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Professional Practice Management Plan



The Association of Professional
Engineers and Geoscientists of Alberta

DOCUMENT HISTORY

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Preface

An APEGA professional practice standard describes the level of performance required of *licensed professionals*. Part 8 of the *General Regulation* under Section 59 allows APEGA to publish standards that define the expectations and professional obligations of APEGA *permit holders* and *licensed professionals*.

The differences between a professional practice standard, a practice guideline, and a practice bulletin are as follows.

- An APEGA professional practice standard sets the minimum standard of practice *permit holders* and *licensed professionals* must meet. It is the standard against which a *permit holder's* or *licensed professional's* practice and conduct will be assessed by APEGA's statutory boards.
- A professional practice guideline provides professional practice advice and best practice recommendations to help *permit holders* and *licensed professionals* meet their professional obligations. APEGA statutory boards may assess a *permit holder's* or *licensed professional's* practice and conduct against practice guidelines.
- A professional practice bulletin provides clarity and guidance on a specific subject related to professional practice. Bulletins remain in force until a practice standard or guideline on the subject is developed, or until the practice bulletin is repealed.

Practice standards, guidelines, and bulletins should be read in conjunction with the *Engineering and Geoscience Professions Act*, the *General Regulation*, APEGA's bylaws, and any other applicable legislation, codes, or standards.

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1.0 Overview

For the public to have confidence in the quality of the *professional services* provided, *permit holders* must have a structured process in place for managing professional practice.

Section 48(1)(d) of the *General Regulation* requires all APEGA *permit holders* to follow a professional management plan that is appropriate to their scope of professional practice, herein referred to as a *Professional Practice Management Plan (PPMP)*. All *permit holders* are required to have a current *PPMP* appropriate to their practice.

A *PPMP* is a documented description of corporate policies, procedures, and systems used to ensure organizations and *licensed professionals* practising engineering, geoscience, or both maintain appropriate standards of professional practice. It is a management and communication tool that helps *permit holders* effectively plan, execute, and manage the quality control and assurance of their professional engineering or geoscience practice. A *PPMP* must be active, current, accessible, known, and understood within the organization.

This practice standard replaces the following guideline:

- *Professional Practice Management Plans v 1.4* (February 2013)

1.1 PURPOSE AND SCOPE

This practice standard details the minimum requirements that must exist in a *PPMP*. It also outlines the professional and ethical obligations of *permit holders* and their *senior officer, Responsible Members*, and *licensed professionals* related to creating and maintaining *PPMPs* and managing the practices of engineering and geoscience.

1.2 REFERENCES

The following publications support this standard. Refer to the latest versions available at apega.ca/practice-standards.

- *The Engineering and Geoscience Professions Act, the General Regulation, and APEGA's bylaws*
- *Authenticating Professional Work Products* practice standard
- *Continuing Professional Development* practice standard
- *Relying on the Work of Others and Outsourcing* practice standard
- *Ethical Practice* practice guideline
- *Guideline for Professional Practice*
- *Good Standing Policy*

1.3 DEFINITIONS

For the purposes of this standard, the below terms and definitions apply. These terms are italicized throughout the text.

Authentication

Authenticating a *professional work product* means a *licensed professional* has completed, performed a *thorough review* of, or *directly supervised and controlled* the engineering or geoscience work and accepts professional responsibility for the engineering or geoscience involved. *Authentication* must be performed in accordance with the practice standard *Authenticating Professional Work Products*.

Direct Supervision and Control

The high degree of guidance a *licensed professional* provides to one or more individuals. The *licensed professional* accepts professional responsibility for engineering or geoscience tasks performed under their guidance. *Direct supervision and control* includes directing, monitoring, and controlling the engineering and geoscience work performed, including making all the decisions related to the practices of engineering and geoscience.

Direct supervision and control requirements are detailed in the practice standard *Relying on the Work of Others and Outsourcing*.

Discipline

A specific field of practice within a profession (e.g., electrical engineering, mechanical engineering, geophysics, geochemistry).

