



GUIDE TO THE STANDARD FOR DOCUMENTED FIELD REVIEWS DURING IMPLEMENTATION OR CONSTRUCTION

VERSION 2.0
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**ENGINEERS &
GEOSCIENTISTS**
BRITISH COLUMBIA

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PREFACE

This *Guide to the Standard for Documented Field Reviews During Implementation or Construction* (the “Guide”) was developed by Engineers and Geoscientists BC to explain the standards of practice, conduct, and competence for Professional Registrants related to the carrying out of Field Reviews during implementation or construction.

This current revision was undertaken to provide clarity in guidance to Professional Registrants in accordance with the scheme and requirements of the *Professional Governance Act* and Engineers and Geoscientists BC’s Bylaws.

This document outlines the appropriate standards of practice, conduct, and competence to be followed at the time it was 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.

ABBREVIATIONS

ABBREVIATION	TERM
AHJ	Authority Having Jurisdiction
BC	British Columbia
<i>BCBC</i>	<i>BC Building Code</i>

DEFINITIONS

The following definitions are specific to this Guide. These words and terms are capitalized throughout the document.

TERM	DEFINITION
<i>Act</i>	The <i>Professional Governance Act</i> , S.B.C. 2018, c. 47.
Authenticate, Authenticating (see also Manually Authenticating and Digitally Authenticating)	The act of a Professional Registrant Manually Authenticating or Digitally Authenticating a Document.
Bylaws	The Bylaws of Engineers and Geoscientists BC made under the <i>Act</i> .
Digitally Authenticating	A Professional Registrant applying all of the following to a Document: (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.
Direct Supervision (and derivatives)	The responsibility for the control and conduct of the activities, work, or decisions related to the Regulated Practice that have been Delegated to a Subordinate.
Document(s)	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.
Documentation	See the definition for “Record”.
Engineers and Geoscientists BC	The Association of Professional Engineers and Geoscientists of the Province of British Columbia, also operating as Engineers and Geoscientists BC.
Field Reviewer	Unless another qualified party is selected by the client, owner, or employer to carry out Field Reviews, the Field Reviewer is the Professional of Record, or an individual under the Direct Supervision of the Professional of Record, who carries out the Field Reviews.
Field Reviews	Reviews conducted by Professional Registrants, or by Subordinates acting under Professional Registrants’ Direct Supervision, at the site of the implementation or construction of professional engineering or professional geoscience work, that Professional Registrants in their professional discretion consider necessary to ascertain whether the implementation or construction of work substantially comply in all material respects with professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for such work.

TERM	DEFINITION
Firm	As defined in the <i>Act</i> : “(a) a legal entity or combination of legal entities engaged in providing services in respect of a regulated practice, or (b) a ministry or agency of the government that the Lieutenant Governor in Council may prescribe by regulation, but does not include a legal entity or combination of legal entities that may be exempted from this <i>Act</i> by regulation of the Lieutenant Governor in Council.”
Guide	A guide to a program or regulatory topic, published by Engineers and Geoscientists BC. These include Guides to quality management standards that in accordance with the <i>Act</i> and Bylaws define professional obligations related to specific processes and explain the minimum standards of practice, conduct, and competence expected from Professional Registrants and Firms.
Letters of Assurance	Uniform, mandatory documents that are intended to clearly identify the responsibilities of key individuals in a building project, and which are executed in accordance with the <i>BCBC</i> or other applicable building code/bylaw.
Manually Authenticating	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.
Professional of Record	The Professional Registrant who is professionally responsible for activities, work, or Documents related to the Regulated Practice.
Professional Registrant	A registrant of Engineers and Geoscientists BC who is registered in one of the following categories of registrants: (a) professional engineer; (b) professional geoscientist; (c) professional licensee engineering; (d) professional licensee geoscience; (e) life member prior to 1998; (f) honorary life member.
Record (Documentation)	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.
Regulated Practice	As defined in the <i>Act</i> and the <i>Regulation</i> , the carrying on of a profession by a registrant of a regulatory body, which for the purposes of this Guide means the practice of professional engineering or the practice of professional geoscience.
Regulation	The <i>Engineers and Geoscientists Regulation</i> , OIC 2021/037.
Subordinate	Any individual who engages in the Regulated Practice under the Direct Supervision of a Professional Registrant.

