

This guide supports applicants who submitted before May 15, 2023

VALIDATOR GUIDE Navigating Competency-Based Assessment







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In this guide, "applicant" refers to someone who has started the licence application process and is working to fulfill the experience requirement.



WELCOME

An applicant for a licence with Professional Engineers Ontario (PEO) has selected you as a validator to verify their experience. This guide explains your role in the application process. As Ontario's engineering regulator, we're responsible for licensing qualified applicants. Only those we license can legally take responsibility for engineering work in the province. Professional engineers must meet high standards to serve the public and ensure public safety. To assess the experience of those applying for a licence, we use a competency-based assessment (CBA) system.

Validating and rating an applicant's experience is essential to their application. This guide explains your responsibilities. Please read it thoroughly and follow each step in the "Validation Process" section. The guide covers:

- The CBA system and what it includes
- The rating system
- Roles and responsibilities within the CBA system
- An explanation of the CBA's 34 competencies. These include indicators or examples of common tasks identified in engineering practice that could describe an applicant's level of exposure to the competency
- A comprehensive guide to how each score on the rating scale corresponds to an applicant's level of experience with the competency
- The steps you must follow to complete the validation process

WHAT IS CBA?

CBA is a tool for assessing experience. It promotes a fair, transparent and consistent licensing process. Under the CBA system, applicants demonstrate competence in critical areas by providing work examples from different situations. This shows us they have the knowledge and skills needed to practise engineering safely and effectively. CBA measures competence to determine if applicants have gained enough knowledge through their work to earn a licence.

The information below outlines the CBA system's features. This includes 34 competencies grouped by category and the competency rating system.

COMPETENCIES

Competency measures the ability to perform a task. The CBA system includes 34 competencies that cover the diverse skills and knowledge professional engineers need to perform everyday tasks safely and effectively. Applicants must demonstrate a minimum level of competence in each one with a work example. Engineering work involves technical expertise, communication, project management, professional accountability and more. By meeting the minimum standards in all 34 areas, applicants show us they are ready to begin professional practice and capable of meeting our standards for public safety and professional integrity.

Among the 34, six professional standards competencies address crucial skills for engineering work in the province and have unique rating criteria. These cover knowledge of regulations, codes and standards, safety awareness and other professional obligations. Work experience from any country showing knowledge of engineering standards used in Canada or the international equivalent can demonstrate these competencies. For example, an applicant working at Shell Nigeria may use the same American Petroleum Institute standards as someone working for Shell Canada.

Professional standards competencies are identified in <u>Appendix A:</u> <u>34 Competencies</u>. The CBA system includes 34 competencies, covering the diverse skills and knowledge professional engineers need to perform everyday tasks safely and effectively.

COMPETENCY CATEGORIES

The 34 competencies are grouped and numbered by category. They represent areas where professional engineers must prove knowledge to obtain a licence. Applicants must demonstrate competence across each category to obtain a licence. The seven competency categories are:

- 1. Technical competence
- 2. Communication
- 3. Project and financial management
- 4. Team effectiveness
- 5. Professional accountability
- 6. Social, economic, environmental and sustainability
- 7. Personal continuing professional development

<u>Appendix A: 34 Competencies</u> lists all 34 competencies grouped by category. Each category and competency description notes a minimum rating and identifies professional standards competencies.

COMPETENCY RATING SYSTEM

Validators must use a scale from 0 to 5 to rate the level of competence shown by each work example the applicant provides. Applicants must meet the minimum ratings for each competency. Additionally, each category requires they meet the minimum average. PEO assessors calculate the category rating average by taking the mean value of their ratings for each competency in the category. Most competencies require a minimum rating of 1. However, professional standards competencies require a rating of 2 or 3, depending on the specific competency. <u>Appendix A: 34 Competencies</u> notes the minimum ratings for each competency and competency category.

<u>Appendix B: The Competency Rating Guide</u> shows how progressive levels of work experience correspond to a score on the rating scale.

Meeting these requirements shows an applicant can work without supervision. This demonstrates competence at entry to practice, an essential factor in determining their eligibility for licensure.



CBA ROLES AND RESPONSIBILITIES

APPLICANT

Applicants provide us with a complete competency-based assessment application to evaluate their experience requirement for licensure. This includes providing work examples to demonstrate each competency, conducting a self-assessment, and choosing validators to validate and rate their examples.

VALIDATOR

Validators rate the applicant's work examples and provide feedback for each assigned competency. To assess an applicant's skills, validators should have direct, firsthand knowledge of their work, including supervising and taking technical responsibility.

Ideally, a validator is a direct supervisor from the same workplace as the example. They can also be managers, mentors, clients or colleagues from other workplaces. Even if a validator did not work with the applicant during the time of their work example, they should have enough knowledge about the applicant's skills to validate and rate their competence for the example effectively. For example, a current supervisor who understands an applicant's skill level could objectively validate and rate their work example from a different workplace. The closer a validator has worked with an applicant, the stronger their application. PEO assessors determine if a validator is acceptable and consider family members case-by-case.