Due Diligence

The level of judgement, care, forethought, and determination a *person* reasonably uses to avoid harming oneself, other people, property, or the environment.

Good Standing

Permit holders, *licensed professionals*, and members-in-training are considered in *good standing* with APEGA if they meet the criteria set out in the Good Standing Policy.

Licensed Professional

A professional engineer, professional geoscientist, professional licensee (engineering), professional licensee (geoscience), licensee (engineering), or licensee (geoscience) entitled by the *Engineering and Geoscience Professions Act* to practise engineering or geoscience in Alberta.

Operating Name

A name a *permit holder* uses (e.g., a trade name) that is different from its legal name but is listed with APEGA under the same *Permit to Practice* and uses the same *permit number*.

Output

See *Professional Services Output*

Outsourcing

Procuring *professional services* from an individual or entity not practising under the *outsourcing entity's Permit(s) to Practice*. This includes when a *sole proprietor* procures *professional services*.

Outsourcing Entity

The *permit holder* or *licensed professional* procuring outsourced professional services. An *outsourcing entity* procures professional services from an *outsourced entity*.

Outsourcing Plan

A plan for procuring outsourced professional services. *Outsourcing plan* requirements are detailed in the practice standard *Relying on the Work of Others and Outsourcing*.

Permit Holder

A partnership, or other association of persons, or a corporation that holds a *Permit to Practice* under the *Engineering and Geoscience Professions (EGP) Act*. The Association of Science and Engineering Technology Professionals of Alberta (ASET) permit holders, as defined in Section 86(4) of the *EGP Act*, are not included.

Permit to Practice

An APEGA licence given to *permit holders* to practise engineering or geoscience in Alberta.

Permit to Practice Number

The unique registration number provided to a *permit holder* licensed by APEGA to practise engineering, geoscience, or both.

Person

An individual or business entity.

Practice Review Board

A statutory board established under Section 15 of the *Engineering and Geoscience Professions (EGP) Act*. Through its powers established in Section 16 of the *EGP Act*, the *Practice Review Board* provides regulatory oversight to professional practice by developing and maintaining practice standards relating to the competent practice of the professions, conducting practice reviews of *licensed professionals* and *permit holders*, and administering the Continuing Professional Development Program (*General Regulation* Section 16(2)).

Professional Practice Management Plan

A *permit holder's* written corporate policies, procedures, and systems describing the quality control and assurance measures in place to ensure appropriate standards of professional practice are maintained as described in Section 48(1)(d) of the *General Regulation*.

Professional Services

Services that involve the practice of engineering as defined in Section 1(q) of the *Engineering and Geoscience Professions (EGP) Act* or the practice of geoscience as defined in Section 1(r) of the *EGP Act*. The products of *professional services* are called *outputs*.

Professional Services Output (or Output)

Any product—physical or electronic—resulting from a *professional service*. Not all *outputs* require *authentication* and *validation*.

Professional Work Product

A professional services output that requires authentication and validation as described in the practice standard *Authenticating Professional Work Products*. Defined in the *General Regulation* as “...plans, specifications, reports, or documents of a professional nature,” a professional work product (PWP) is any professional services output with technical information that is complete and final for its intended purpose, and which is relied upon by others, internally or externally. A PWP can be physical (e.g., paper, plastic film), electronic (e.g., electronic document, image), or digital (e.g., software, modelling, simulation, or any other computer application that cannot be reproduced in a physical or electronic format). See the authentication test in the practice standard *Authenticating Professional Work Products* when assessing whether an output is a PWP.

Responsible Member

A licensed professional who is responsible to provide oversight of the practice of engineering or geoscience by the permit holder and meets the specification in Part 7, Section 48(1)(c) of the *General Regulation*. A Responsible Member must be qualified by education and experience in the profession of engineering or geoscience in which the partnership, corporation or other entity intends to engage, designated in writing by the permit holder, and registered with APEGA as a Responsible Member.