VERSION HISTORY

VERSION NUMBER	PUBLISHED DATE	DESCRIPTION OF CHANGES
2.0	February 17, 2021	Updated the content and terminology to conform with the <i>Professional Governance Act</i> and updated Bylaws; changed the main title to “Guide to the Standard for Documented Field Reviews During Implementation or Construction”; changed the document category from “quality management guidelines” to “quality management guides.”
1.3	January 9, 2018	Updated format to align with new Engineers and Geoscientists BC brand; minor editorial corrections.
1.2	October 7, 2013	Minor editorial corrections.
1.1	February 25, 2013	Minor editorial corrections.
1.0	May 2012	Initial version.

1.0 INTRODUCTION

1.1 OVERVIEW

- 1.1.1 Engineers and Geoscientists BC 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 qualifications and practice of Professional Registrants.
- 1.1.2 Engineers and Geoscientists BC provides practice resources to Professional Registrants to assist them in meeting their professional and ethical obligations under the *Act* and Bylaws. One category of these practice resources is Guides to quality management standards, which explain the standards of practice, conduct, and competence for quality management in professional activities.
- 1.1.3 This *Guide to the Standard for Documented Field Reviews During Implementation or Construction* explains the standards of practice, conduct, and competence for Professional Registrants related to carrying out Field Reviews. This Guide explains how Professional Registrants must address the requirement for carrying out Field Reviews, even if they are not the Professional of Record engaged for the Field Review and the documenting of the process.
- 1.1.4 This current revision was undertaken to provide clarity in guidance to Professional Registrants, in accordance with the scheme and requirements of the *Act* and the current Bylaws, and to assist Professional Registrants in upholding their professional obligations under the *Act* and Bylaws.

1.2 PURPOSE OF THIS GUIDE

- 1.2.1 This document explains the standards of practice, conduct, and competence expected of Professional Registrants when carrying out Field Reviews. This Guide provides a common approach applicable to all Professional Registrants who carry out Field Reviews themselves or have Field Reviews carried out by Subordinates under their Direct Supervision.
- 1.2.2 The specific objectives of this Guide are to:
1. describe the minimum standards, scope, and purpose of carrying out Field Reviews during implementation or construction;
 2. assist Professional Registrants in establishing and maintaining documented quality management procedures for Field Review of professional engineering or professional geoscience work;
 3. assist Professional Registrants in understanding the purpose of carrying out Field Reviews;
 4. assist Professional Registrants in clarifying the intent and frequency of Field Reviews and what they include;
 5. clarify what Professional Registrants must do if they are not involved in Field Reviews;
 6. provide guidance on how Professional Registrants should identify and address issues during a Field Review; and

7. provide guidance on how to meet the quality management requirements under the *Act* and Bylaws when engaged in Field Reviews of professional engineering or professional geoscience work.

1.3 ROLE OF ENGINEERS AND GEOSCIENTISTS BC

- 1.3.1 This Guide and the current revision was developed under the direction of Engineers and Geoscientists BC's Council and, prior to publication, underwent final legal and editorial reviews. This Guide forms part of Engineers and Geoscientists BC's continuing commitment to establishing and monitoring the quality of professional services that Professional Registrants provide to their clients and to the public.
- 1.3.2 Field Reviews are a requirement that are critical for assisting Professional Registrants in fulfilling their professional obligations, including holding paramount the safety, health, and welfare of the public. Field Reviews ensure that professional engineering or professional geoscience work substantially comply with the concepts or intent reflected in the Documents prepared for the work in a way that meets all regulatory requirements.

