Professional Practice Guideline

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Ethical Practice

APEGA
The Association of Professional Engineers and Geoscientists of Alberta

DOCUMENT HISTORY

Date	Version	Revision Description
December 1995		Manual of Professional Practice Under the Code of Ethics
2003		Guideline updated to reflect changes in the Code of Ethics in the *General Regulation* (2003)
February 2013	**2.2**	Updated to reflect changes to the name of the Association and governing legislation that became effective in 2011
August 1, 2022	**3.0**	Notable changes include reorganizing content, updating case studies and commentary, broadening the definition of "the public interest," adding content related to the environment, broadening the concept of workplace safety, referencing applicable legislation, and adding content regarding whistleblowing, emerging technologies, compensation for *professional services*, and reconciliation. This guideline expands the qualities of professional leadership and supervision and includes commentary on how bias may impact the professions.

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Preface

An APEGA professional practice guideline describes the level of performance expected of *licensed professionals*. Part 8 of the *General Regulation* under Sections 58 and 59 allows APEGA to publish guides that define and promote the expectations 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remain in force until a practice standard or guideline on the subject is developed, or until the practice bulletin is repealed.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.

Contributors

APEGA thanks the members who contributed to the 2003 version of this practice guideline for their time and commitment. At the time this standard was completed, the contributors were as follows:

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1.0 Overview

This guideline is divided into several sections, followed by appendices. This first section outlines the scope of the guideline and the purpose behind the Code of Ethics, which is included as a Schedule to the *General Regulation* under the *Engineering and Geoscience Professions (EGP) Act*. The second section provides a perspective on the meaning of a profession and a discussion on ethics and excellence in general. The third section presents the Code of Ethics as it appears in the Schedule. The fourth section presents the five Rules of Conduct individually, with commentary and case studies. Finally, the appendices present the historical background of the Code of Ethics, outline APEGA's discipline process, and connect the case studies with the Rules of Conduct.

This guideline has been updated considerably to reflect the evolution of the practices of engineering and geoscience and the evolution of society. Issues relevant to engineering and geoscience workplaces are included, such as the effect of workplace safety on professional obligations and the delivery of *professional services*, including the development of *professional work products*. These issues are included in this guideline because a workplace that does not emphasize the importance of ethics or does not have a healthy work culture may directly impact the public interest. A determinant of overall safety is workplace culture. This is core to the professions' protection of the public and is one of the reasons a Code of Ethics exists. *Licensed professionals* and members-in-training are encouraged to consider these topics and discuss them further with their peers.

The breadth and depth of knowledge and skill required of *permit holders*, *licensed professionals*, and members-in-training demands high levels of integrity and trustworthiness. They must hold themselves and each other to high ethical and professional standards to protect the public interest and to maintain trust, respect, and autonomy.

1.1 PURPOSE AND SCOPE

The professional challenges faced by *permit holders*, *licensed professionals*, and members-in-training are often complex, and there may not be clear or obvious solutions to ethical challenges. There is a need to continually and carefully reflect on how actions may affect or be perceived by third parties or the public and how those actions may affect the public's trust of the professions. This guideline illustrates how competent and diligent *permit holders*, *licensed professionals*, and members-in-training should formulate such judgments in a manner consistent with the values and standards of their profession.

Through commentary and case studies, this guideline illustrates how the fundamental principles of ethical conduct, as summarized by the Rules of Conduct in the Code of Ethics, may be interpreted and applied to the diversity of circumstances encountered in the practice of the professions. Even though the rules under the Code of Ethics refer to "professional engineers and geoscientists," the Code of Ethics and this guideline applies to all *permit holders*, *licensed professionals*, and members-in-training, as specified in the *EGP Act* and *General Regulation*.

The Code of Ethics outlines the fundamental principles supporting the rules of professional conduct expected of *permit holders*, *licensed professionals*, and members-in-training. The Code of Ethics, therefore, provides the basis on which allegations of *unprofessional conduct* are judged through the discipline process.

The principles expressed in the Code of Ethics are guideposts that, combined with moral professional judgment, guide the actions of each *permit holder, licensed professional,* and member-in-training. They should be familiar to all *permit holders, licensed professionals,* and members-in-training and should guide their daily ethical practice in the same way that technical principles are well known and guide daily professional work.

1.2 REFERENCES

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

- The *Engineering and Geosciences Professions (EGP) Act, General Regulation,* and APEGA's bylaws
- *Authenticating Professional Work Products* practice standard
- *Continuing Professional Development* practice standard
- *Professional Practice Management Plan* practice standard
- *Relying on the Work of Others and Outsourcing* practice standard

Further reference material is available at apega.ca/members/equity-diversity-inclusion.

The following external references are cited in this guideline:

Alberta Human Rights Act, RSA 2000, c.A-25.5. https://canlii.ca/t/81xx.

Canadian Centre for Diversity and Inclusion (CCDI). 2022. *Glossary of Terms: A reference tool.* PDF. https://ccdi.ca/media/3150/ccdi-glossary-of-terms-eng.pdf.

National Inquiry into Missing and Murdered Indigenous Women and Girls (MMIWG), n.d. *Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls.* https://www.mmiwg-ffada.ca/final-report.

Occupational Health and Safety Act, SA 2020, *c.O-2.2.* https://canlii.ca/t/b5f1.

Truth and Reconciliation Commission of Canada (TRC). 2015. *Truth and Reconciliation Commission of Canada: Calls to Action.* PDF. https://ehprnh2mwo3.exactdn.com/wp-content/uploads/2021/01/Calls_to_Action_English2.pdf.

United Nations Declaration on the Rights of Indigenous Peoples Act, SC 2021, c.14. https://laws-lois.justice.gc.ca/eng/acts/u-2.2/.

Association of Professional Engineers and Geoscientists of Alberta (APEGA). 2021. *Women in the Workplace: A Shift in Industry Work Culture.* PDF. https://www.apega.ca/docs/default-source/pdfs/wage-2021-abridged-report.pdf.

1.3 DEFINITIONS

For the purposes of this guideline, the following 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*.

Client

The *person*, owner, or agent of the owner who requires the services of a consulting *licensed professional*.

Contract

An agreement entered into between two or more parties that may give rise to obligations the courts may enforce.

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*.

Due Diligence

The level of judgment, 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.

Harassment

Any single incident or repeated incidents of objectionable or unwelcome conduct, comment, bullying or action by a person that the person knows or should reasonably know will or would cause offence or humiliation to another person, or adversely affect someone's health or feelings of safety and security. This includes conduct, comments, bullying, or actions on the basis of race, colour, ancestry, place of origin, religious beliefs, gender, gender identity, gender expression, age, physical disability, mental disability, marital status, family status, source of income or sexual orientation. This includes sexual solicitation or advance. (*Alberta Human Rights Act 2000; Occupational Health and Safety Act 2020*).

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.

Marginalized Group
Members of society that face exclusion due to societal and systemic barriers (CCDI 2022).

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.

Person
An individual or business entity.

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 *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.

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

Stamp
A unique, personalized, rubber block or electronic file (e.g., JPEG or TIFF) that APEGA, or its approved vendors, provides upon request to *licensed professionals* or *permit holders*.

A *stamp* issued to *permit holders* contains the *Permit to Practice* information. A *stamp* issued to *licensed professionals* contains their APEGA licence information.

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*.

Unconscious Bias
Social stereotypes about certain groups of people that individuals form outside their own conscious awareness. Everyone holds unconscious beliefs about various social and identity groups, and these biases stem from the tendency to organize social worlds by categorizing (APEGA 2021). These biases include assumptions, beliefs, perceptions, attitudes, and stereotypes about different groups of people, including characteristics such as

race, skin colour, ethnic origin, age, religion, family status, ancestry, political beliefs, linguistic and cultural background, gender, sex, sexual orientation, and physical or mental disability.

Unprofessional Conduct
Conduct by *permit holders, licensed professionals,* and members-in-training deemed by their peers to be in violation of the Code of Ethics.

Unskilled Practice
Practice by *permit holders, licensed professionals,* and members-in-training deemed by their peers to be below acceptable standards of practice in terms of professional competence for the overall performance of the scope of services undertaken.

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 with the practice standard *Authenticating Professional Work Products*.

2.0 Professions and Ethics

Through the years, the application of professional values and conduct has changed. This evolution has been reflected in successive codes of ethics. A brief history is presented in Appendix A.

2.1 PROFESSIONS AND SELF-GOVERNANCE

Generally, a profession requires training, formal qualification, and specialized knowledge. This knowledge is applied with experienced judgment in the context of the following recognized social responsibilities.
A profession:

- renders services based on advanced knowledge, skill, and judgment, which the public takes on trust
- is charged with substantive public obligation and serves the public interest
- is bound by a distinctive ethical code in its relationships with the public, *clients*, employers, and colleagues

To perform their professional duties, *permit holders, licensed professionals,* and members-in-training depend on the confidence of *clients*, employers, and the public. To maintain this confidence, they must justify the trust given to them by demonstrating technical and ethical competence. *Permit holders, licensed professionals,* and members-in-training accept this responsibility as part of their obligations to society.

Professions such as engineering and geoscience are generally highly organized. They have definitive minimum standards of admission, they regulate the activities of their *licensed professionals* in terms of skilled practice and ethical conduct, and they promote the advancement of knowledge by encouraging the formulation of standards.

The *Engineering and Geoscience Professions (EGP) Act* gives the professions the privilege of self-governance. That privilege carries with it the obligation to ensure *permit holders, licensed professionals*, and members-in-training maintain high standards of professional practice and conduct.

One noteworthy characteristic of professions granted self-governing status under provincial statute is the authority to investigate and discipline *permit holders, licensed professionals*, and members-in-training who fail to comply with acceptable standards of practice and conduct. At APEGA, this authority is achieved through the disciplinary process.

Permit holders and *licensed professionals* are expected to file complaints when serious breaches of the Code of Ethics are alleged—a serious breach is when conduct or practice presents a risk of significant harm to the environment, to the health and safety of the public, or to the reputation of the professions. An investigation first determines whether there is sufficient evidence to refer the allegations to a formal discipline hearing. If there is, the Discipline Committee may find the actions of a *permit holder, licensed professional*, or member-in-training under investigation constitute *unskilled practice* of the profession, *unprofessional conduct*, or both, as presented in Appendix B.

Determination of *unskilled practice* and *unprofessional conduct* is further described in Section 44(1) of the *EGP Act*.

2.2 ETHICS

The term "ethics" relates to the study of principles surrounding the conduct of individuals and reflects beliefs and a system of guidelines about what is right, what is wrong, what is just, what is unjust, what is fair, what is unfair, what is good, and what is bad in terms of human behaviour. Ethics deals with voluntary actions taken by an individual with sufficient knowledge of the options available to them. In the professional context, ethics applies to a code or a set of values that guides the behaviour of individuals and organizations with regard to conduct and decision-making in the course of carrying out their professional duties and obligations.

In the context of a profession that serves society, the Code of Ethics shapes individual practices in two important ways.