The Responsible Member must have a sufficiently close relationship with the permit holder to undertake the roles and responsibilities associated with acting as a Responsible Member. The role of Responsible Member may not be delegated to other licensed professionals who are not Responsible Members.

A Responsible Member can be:

- a full-time, permanent employee of the permit holder
- a member of the permit holder
- a sole practitioner
- an individual providing professional services to the permit holder through a contractual arrangement or as a part-time employee

The permit holder's Responsible Members direct, supervise, and control all or part of a permit holder's professional practice in accordance with the permit holder's Professional Practice Management Plan and all relevant legislation, regulations, and codes.

Senior Officer

Holds signing authority to make decisions on behalf of the permit holder. The senior officer is named in the *Permit to Practice* application and signs a declaration form to legally bind the permit holder to the *Permit to Practice* agreement with APEGA. The senior officer is not required to be a licensed professional. APEGA formerly referenced the senior officer as the company's chief operating officer.

Sole Practitioner

Within Alberta, an individual who practises as an incorporated entity. A sole practitioner must hold a *Permit to Practice*.

Sole Proprietor

Within Alberta, an individual who is the sole owner of a business and makes no legal distinction between themselves and their business (i.e., the business does not exist as a separate entity).

A licensed professional practising as a sole proprietor does not need a *Permit to Practice* since the sole proprietor is not practising engineering or geoscience through a corporation, partnership, or association.

Technical Information

A term for content or data derived from the practice of engineering or geoscience as defined by the *Engineering and Geoscience Professions Act*, including advice, analyses, assessments, calculations, designs, evaluations, inputs (e.g., to planning or to modelling and simulation), interpretations, notes, opinions, recommendations, and process descriptions.

Thorough Review

An evaluation of the *outputs* of professional services prepared by others to verify their reliability, validity, and technical accuracy. *Thorough review* requirements are detailed in the practice standard *Relying on the Work of Others and Outsourcing*.

Validation

Validating a professional work product (PWP) means a permit holder's Responsible Member has reviewed the PWP to ensure it meets the quality control and assurance measures described in the permit holder's Professional Practice Management Plan. Validation must be performed in accordance to the practice standard *Authenticating Professional Work Products*.

2.0 Professional and Ethical Obligations

Permit holders and their licensed professionals must ensure their professional practice conforms with the *Engineering and Geoscience Professions (EGP) Act* and the *General Regulation*, as well as APEGA's bylaws, practice standards, bulletins, and guidelines. Professional practices of engineering and geoscience must also comply with all other applicable statutes, regulations, bylaws, standards, and codes.

2.1 PERMIT HOLDER OBLIGATIONS

A permit holder must assign a senior officer to be accountable for its compliance to APEGA's *Permit to Practice* requirements. A senior officer may delegate their responsibilities to another individual in writing within the *Permit to Practice*. Such delegation of authority does not exempt the senior officer from obligations or accountability relating to the *Permit to Practice*. The senior officer acknowledges that the permit holder is regulated by APEGA under the authority of the *EGP Act* and the *General Regulation*. APEGA recommends the senior officer attend *Permit to Practice* seminars to help them meet their obligations.

The senior officer, on behalf of the permit holder, must:

- assign qualified and competent licensed professionals to act as *Responsible Members*
- assign a sufficient ratio of *Responsible Members* to licensed professionals, members-in-training, and individuals contributing to the practices of engineering or geoscience. Refer to Section 4.6.2 of this standard

- be accountable for the creation, revision, implementation, and continual improvement of the *Professional Practice Management Plan (PPMP)*, and ensure it is followed
- assign, direct, and support *Responsible Members* to create, revise, implement, and follow the *PPMP*
- provide written direction to the *Responsible Members* to validate engineering and geoscience *professional work products*
- assign *Responsible Members* to be accountable for the quality control and assurance processes under which *licensed professionals* practise engineering and geoscience
- ensure changes to the *PPMP* are communicated to all *licensed professionals* and keep evidence of this communication
- ensure the *professional services* offered by the company are performed by competent *licensed professionals*
- ensure the membership database listing the *licensed professionals* and members-in-training on the *Permit to Practice* is up to date. At a minimum, this must be done at the time of permit renewal
- ensure adherence to relevant statutes, regulations, bylaws, standards, and codes
- respond to requests from APEGA within the timeline given (APEGA Bylaw 32.1)