1.4 SCOPE

- 1.4.1 Proper and appropriate Field Reviews are fundamental to upholding the *Act* and Bylaws, including the Code of Ethics in Schedule A of the Bylaws, which require that all Professional Registrants hold paramount the safety, health, and welfare of the public, including the protection of the environment, and the promotion of health and safety within the workplace.
- 1.4.2 As required by the Bylaws, Professional Registrants must satisfy the Field Review requirements for all professional engineering and professional geoscience work, or projects for which they are responsible. Refer to [Section 3.6 Who is Permitted to Carry Out Field Reviews](#) of this Guide for more information.
- 1.4.3 This Guide is intended to assist Professional Registrants in establishing and maintaining a documented quality management procedure for Field Reviews that complies with the requirements of the *Act* and of the Bylaws by addressing the following:
 - the purpose of Field Reviews;
 - the extent of Field Reviews;
 - what is included and not included in Field Reviews;
 - when Field Reviews should occur;
 - who is qualified to conduct a Field Review; and
 - how to carry out, document, and address issues identified in Field Reviews.

- 1.4.4 To comply with the Bylaws, Professional Registrants must have established, or have access through their Firm to, a documented quality management procedure that includes performing or Directly Supervising and documenting Field Reviews of their projects during implementation or construction.
- 1.4.5 A documented quality management procedure is one that has been thought out and reduced to writing in a suitable form. The process may be captured in a written procedure, process flowchart, checklists, forms, or other Documentation developed to suit the nature of the work undertaken by Professional Registrants.
- 1.4.6 These obligations apply to Professional Registrants acting in their professional capacities in all industries when their work involves, among other things:
- ongoing professional engineering and professional geoscience work;
 - projects with a defined start and finish;
 - products and services requiring the application of professional engineering or professional geoscience;
 - professional engineering or professional geoscience deliverables such as reports, drawings, specifications, digital artifacts, or other deliverables;
 - implementation or use of professional engineering or professional geoscience work as may be found in a manufacturing facility, technology company, operations, or utilities work;
 - construction or installation of professional engineering or professional geoscience work;
 - implementation or construction carried out by others;
- implementation or construction being carried out by the Professional Registrant's Firm's own forces;
 - professional engineering or professional geoscience work carried out for use internally by the Professional Registrant's Firm; and
 - professional engineering or professional geoscience work carried out for others.
- 1.4.7 Terminology used within an industry may not match the terminology used in this Guide. However, the obligations of Professional Registrants in all industries remain the same: to ensure that Field Reviews take place to meet the intent of the *Act*, Bylaws and this Guide.
- 1.4.8 The following examples may assist in illustrating how Field Reviews may occur and what they may include, in a project situation and in a situation involving ongoing work.
- 1.4.9 **Example 1: Consulting**
- Documents for the professional engineering or professional geoscience work are prepared by, or under the Direct Supervision of, the Professional of Record. The work is put out to tender and a contractor is selected to construct the work.
- In this instance, the Professional of Record or Subordinate carries out periodic Field Reviews to confirm that the construction conforms to the professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for the work.

1.4.10 **Example 2: Manufacturing or Technology**

A process or program is engineered by the Professional of Record in a manufacturing or technology Firm. The Firm implements the process or program using internal or external resources to create an end product or end result.

- In this instance, the Professional of Record or Subordinate may conduct testing, review test results, inspect operations, review quality control processes, or carry out other actions to confirm that the implementation meets the professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for the work.

1.4.11 **Example 3: Mineral Exploration**

A Registered Professional plans a drilling program. The drilling contractors are to follow the drill plan as laid out by the project geoscientist. The Field Reviewer confirms that the exploration program proceeds as planned (e.g., locations, depths).

- In this instance, the Professional of Record or Subordinate carries out periodic Field Reviews to confirm that the drilling program conforms to the drillhole layout designed by the Professional of Record.