For work experience in Canada, the validator must be a registered professional engineer (P.Eng.) in Canada at the time of validation.

For experience outside Canada, the validator should be:

- A senior engineering practitioner
- Licensed in their jurisdiction
- Able to provide proof of engineering qualifications upon request, including academic, engineering and professional credentials

Professional engineers must meet high standards to serve the public effectively and ensure public safety.

Validators and applicants must provide ratings independently of each other. An applicant may have multiple validators but cannot assign more than one to the same competency.

ASSESSOR

PEO assessors determine whether applicants have the skills to meet the experience requirement. Their ratings alone determine readiness for licensure. The ratings provided by the validator and applicant are supplementary and assist them with their assessment. Assessors review applicant submissions and validator feedback, score each competency using the rating scale and make the final recommendation on licensure.

VALIDATION PROCESS

You have been asked to validate specific competencies. The validation process outlined below will require you to:

- Confirm the competency has been met
- Verify technical ability, understanding and the application of engineering principles and theories for each situation
- Confirm the location, breadth and depth of experience
- Score each competency using the rating scale
- Provide feedback on the work examples for the competencies you have rated
- Share your engineering qualifications if requested

To complete the validation process, follow these sequential steps:

- 1. Look for the validator invitation email from PEO containing the fillable PDF 'CBA P.Eng. Application Form' and the 'Validator Rating Sheet.' If you have not received the email, please check your spam filter.
- 2. Open the "CBA P.Eng. Application Form" and review the applicant's competency responses.
- 3. On the 'Validator Rating Sheet,' use the drop-down menu and the rating scale to rate each assigned competency from 0 to 5.
- 4. Provide overall feedback on the applicant's readiness for professional licensure.

- 5. On the 'Validator Rating Sheet,' enter your full name, licence number (if applicable), employer, date and signature on page 2.
- 6. You can decline to complete the process if you are unwilling or unable to verify the applicant's competencies. If you wish to decline, please see page 2 of the 'Validator Rating Sheet.'
- 7. Please return the completed and signed PDF to PEO by replying to the validator invitation email.

Thank you for your vital role in an applicant's path to licensure.

PEO abides by a privacy policy for collecting, using, disclosing and retaining personal information.

APPENDIX A: 34 COMPETENCIES

This section lists 34 competencies grouped and numbered by category. Each competency is paired with indicators of common tasks in engineering practice that could describe the applicant's level of exposure to the competency. Minimum rating requirements and professional standards competencies are noted. In this section, "you" refers to the applicant.

CATEGORY 1: TECHNICAL COMPETENCE

In this category, you must show the ability to integrate safety regulations, technical codes and standards into project design. There are 10 competencies in this category. Minimum Average: 3

COMPETENCY 1.1

You demonstrate knowledge of the regulations, codes and standards used in Canada or the international equivalent, including relevant local engineering procedures and practices. This is a professional standards competency. **Minimum Rating: 3**

Indicators

- 1. You identified and complied with legal and regulatory requirements for project activities.
- 2. You used knowledge of codes and regulations when choosing design materials.
- 3. You prepared reports gauging project compliance with regulations, codes and standards used in Canada or the international equivalent.
- 4. You recognized the need to design for code compliance while ensuring buildability.
- 5. You identified relevant provincial, territorial, regional and Indigenous codes, standards or practice guidelines. If the project occurred outside Canada, explain how these applied in your local jurisdiction.
- 6. You integrated knowledge of provincial, regional, and Indigenous codes, standards, regulations and practice guidelines into design materials.
- 7. You recognized the need to respect regional traditions and Indigenous regulations on a project.

COMPETENCY 1.2

You understand the materials, operations, project and design constraints that best fit the purpose and can address interdisciplinary impacts. **Minimum Rating: 1**

Indicators

- 1. You showed knowledge of materials, operations, project and design constraints such as cost, design, materials, labour, time, budget and production.
- 2. You showed knowledge of and coordinated with other engineering and professional disciplines.

COMPETENCY 1.3

You analyze technical risks and propose solutions to reduce them. Minimum Rating: 1

- 1. You showed knowledge of system protection and damage or hazard mitigation.
- 2. You identified risk areas, including their causes and impacts.
- 3. You created plans to manage and reduce risks.
- 4. You understood the difference between technical risks and public safety issues.

COMPETENCY 1.4

You apply engineering knowledge to design solutions. Minimum Rating: 1

Indicators

- 1. You prepared technical specifications.
- 2. You used theory and calculations to arrive at solutions.
- 3. You developed a unique design solution that wasn't possible with standard methods.

COMPETENCY 1.5

You understand solution methods and can independently verify the results. Minimum Rating: 1

Indicators

- 1. You understand engineering principles used in the application of computer design programs and can explain the methods used to verify the results.
- 2. You independently reviewed and validated solution or analysis methods.