The *senior officer*, on behalf of the *permit holder*, is accountable to notify APEGA if:

- their contact information changes
- they change who is assigned as a *Responsible Member*
- the *permit holder* is subject to a discipline decision from another provincial or territorial jurisdictional body in Canada governing the practice of engineering or geoscience
- any change is made to the assignment of the *senior officer*

2.2 RESPONSIBLE MEMBER OBLIGATIONS

In addition to their obligations as *licensed professionals*, *Responsible Members* must:

- complete at least one *Permit to Practice* seminar every five years
- create or revise the *PPMP* if assigned to do so by the *senior officer*
- ensure the *PPMP* is appropriate to the *permit holder's* professional practice

- follow the *PPMP* and ensure *licensed professionals* and others who are contributing to the practices of engineering and geoscience are trained on how to use it
- be accountable, on behalf of the *permit holder*, for the quality control and assurance processes under which *licensed professionals* practise engineering and geoscience
- ensure all engineering and geoscience work performed on behalf of the *permit holder* is authenticated and validated in accordance with APEGA practice standards and bulletins
- be accountable, on behalf of the *permit holder*, to ensure that all engineering and geoscience work associated with the organization abides by all applicable statutes, regulations, bylaws, and standards, which include those that APEGA enforces
- respond to requests from APEGA within the timeline given (APEGA Bylaw 32.1)
- notify the *senior officer* if they can no longer carry out the duties of a *Responsible Member*
- notify APEGA if they are no longer acting as a *Responsible Member* for the *permit holder*

2.3 LICENSED PROFESSIONAL OBLIGATIONS

Licensed professionals must:

- understand and follow the *PPMP* under which they are practising
- monitor and report any non-conformance with this standard to the *permit holder's Responsible Member(s)*
- maintain *good-standing* status and keep the *permit holder's senior officer* informed of their registration and *good-standing* status

2.4 APEGA'S AUTHORITY

APEGA's mandate is to protect the public. Under the authority of the *Practice Review Board*, which is a statutory board legislated under the *EGP Act* [Section 16(1)(b)], APEGA is authorized to conduct practice reviews of *permit holders* and *licensed professionals*. Practice reviews ensure the practices of engineering and geoscience are carried out in accordance with the *EGP Act* and the *General Regulation*; APEGA's practice standards, bulletins, and guidelines; and the *permit holder's PPMP*.

2.5 ETHICAL OBLIGATIONS

Permit holders and *licensed professionals* must comply with the Code of Ethics and its five Rules of Conduct as defined in the *General Regulation*.

Permit holders and licensed professionals must advise APEGA of any entity or individual failing to meet the obligations of the EGP Act, the General Regulation, or any APEGA practice standard if attempts to resolve issues directly with permit holders and licensed professionals involved do not lead to the required compliance. This is consistent with self-regulation.

3.0 Professional Practice Management Plan Administration

3.1 PPMP SUBMISSION TO APEGA

If requested by APEGA, *permit holders* must submit their *Professional Practice Management Plan (PPMP)* in its entirety, along with its supporting documents, within the stated deadline in the request (APEGA Bylaw 32.1).

3.2 PPMP CHANGE MANAGEMENT

3.2.1 Review Cycle

An up-to-date *PPMP* is essential to effectively manage a professional practice. *Permit holders* must review their *PPMP* at least annually to verify its continued suitability and effectiveness. These reviews clarify organizational structure and roles, examine areas of concern, ensure references are current and accessible, and confirm quality control and assurance processes are adequate.