1. Adherence to the Code of Ethics provides a common set of values within the profession and thereby offers a reliable *professional service* to the public. Practising in a technically competent and ethical manner are two indivisible components vital to maintaining a relationship of trust within the profession and with the public in general.

2. In an increasingly technological world, the public is looking to *licensed professionals* to provide societal leadership. The professional relationship of trust is a fundamental element upon which *licensed professionals* do their part in guiding society to adopt technology for the advancement of public welfare.

2.3 EXCELLENCE

The Government of Alberta has vested APEGA and its *permit holders, licensed professionals,* and members-in-training with certain responsibilities and privileges. In return, the public expects competent practice and ethical conduct. As honoured and respected members of society, *permit holders, licensed professionals,* and members-in-training should strive for excellence in their professional practice and conduct.

Because society is changing rapidly, it is important that *permit holders, licensed professionals,* and members-in-training maintain a high level of integrity. Through their work, they continue to make vital contributions to the quality of life.

3.0 Code of Ethics

Permit holders, licensed professionals, and members-in-training must adhere to the Code of Ethics.

Although all the rules of conduct are important, protecting the public interest is paramount.

The Code of Ethics Schedule in the *General Regulation* lists the following Preamble and Rules of Conduct.

3.1 PREAMBLE

Professional engineers and geoscientists shall recognize that professional ethics is founded upon integrity, competence, dignity, and devotion to service. This concept shall guide their conduct at all times.

3.2 RULES OF CONDUCT

1. Professional engineers and geoscientists shall, in their areas of practice, hold paramount the health, safety and welfare of the public and have regard for the environment.
2. Professional engineers and geoscientists shall undertake only work that they are competent to perform by virtue of their training and experience.
3. Professional engineers and geoscientists shall conduct themselves with integrity, honesty, fairness, and objectivity in their professional activities.
4. Professional engineers and geoscientists shall comply with applicable statutes, regulations, and bylaws in their professional practices.
5. Professional engineers and geoscientists shall uphold and enhance the honour, dignity, and reputation of their professions and, thus, the ability of the professions to serve the public interest.

4.0 Commentary

This guideline cannot capture every situation in which a *permit holder, licensed professional,* or member-in-training may need to determine the ethical course of action. The following commentary is presented to assist with interpretation and application of the Rules of Conduct. However, it is not all encompassing. Appendix C contains a summary of case studies and connects them with the applicable Rules of Conduct.

Some of the case studies are based on real-life examples and recommended discipline orders. However, all names have been changed, and any reference to names of existing *permit holders, licensed professionals,* or members-in-training is coincidental.

4.1 RULE 1: HEALTH, SAFETY, AND WELFARE OF THE PUBLIC AND THE ENVIRONMENT

Professional engineers and geoscientists shall, in their areas of practice, hold paramount the health, safety and welfare of the public and have regard for the environment.

The following commentary illustrates how the principles outlined in Rule 1 are interpreted and applied to professional activities.

4.1.1 Holding Paramount

Holding paramount the health, safety, and welfare of the public, and having regard for the environment, means these matters take precedence over all other considerations.

Permit holders, licensed professionals, and members-in-training must:

- always put the safety of the public first, even if that means going against their own interests or the interests of their employer or *client*. In such cases, *licensed professionals* have a duty to inform their employer or *client* to allow them the opportunity to correct the action
- ensure employers and *clients* are aware of societal and environmental consequences of actions and clearly communicate expected impacts factually and objectively

Permit holders, licensed professionals, and members-in-training may occasionally disagree on the degree of risk presented versus the degree of protection of the public interest. See Section 4.3.7 Having Recommendations Overruled.

Also see Case Studies #5 and #11.

4.1.2 The Public Interest

Permit holders, *licensed professionals*, and members-in-training are responsible for protecting public health, safety, and welfare. They must serve to protect the public interest and the interest of public safety by safeguarding life, health, the environment, and the property and economic interests of the public.

There is no simple, fixed definition of "the public interest"—public health, safety, and welfare are affected by complex interrelated factors. These factors include issues related to the protection of people, the environment and traditional land uses, sustainability, future generations, emerging technology, societal values and needs, and the economic interests of the public. Factors are situational, and their relative weights are unique to individual circumstances. Societal perceptions and values also evolve over time, as does the definition of "the public interest." Lack of specific guidance or requirements in codes, regulations, and standards does not justify a *permit holder's*, *licensed professional's*, or member-in-training's failure to uphold the public interest.

Permit holders, *licensed professionals*, and members-in-training must understand the public interest if they are to protect it and, in all work, guard against conditions that threaten the health, safety, and welfare of the public. To do so, they must understand the:

- safeguards required to protect the public
- methods of identifying and mitigating adverse impacts
- importance of public engagement
- diverse needs of the community
- long-term impacts of the work
- relationship between the engineering and geoscience activity and the public interest

Permit holders, *licensed professionals*, and members-in-training may face pressure to make professional decisions affecting the public interest based on the diverse perspectives of affected stakeholders. When serving the public interest, prioritizing the health, safety, and well-being of the public by ensuring competent and ethical practice is paramount.

Professional decision-making may involve financial constraints that can lead to ethically challenging situations. *Permit holders*, *licensed professionals*, and members-in-training must consider when a financial constraint may cause an unacceptable increase in risk to the public interest and respond appropriately.

Case Study #1

Alex, P.Eng., is a professional engineer who specializes in air-quality studies and a member of a design team with *permit holder* MM Corporation. MM Corporation has been retained to design a pulp mill in northern Alberta and to complete operational trials.

The design team has been instructed to comply with all government regulations and environmental requirements, including those regarding the management of emissions.

As the design proceeds, Alex realizes the emissions will just satisfy current regulations. When completing initial site visits, he realizes the emissions carried by prevailing winds may significantly affect the quality of life in two major communities within 30 kilometres of the site.

What action should Alex take?

As a part of his professional obligations, Alex should inform his *Responsible Member* and supervisor at MM Corporation of his concern regarding the local area and the emissions.

Permit holders and *licensed professionals* have a duty to protect the public interest, which includes public health, safety, and welfare. In this case, the public is the two nearby communities that will potentially be affected by the pulp mill. At this early stage of design, revisions could be made to reduce or eliminate the potential environmental hazards, even though the emissions just satisfy regulations.

Also see Case Studies #2, #3, #5, #11, #12, and #17.

4.1.3 The Environment

In carrying out their professional duties, *permit holders*, *licensed professionals*, and members-in-training must have regard for the environment.

Having regard for the environment goes beyond meeting minimum industry standards and regulations. It includes having regard for cultural and traditional land uses and any impacts the work may have on those uses. It also includes making informed decisions related to sustainable development and life-cycle management that consider societal, environmental, and economic impacts. It includes mitigating negative consequences and recognizing that the most cost-efficient options may not be in the best interest of the environment. The environment should be considered through a reciprocal relationship between society and the land rather than merely as a resource to be used. Impacts on future generations should also be considered.

Permit holders, *licensed professionals*, and members-in-training should develop and maintain awareness and understanding of environmental issues and follow the laws pertaining to the environment for their area of practice. When a *licensed professional's* knowledge alone is not adequate, they should use the services of experts.

Permit holders, *licensed professionals*, and members-in-training should be aware of any specific sustainability clauses that apply to their area of practice, and they should consider how sustainability principles could be applied and promoted in their specific work.

See Sections 4.2.1 Competence and Knowledge and 4.4.1 Being Aware of the Law.

Also see Case Studies #1, #2, #3, and #11.

4.1.4 Safe Workplaces

A "workplace" is anywhere engineering or geoscience work is performed. In the workplace, *permit holders* and *licensed professionals* are relied upon to provide direction and hold paramount the overall health, safety,

and welfare of the public, which includes workers. As trusted leaders, *permit holders* and *licensed professionals* are expected to be familiar with the *Occupational Health and Safety Act*, relevant safety regulations, and environmental protection requirements so they can fulfil their obligations with regards to workplace safety.

The *Occupational Health and Safety Act* addresses the requirements for a physically and psychologically safe workplace.

Potential workplace hazards and associated risks must be identified and mitigated to protect the public and the environment and help create a physically safe workplace. Other factors to consider include providing proper safety training, having emergency procedures, and ensuring personal protective equipment is used as required. Researching and introducing new technologies that advance physical safety, completing regular safety audits, appointing joint health and safety committees, and ensuring first aid stations and equipment are readily available all contribute to physically safe workplaces. Workplaces must be kept safe during all phases of work, including site assessments, construction, commissioning, maintenance, and operations.

Having a physically safe workplace helps make individuals feel valued, creates productive work environments, enables continuous improvement, and reduces work-related injuries, illness, or death.

A psychologically safe workplace exists when individuals can contribute their comments, questions, concerns, or mistakes without fear of being punished or degraded. It also requires ensuring that no individual is subject to *harassment*—which includes sexual *harassment,* violence, or threats (*Occupational Health and Safety Act 2020*).

It is recommended that *permit holders*, *licensed professionals*, and members-in-training address the factors that contribute to a psychologically safe work environment. The *Professional Practice Management Plan* practice standard describes the requirement to create a workplace culture that enables people to freely and safely bring forward concerns.

A psychologically safe workplace promotes collaboration, leads to better problem solving, improves innovation, increases reliability, creates an environment in which employees can thrive, and may help identify errors and reduce risks related to the practices of engineering and geoscience.

When *licensed professionals* and members-in-training become aware of conditions that present a material, immediate, or anticipated threat to an individual's safety, health, or welfare or to the environment, they must identify and report these conditions. The conditions should be reported first to those who are responsible. If the response is not satisfactory, the threat should be reported to appropriate corporate or regulatory authorities. See Section 4.1.5 Whistleblowing.

Case Study #2

Stan, P.Eng., was responsible for supervising the completion procedures for a cased well in a potential gas-producing zone. Having recently transferred from working in another area of the province, Stan was unfamiliar with the oil and gas wells in the area.

Kim, P.Geo., was familiar with operations at the well site and knew the well could produce significant volumes of gas at a high formation pressure. She correctly selected the depth intervals at which the casing was to be perforated and communicated this information to Stan. Assuming that Stan was

already aware of the expected high formation pressure, Kim did not include this information with the depth intervals provided to Stan.

Stan was nearing the end of a very hectic week when the time came to perforate the well. He quickly checked the depth intervals and verified they matched those provided by Kim. He did not check the expected pressure for the zone being perforated and did not verify there was sufficient fluid in the casing before giving the perforating company the go-ahead to proceed with the completion.

As the well was being perforated, the perforating tools and cable were blown from the well by a significant, uncontrolled flow of high-pressure gas. The fluid within the casing had been insufficient to contain the hydrostatic pressure of the gas within the perforated formation and a nearly unmanageable amount of natural gas flowed from the well, creating hazards to equipment and placing several lives at risk.

Fortunately, the well was brought under control and capped without injury to the workers. This might not have been accomplished if the gas flow had been greater or if the gas had contained hydrogen sulphide.

