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Public guideline on supervising and assuming professional responsibility for the work of engineers-in-training

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Notice

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About this Engineers Canada paper
This national Engineers Canada paper was prepared by the Canadian Engineering Qualifications Board (CEQB) and provides guidance to regulators in consultation with them. Readers are encouraged to consult their regulators' related engineering acts, regulations, and bylaws in conjunction with this Engineers Canada paper.

About Engineers Canada
Engineers Canada is the national organization of the provincial and territorial associations that regulate the practice of engineering in Canada and license the country's 295,000 members of the engineering profession.

About the Canadian Engineering Qualifications Board
CEQB is a committee of the Engineers Canada Board and is a volunteer-based organization that provides national leadership and recommendations to regulators on the practice of engineering in Canada. CEQB develops guidelines and Engineers Canada papers for regulators and the public that enable the assessment of engineering qualifications, facilitate the mobility of engineers, and foster excellence in engineering practice and regulation.

About Equity, Diversity, and Inclusion
By its nature, engineering is a collaborative profession. Engineers collaborate with individuals from diverse backgrounds to fulfil their duties, tasks, and professional responsibilities. Although we collectively hold the responsibility of culture change, engineers are not expected to tackle these issues independently. Engineers can, and are encouraged to, seek out the expertise of Equity, Diversity, and Inclusion (EDI) professionals, as well as individuals who have expertise in culture change and justice.

1 Introduction

Provincial and territorial legislation requires that any person practising engineering be licensed to in the jurisdiction where they practise. Legislation often* includes an exemption which allows unlicensed individuals, including engineers-in-training to assist in the practice of engineering, provided that a professional engineer assumes full responsibility for the work. In some jurisdictions, elements of supervision may be governed by other provincial laws. However, this guideline was developed to guide professional engineers assuming responsibility for the work of engineers-in-training.

For the purposes of this paper, unless otherwise specified, the term "engineer-in-training" may refer to someone who is enrolled in a formal program (i.e. EIT, MIT, CEP, Engineering Intern), or to an individual who is undertaking supervised engineering practice with the intention of becoming an engineer in a jurisdiction without an official EIT program.

Engineers Canada provides the following related documents:

- »Regulator guideline for the Engineer-in-Training program;
- »Public guideline: Direct supervision;
- »Public guideline on the code of ethics;

- Public guideline on good character.

Please note that a glossary of terms follows the main body of the text.

2 Commitments

2.1 The regulator

While jurisdictional contexts differ, several good practices will ensure better protection of the public, and increased success of EITs who are applying for licensure:

- Encouraging employers to support the professional development of engineers-in-training;
- Providing guidance to employers to develop the requirements that will allow for the growth of engineers-in-training into highly trained, ethical professionals;
- Identifying continuing education opportunities to engineers-in-training;
- Establishing requirements for engineer-in-training programs, including practices for supervision of individual engineers-in-training;
- Making recommendations for continual improvement of the process required for professional licensure.

2.2 The employer

In Canada, although an engineer-in-training may perform engineering work, only a professional engineer licensed in the jurisdiction can take professional responsibility for it. Organizations employing engineers-in-training must therefore ensure that their work is properly supervised by one or more engineers working in the appropriate field. An engineer-in-training may be licensed as a professional engineer only when they have met their jurisdiction's experience requirements in addition to any other licensure requirements of their jurisdiction.

When the employer does not have a professional engineer to supervise and take responsibility for the engineer-in-training's engineering work, the employer must make arrangements with an external engineer to take on the accountability of that supervision and responsibility for the engineering work. This can be particularly challenging in situations when the engineer-in-training is working in an emerging field for which there is not yet a pool of qualified supervisors, or in situations when the engineer-in-training is working in an entrepreneurial environment where supervisors and the time for supervised practice are in limited supply. It is best to consult with the relevant jurisdiction's regulator when employers are unsure of how to proceed with supervision. Notably, mentorship programs do not meet the requirements of EIT supervision, as they do not provide supervision or approval of the engineering work completed by the EIT.

The employer should be committed to:

- Supporting the professional development of engineers-in-training;
- Implementing and continually improving a structured program to facilitate the development of engineer-in-trainings;
- Ensuring that a professional engineer employed at the organization is responsible for the work of each engineer-in-training, or that an appropriate third-party supervisor is hired to supervise.

3 Obligations of the responsible engineer

A responsible engineer is a licensed Professional Engineer who assumes supervision and development of the engineer-in-training and is accountable for the work of the engineer-in- training.

The responsible engineer should:

- Demonstrate the importance of subscribing to the *Code of Ethics* and practising to the benefit of the public;
- Discuss motivations, or traits required for professional registration and ways that they are demonstrated through the actions and behaviours of the applicant;
- Be aware of the jurisdiction's requirements for licensure and provide opportunities for the engineer-in-training to fulfill those requirements;
- Supervise engineers-in-training within their scope of practice only; For emerging disciplines or overlap

in specialty, consider inviting another Professional Engineer for co-supervision;