When *permit holders* implement substantive changes to their provided scope of services or organizational structure, they must review and update their *PPMP* as soon as practicable.

After the review is complete, the required declaration statement is signed as described in Section 4.1.1.

Permit holders must retain previous versions of their *PPMPs* as aligned with the retention policies defined in Section 4.9.3 of this standard.

3.2.2 Communication of Change

When updating their *PPMP*, *permit holders* must inform all impacted *licensed professionals* and contributors to their professional practice of any changes as soon as practicable. *Senior officers*, on behalf of the *permit holders*, must keep evidence of the communication of change sent (such as an email or record of attendance for training).

3.3 DISCLOSING INFORMATION FROM PPMPs

When procuring *professional services* from other *permit holders*, *due diligence* requires ensuring *professional work products* are created using adequate and acceptable quality control and assurance processes. For this reason and as part of self-regulation, APEGA recommends that *permit holders* provide their *PPMP* when requested by other *permit holders*, *licensed professionals*, or the public. This elevates the quality of practice in the professions and enables other *permit holders* and the public to have confidence in a *permit holder's* professional practice *outputs*.

4.0 PPMP Content Requirements

This section describes *Professional Practice Management Plan (PPMP)* content requirements. *Permit holders* must include these components when developing their *PPMP*. If a *permit holder* determines a particular requirement is not applicable to its practice, the *permit holder* must include the section requirement with a statement that explains why it is not applicable.

PPMPs must be clearly written and describe the processes designed to support the *permit holder's* professional practice. *PPMPs* may vary considerably in complexity, degree of detail, and specific content depending on the size of the *permit holder* and the nature and scope of professional practice. They do not need to duplicate existing documentation and may refer to supporting or more detailed documentation.

The *PPMP* must include a table of contents.

4.1 PPMP PART 1: GENERAL INFORMATION

4.1.1 PPMP Declaration

The *PPMP* must contain a declaration that is signed and dated annually by the *senior officer* and at least one *Responsible Member*. This certifies that an internal review of the *PPMP* has been conducted and that the *senior officer*, on behalf of the *permit holder*, has approved and accepted responsibility for its content.

4.1.2 Revision History

The *PPMP* must include:

- the date of each revision
- a numbered revision history
- a summary of the most recent update (or reaffirmation if no updates were required)

4.1.3 Permit Holder Information

The *PPMP* must contain *permit holder* information, including its:

- legal and *operating name(s)*
- contact information
- *permit number*
- area of practice, which identifies the *disciplines* and types of work the *permit holder* engages in

4.1.4 Objective of the PPMP

The *PPMP* must include an objective specific to the *permit holder's* practice to guide the practice of engineering, geoscience, or both and provide awareness to *licensed professionals* of the *permit holder's* commitment to responsible and ethical practice.

4.1.5 Definitions, Acronyms, Abbreviations

All terms, acronyms, and abbreviations used in the *PPMP* must be defined.

4.1.6 Supporting Documents

The *PPMP* must reference key internal and external documented systems, policies, and procedures used to create and support the *PPMP*, including applicable APEGA practice standards, guidelines, and bulletins.

The *permit holder* is responsible to ensure that all supporting material is current and accessible.

4.1.7 PPMP Review Process

The *PPMP* must include or reference a process specific to how *PPMP* annual reviews are conducted and documented.

4.2 PPMP PART 2: ETHICAL PRACTICE

4.2.1 Ethical Practice

The *PPMP* must include or reference policies or procedures that ensure ethical practice in the professions. The *permit holder's* code of ethics must be consistent with the Rules of Conduct in the Code of Ethics as defined in the *General Regulation*, which is used by APEGA when investigating a complaint.

Permit holders must ensure the culture they create allows *licensed professionals* and others to freely and safely bring forward concerns about the practices of engineering and geoscience, particularly related to Rules of Conduct. Refer to APEGA's guideline *Ethical Practice* for more information.