Through their failure to communicate adequately and to be vigilant regarding potential safety hazards, the two *licensed professionals* endangered the lives of their fellow workers. It could have resulted in significant economic loss, damage to the environment, and loss of life. Rule 1 was clearly violated.

Kim failed to caution Stan, the supervising engineer, regarding the high-pressure gas zone and the potential hazard of a blowout. Stan was responsible for anticipating a variety of possible hazards involved in perforating a well casing opposite a potentially high-pressure gas zone. If he was unfamiliar with the expected formation pressures, he should have consulted Kim.

If Stan had ensured correct well completion procedures were followed, he would have maintained control of the gas flow from the well and prevented the incident from occurring.

Also see Case Studies #3, #17, and #18.

4.1.5 Whistleblowing

It may be difficult for a *licensed professional* to report to the appropriate authority another *licensed professional*, employer, or *client* whose actions are believed to be putting the public interest at risk. Regardless, once all other internal avenues have been exhausted, a *licensed professional* has an ethical obligation to make such a report, especially if there is risk:

- to an identifiable individual or group of individuals
- to the environment
- of serious bodily harm or death
- of imminent danger

A *licensed professional* who makes a report to the appropriate authority in good faith must be able to do so without fear of reprisal from other *licensed professionals*, members-in-training, their employer, or their *client*. See Section 4.1.4 Safe Workplaces.

Case Study #3

XYZ Construction contracted ABC Engineering to perform inspection and leak detection testing on a pipeline XYZ Construction was installing. When ABC Engineering's engineer, Pablo, arrived on site, a large portion of the backfill for the pipeline had been placed, meaning a visual inspection was not possible. Pablo carried out the leak detection test and, although the estimated leakage was at or below the allowable limit, he felt that without a visual inspection it was possible the leakage could be concentrated in one area, resulting in potential risk to the integrity of the pipeline. He also noticed some concerning ground settlement.

He approached XYZ Construction's site foreman and requested that portions of the pipeline be exposed for visual inspection. The foreman refused based on cost and schedule, and because the leakage test had passed. He insisted Pablo sign off on the test results as required for regulatory approvals. Pablo brought his concerns to his supervisor at ABC Engineering, who was not an engineer, and who also owned the company. His supervisor told him that additional testing was expensive, and since the result he obtained was acceptable, no further action was required and he should sign off on the inspection. She also explained that XYZ Construction was an important *client*. Pablo felt uneasy, knowing that there could be a potential risk to the environment.

What should Pablo do?

Pablo has an obligation to protect the public and have regard for the environment, and this duty takes precedence over his duty to his employer. If he thinks there could be a potential leak, he is required to inform his employer of his duty and insist the visual testing is done. This can be difficult considering the power dynamic of the workplace. However, ABC Engineering is expected to create a culture where individuals can freely and safely bring forward concerns. If the supervisor still refuses, then Pablo must report to his *client*, XYZ Construction, and if the response is not satisfactory, then to the authority having jurisdiction, in this case, Alberta Environment. This duty comes with risk to his employment, but if he violates the Rules of Conduct, he risks his licence to practise engineering in Alberta.

Also see Case Studies #11 and #12.

4.1.6 Professional Leadership

Although *licensed professionals*—and in some cases, members-in-training—may not always have formal authority, they have a responsibility to lead by example and set the tone for competent and ethical conduct in their organizations. In many organizations, *licensed professionals* and members-in-training are hired in part because they provide this leadership, and sometimes they are the only employees who have a legal obligation to protect the public interest.

To be aligned with APEGA's diversity statement to encourage equity within the engineering and geoscience professions and to promote safety, professional leadership should support a culture of belonging. Professional leaders can be proud to lead diverse and innovative teams. Professional leadership can be demonstrated by explaining reasons for change, acting with integrity, taking ownership over mistakes, encouraging relationship building and information sharing, considering diverse perspectives, promoting self-awareness, and ensuring

interactions are respectful, courteous, and fair. Having self-awareness, especially in relation to how they receive feedback on or challenges to their professional work, helps *licensed professionals* and members-in-training learn to respond in a way that enables further discussion.

Also see Case Studies #2, #12, #17, and #18.

4.1.7 Emerging Technologies

Permit holders, *licensed professionals*, and members-in-training have a responsibility to maintain knowledge about or gain competence in the use of emerging technologies within their area of practice. Employers or *clients* should be advised accordingly and given assistance to manage such technologies to avoid negative impacts and maximize positive impacts on society.

With the rapid advancement of technologies, *permit holders*, *licensed professionals*, and members-in-training should identify the implications and limitations of these technologies in the practices of engineering and geoscience, and they should understand their related professional and ethical obligations. They must demonstrate *due diligence* in understanding the effects of emerging technologies and related outcomes in their area of practice, including long-term impacts, and they must take professional responsibility to protect the public accordingly.

Permit holders, *licensed professionals*, and members-in-training should also recognize existing regulations, technical specifications, standards, and guidelines for these technologies. Since advancements in technology tend to outpace the creation of these documents, it falls upon *permit holders*, *licensed professionals*, and members-in-training to support the development of documentation that will help ensure the public interest is protected.

4.2 RULE 2: COMPETENCE

Professional engineers and geoscientists shall undertake only work that they are competent to perform by virtue of their training and experience.

The following commentary illustrates how the principles outlined in Rule 2 are interpreted and applied to professional activities.

4.2.1 Competence and Knowledge

Licensed professionals must undertake assignments only when they are competent to do so—that is, when they have the combined education, experience, knowledge, skills, proficiency, attitudes, and judgment to complete the work.

Licensed professionals and members-in-training are encouraged to take on new challenges and learn new skills while ensuring they are transparent with their employer or *client* about their current competency and addressing gaps for specific assignments as needed.

Licensed professionals and members-in-training should regularly review their own and their employer's capabilities to provide specific services to the public. If specialized assistance is needed, it is important that *due diligence* is demonstrated when selecting a provider, especially when a lack of capability could result in serious adverse consequences.

When outside expertise is retained, it should be with the *client's* informed knowledge and approval and must be carried out in accordance with the practice standard *Relying on the Work of Others and Outsourcing*.

Also see Case Studies #4, #6, #7, and #17.

4.2.2 Scope of Responsibility

Before accepting assignments, *permit holders*, *licensed professionals*, and members-in-training should discuss and document the extent of their professional responsibilities with their employers and *clients* to ensure common understanding between all parties. The scope of services defines precisely what services will be performed. Timelines, performance expectations, and scope of services should be documented and understood, including procedures for addressing scope change. Any services not listed as part of the scope but that the *permit holder*, *licensed professional*, or member-in-training accepting the assignment knows to be necessary for the project should be noted to the *client* as out of scope.

Depending on the size and complexity of the scope, it may be necessary to define the specific areas of practice and skills expected or required to undertake the work effectively. It is important that skills are represented accurately. The scope of services can also indicate potential or future scope. The interpretation of agreements, including scope of responsibility, should reflect the spirit and intent of the work.

4.2.3 Presentation of Qualifications

Permit holders, *licensed professionals*, and members-in-training should present their qualifications and competence factually, without exaggeration. This includes ensuring correct and appropriate use of reserved titles and designations in all correspondence and representation, including on social media.

Case Study #4

Sam, P.Eng., promoted his services to several prospective *clients* by advertising skills on his LinkedIn profile. Using the automated prompts that this social network platform suggested for additional potential skills, he highlighted extensive project management experience in process engineering. He also listed skills in research on critical process components and ownership of patentable processes.

From a connection he made via LinkedIn, Sam was retained by a *client* to design a specialized process plant and conduct research and testing of critical components required to achieve full production at the facility. As work proceeded, delays occurred, primarily due to Sam's ineffective project management and poorly detailed drawings.

As soon as the operating equipment was installed, a check-run was conducted to assess the process capacity. Despite numerous time-consuming adjustments, the tests never achieved the minimum flow Sam estimated. Revised designs required the purchase of additional equipment, jeopardizing the plant's economics. When asked to clarify the matter of ownership of the patentable processes, Sam provided no information.

The *client* complained to APEGA that Sam had misrepresented his capabilities on LinkedIn and his résumé.

A discipline hearing confirmed that Sam had not performed in a skilled manner, coordinated the plant design, monitored the capacities of various components, or displayed the promised competency.

Sam violated Rule 2 of the Code of Ethics. He oversold his capabilities, and when it became clear the design was not progressing well, he did not seek expert assistance.

Case Study #5

Casey, an engineer-in-training, was having trouble finding work. Her colleagues seemed to be getting hired, and she began to feel anxious she was not getting the required work experience to become registered with APEGA.

She applied to a posting for Company A, a firm specializing in electronics and instrumentation engineering. She was selected for an interview and learned more about the position, but, unfortunately, was not hired. Discouraged, she returned to her job search.

A posting for a position at Company B, another firm specializing in electronics and instrumentation engineering, piqued her interest. Casey was determined to get her foot in the door at this firm, and decided to include a short false employment record on her résumé. She reasoned that the new position would be an entry-level position for which she would receive the necessary training to perform the duties, and the much-needed employment would help her gain the required experience to be registered with APEGA.

Casey violated Rules 1, 2, 3, and 5 by knowingly including false employment experience in résumés she submitted to potential employers.

4.2.4 Providing Advice

Only practising *licensed professionals* may provide advice on matters related to engineering and geoscience. This includes providing advice in a volunteer capacity.

Permit holders, *licensed professionals*, and members-in-training should advise on engineering and geoscience matters only on the basis of adequate skill, knowledge, training, experience, and honest conviction. They should not use their title or designation to bolster their views in areas in which they do not have competence, including in areas not related to engineering or geoscience. Using designations in social media posts, for example, should be carefully considered.

Licensed professionals and members-in-training should ensure, to the best of their ability, that statements on engineering and geoscience matters attributed to them properly reflect their professional knowledge. See Section 4.3.4 Expressing Opinions in Public.

4.2.5 Authentication and Validation

Section 54 of the *General Regulation* requires *licensed professionals* to stamp (authenticate) professional work. Practising *licensed professionals* are responsible for their *stamp* security and must only authenticate *professional work products* in their area of competency. This includes work they prepared or that has been prepared under their *direct supervision and control*. In the case of work prepared by others, they must only authenticate after having performed a *thorough review* of the work. Refer to the practice standards *Authenticating Professional Work Products* and *Relying on the Work of Others and Outsourcing* for detailed requirements.

In addition:

- the requirement to stamp (authenticate) is in the *Engineering and Geoscience Professions (EGP) Act* and the *General Regulation* and exists independently of any contractual agreements between a *permit holder* or *licensed professional* and an employer or *client*
- the absence of *authentication* does not relieve the *licensed professional* of professional or legal responsibility if it can be shown they were involved with the work
- *authentication* may include a note to describe boundaries and limitations as described in the *Authenticating Professional Work Products* practice standard. However, waivers or disclaimers releasing the *permit holder* or *licensed professional* from professional responsibility for work they completed should not be placed on *professional work products* and do not release *permit holders* or *licensed professionals* from their professional responsibility

Failing to authenticate is a violation of Rule 4. See Section 4.4.1 Being Aware of the Law.