1.4.12 **Example 4: Software in an Industrial Plant**

A Registered Professional leads a team that is developing a supervisory, control, and data acquisition software package for a complex industrial plant. The Registered Professional works with other members of the plant design and operations teams to determine the software requirements. The Registered Professional supervises the team's efforts to design and implement a suitable software system for the plant. The Field Reviewer confirms that the developed software, through demonstrating software compliance to requirements, is appropriate for use in its intended application.

- In this instance, the Professional of Record or Subordinate carries out a software validation campaign that might include:
 - unit tests of software code during development;
 - factory tests of the software prior to release of the software to the plant;
 - on-site tests of the software after deployment of the software to the plant, including that the proper software version has been deployed; and
 - commissioning of the software during normal plant operations.

2.0 REGULATORY FRAMEWORK

2.1 Section 57(1) of the *Act*, Standards of conduct and competence, states that:

“Subject to subsections (2) and (3), the council of each regulatory body must make bylaws establishing the following:

- (a) standards of professional and ethical conduct for registrants, which standards may be different for different categories or subcategories of registrants;
- (b) standards of competence for registrants, which standards may be different for different categories or subcategories of registrants or different areas of practices;”

...

2.2 Section 7.3.3, of the Bylaws, Field Reviews, states that:

“(1) Field review must be completed during the construction, manufacturing, fabrication, implementation, testing, or commissioning of work related to the Regulated Practice by a Professional Registrant, or a Subordinate under the Professional Registrant’s Direct Supervision, in a manner that is appropriate to the level of risk that

has been assessed through a documented risk assessment.

- (2) If applicable pursuant to subsection (1), a Professional Registrant must establish, maintain, and follow documented procedures for documented field reviews of work related to the Regulated Practice in British Columbia.
- (3) Through a field review, a Professional Registrant, or a Subordinate under the Professional Registrant’s Direct Supervision, must determine whether the construction, manufacturing, fabrication, implementation, testing, or commissioning of work related to the Regulated Practice substantially complies with the concepts or intent reflected in the Documents prepared for the work related to the Regulated Practice.”

2.3 This Guide is intended to assist Professional Registrants in understanding the minimum standard of practice and in fulfilling their professional obligations in accordance with section 7.3.3 of the Bylaws. Failure to meet the requirements as set out in this Guide could be evidence of incompetence, negligence, unprofessional conduct, or breach of the Bylaws, and may lead to disciplinary proceedings by Engineers and Geoscientists BC.

3.0 STANDARDS FOR PRACTICE

3.1 WHAT IS THE PURPOSE OF A FIELD REVIEW

- 3.1.1 Field Reviews are periodic reviews conducted by Professional Registrants, or by Subordinates under Professional Registrants' Direct Supervision, at the site of the implementation or construction of professional engineering or professional geoscience work, that Professional Registrants in their professional discretion consider necessary to ascertain whether the implementation or construction of work substantially comply in all material respects with professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for such work. Field Reviews also help Professional Registrants keep employers, clients, owners, and other relevant professionals informed about the quality of the implementation or construction work as it pertains to compliance with the Documents prepared for the work.
- 3.1.2 Decisions about the number and extent of Field Reviews must always remain at the discretion of Professional Registrants. Consequently, Professional Registrants may not, in their agreements with employers, clients, owners, or anyone else, agree in advance to limit the number or extent of Field Reviews. It is, however, appropriate for Professional Registrants to provide estimates of the number of anticipated Field Reviews and/or the costs for attending sites for Field Reviews to employers, clients, or owners.