4.3 PPMP PART 3: PROFESSIONAL BUSINESS PRACTICE

4.3.1 Quality Management

Quality management includes quality control and quality assurance. The *PPMP* must include or reference policies, systems, procedures, or processes to maintain an adequate level of quality related to the professional engineering and geoscience work produced or delivered. These processes help ensure the professional work is performed competently, safely, and with required *due diligence*.

The quality control and assurance processes must describe or reference how the *permit holder* will:

- minimize errors and omissions in technical work
- manage errors once discovered
- perform appropriate, independent checks and documentation of concepts, calculations, models, processes, and procedures, such as peer reviews to verify accuracy of work
- ensure adherence to applicable regulations, codes, standards, and other relevant specifications
- ensure the risks and impacts of professional work performed are understood and acceptable

4.3.2 Project Execution

PPMPs must include or reference policies or procedures on how *permit holders* execute engineering- or geoscience-related projects.

For engineering and geoscience projects that deliver *professional services* or have deliverables that require *authentication* and *validation*, *permit holders*, with support from their *Responsible Members* and *licensed professionals*, must ensure:

- the scope of professional work is defined and documented, including assumptions and limitations of work
- appropriate communication plans exist detailing when, what, and how information is communicated to stakeholders throughout the project, especially related to the expectations regarding *professional services*
- all *professional service output* deliverables requiring *authentication* and *validation* are identified throughout the project. Refer to the authentication test described in the practice standard *Authenticating Professional Work Products* to determine what *professional services outputs* require *authentication* and *validation*
- appropriate and adequate policies and procedures for change orders and change management are in place and agreed upon to ensure impacts to *professional services* and *PWPs* are considered and authenticated and validated, if required
- appropriate resources are in place to carry out the professional responsibilities for the project, such as field construction and inspections, field reviews, field supervision, and commissioning and start-up plans
- appropriate risk assessments related to the practices of engineering and geoscience are completed and documented

4.4 PPMP PART 4: AUTHENTICATION AND VALIDATION

Permit holders must document *authentication* and *validation* processes which must comply with APEGA's practice standard *Authenticating Professional Work Products*. The *PPMP* must reference or include documentation outlined in the following sections.

4.4.1 Authentication and Validation of Professional Work Products

The *PPMP* must include or reference the nature of the *permit holder's* *PWPs*, including their format (physical, electronic, or digital). This list must include the types of *PWPs* normally created and used internally by the *permit holder* and may contain internal practice references and aids, as described in Section 4.8.1. The *PPMP* must also include or reference *outputs* from *professional services* that are not usually considered *PWPs* and are therefore not authenticated.

The *PPMP* must include or reference policies or procedures on:

- the *authentication* and *validation* process used by the *permit holder*, including how the *permit holder* will authenticate and validate digital *PWPs* (such as code, software, or modelling and simulation)
- the method used for *authentication* and *validation* (physical, digital, or combination)
- how revisions to previously authenticated *PWPs* are managed, including subsequent *authentication* and *validation*
- *authentication* and *validation* during continuous operation for design revisions, change orders, and field or operational changes
- *authentication* and *validation* of single-discipline *PWPs* and multi-discipline *PWPs*
- *authentication* and *validation* of *PWPs* destined for use outside of Alberta

4.4.2 Stamps – Control and Security

Electronic and physical stamps are the property of APEGA. Physical stamps must be returned upon request. *Permit holders* and *licensed professionals* are responsible to keep their stamps secure.

The *PPMP* must include or reference policies or procedures on:

- control and security over professional and *Permit to Practice* stamps (physical and electronic)
- written delegations of stamp application to others, if not performed by the *licensed professional* or *Responsible Member*

4.5 PPMP PART 5: RELYING ON THE WORK OF OTHERS AND OUTSOURCING

Permit holders must ensure compliance with APEGA's practice standard *Relying on the Work of Others and Outsourcing*. The *PPMP* must reference or include documentation outlined in the following sections.