Case Study #6

Hakim, P.Eng., did some work for a friend who owned ABC Steel Industries. It is unclear if Hakim had the competency or skill to do this work. He authenticated final welding reports without conducting site visits to complete the required inspections. Later, an issue arose about the integrity of the welded structures, and a complaint was filed with APEGA against him.

During an APEGA disciplinary hearing, Hakim stated he would normally visit the shop, verify the shop foreman's data, and conduct the inspection. He would then authenticate the final report and take professional responsibility for the information provided.

In this situation, he consulted the shop foreman via telephone and authenticated the report without conducting a site visit because his friend, the owner, needed an expedited approval to move forward with the project. Hakim did not charge a fee for this work.

In this example, did Hakim violate the Code of Ethics?

Regardless of his motives, Hakim demonstrated a lack of judgment in carrying out his duties. He indicated he had witnessed and had personal knowledge of the specific work and authenticated the *professional work product*. He did this without conducting a site visit and verifying the data provided by the shop. His competency may be in question, which would violate Rule 2. In addition, *licensed professionals* are expected to charge appropriate fees for service (Rule 3) and uphold the honour, dignity, and reputation of the profession (Rule 5).

A similar situation is when *clients* request authenticated as-builts from *licensed professionals*. Unless a *licensed professional* conducts a *thorough review* of the as-builts and confirms the site conditions are accurately represented, they must not provide authenticated as-builts.

Case Study #7

A geoscience consulting company and *permit holder*, LMN Geoscience Inc., was awarded an assignment to interpret data and create maps, evaluate the potential of a field, and prepare a report for use by a *client* to raise capital from the public. LMN Geoscience's president, Sarah, P.Geo., acted as the *licensed professional* taking responsibility for the work and as the *permit holder's Responsible Member*. She maintained custody of the *Permit to Practice stamp* and was authorized to affix and sign it as part of *validation* before completed *professional work products* were issued.

The assignment came when the company was extremely busy, so Sarah assigned Odette, P.Geo., to provide *direct supervision and control* over a member-in-training doing the work. However, Odette was not able to devote as much attention to the assignment as she believed was needed to provide an adequate level of professional supervision.

When the work was completed, Odette discussed the report with Sarah. Although Odette believed the member-in-training completing the work had performed their respective duties responsibly and well, she expressed concern that she had not been able to directly supervise the work. She explained that for this reason, she had not authenticated the final report.

Sarah accepted this explanation and, without further review, authenticated the report and submitted it to the *client*.

The report was accepted and used to develop a prospectus for distribution to potential investors. Several years later, an error was discovered in the report, which had the effect of overstating the investment potential by a factor of three.

The *client* sued LMN Geoscience and named Sarah and Odette in the lawsuit. One of the investors also complained to APEGA.

Who should bear the major professional responsibility for the error—Sarah or Odette?

To what extent is Odette professionally responsible, having refused to authenticate the report?

Sarah bears the major professional responsibility for four reasons:

1. she neglected to listen and respond to Odette's concerns about not providing adequate supervision
2. she neglected to *thoroughly review* the report herself before authenticating it and taking professional responsibility for its contents
3. she neglected to validate the report as *Responsible Member*
4. she demonstrated a lack of judgment in carrying out her duties

Odette could have also handled the situation better. She should have told Sarah at the outset that she would be unable to properly directly supervise the work when it was assigned to her. As a *permit holder,* LMN Geoscience is also responsible for ensuring that their *Responsible Members* and *licensed professionals* are following their *Professional Practice Management Plan,* which must include processes for *authentication* and *validation.*

4.2.6 Engaging Experts

Permit holders, licensed professionals, and members-in-training should be aware of their limitations and engage—or advise their employers and *clients* to engage—other experts and specialists whenever it would be in the public's, employer's, or *client's* best interests. When procuring *professional services, permit holders* and *licensed professionals* must comply with the practice standard *Relying on the Work of Others and Outsourcing*.

4.2.7 Continuing Professional Competence

Licensed professionals must take appropriate measures to maintain competence in their professional practice by participating in meaningful continuing professional development activities. They must meet the requirements outlined in the practice standard *Continuing Professional Development*.

Competence includes the ability to effectively perform a service in a skilled, knowledgeable, and ethical manner consistent with the individual's position and responsibilities. *Licensed professionals* are obligated to assess their needs and plan appropriately to maintain competence in their area of practice.

4.3 RULE 3: INTEGRITY, HONESTY, FAIRNESS, AND OBJECTIVITY

Professional engineers and geoscientists shall conduct themselves with integrity, honesty, fairness and objectivity in their professional activities.

The following commentary illustrates how the principles outlined in Rule 3 are interpreted and applied to professional activities.

4.3.1 Practising the Professions

Permit holders, *licensed professionals*, and members-in-training are expected to conduct themselves with integrity, honesty, fairness, and objectivity in their professional practice.

Some examples of acting with integrity, honesty, fairness, and objectivity in a professional setting are:

- documenting, reporting, and addressing errors or omissions. This may include completing an error or omission risk assessment and communicating the findings to affected stakeholders
- discussing with employers or *clients* the risks inherent in projects and how to manage those risks
- providing timely notification and advice to employers or *clients* when a project will not be successful
- communicating in a clear, respectful, and purposeful manner
- making objective decisions and examining the outcomes of those decisions to ensure they uphold the respect and dignity of others and do not show favouritism. Identifying who benefits and who is excluded from these decisions is also key to ensuring equitable and fair decisions
- interpreting agreements and *contracts* to reflect the spirit and the intent of the documents

When practising the professions, *permit holders*, *licensed professionals*, and members-in-training should have high regard for their employer's and *client's* interests. However, the duties to protect the public interest, to comply with the Code of Ethics, and to uphold the human rights of others take precedence over the interests of the *licensed professional's* employer or *client*.

When the interests of an employer or *client* are in conflict with these duties, a *licensed professional* must advise the employer or *client*.

Case Study #8

123 Piperack Designs Ltd. was contracted to design a pipe-rack structure for an existing natural gas processing facility. The project scope included piping layout, pipe stress analysis, and supporting structure design. The deadline provided by the facility owner to complete construction was tight, so Kerry, P.Eng., a civil engineer working for 123 Piperack Designs, decided to use preliminary pipe stress loads in the design of the pipe rack. They documented their assumptions in their calculation package, which was checked during peer review and approved by their technical supervisor. Drawings were prepared, authenticated, validated, and issued for construction.

During construction, Kerry received the final pipe stress loads and discovered there was an anchor point they had not included in the preliminary pipe stress loads. This additional anchor point would put additional loads in that area of the structure.

What should Kerry do?

When an error is found, it must be documented, reported, and addressed immediately. In this case, Kerry should review their calculations to determine the potential impact to the design. If the review indicates additional bracing is required in the area of the anchor point, which would likely delay project completion, Kerry should communicate the change and the impact to the schedule with their supervisor. The supervisor should inform the owner of the facility and work should be stopped while the required modification is added to the design documentation. The change should then be authenticated and validated. Construction can then continue. The project schedule and cost may be affected.

What could Kerry have done differently?

While Kerry performed their *due diligence* in documenting their assumptions, evaluating the updated pipe stress loads, and ultimately informing the facility owner, they could have taken additional measures at the start of the project to mitigate the risk to the project schedule. These measures could have included informing the facility owner of the potential risk of such an aggressive schedule and getting buy-in on the use of preliminary pipe stress loads or the conservative design of the pipe rack. These risk mitigation steps must also be outlined in 123 Piperack Designs' *Professional Practice Management Plan*, under the quality management section.

Also see Case Study #5.

4.3.2 Conflict of Interest

Conflicts of interest can influence objectivity and affect the practice of the professions.

Obligations to the public, employers, and *clients* are prioritized over the personal interests of the *permit holder, licensed professional*, and member-in-training. Under normal circumstances, *permit holders, licensed professionals*, and members-in-training should, before accepting assignments, inform employers and *clients* of conflicts of interest. These include any special interests, business connections, personal relationships, and other circumstances that could influence or be perceived to influence professional judgment. *Permit holders, licensed professionals*, and members-in-training should carefully consider whether it is appropriate to accept gifts, payments, or benefits.

Permit holders, licensed professionals, and members-in-training have a right to make political contributions and other donations. They have a duty under the Code of Ethics to avoid doing so in such a manner that the reputation of the professions would be damaged or exposed to public misunderstanding.

4.3.3 Bias in the Professions

There are many types of biases, and all can lead to systemic errors in thinking, affect the rationality of judgment, and lead to inaccurate or unreasonable conclusions or decisions.

Biases can also influence professional judgment and affect objectivity and fairness. Biases can arise in all aspects of professional practice, including decision-making, people management, supervision, work reviews, *contract* evaluations and assignments, employer or *client* relationships, personal behaviour, and interpersonal conduct.

Everyone has *unconscious bias* and acting on *unconscious biases* is common. It can be difficult to acknowledge that these actions may be harmful because there is typically no malicious intent. When confronted, individuals are often surprised or offended because their actions may be in direct conflict with the values they hold. When approaching these situations, *licensed professionals* and members-in-training should have candid, honest, and respectful conversations and allow space for mistakes to occur. The purpose of addressing these situations is to recognize their impact on others and the professions. *Unconscious biases* left unchecked can lead to discrimination, which is against the law.

To uphold the trust, dignity, and honour of the professions, *permit holders* and *licensed professionals* should educate themselves on and be aware of biases, including how to counteract them.

Case Study #9

Charlie, an experienced and competent P.Eng., was working at a consulting firm hired by a rail operator (the *client*) to design a crossing warning system. The consulting firm approached him to prepare a proposal and asked him to contact another junior engineer at the firm who had performed similar work for this *client* in the past. The firm mentioned this *client* had specific design specifications and challenging site conditions that required consideration.

Charlie studied the request for proposal. Since he had designed many similar systems in the past, for many different rail operators all over Canada, he was confident he knew what was required and did not contact the junior engineer. He put together a bid based on his past experience. The proposal was accepted, and Charlie immediately ordered the required material before beginning the design to avoid schedule delays due to long lead times.

During the design phase, Charlie noticed many of the assumptions he had made in the preliminary phase were not correct. He realized he ordered the wrong material and would have to inform the rail operator, resulting in significant cost and schedule impacts.

Where did things go wrong?

Acting on biases can impact decision-making. In this case, Charlie made decisions based on his past successes, failed to consider the specific context for this work, and dismissed the importance of the junior engineer's experience. Further, his preliminary design did not consider specific site conditions and other influencing factors. He assumed he was familiar with the specifications, but he was not.

These errors in decision-making negatively impacted the work and Charlie failed to act in the rail operator's and his firm's best interests by not making objective decisions.