3.2 WHAT ARE FIELD REVIEWS NOT INTENDED TO DO

- 3.2.1 Field Reviews are not supervision of the implementation or construction of work, nor are they a guarantee that all deficient work will be identified by Professional Registrants or Subordinates. The contractors or other parties implementing or constructing the work are responsible for supervising the work, delivering work that is in conformity with the Documents, and deciding the means and methods for doing so. Field Reviewers observe the work of contractors, to ascertain whether the work substantially complies in all material respects with the professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for the work. Field Reviewers may reject nonconforming work, but leave the means and methods for achieving what is required to the contractors or others who are tasked with implementing or constructing the work.
- 3.2.2 Field Reviews are also not inspections of the work or safety at a contractor-controlled site or a site managed by others, nor are they reviews of the relevant safety programs. This does not mean that Professional Registrants may exercise willful blindness when they see a safety violation or concern. Professional Registrants have a duty to hold public safety paramount.

3.2.3 When Professional Registrants become aware of a safety violation or concern, they must inform the appropriate party in control of the site or responsible for the site safety. If no action is taken, Professional Registrants must then advise the client or relevant authorities.

3.2.4 If the notified parties described in section 3.2.3 fail to take appropriate actions, and Professional Registrants believe that workers or the public may be in imminent danger, Professional Registrants have a professional duty to act to stop the work. If a Professional Registrant's attempts to stop a dangerous work fails, the Professional Registrants should call WorkSafeBC or the appropriate Authority Having Jurisdiction (AHJ) for assistance and indicate the urgency of the situation. When this level of action becomes necessary it must be documented.

- The standard of practice for the type and nature of work to be reviewed
- The requirements of related Engineers and Geoscientists BC professional practice guidelines and/or practice advisories
- The legislation, codes, standards, or other regulatory requirements that may be relevant and applicable to the nature of the Field Review to be carried out
- The level of detail provided in the Documentation prepared for the project or work
- The experience, reputation, and method of selection (that is, public tender, prequalified bidders, or negotiated) of those implementing or constructing the work
- The number of deficiencies found early in the project or work
- The experience of the Professional of Record

3.3 HOW OFTEN SHOULD FIELD REVIEWS TAKE PLACE

3.3.1 The timing of Field Reviews must take into consideration and reflect the following:

- The number of Field Reviews that are deemed necessary, based on a Professional Registrant exercising reasonable professional judgment, to ascertain whether the implementation or construction of work substantially complies in all material respects with the professional engineering or professional geoscience concepts or intent reflected in the Documents prepared for the work
- The level and nature of risk, complexity, unknown conditions, and duration of the implementation or construction

3.3.2 Professional Registrants must assess the work being carried out and the associated risks to determine the number, extent, frequency, and timing of Field Reviews. The number of reviews must be consistent with the standards of practice in the profession for the specific professional engineering and professional geoscience work. Professional Registrants should act reasonably, but must not acquiesce to the demands of employers, clients, or owners to conduct fewer Field Reviews than Professional Registrants believe are necessary. Professional Registrants must not rely on the fact that an employer, client, owner, regulatory authority, or anyone else is carrying out reviews as a reason to reduce the number of Field Reviews that Professional Registrants carry out. Educating employers, clients,

and owners about the purpose of Field Reviews, and documenting and agreeing in advance about the nature and purpose of Field Reviews, will help to avoid misunderstandings later in the project or work.

3.3.3 The number and frequency of Field Reviews may need to be adjusted if more deficiencies than expected are found early in the project or work.

3.3.4 If Professional Registrants determine that the number or extent of Field Reviews that may be referenced in an agreement or scope of work is insufficient, Professional Registrants must undertake the following actions:

1. Advise the client, owner, or employer about the need and rationale for more Field Reviews.
2. If the client, owner, or employer does not authorize additional Field Reviews, Professional Registrants must document and communicate to the client, owner, or employer the consequences of not conducting sufficient Field Reviews, such as:
 - placing public safety at risk;
 - having to notify the appropriate AHJ or other relevant regulatory body;
 - not being able to execute Letters of Assurance required by the *British Columbia Building Code (BCBC)*; and
 - not being able to Authenticate assurance statements required by other legislation.