4.5.1 Relying on the Work of Others

The *PPMP* must include or reference policies or procedures describing how *licensed professionals* take professional responsibility for *PWPs* created by others who are not licensed by APEGA, as described in the practice standard *Relying on the Work of Others and Outsourcing*.

4.5.2 Outsourcing to Entities Licensed by APEGA

The *PPMP* must include or reference the *outsourcing* process used when *outsourcing professional services* to another APEGA *permit holder* or *licensed professional*.

Permit holders must document and follow an *outsourcing* process, as defined in the practice standard *Relying on the Work of Others and Outsourcing*.

4.5.3 Outsourcing to Entities Not Licensed by APEGA

When *permit holders* procure *professional services* from entities not licensed by APEGA, they have additional *due diligence* requirements. An *outsourcing plan* must be created to comply with the practice standard *Relying on the Work of Others and Outsourcing*.

The *PPMP* must include or reference the process used to create the *outsourcing plan*.

4.6 PPMP PART 6: ORGANIZATION AND ROLES

The *permit holder* must define clear lines of professional responsibility as outlined in the following sections.

4.6.1 Use of Title

Reserved titles must only be used by *licensed professionals* permitted to practise engineering or geoscience in Alberta.

Part 1, sections 3 and 6 of the *Engineering and Geoscience Professions (EGP) Act* specify that only *licensed professionals* are permitted to use:

- reserved titles, including professional engineer, professional geoscientist, and any abbreviation of those titles
- the word “engineer” or “geoscientist” in combination with any other name, title, description, letter, symbol, or abbreviation that implies an individual, corporation, partnership, or other entity is a professional engineer or professional geoscientist

The *PPMP* must include or reference policies or procedures on how reserved titles used by the *permit holder* and its employees are managed to ensure the use of title complies with the *EGP Act*.

Members-in-training may use the word “engineer” or “geoscientist” in their title, provided it is followed by the phrase “in training.”

4.6.2 Organizational Structure

All individuals contributing to the practices of engineering and geoscience as defined in the *EGP Act* Sections 1(q) and 1(r) must be included in the organizational structure. This includes individuals who are not licensed by APEGA, such as technologists, members-in-training, or anyone else contributing to the practices. These individuals must be supervised as described in *Section 4.7.3* of this standard.

The organizational structure may be presented in an organizational chart, list, or database.

The *PPMP* must include or reference an organizational structure that identifies:

- performance supervision, technical supervision, and *Responsible Member* oversight
- the final decision-making authority used for engineering and geoscience work
- temporary or student positions and their supervision
- appropriate professional oversight through the ratio of *Responsible Members* to *licensed professionals*, *members-in-training*, and other individuals contributing to the practices of engineering and geoscience, with reasonable representation in each area of practice and business unit. APEGA recommends a ratio of one *Responsible Member* to 10 *licensed professionals*, *members-in-training*, and other individuals contributing to the practice of engineering or geoscience

4.6.3 Roles

The *PPMP* must include or reference the following information (either in the organizational structure itself or separately, such as in an organizational chart, list, database, or project-specific list) for each individual contributing to the practices of engineering and geoscience:

- name
- APEGA ID, if applicable
- position (job or work) title (refer to Section 4.6.1 of this standard)
- professional designation, if applicable
- area of practice (such as *discipline*)
- practising status, if applicable
- performance supervisor, technical supervisor, and *Responsible Member*
- *Responsible Member* status and the date they last attended a *Permit to Practice* seminar, if applicable

4.7 PPMP PART 7: MANAGEMENT OF PROFESSIONAL RESOURCES

The *PPMP* must include information to ensure the individuals performing professional work for a *permit holder* have the necessary qualifications to effectively accomplish their work. It must describe the *permit holder's* policies and processes supporting the management of professional resources identified in the following sections.

4.7.1 Recruitment

The *PPMP* must include or reference policies or procedures to ensure only qualified and competent individuals are selected, and the job postings and descriptions use reserved titles appropriately (Section 4.6.1 of this standard).