4.3.4 Expressing Opinions in Public

Licensed professionals and members-in-training should clearly distinguish between facts, assumptions, and opinions in their professional work and also in public discussion or published articles and comments (including social media) with respect to their professional work. When expressing opinions or taking part in public discussion, *licensed professionals* and members-in-training should disclose on whose behalf they are giving opinions or statements and use their professional titles and designations appropriately.

Licensed professionals and members-in-training should communicate the results of their work clearly and accurately, place an appropriate qualification on the results when a matter is only partially resolved, and avoid bias due to political, economic, or other factors. In corporate and societal settings, *licensed professionals* and members-in-training should focus discussion on the facts of the issue and do their best to ensure their professional opinions are accurately represented. To avoid misinterpretation when presenting complex issues to a non-technical audience, *licensed professionals* and members-in-training should adjust their discussion without losing the critical elements.

Licensed professionals and members-in-training can hold personal or political interests, but they should separate their personal views from their professional activities and be impartial and factual when expressing professional opinions. See Section 4.2.4 Providing Advice.

4.3.5 Maintaining Confidentiality

All information provided by an employer or *client* to a *licensed professional* or member-in-training should be considered confidential. This includes all information concerning the employer's or *client's* business affairs, technical methods, proprietary information, intellectual property, and processes. *Licensed professionals* and members-in-training should not use their employer's or *client's* confidential information for personal gain.

Technical knowledge and skills gained through experience and not based on proprietary information may be used in subsequent work without consent from other parties.

Licensed professionals and members-in-training may consider engaging in new work that would require the application of confidential knowledge obtained through other work. However, they should not actively seek such work or negotiate for it without the consent of all parties involved with the confidential work. Applying skills gained through employment is different than applying confidential knowledge. It is acceptable for *licensed professionals* and members-in-training to use skills and experience gained through employment to seek other employment. Sometimes, employers will include non-compete clauses in employment agreements—*licensed professionals* and members-in-training should respect such clauses.

Licensed professionals and members-in-training who are approached by two or more competing *clients* to perform work have an obligation to be transparent and disclose any potential conflicts of interest. See Section 4.3.2 Conflict of Interest.

Confidential information is only loaned to a *licensed professional* or member-in-training to enable them to perform their duties. All information received while delivering *professional services* should be considered the exclusive property of its owner. Care should be taken to protect trade practices that may be unique and

practices that identify the owner's special attributes. Designs supplied by *clients* remain the property of the *clients* and should not be duplicated by *licensed professionals* and members-in-training for others without the express permission of the *client* to whom the designs belong.

Case Study #10

ABC Software Ltd. sets up a computer system for its office and purchases appropriate software packages for its business operation. Rowan, P.Eng., who holds a senior position with the company, makes revisions and modifications to the software so the packages are tailored for ABC Software's use. Rowan has a copy of the completed program at home when they are laid off due to a downturn.

Rowan forms their own company and uses the software after extensively updating it to suit their own business purposes. Although the nature of Rowan's work is not in competition with their former employer, their use of the software becomes known and ABC Software sues them for damages.

Has Rowan acted unethically toward ABC Software for using a modified copy of software they helped to create?

An employee's use of their own knowledge and skills and their employer's proprietary or trade secrets requires reflection. Loyalty, good faith, and avoiding a conflict between professional duty and self-interest are the key ethical issues in this case. Taking and using or modifying an employer's (or former employer's) software program for personal gain is a breach of trust and confidentiality.

Rowan violated Rule 3.

Rowan was judged to have caused damages under the principle of unjust enrichment, even though ABC Software Ltd. was not deprived of the use of its software or infringed upon in the area of competitive work.

This does not mean employees cannot use the skills and experience they have gained from former employers. The distinction between skills and knowledge gained while on the job and trade secrets that are the confidential property of the employer and its *clients* should be mutually determined and respected.

4.3.6 Disclosing Confidential Information

The duty not to disclose secret and confidential information obtained through work is an obligation recognized and enforced by common law, oaths of secrecy, the Criminal Code, and non-disclosure provisions of specific statutes. *Permit holders*, *licensed professionals*, and members-in-training must adhere to all laws and regulations regarding information confidentiality. See Section 4.4.1 Being Aware of the Law.

The obligation to keep employer and *client* information confidential ceases if the information legally enters the public domain (e.g., release of exploration well data after drilling).

Confidential information may be disclosed if any of the following apply:

- the employer's or *client's* prior permission is obtained
- withholding the information is contrary to public safety
- disclosure is required by law

If a *licensed professional* or member-in-training believes withholding certain confidential information is contrary to the safety of the public, they should advise the employer or *client* first, preferably in writing. If the concern is ignored or overruled and the employer or *client* continues to follow a course of action that is harmful, the *licensed professional* or member-in-training should inform their employer or *client* that they are ethically bound to present the concern to the appropriate authorities. The information they disclose should only be that which is necessary to protect public safety.

If disclosure of confidential information is required by law, the disclosure should be made only to the extent required by law. Present or past employers or *clients* should be advised of the disclosure as soon as is practical.

Case Study #11

A pollution-control regulatory agency has advised XYZ Corporation that it must apply for a permit to discharge plant manufacturing waste into an adjacent lake and show that the lake will still meet environmental standards.

To show that the lake will still meet environmental standards after receiving the manufacturing waste, XYZ Corporation hires Shashi, P.Eng., to perform a study and submit a detailed final report.

After completing the study, Shashi concludes that the discharge from the plant will lower the quality of the lake below minimum acceptable standards. She advises XYZ Corporation of her findings. Subsequently, XYZ Corporation terminates her contractual agreement with full payment for the services performed.

Shashi later learns the pollution-control agency has called a public hearing and XYZ Corporation has presented information to support its view that the present discharge meets minimum acceptable standards.

Does Shashi have an ethical obligation to report her findings to the agency upon learning of the hearing? If so, how should she go about reporting these findings to the agency? Does she have any obligation to notify XYZ Corporation of these intended actions before proceeding?

While it might seem XYZ Corporation may be presenting incorrect information at the hearing, it is also possible XYZ Corporation has used the report from Shashi to find alternate methods of satisfying the minimum acceptable standards.

Shashi should approach senior officials of XYZ Corporation to clarify whether her findings have been included in the corporation's presentation. If not, she should explain clearly to XYZ Corporation that if it continues to share incorrect information about the discharge, she has a professional obligation to advise the regulator of her findings.

The failure to meet minimum acceptable environmental standards may be detrimental to public health and safety. Because of this, Shashi should first consider her obligations to the public, which override her obligations to XYZ Corporation. Although her report was completed for XYZ Corporation and is considered confidential, the information contained within may be disclosed if withholding it is contrary to the safety of the public. See Section 4.1.5 Whistleblowing.

4.3.7 Having Recommendations Overruled

Licensed professionals should present clearly to their employers and *clients* the consequences if their professional judgment is disregarded or overruled.

Licensed professionals may occasionally find themselves in a situation where another *licensed professional,* their employer, their *client,* or another expert questions their recommendations.

When the disagreement or challenge is between two *licensed professionals,* the individual professionally responsible for the work has a duty to ensure their facts and recommendations are correct and the information and assumptions are presented simply and clearly. For contentious issues, this information should be communicated in writing and verbally. If the *licensed professional* responsible for the work understands the challenge presented but decides to dismiss it, they continue to take full professional responsibility for the work. If the outcome is still not satisfactory to the *licensed professional* who raised the challenge and they believe there is a risk to public safety, they must take appropriate action. See Section 4.1.5 Whistleblowing.

When an employer or *client* makes a decision that adversely affects the public interest and is contrary to the recommendation of the *licensed professional,* the *licensed professional* should inform the employer or *client* of the consequences of the decision. If the employer or *client* is unavailable or unresponsive, the *licensed professional* should notify the appropriate regulatory authorities that have the ability to evaluate the concerns and the power to suspend activities until the technical issue is resolved.

When others question a *licensed professional's* recommendation, the *licensed professional* should always seek first to understand, then consider new information and help create awareness for others by providing relevant facts. While the other individual may not understand the rationale of the recommendation and the potential consequences of failure, they may also have a different perspective or possess expertise the *licensed professional* should consider.

See Sections 4.5.3 Conduct Towards Others and 4.5.4 Reviewing the Work of Others.

Case Study #12

Malinda, P.Eng., a geotechnical engineer with an M.Sc. and five years of industry experience, is employed by a consulting firm to design a 10-metre-high earth dam for an industrial project in northern Alberta. Malinda develops recommendations using a computer analysis based on soil properties derived from a field investigation.

Frank, P.Eng., a principal in the consulting firm, reviews the report before it is submitted to the *client*. Frank's experience suggests steeper side slopes can be used, which would reduce the earth fill volume by about 15 per cent and result in considerable cost savings for the *client*. Frank requests that Malinda change the report accordingly. After considerable discussion, Malinda agrees to recheck the analysis, but remains unconvinced that Frank is correct.

What should Malinda do?

Malinda is on the right track. Rechecking her assumptions, calculations, and design approach is the first step in deciding how vigorously to defend the original design. With significant earth-moving savings at stake, she may still recommend additional work to refine the soil properties or conduct an alternate analysis.

If Malinda remains convinced her original design is correct or additional work is needed before changing the report, she should advise Frank, providing a clear explanation of the reasoning. If Frank chooses to overrule her design and include his recommendations, he must take professional responsibility for the work himself.

Malinda should not authenticate recommendations she does not personally accept.

Since Frank is a qualified *licensed professional* who completed the work himself and took professional responsibility, the discussion would not normally go beyond Frank and Malinda. However, if Malinda felt a risk to public safety remained, she would be obligated to report it to the appropriate jurisdictions after informing Frank of her intention to do so.

4.3.8 Compensation for Professional Services

To maintain the professional integrity of the professions, *licensed professionals* and members-in-training should be monetarily compensated for the *professional services* they provide. This recognizes that *licensed professionals* have a unique set of skills and qualifications. *Licensed professionals* should avoid underbidding work or completing work without compensation to secure future work. *Permit holders* and *licensed professionals* should also engage in fair competition. *Licensed professionals* may volunteer their *professional services* if they understand the risks inherent in doing so and have permission from their employer, if applicable.

Licensed professionals of similar qualification and competence performing the same or substantially similar work should receive the same or similar compensation and opportunities. APEGA's *Women in the Workplace: A Shift in Industry Work Culture* report identifies that women and those who identify as women in engineering and geoscience in Alberta face pay inequity. *Permit holders* and *licensed professionals* are encouraged to address these inequities in compensation.

Gender is not the only factor that contributes to pay inequity. *Permit holders* and *licensed professionals* are encouraged to ensure pay equity is achieved for individuals from all *marginalized groups* and those under-represented in the professions.

Also see Case Study #6.

4.4 RULE 4: STATUTES, REGULATIONS, AND BYLAWS

Professional engineers and geoscientists shall comply with applicable statutes, regulations and bylaws in their professional practices.