- Ensure that the work assigned is compatible with the engineer-in-training's education, comprise a variety of tasks of increasing responsibility and technical complexity, and provide the opportunity for the engineer-in-training to develop professional judgment and the ability to work effectively as part of a team;
- If the responsible engineer does not work for the employer and cannot determine the compatibility of the engineer-in-training's tasks with their education, there is a responsibility to discuss this matter with the engineer-in-training and help them bring it to the attention of the employer and possibly the regulator;
- Assist in the engineer-in-training's professional and technical development, to ensure that the engineer-in-training develops the core engineering competencies by providing guidance, encouragement and support as required, while assuming responsibility for the technical quality of the engineer-in-training's work;
- Consider the welfare and well-being, including workplace safety and mental health, of the engineer-in-training;
- Be aware of and receptive to issues that may be difficult for under-represented individuals, such as equity, unconscious bias, discrimination, and systemic barriers;
- When suitable based on the supervisory situation, provide examples of good work practices and organizational skills, such as note taking, logbook entries, calculations; assist in developing good filing and recording habits;
- Ensure that assignments are progressive in complexity and responsibility, helping to satisfy competency requirements and lead towards the engineer-in-training becoming an independent professional;
- Encourage the engineer-in-training to maintain a detailed experience record/competency based assessment (depending on the jurisdiction's requirement);
- Engage in frank and open conversations about the engineer-in-training's readiness for licensure, suggesting areas for improvement, and, when necessary, developing growth plans to prepare the supervisee for licensure;
- Encourage the engineering-in-training's professional growth through activities including but not limited to professional development opportunities, education on organizational structures and governance, participation in technical and professional society activities, and participation in management training and decision making;
- Be prepared to serve as a validator when the engineer-in-training is ready for registration as a professional engineer, and be ready to comment on the applicant's competencies, which may include technical competence, communication skills, project and financial management skills, team effectiveness, professional accountability, social, economic, environmental and sustainability competence, and personal continuing professional development skills;
- Promote the engineering profession and the purpose of regulation to engineers-in-training.

4 Responsibilities of the engineer-in-training

It is the responsibility of the engineer-in-training to comply with all applicable legislation. Regulators expect that engineers-in-training are proactive in developing into professional engineers who can safely and independently practice. Becoming a professional engineer goes beyond strictly technical abilities. It includes developing an understanding of the social and ethical significance of the professional's role in society.

In preparation for licensure, the engineer-in-training should:

- Understand and comply with the requirements of the regulator's engineer-in-training program;
- Be an active participant in their own training process;
- Document all work experience and professional development activities in a format that is acceptable to the regulator;
- Develop effective communication, decision-making and leadership skills;
- Use their intellectual and analytical abilities to further their professional development;
- Take responsibility for the development of their own careers;
- Engage their supervisors by sharing and discussing their intended experience examples and seeking feedback on gaps in exposure to any missing competencies and how to address them.

In recording and reporting work experience, the engineer-in-training should be:

- »As concise as possible;
- »Specific in describing work and identifying roles in larger projects;
- »Using the word “I” frequently;
- »Identifying gaps in their engineering experience timeline;
- »If confidentiality of projects is a concern, consulting with their employer and the regulator;
- »Flagging the difference between similar work experience reports.

In order to license an individual, regulators require that an engineer-in-training be able to demonstrate competencies in specific areas through examples that follow a set format:

- »**Situation:** Choose an example that demonstrates your knowledge of the competency.
- »**Action:** Describe your actions clearly so that someone not familiar with the situation can understand what happened.
- »**Outcome:** Summarize the result in a way that highlights your contribution.

In writing their examples, engineers-in-training are encouraged to:

- »Select examples that best demonstrate the specific competency they are seeking to illustrate; the examples can come from any time in their employment history;
- »Write their examples in first-person, as it is important to demonstrate the work that they have done, as opposed to the work of other team members;
- »Consider their audience, use general terminology during the assessment phase and avoid company-specific terms to provide context to the assessors;
- »Be specific in their examples, avoiding general work or routine tasks;
- »Include reference to theory and technical concepts;
- »Rather than including calculations, refer to what was calculated and why.

Appendix A - Definitions

Competency Based Assessment/Competency Assessment: The assessment of observable and measurable skills, knowledge, abilities, motivations, or traits required for professional registration that are demonstrated through the actions and behaviours of the applicant.

Engineer: An engineer (or professional engineer) is an individual who has been issued a license to practice engineering by a provincial or territorial engineering regulatory body after demonstrating that they have the requisite education, skills, knowledge and experience. An engineer is sometimes referred to as a licensed engineer, a registered engineer, a professional engineer, or an engineer.

Engineer-in-training: A candidate for engineering licensure who has met the academic and good character requirements, and is in a period of on-the-job training to develop engineering competencies through work experience, including an understanding of:

- »The application of the relevant Regulations, By-laws, Code of Ethics and Professional Standards of Conduct in a professional environment;
- »The responsibilities of participating in a self-regulated profession; and
- »The importance of an engineer’s relationship with clients, employers, the regulator and society.

Equivalent terms: In addition to the designation “Engineer-in-Training” Canadian regulators also use Member-in-Training, Candidate to the engineering profession, and Engineering Intern.

Mentor: An individual offering professional guidance and coaching to an engineer-in-training. A mentorship relationship is distinct and different from a supervisory one, in that a mentor does not assume professional responsibility for the engineer-in-training.

Regulator: A body empowered by legislation to establish the standards for admission to the profession and to regulate the practice of engineering in a province or territory.

Responsible engineer: An engineer who assumes responsibility for the engineering work of an engineer-in-training, and is licensed in the jurisdiction where the engineer-in-training is performing work.

Validator: Responsible engineers who review an applicant’s competency self-assessment and provides

validation and competence level ratings to the regulator for the examples that the applicant has assigned to them. A validator also provides overall feedback on the applicant's readiness for professional registration or licensure to the regulator.

Note: Situations where an engineer-in-training and responsible engineers have a personal relationship can present real or perceived conflicts of interest and are best avoided. If a relationship exists, regulators should be notified and may require additional references.

Notes

* As of 2024, this is not the case in Ontario, except when the person holds an official EIT designation. See PEO's Assuming Responsibility and Supervising Engineering Work Guideline (Accessed March 15, 2024) for jurisdiction-specific information.