3.3.5 If the employer, client, or owner continues to refuse to authorize additional Field Reviews, Professional Registrants must notify the appropriate AHJ or other relevant regulatory body and consider removing themselves from the project.

3.4 WHEN SHOULD FIELD REVIEWS OCCUR

3.4.1 Field Reviews must take place during times when critical components of the work are visible and available to be observed. Field Reviews carried out after critical work is covered up are inadequate. If critical work is covered up before a Field Review can occur, Professional Registrants must consider whether to request that the work be opened up for review. Where uncovering or opening up the work is not feasible or practical, Professional Registrants must prepare Documents about what was observed relevant to the work and the performance of the contractors or those tasked with implementing the work. Professional Registrants must also identify and communicate in writing to the employer, client, or owner the consequences of not seeing the work and the reasons for not requiring that the work be uncovered or opened up.

3.4.2 Field Reviews should occur periodically to suit the nature and progress of the implementation or construction. Some reviews may be carried out randomly and unannounced so that Field Reviewers are not observing work only when the contractor or other party implementing the work has had the opportunity to prepare for the Field Review.

3.5 WHAT DO FIELD REVIEWS INCLUDE

- 3.5.1 Field Reviews may simply involve Field Reviewers visiting the site where the implementation or construction of the professional engineering or professional geoscience work reflected in the Documents occurs; making observations; and communicating observations, interpretations, and advice. In some instances, observations may need to be supplemented with testing or surveying. Testing and analysis should be carried out to recognized standards. Equipment used for inspecting, measuring, testing, surveying, or similar purposes must be periodically calibrated to recognized standards and checked, where possible, before each use. Records of use, calibration, and current status should be maintained. In some industries, Field Reviews may involve reviewing quality control processes.
- 3.5.2 On occasion, the contractor or others implementing the work will seek advice or direction from Field Reviewers. Where this advice or direction involves professional engineering or professional geoscience decisions, such decisions must be reviewed with the Professional of Record. Where the decisions will have an impact on the cost, quality, function, or schedule of the end product, the Professional of Record must advise, and seek approval from, the employer, client, or owner before directing the contractor or others implementing the work to make any changes. The means and methods for fulfilling the advice must always be left to the contractor or others implementing the work.

3.6 WHO IS PERMITTED TO CARRY OUT FIELD REVIEWS

- 3.6.1 Section 7.3.3 of the Bylaws requires that Field Reviews must be carried out by Professional Registrants or by Subordinates under the Direct Supervision of Professional Registrants. For more information about Direct Supervision, refer to the Engineers and Geoscientists BC *Guide to the Standard for Direct Supervision* (Engineers and Geoscientists BC 2021a). Where possible and appropriate, Field Reviewers should be accompanied by a representative of the owner and or the contractor or other party responsible for the implementation or construction.
- 3.6.2 Engineers and Geoscientists BC recommends that the Professional of Record responsible for preparing Documents developed for implementation or construction also be responsible for Field Reviews during implementation or construction. This is the most common and preferred practice in industry, as it is not only in the best interests of clients, owners, or employers but also best reflects the intent of the Bylaws. The division of responsibilities for preparing the Documents and for carrying out Field Reviews is undesirable and should be avoided where possible.
- 3.6.3 Professional Registrants working in jurisdictions outside of BC must abide by the licensing, registration, and other regulatory requirements in those jurisdictions.