The following commentary illustrates how the principles in Rule 4 are applied and interpreted in professional practices and activities.

4.4.1 Being Aware of the Law

Different jurisdictions have their own laws and regulators, monitoring and compliance assurance systems, and penalties for non-compliance. A breach of the law committed by a *permit holder, licensed professional,* or member-in-training could be conduct deserving of disciplinary actions by APEGA.

Permit holders, licensed professionals, and members-in-training must maintain adequate knowledge of the law relating to their area of practice. They should also recognize they are governed by the *Engineering and Geoscience Professions (EGP) Act* and the *General Regulation,* which includes the Code of Ethics. Only *licensed professionals* with practising status may provide *professional services* in Alberta. APEGA has published several practice standards, bulletins, and guidelines to help *permit holders, licensed professionals,* and members-in-training understand and meet their responsibilities.

Permit holders, licensed professionals, and members-in-training should recognize there may be multiple and diverse federal, provincial, and municipal laws that may be of significance to the project they are working on or for which they are responsible. From one jurisdiction to another, these laws may be contradictory, overlapping, or unclear. The responsible party (*permit holder, licensed professional, client,* or owner) may need to use their own judgment, seek outside advice, or obtain guidance from the appropriate authority in the application of the law.

The extent of the duties and responsibilities of *permit holders, licensed professionals,* and members-in-training with regard to the law may vary from project to project. They should ensure all necessary permits, approvals, and authorizations are received from the applicable regulatory bodies on the projects for which they are responsible. It is important that the various responsibilities of the *permit holder, licensed professional,* or member-in-training are clearly defined to ensure compliance with the law.

Case Study #13

Silas, P.Eng., a competent senior mechanical engineer at Company XYZ, issued a design to a *client* that included the provision for hot and cold domestic water runs and dryer vent runs based on specifications provided by the *client.* Silas issued the design documents for construction, but he did not authenticate them.

The *client* relied upon the design documents when coring a hole through a concrete wall to accommodate dryer vents. When it came time for installation, the *client* discovered the dryer vent holes were too small. Section 78 of the *EGP Act* requires that *licensed professionals* stamp (authenticate)

professional work. In addition, the practice standard *Authenticating Professional Work Products* lists requirements *licensed professionals* must adhere to when authenticating.

Silas violated Rule 4. Failure to authenticate is a violation of the *EGP Act* and will be investigated by APEGA.

Case Study #14

Company OPQ Engineering is incorporated and delivering engineering *professional services* in Alberta. The company has determined it does not need a *Permit to Practice* because it is a small company with only one *licensed professional* and it does not issue any *professional services outputs* that require *authentication* and *validation*. Furthermore, the company has been hired by another *permit holder* and is working under that *permit holder's Professional Practice Management Plan* to provide *professional services*.

In this case, the *licensed professional* who owns Company OPQ is not meeting compliance obligations and has violated Rule 4 of the Code of Ethics. Even though the company is not producing *professional work products*, which require *authentication* and *validation* to comply with the practice standard *Authenticating Professional Work Products* and the *EGP Act*, it is still practising engineering.

The practice of engineering is defined in Section 1(q) of the *EGP Act* and includes more than just providing authenticated work. Section 2(1) of the *EGP Act* requires entities that practise engineering and geoscience to hold a *Permit to Practice*. In addition, the *General Regulation* requires Company OPQ to have its own *Professional Practice Management Plan* associated with its *Permit to Practice*, as outlined in Section 48(1)(d), even if the company is hired by another *permit holder* and is working under that *permit holder's Professional Practice Management Plan*.

For Company OPQ to use the reserved title "engineering" and offer *professional services*, it must apply for a *Permit to Practice* and create a *Professional Practice Management Plan*.

Also see Case Study #15.

4.4.2 Making Employers and Clients Aware of the Law

Employers or *clients* may not be familiar with laws that may apply to the work. *Permit holders* and *licensed professionals* should take appropriate actions to ensure employers, *clients*, and those under their *direct supervision and control* have knowledge of and comply with the laws governing their work.

Permit holders, *licensed professionals*, and members-in-training have a responsibility to advise employers and *clients* if they become aware of any proposed activities that conflict with the law. For example, *clients* may not be aware that *licensed professionals* are required to authenticate *professional work products* to comply with the *EGP Act*.

Case Study #15

A safety concern complaint was made to APEGA against a *permit holder* and their *Responsible Member*. A former employee of the *permit holder*, who was a *licensed professional*, failed to detect the hazard of a live lead wire he was handling that caused an arc flash. Fortunately, there were no injuries, but serious injury or death could have occurred.

The complainant also described how they had previously raised their concerns to the *permit holder* regarding the former employee's competency and had suggested that a more experienced engineer be hired. These concerns were disregarded. Only after the incident did the *permit holder* implement a hazardous-energy-isolation, or lock-out, procedure.

An APEGA investigation found that the *permit holder* and the *Responsible Member* overseeing the former employee failed to comply with the Alberta Occupational Health and Safety Code, and therefore violated Rule 4. This led to the former employee also being investigated.

Case Study #16

A renovation company (the *client*) required advice about a potential load-bearing wall before making design decisions. It hired EFG Structural Engineering. The structural engineer completed a site visit, provided a draft report to the *client* based on the documented scope of work, and told the *client* the final report was being prepared.

The engineer determined the wall was indeed load bearing and could not be removed without installing a reinforced beam. Calculating the beam size was not part of the original scope of work and the engineer and *client* understood the calculation would not be included. The renovation company saw the draft report and told the engineer it did not need the final and authenticated report, it had installed a reinforced beam, and the engineer's services were no longer required.

What should the structural engineer do?

The engineer should inform the *client* he is obligated to issue final *professional work products* that include *authentication* and *validation* to meet his obligations under the *EGP Act* and the practice standard *Authenticating Professional Work Products*. If the engineer failed to authenticate, he would violate Rule 4. The structural engineer should ensure any scope that is not part of the work but is necessary to complete the project is communicated with the *client* to avoid violating Rule 2.

4.5 RULE 5: HONOUR, DIGNITY, AND REPUTATION

Professional engineers and geoscientists shall uphold and enhance the honour, dignity and reputation of their professions, and thus the ability of the professions to serve the public interest.

The following commentary illustrates how the principles outlined in Rule 5 are interpreted and applied to professional activities.

Also see Case Studies #5, #6, #17, #18, and #19.

4.5.1 Discrimination and Human Rights

Permit holders, licensed professionals, and members-in-training are expected to have regard for the personal dignity and human rights of others and comply with relevant legislation, such as the *Alberta Human Rights Act* and the *Occupational Health and Safety Act.*

It is expected that *permit holders, licensed professionals,* and members-in-training:

- uphold the human rights of others
- do not discriminate or display any intention to discriminate against any individual or class of individuals, particularly on the basis of race, religious beliefs, colour, gender, gender identity, gender expression, physical disability, mental disability, age, ancestry, place of origin, marital status, source of income, family status, or sexual orientation
- treat all others with fairness, dignity, and respect in all capacities, not solely in their professional capacities, and maintain and uphold the trust and dignity of the profession at all times

Case Study #17

Katherine, P.Eng., is the engineering design manager and *Responsible Member* for ABC Design Co. One of the employees Katherine is responsible for is Wei, a senior engineer with extensive experience in bridge design. Wei is a long-time employee of ABC Design Co. and is considered the technical subject matter expert on bridge design. He has been registered with APEGA for more than 20 years, since moving to Canada. He just finished a project and is ready to take on more work.

Another employee who reports to Katherine is Leslie, P.Eng., who recently gained her professional licensure with APEGA. Leslie has little experience designing large-scale construction projects and very little experience with bridge engineering and design work.

A key *client,* BCD Construction Corp., is overseeing a new major bridge construction project and has contracted ABC Design Co. for the engineering and design work. Katherine proposes the design team to BCD Construction, with Wei acting as the lead engineer given that he has the most project

and design experience. The BCD Construction contact responds to Katherine that they want the "right people on this design" and comments that some of ABC Design Co.'s engineers are hard to understand, saying that "people who move to Canada need to be able to speak proper English." The contact further indicates they would prefer Wei not to be the lead engineer on the project, and requests that Katherine appoint Leslie, who they recently met at a technical conference, as the lead instead.

Although the *client's* preference for who works on the design may be considered as a factor when assigning the work, in this case, the *client's* preference is actually discriminating against Wei on the basis of his place of origin and an unfair and unjustified perception of his proficiency in English. The BCD Construction contact's statements reflect prejudice, discrimination, and conscious or perhaps *unconscious bias*. Appointing Leslie, the less experienced engineer, to lead the project on the basis of her English-speaking ability would also reflect bias and discrimination.

What should Katherine do?

Katherine has a responsibility to protect the public interest by assigning a competent design engineer and should explain to the *client* that Wei has the demonstrated technical competency to act as the lead engineer. It is also expected that Katherine uphold Wei's human rights.

In this example, Katherine and ABC Design Co. should ensure they do not violate Rule 1, Rule 2, or Rule 5.

4.5.2 Reconciliation and the Professions

Part of reconciliation is understanding and acknowledging the impact of engineering and geoscience on Indigenous peoples and communities, historically through to the present day. Having awareness of provincial Indigenous consultation policies and guidelines as well as federal legislation is a way that *permit holders*, *licensed professionals*, and members-in-training can connect reconciliation to their profession.

The *United Nations Declaration on the Rights of Indigenous Peoples Act* outlines Canada's obligations to uphold the human rights of Indigenous Peoples, including treaty and inherent rights. As the practices of engineering and geoscience can have direct ties to the land, this is of interest to the professions.

The *Truth and Reconciliation Commission of Canada: Calls to Action* was released to further reconciliation. Specifically connected to the professions is Call to Action #92: Business and Reconciliation. This Call to Action speaks to the commitment of meaningful consultation and obtaining free, prior, and informed consent before proceeding with economic development projects, ensuring Indigenous Peoples have equitable access to jobs, training, and education opportunities in the corporate sector, and encouraging businesses to complete education on the history of Indigenous Peoples (TRC 2015).

The *National Inquiry into Missing and Murdered Indigenous Women and Girls* is an initiative to stop the increased violence towards Indigenous women and girls. Calls to Justice 13.1 through 13.5 speak specifically to resource-extraction and development industries, which are directly connected to the practices of engineering and geoscience. These Calls to Justice speak to increasing safety, mitigating risks, and recognizing the increased demand on social infrastructure that results from development projects and resource extraction (MMIWG n.d.).

To uphold the honour, dignity, and reputation of the professions, *permit holders*, *licensed professionals*, and members-in-training are encouraged to educate themselves on this content as it applies to the professions—considering both history and the future.

4.5.3 Conduct Towards Others

Conduct towards anyone involved in the practices of the professions should be respectful, courteous, fair, and in good faith. To maliciously or frivolously injure the character or the business prospects of another *licensed professional* or any other *person* risks a civil suit and serious disciplinary action by APEGA.