4.7.2 Continuing Professional Development

The *PPMP* must include or reference the *permit holder's* process to ensure continued competence of the *licensed professionals* the *permit holder* employs.

All *licensed professionals* must adhere to the mandatory minimum requirements in APEGA's practice standard *Continuing Professional Development*.

4.7.3 Supervision

The *PPMP* must include or reference policies or procedures to ensure members-in-training and other individuals who are not licensed by APEGA but who are contributing to the *permit holder's* practices of engineering and geoscience are supervised and trained appropriately.

Since members-in-training and other individuals not licensed with APEGA cannot practise independently (*EGP Act* Sections 3(1) and 5(1)), the *PPMP* must include or reference policies or procedures to ensure their work is supervised and controlled by *licensed professionals*.

4.8 PPMP PART 8: MANAGEMENT OF TECHNICAL RESOURCES

Professional work must be carried out with appropriate technical resources that are maintained and available to *licensed professionals*. The *PPMP* must describe the available technical resources as follows.

4.8.1 Practice Reference Resources and Aids

The *PPMP* must include or reference policies or procedures that describe the process used to ensure *licensed professionals* have access to current reference resources or materials required to deliver *professional services*.

At a minimum, these include applicable:

- statutes, regulations, bylaws, standards, and codes
- technical journals
- data sheets
- *permit holder* codes of practice
- internal standards and guidelines
- manuals (such as equipment and operating manuals)
- internally relied upon resources (such as calculators and programs) that may themselves be *professional work products (PWP)*s used to create *PWP*s or to perform *professional services*

4.8.2 Information Technology

The *PPMP* must include or reference an information technology policy appropriate to its practice to mitigate risk associated with information security. Ensuring the confidentiality and integrity of information related to the practices of engineering and geoscience is important to maintain contractual, legal, regulatory, and statutory requirements, and to meet APEGA's Code of Ethics.

4.8.3 Equipment and Tools

The *PPMP* must include or reference policies or procedures that describe the processes used to ensure the equipment, instruments, hardware, software, firmware, or tools used in providing *professional services* are certified, operated, maintained, and calibrated properly.

Calibration must be completed in accordance with specifications to ensure the integrity of the system's *outputs*. If applicable, the *PPMP* must include or reference how *licensed professionals* access and use:

- equipment operating procedures (or standard operating procedures) or a catalogue of operating procedures
- maintenance plans or procedures
- methods of and schedules for certification and calibration

4.9 PPMP PART 9: PROFESSIONAL SERVICES OUTPUT MANAGEMENT

The *PPMP* must address appropriate controls for managing *professional services outputs* and associated documentation as well as the related responsibilities and authorities of the *senior officer*, *Responsible Members*, *licensed professionals*, and staff.

4.9.1 Originals and Copies

The *PPMP* must include or reference policies or procedures on how original *PWPs*, and copies of them, are marked and controlled as outlined in the practice standard *Authenticating Professional Work Products*.

4.9.2 Revision Control and Transmittals

The *PPMP* must include or reference policies or procedures for revision control and transmittals of *professional services outputs*.

4.9.3 Retention

The *PPMP* must include or reference policies or procedures on how *permit holders* will manage retention of *professional services outputs* and must be kept for as long as the *professional services outputs* it references are in service, or the lifetime of the work if relevant. *Permit holders* must consider applicable regulations, standards, and codes, and the lifespan of *PWPs* as outlined in the practice standard *Authenticating Professional Work Products*.

The *PPMP* must also describe if and how copies of *PWPs* will be provided to employees or contractors in the case of a claim made against them.

4.9.4 Storage and Disposal

The *PPMP* must include or reference policies or procedures on how *permit holders* manage safely storing and disposing of *professional services outputs*, including:

- storage format (hard copy, electronic, digital)
- storage security (including access, ownership, and protection from loss, damage, and deterioration)
- retrieval
- disposal

The *permit holder* must ensure compliance with applicable regulations, standards, and codes.