- 3.6.4 Refer to [Section 3.7 What If the Professional of Record Is Not Engaged for Field Reviews](#) of this Guide for guidance for when the Professional of Record responsible for preparing Documents developed for implementation or construction is not engaged to do Field Reviews.
- 3.6.5 Professional Registrants may delegate Field Reviews only when the Field Reviews are carried out under their Direct Supervision. Before doing so, Professional Registrants must assess:
- the level, complexity, and critical nature of the Field Reviews;
 - the requirements or recommendations set out in any related Engineers and Geoscientists BC professional practice guidelines, practice advisories, or other standards, codes, and legislation that may preclude delegation of Field Reviews;
 - the experience and training of the proposed Field Reviewers; and
 - the ability of the proposed Field Reviewers to deliver the required level of quality and accuracy.
- 3.6.6 Professionals of Record must provide direction regarding the timing, frequency, and focus of Field Reviews. They must give directions about the required effort, reporting detail, and specific aspects of the implementation or construction activities to be Field Reviewed. Professionals of Record must be involved in any professional engineering or professional geoscience decisions made during or as a result of Field Reviews. See the Engineers and Geoscientists BC *Guide to the Standard for Direct Supervision* (Engineers and Geoscientists BC 2021a) for further guidance regarding what constitutes Direct Supervision of Field Reviews.

3.7 WHAT IF THE PROFESSIONAL OF RECORD IS NOT ENGAGED FOR FIELD REVIEWS

- 3.7.1 The documented quality management procedure referenced in [Clause 1.4.5](#) of this Guide must include protocols to be followed when the Professional of Record responsible for preparing the Documents developed for implementation or construction is not engaged or required by the client, owner, or employer to carry out Field Reviews during implementation or construction of the professional engineering or professional geoscience work.
- 3.7.2 The protocols should address the following:
1. Obtaining written confirmation from the client, owner, or employer about how and by whom the Field Reviews will be carried out.
 2. Confirming that a qualified engineering/geoscience professional, as appropriate for the work and registered in the governing jurisdiction where the implementation or construction will occur, will be conducting or Directly Supervising the Field Reviews.
 3. Advising the client, owner, or employer and the engineering/geoscience professional responsible for the Field Review of the Professional Registrant's availability to answer questions regarding the work during implementation or construction.
 4. Requesting copies of Field Review reports.
 5. Retaining a Record of any communication confirming steps 1 to 4 and the client, owner, or employer's response.

3.7.3 For buildings in BC covered by the *BCBC*, the Professional Registrant responsible for Field Reviews would be the registered professional who signs the Letters of Assurance under the *BCBC*. Refer to the Engineers and Geoscientists BC *Bulletin K: BCBC – Letters of Assurance in the BC Building Code and Due Diligence* (Engineers and Geoscientists BC 2010) under the section titled Field Reviews, and the *Guide to the Letters of Assurance in the BC Building Code* (Province of BC 2010) issued by the BC Building and Safety Standards Branch.

3.7.4 If the client, owner, or employer does not confirm that Field Reviews will be carried out by a professional licensed or registered in the governing jurisdiction or by a qualified party under that professional’s Direct Supervision, the Professional of Record must undertake the following actions:

1. Advise the client, owner, or employer of the Professional Registrant’s obligations under the *Act* and Bylaws and the consequences of the client, owner, or employer not having appropriate Field Reviews carried out, including:
 - placing public safety at risk;
 - having to notify the appropriate AHJ or other relevant regulatory body;
 - not being able to execute required Letters of Assurance; and
 - not being able to Authenticate other legislated assurance statements.
2. If the client, owner, or employer continues to refuse to authorize an appropriate Field Review, notify the appropriate AHJ or other relevant regulatory body and consider removing themselves from the project.

3.7.5 Similar protocols are recommended for work requiring Field Reviews outside of BC.

3.8 HOW SHOULD OUT OF PROVINCE-ENGINEERED AND SUPPLIED EQUIPMENT BE HANDLED

3.8.1 Where Professional Registrants are specifying equipment, products, or components that are designed and manufactured or fabricated out of province for use on projects in BC, they should begin by preparing and Authenticating a performance specification for the equipment. The specifications should indicate that the manufacturer or fabricator must certify that the equipment meets the performance specifications. This will relieve Professional Registrants of any requirement to carry out Field Reviews at the place of fabrication.