Permit holders, *licensed professionals*, and members-in-training should also encourage inclusion and collaboration and take the time to understand diverse perspectives.

A *licensed professional* and member-in-training should be careful to give full credit due to others. This includes citing sources of information, avoiding plagiarism, and acknowledging others who contributed to a project's success. Likewise, it applies to other contributing firms, even if they are competitors.

A *licensed professional* or member-in-training should not call into question the professional conduct or technical competence of another *licensed professional* or member-in-training without first consulting that individual to attempt to determine the relevant facts. If a *licensed professional* or member-in-training determines or has reasonable and probable grounds to believe the professional conduct or technical competence of another is in serious question, they have a clear and definite duty to inform APEGA accordingly. See Section 4.3.7 Having Recommendations Overruled, Section 4.5.4 Reviewing the Work of Others, and Appendix B.

Case Study #18

Salima, P.Eng., is a newly licensed engineer in Canada but had been practising engineering in India for more than 10 years before becoming licensed with APEGA. She has been hired as a project manager at STU Engineering in its materials engineering area.

Given her previous experience with materials engineering, Salima has been assigned as the engineer responsible for a mid-sized project. As a project manager, she is responsible for running all project meetings for the duration of the project.

During a project meeting with key stakeholders, Gord, P.Eng., a materials engineer with STU Engineering, continually speaks over Salima and is dismissive of her project risk-assessment concerns. Salima's colleague, Josephine, P.Eng., has noticed Gord speaking over Salima, and recognizes

that Gord may be doing so unintentionally. Josephine also wants to ensure that she is not making assumptions on behalf of Salima and that everyone in the meeting is respected. However, she notices Salima stops contributing and she is concerned with how Gord's actions may be affecting the meeting.

How should Josephine address the situation?

Speaking over someone may contribute to a culture that does not value or promote freely bringing up concerns. Josephine recognizes seemingly subtle acts of exclusion such as talking over someone may be difficult to experience and may have a lasting impact. In this case, Josephine also wants to ensure Salima's risk-assessment concerns are heard and discussed. For these and other reasons, it is important for Josephine to address these situations soon after they arise, whether she thinks they are caused intentionally or not.

There is no one right way to respond to such a situation. Each situation is unique, and all contributing factors need to be considered. Josephine could wait and speak privately with Gord, or she could speak up in the meeting. If she speaks up in the meeting, she should focus on inviting Salima to finish her comments and model inclusive behaviour instead of simply telling Gord to stop speaking over Salima.

After weighing the options, Josephine chooses to speak up in the meeting, using it as an opportunity to respectfully invite everyone to comment and improve communication in future project meetings. She is careful to maintain a respectful dialogue, avoid blame, and focus on making sure everyone is included in the meeting. If Gord's behaviour does not change going forward, Josephine can have a private discussion with him to further reflect upon why Gord is still speaking over Salima.

Speaking over someone is not always a problem—it depends on the context. If the behaviour is repeated, especially after it is pointed out, or if it is directed at specific individuals or groups of individuals, additional steps may be required to address the situation. It is important for STU Engineering to create a workplace culture that empowers individuals to bring forward concerns.

Licensed professionals are expected to ensure that interactions are respectful, courteous, and fair. *Permit holders* are required to create a workplace culture that enables people to freely and safely bring forward concerns they may have about their workplace.

4.5.4 Reviewing the Work of Others

Before questioning the work of another *licensed professional* in such a way that the professional conduct or technical competence of that individual is called into doubt, the reviewer should be fully aware of all relevant information. This may require communicating with the individual. See Sections 4.3.7 Having Recommendations Overruled and 4.5.3 Conduct Towards Others.

Licensed professionals are entitled to review and evaluate the work of other *licensed professionals* when so required by their employment duties. When asked to review the work of another *licensed professional*, it is a normal courtesy and a required obligation to contact and advise that individual. If the individual cannot be contacted, documentation indicating attempts were made should be kept. Open communication should exist

between the two *licensed professionals* so the reviewing *licensed professional* understands underlying assumptions and the *licensed professional* being reviewed has an opportunity to respond to any comments or criticisms.

A review of, and a report on, another *licensed professional's* or member-in-training's work that is performed at the request of a lawyer, such as acting as an expert witness, is protected by solicitor-client privilege and may be done without advising the individual under review. Such a report is considered part of the lawyer's work product and would remain privileged unless the privilege is waived by the lawyer's client or used by the client in some way. A similar situation exists when expert *licensed professionals* review work for which deliberate secrecy enables review without first informing the individual under review. Secrecy is sometimes necessary if knowing about the review could negatively or detrimentally affect the outcome.

In APEGA's investigations and discipline processes, effort is made to disclose the identity and qualifications of experts used to those under investigation to maintain transparency and objectivity.

Clients sometimes request that a review of another *licensed professional's* work be done without the other *licensed professional's* knowledge. Except in situations (discussed below) in which a duty of confidentiality to the *client* reasonably takes precedence over the duty of courtesy to a fellow *licensed professional*, the *client* should be advised that their request for secrecy runs contrary to the APEGA Code of Ethics and thus cannot be granted. It is then the *client's* choice whether to proceed openly or not to proceed at all.

Sometimes the duty of confidentiality to a *client* may create an exception to and take precedence over the duty of courtesy to contact a fellow *licensed professional*. An example is when a *client's* interests might be damaged if it became known that confidential work was taking place. In such cases, the *client's* wish for confidentiality needs to be respected.

Situations also arise when the information under review is of a proprietary nature, thereby preventing the reviewer from freely discussing the subject.

When a review is of a confidential or proprietary nature, the reviewer should:

- establish that the work is of a confidential or proprietary nature
- establish with the *client* that the review will be undertaken without contacting the original party
- establish that any contact with the *licensed professional* whose work is being reviewed will be the responsibility of the *client*
- undertake the review in a professional manner. The reviewer should be fully apprised of all the relevant facts and be competent and knowledgeable with respect to the area under review

The *client's* need for confidentiality may limit a reviewer's ability to determine relevant facts and may thereby create a conflict with their responsibility to do so. If such a conflict arises, an assignment should not be accepted or should be terminated.

Rights of a *client's* confidentiality do not extend to circumstances in which public safety is or could be affected. Public safety is paramount and always takes precedence.

4.5.5 Off-Duty Conduct

Licensed professionals and members-in-training are expected to respect the law in their personal conduct and should not engage in activities in their personal lives that may compromise their professional or personal reputations or discredit the professions.

This includes behaviour on social media and in public settings.

By remaining in *good standing* and signing the annual character declaration (*Annual Declaration Policy*) each year upon membership renewal, *licensed professionals* confirm that any criminal convictions and findings of *unprofessional conduct* or *unskilled practice* are disclosed.

Case Study #19

Chad, a P.Eng., was an avid hiker. During a recent hike, he ran into another local hiker he knew from the community. Chad did not get along with this hiker, as she had recently been chosen to act as the president of the local hiking club—a position Chad was hoping to get. In passing, the hiker made a snide comment to Chad about not getting the position. Chad was so frustrated that this was the type of woman his hiking club had elected that he posted on the hiking club's Facebook group. The group had several hundred members, and he wanted to make sure everyone knew the kind of individual they had chosen for their president. He included that he, as a knowledgeable hiker, advocate for the community, and *licensed professional* with APEGA, would have been the better choice for president.

Once Chad began to receive supportive comments and responses to his post, he wrote additional posts that were increasingly aggressive and vulgar. He continued to receive encouragement. He made further comments about how perhaps the new club president would fall off a ridge on her next hike, allowing a better individual to take over the position—the post went viral and sparked heated debate. Chad continued to make profane personal attacks against the president. The hiking club made a complaint to APEGA.

The Disciplinary Hearing panel found that Chad was guilty of *unprofessional conduct* contrary to Section 44(1) of the *EGP Act*. He failed to uphold and enhance the dignity and honour of his profession by acting in a manner that harms or tends to harm the standing of the profession generally, and which contravenes Rule 5. The panel found that Chad's abusive, profane, and threatening comments were sufficient to demonstrate he engaged in *unprofessional conduct*.

4.5.6 Supervision

Members-in-training or others who are not licensed by APEGA but who contribute to the practices of engineering and geoscience cannot practise engineering or geoscience independently, and their work must be supervised and controlled by a *licensed professional* as per the *EGP Act* Sections 2(1), 4(b), 5(1), and 5(2). A *licensed professional* who is recently registered or who has been out of the profession for a period of time may not yet have the competencies to work independently and may also require supervision. To uphold the reputation of the professions, adequate supervision and training should be provided.

Licensed professionals are expected to take an active leadership role. Examples of appropriate actions and behaviours include:

- assigning duties equitably to members-in-training and others that use and build on their training and experience and give them exposure to the knowledge, experience, and mentoring of more senior *licensed professionals*
- being active in professional and technical societies and in continuing education
- providing inclusive and equitable mentorship, constructive input, and feedback to members-in-training and others on their professional development
- encouraging participation in professional development activities
- providing inclusive leadership that includes sharing knowledge and experience to aid in training and development
- promoting informal discussions with more senior *licensed professionals* on ethical dilemmas, individual interests, and professional growth

4.5.7 Advertising and Marketing Professional Services

Advertisements, marketing materials, and information should be factual, clear, and dignified. This applies to all areas where advertisements and marketing materials would be presented and to proposals, presentations, and other means used to engage in professional work.

Advertising and marketing material should complement the professional image and enhance the stature of the professions. Misleading claims, boastful language, and sensationalism diminish the dignity of the individual and, by association, the dignity of the entire profession. Examples of inappropriate advertising and marketing include:

- exaggerating project involvement, experience, or level of expertise
- negatively comparing or commenting on competing professionals
- suggesting or implying, not duly founded in fact, the availability of staff or expertise for a project

It is recommended best practice that advertising and marketing material:

- is clear, factual, and without exaggeration
- does not diminish the dignity, professional image, or stature of the professions
- complies with applicable laws
- does not reference fees or charges for services
- does not display images of the professional or *Permit to Practice stamps* or use APEGA's logo without permission
- uses testimonials in good faith

APPENDIX A—HISTORICAL BACKGROUND

In 1920, the Association of Professional Engineers of Alberta (APEA) was incorporated by provincial statute. The following year, a standing committee was established to formulate a Code of Ethics. In 1928, the *Engineering Profession Act* was revised. Revisions included that a "Code of Ethics, controlled by the Bylaws, be devised to keep the practice of the members within their respective fields." The bylaws accompanying the 1930 revisions to the *Engineering Profession Act* included a Code of Ethics to which members and licensees were required to conform. This Code of Ethics contained 10 articles preceded by two "whereas" paragraphs as preamble.

In 1949, APEA Council approved a revised Code of Ethics that was ratified one year later by the membership and incorporated into the bylaws. This updated Code of Ethics was essentially the same as the 1930 version, save for minor article revisions and the addition of an article on signing and sealing—"He shall sign and seal only those plans, specifications and reports actually made by him or under his personal supervision and direction"—making 11 articles in all.