3.8.2 However, when Professional Registrants receive such equipment, products, or components, they are responsible for checking their quality. If occupational health and safety legislation imposes any requirements such as for guards and safety switches, Professional Registrants are responsible for checking that the equipment meets those requirements. Professional Registrants must also confirm that the equipment meets any Technical Safety BC requirements. If the equipment requires services such as electrical, gas, or water feeds, Professional Registrants are responsible for carrying out Field Reviews of those services.

3.9 HOW SHOULD ISSUES FOUND IN FIELD REVIEWS BE ADDRESSED

3.9.1 When work is observed that does not substantially comply in all material respects with the professional engineering or professional geoscience concept or intent, as reflected in the Documents that have been prepared to guide the implementation or construction, the problem must be communicated in writing to the party responsible for the implementation or construction. The written instructions should clearly indicate which work is nonconforming and why. The means and methods for how to rectify any nonconforming work must remain the responsibility of the contractor or others.

Professional Registrants must confirm and record when the work is made to conform to the professional engineering or professional geoscience concept or intent, as reflected in the Documents that have been prepared to guide the implementation or construction, or what alternative strategy was employed. If the contractor, employer, client, or owner does not make the work conform, Professional Registrants must consider a written report to the appropriate AHJ or other relevant regulatory authority and must document the events and implications for the contractor, employer, client, or owner.

3.10 WHAT FIELD REVIEW RECORDS MUST BE CREATED AND KEPT

3.10.1 It cannot be over-emphasized how important thorough and complete Documentation of Field Reviews can be to Professional Registrants. Records will refresh memories, confirm directions given, and demonstrate that the required standards of practice have been met in Field Reviews. These Records may also serve as evidence in case of a dispute.

3.10.2 In some instances, the client, owner, or employer may choose to have Field Reviews conducted by someone other than the Professional of Record. In these circumstances, the Professional of Record should develop protocols as described in [Section 3.7 What If the Professional of Record Is Not Engaged for Field Reviews](#) and retain required Records.

3.10.3 Observations made during Field Reviews must be recorded and retained. Using standard forms that capture the date, time, and detail of any observations helps to ensure consistent and complete Records.

3.10.4 Photographs or videos provide excellent Records of what was observed and are particularly useful where the work being Field Reviewed will be buried or covered by construction. When using photographs as Records, create an audit trail by:

- checking the equipment, date, and time settings before taking photographs;
- including a description of what was photographed along with the data, time, location, and photographer;
- setting up appropriate downloading and storage procedures;
- creating a non-editable back-up of all photographs;

- never deleting a photograph in the Record set; and
 - enhancing, cropping, or otherwise editing photographs for clarity only, and retaining the original unaltered photo with the edited photo.
- 3.10.5 Any field notebooks used in Field Reviews to document dates, times, observations, surveys, and actions must be retained as Records.
- 3.10.6 All communications and directions to the contractor or others implementing the work about observations and nonconforming work must be provided in writing at the time of the Field Review, even if handwritten and followed up later with a typewritten report. Copies must be provided to the owner and retained as a Record. Care must be taken to provide directions about what must be carried out by the contractor or others and to not use language that indicates how to rectify the nonconforming work. Again, using a standard form will help to ensure consistent and complete Records.
- 3.10.7 Professional Registrants must continue to report nonconforming work until it is rectified. When the work is rectified, Professional Registrants must document compliance with an appropriate Record.
- 3.10.8 Records of test results must be copied to the contractor, client, or owner and retained as Records. Calibration results for equipment must also be retained as Records.
- 3.10.9 Site meetings that discuss Field Reviews, observations, and resolutions must be recorded in meeting minutes, distributed to the contractor, owner, and other relevant professionals, and must be retained as Records.
- 3.10.10 All Field Review Records must be retained with project or work Documentation. For further guidance about retaining project or work Documentation, see the Engineers and Geoscientists BC *Guide to the Standard for Retention of Project Documentation* (Engineers and Geoscientists BC 2021b).

4.0 REFERENCES AND RELATED DOCUMENTS

Engineers and Geoscientists Regulation, OIC 2021/037.

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