The Canons of Ethics, recommended by the Engineers' Council for Professional Development, was used to supplement the Code of Ethics. The canons consisted of 28 articles under four headings: Professional Life, Relations with the Public, Relations with Clients and Employers, and Relations with Engineers. While the canons were intended to be used as a guide, members were expected to conform to the Code of Ethics. The Code of Ethics applied to members, visitors or licensees, engineers-in-training, and students.

In 1969, APEA expanded to include professional geologists and geophysicists and changed its name to the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA). By 1975, the Code of Ethics had evolved into 21 articles relating to professional engineers, geologists, and geophysicists. The articles were assembled into three broad groupings: duties to the public, duties to the employer or client, and duties to the profession. A booklet published in 1978—*Guide to Professional Practice under the Code of Ethics*—elaborated on and explained most of the articles. Except for a 1981 revision to Article 20, which outlined conditions for making proposals, this Code of Ethics remained in effect until the late 1980s.

APEGGA Council established a task force in 1985 to review the Code of Ethics. The review was initiated to improve the Discipline Committee's ability to apply the Act to the discipline process and the internal consistency between individual articles. The membership supported the basic philosophical approach of including a general statement of principles as a preamble plus specific, enforceable Rules of Conduct. A revised Code of Ethics was developed through a series of drafts and approved at the 1987 annual general meeting. The membership also recognized that a supplementary document elaborating on the new Code of Ethics was required, and the first *Manual of Professional Practice Under the Code of Ethics* was published at that time.

A 1993 review of the commentaries on certain articles, as presented in the manual, to improve their applicability to APEGGA's Earth scientists stoked a desire to once again review the entire Code of Ethics. In early 1996, a Practice Standards subcommittee was established to review the codes of ethics of almost 25 professional associations, including their content (rules), presentation, and philosophical underpinnings.

At the conceptual level, discussions flowed back and forth between the subcommittee, other committees affected by possible changes (such as the Investigative Committee, the Discipline Committee, the Appeal Board, and the Practice Review Board), APEGGA Council, and APEGGA members (through *The PEGG* articles and responses). The topics of discussion illustrated the inherent difficulties in codifying philosophical principles: whether the articles should be prescriptive or broad principles, whether a hierarchy of articles was appropriate, and whether some articles applied to a professional's personal conduct and to their practice.

These wide-ranging discussions eventually converged into consensus on the current Code of Ethics, with five rules expressing broad principles of professional conduct and an expanded *Guideline for Ethical Practice*. APEGGA Council approved the Code of Ethics on Feb. 3, 2000, and it was ratified by the membership at the annual general meeting on April 28, 2000. It was subsequently incorporated into the *General Regulation* under the *Engineering, Geological and Geophysical Professions Act* in February 2003.

APPENDIX B—APEGA DISCIPLINE PROCESS

The privilege of self-governance comes with the responsibility to uphold public safety by ensuring there is a discipline process that effectively addresses those who fail to comply with proper standards of practice and conduct. At APEGA, this authority is accomplished through a disciplinary process involving an Investigative Committee, a Discipline Committee, and an Appeal Board. Complete and specific details of the process are contained in the *Engineering and Geoscience Professions (EGP) Act* and the *General Regulation*. These committees refer to Section 44(1) of the *EGP Act* and the *Ethical Practice* guideline when carrying out their tasks.

Complaints about the conduct of *permit holders*, *licensed professionals*, or members-in-training may be made by any individual, such as a member of the public or another APEGA member. When APEGA receives a complaint, the discipline process is set in motion.

The Investigative Committee receives complaints, which must be in writing and cannot be anonymous. Once the committee receives a complaint, an investigative panel—made up of members of the Investigative Committee—completes a preliminary investigation and makes a recommendation to the full committee on whether to proceed to a Discipline Committee hearing or terminate the investigation. If the Investigative Committee decides to terminate an investigation, the complainant may appeal that decision to the Appeal Board pursuant to Section 51(3) of the *EGP Act*.

If the investigation proceeds and the registrant voluntarily admits to *unskilled practice* or *unprofessional conduct* before the hearing takes place, the Investigative Committee may recommend an order and sanctions (referred to as a recommended discipline order [RDO]) to the Discipline Committee. The Discipline Committee appoints a case manager to review the order. If approved, the order will have the same force and effect as one made by the Discipline Committee after a hearing. If the RDO is not agreed upon, the matter must proceed to a hearing.

If the Investigative Committee does not recommend an RDO and the matter proceeds to a hearing, a formal notice of hearing is served by APEGA outlining the specific allegations. Discipline Committee hearings are held before a panel of the committee and are open to the public unless the panel directs otherwise. The Investigative Committee and the registrant under investigation (RUI) present evidence before the panel. The Investigative Committee counsel acts as the prosecutor. The RUI, akin to a defendant, may choose to be represented by legal counsel.

After hearing the evidence from both sides, the panel adjourns to consider the information and make its findings with respect to each charge. It issues the findings and supporting reasons to the RUI and the Investigative Committee, which each have an opportunity to suggest appropriate sanctions if the panel finds that *unskilled practice* or *unprofessional conduct* has occurred. The panel considers the suggestions and decides what discipline orders it will make. There are a wide range of orders available as per Section 63 of the *EGP Act*.

Once the panel issues its final decision, which includes the findings, reasons, and discipline orders, both parties may appeal any finding or order to the Appeal Board.

The Appeal Board's powers regarding appeals of Discipline Committee decisions are outlined in Section 69 of the *EGP Act*. Furthermore, as per Section 70, an RUI may appeal a decision of the Appeal Board to the Court of Appeal.

APPENDIX C—CASE STUDY SUMMARY

The table below contains a summary of case studies and connects them with the Rules of Conduct they address.

Case Study	Name	Commentary	Rule 1 Health, Safety, and Welfare of the Public	Rule 2 Competence	Rule 3 Integrity, Honesty, Fairness, and Objectivity	Rule 4 Statutes, Regulations, and Bylaws	Rule 5 Honour, Dignity, and Reputation
#1	Alex (air quality)	4.1.2 The Public Interest (Rule 1) 4.1.3 Environment (Rule 1)	✓				
#2	Stan and Kim (cased well)	4.1.2 The Public Interest (Rule 1) 4.1.3 Environment (Rule 1) 4.1.4 Safe Workplaces (Rule 1) 4.1.6 Professional Leadership (Rule 1)	✓				
#3	Pablo (leak detection)	4.1.2 The Public Interest (Rule 1) 4.1.3 Environment (Rule 1) 4.1.4 Safe Workplaces (Rule 1) 4.1.5 Whistleblowing (Rule 1)	✓				
#4	Sam (advertising skills)	4.2.1 Competence and Knowledge (Rule 2) 4.2.3 Presentation of Qualifications (Rule 2)		✓			

Case Study	Name	Commentary	Rule 1 Health, Safety, and Welfare of the Public	Rule 2 Competence	Rule 3 Integrity, Honesty, Fairness, and Objectivity	Rule 4 Statutes, Regulations, and Bylaws	Rule 5 Honour, Dignity, and Reputation
#5	Casey (falsified résumé)	4.1.1 Holding Paramount (Rule 1) 4.1.2 The Public Interest (Rule 1) 4.2.3 Presentation of Qualifications (Rule 2) 4.3.1 Practising the Professions (Rule 3) 4.5 Honour, Dignity, and Reputation (Rule 5)	✓	✓	✓		✓
#6	Hakim (site visit)	4.2.1 Competence and Knowledge (Rule 2) 4.2.5 Authentication and Validation (Rule 2) 4.3.8 Compensation for Professional Services (Rule 3) 4.5 Honour, Dignity, and Reputation (Rule 5)		✓	✓		✓
#7	Sarah and Odette (thorough review)	4.2.1 Competence and Knowledge (Rule 2) 4.2.5 Authentication and Validation (Rule 2)		✓			
#8	Kerry (pipe rack)	4.3.1 Practising the Professions (Rule 3)			✓		

Case Study	Name	Commentary	Rule 1 Health, Safety, and Welfare of the Public	Rule 2 Competence	Rule 3 Integrity, Honesty, Fairness, and Objectivity	Rule 4 Statutes, Regulations, and Bylaws	Rule 5 Honour, Dignity, and Reputation
#9	Charlie (crossing warning system)	4.3.3 Bias in the Professions (Rule 3)			✓		
#10	Rowan (software)	4.3.5 Maintaining Confidentiality (Rule 3)			✓		
#11	Shashi (permit to discharge)	4.1.1 Holding Paramount (Rule 1) 4.1.2 The Public Interest (Rule 1) 4.1.3 Environment (Rule 1) 4.1.5 Whistleblowing (Rule 1) 4.3.6 Disclosing Confidential Information (Rule 3)	✓		✓		
#12	Malinda and Frank (earth dam design)	4.1.2 The Public Interest (Rule 1) 4.1.5 Whistleblowing (Rule 1) 4.1.6 Professional Leadership (Rule 1) 4.3.7 Having Recommendations Overruled (Rule 3)	✓		✓		
#13	Silas (dryer vent)	4.4.1 Being Aware of the Law (Rule 4)				✓	
#14	OPQ (*Permit to Practice*)	4.4.1 Being Aware of the Law (Rule 4)				✓	

Case Study	Name	Commentary	Rule 1 Health, Safety, and Welfare of the Public	Rule 2 Competence	Rule 3 Integrity, Honesty, Fairness, and Objectivity	Rule 4 Statutes, Regulations, and Bylaws	Rule 5 Honour, Dignity, and Reputation
#15	Live Wire Hazard	4.4.1 Being Aware of the Law (Rule 4) 4.4.2 Making Employers and Clients Aware of the Law (Rule 4)				✓	
#16	EFG (load bearing wall)	4.4.2 Making Employers and Clients Aware of the Law (Rule 4)				✓	
#17	Katherine, Wei, and Leslie (language)	4.1.2 The Public Interest (Rule 1) 4.1.4 Safe Workplaces (Rule 1) 4.1.6 Professional Leadership (Rule 1) 4.2.1 Competence and Knowledge (Rule 2) 4.5 Honour, Dignity, and Reputation (Rule 5) 4.5.1 Discrimination and Human Rights (Rule 5)	✓	✓			✓

Case Study	Name	Commentary	Rule 1 Health, Safety, and Welfare of the Public	Rule 2 Competence	Rule 3 Integrity, Honesty, Fairness, and Objectivity	Rule 4 Statutes, Regulations, and Bylaws	Rule 5 Honour, Dignity, and Reputation
#18	Salima (project meeting)	4.1.4 Safe Workplaces (Rule 1) 4.1.6 Professional Leadership (Rule 1) 4.5 Honour, Dignity, and Reputation (Rule 5) 4.5.3 Conduct Towards Others (Rule 5)	✓				✓
#19	Chad (hiker)	4.5 Honour, Dignity, and Reputation (Rule 5) 4.5.5 Off-Duty Conduct (Rule 5)					✓