COMPETENCY 1.6

You know the safety regulations, codes, and standards used in Canada or the equivalent international standard. This is a professional standards competency. **Minimum Rating: 3**

Indicators

- 1. You identified, incorporated or participated in reviewing safety considerations, procedures, and equipment related to system operations and maintenance programs.
- 2. You reviewed and incorporated safety and system operating procedures.
- 3. You showed specific knowledge of safety regulations.
- 4. You included safety considerations in the design and all other professional activities.
- 5. You understood and addressed associated safety risks.
- 6. You identified protective equipment and process modifications to manage safety risks.

COMPETENCY 1.7

You understand systems and components of systems. Minimum Rating: 1

Indicators

- 1. You understood each element in a process.
- 2. You showed a holistic understanding of the system's behavioural interactions and limitations.
- 3. You managed processes in a system, including monitoring and modifying them, to get the best results.

COMPETENCY 1.8

You have been exposed to the stages of a process or project life cycle, from concept and feasibility analysis through implementation. **Minimum Rating: 1**

Indicators

You showed an understanding of project concerns and stakeholder roles in different project stages through:

- 1. Identification: You generated an initial project idea and a preliminary design.
- 2. Preparation: You developed a detailed design addressing the technical and operational aspects of the project.
- 3. Appraisal: You analyzed the project from technical, financial, economic, social, institutional and environmental perspectives.
- 4. Specifications and tender document preparation: You created tender documents, invited and opened tenders, conducted pre-qualification, evaluated bids and awarded work.
- 5. Implementation and monitoring: You conducted project activities while monitoring progress and feedback.
- 6. Evaluation: You conducted periodic project reviews and provided feedback for the next cycle.

COMPETENCY 1.9

You understand the roles of peer review and quality management. This is a professional standards competency. Minimum Rating: 3

Indicators

- 1. You performed checks, including field checks, to confirm design validity.
- 2. You followed quality management principles such as guidelines on quality management, document authentication, use of the seal, reviewing work prepared by others, and other policies related to regulatory practice.
- 3. You developed quality control plans that outline the frequency and test parameters for specific processes or products.
- 4. You reviewed test results, assessed adequacy and proposed recommended actions.
- 5. You engaged in peer review.
- 6. You showed that completed projects, systems or sub-systems met functional and operational objectives.

COMPETENCY 1.10

You can transfer design intentions and information to drawings and design documents. Minimum Rating: 1

Indicators

- 1. You reviewed the designs of others, communicated findings or issues, and suggested alternatives.
- 2. You communicated ideas and concepts to fellow project team members.
- 3. You recognized the value of project completion reports and lessons-learned reports that you or others could apply to future projects.
- 4. You created sketches, notes, documentation, and design documents to develop proposals and initial and final drawings for client approval and regulatory acceptance.

CATEGORY 2: COMMUNICATION

In this category, you must demonstrate the ability to communicate technical and non-technical information to diverse audiences through reports, presentations and meetings. There are three competencies in this category. Minimum Average: 3

COMPETENCY 2.1

You demonstrate practical verbal communication skills when interacting with team members, clients, contractors and the public. **Minimum Rating: 1**

- 1. You communicated clearly.
- 2. You shared official project data with team members, clients and contractors.
- 3. You clearly expressed technical and non-technical issues and ideas to all personnel.
- 4. You conducted presentations for technical and non-technical groups, including superiors, subordinates, colleagues, and clients.
- 5. You presented project parameters to the public.
- 6. You actively participated and contributed to meetings.

COMPETENCY 2.2

You demonstrate practical written communication skills when interacting with team members, clients, contractors and the public. **Minimum Rating: 1**

Indicators

- 1. You tailored communications to the intended audience.
- 2. You wrote and reviewed technical documents.
- 3. You wrote clear memos and reports for technical an non-technical personnel.
- 4. You used drawings and sketches to show key points and concepts.
- 5. You wrote a report on a technical subject.
- 6. You wrote a report on field observations.
- 7. You received training in technical report writing.
- 8. You showed proficiency in standard office software like Excel, Word and Outlook.

COMPETENCY 2.3

You can review essential documents. This is a professional standards competency. Minimum Rating: 3

Indicators

1. You reviewed technical documents, understood their implications and summarized key points.

CATEGORY 3: PROJECT AND FINANCIAL MANAGEMENT

In this category, you must demonstrate the ability to manage resources, budgets, schedules and client expectations while understanding a project's financial and business aspects and adapting to changes throughout its lifecycle. There are five competencies in this category. Minimum Average: 2

COMPETENCY 3.1

You understand project management principles. Minimum Rating: 1

Indicators

- 1. You showed awareness of resource planning, budgeting, change management, scope management, scheduling and unforeseen issues in managing a project from start to finish.
- 2. You understood the impacts, benefits and risks of different design solutions on a project.
- 3. You understood the needs and expectations of both internal and external clients.

COMPETENCY 3.2

You take on progressive responsibility in project planning and execution. Minimum Rating: 1

- 1. You contributed to and followed the development of project management plans.
- 2. You stayed informed about future improvements, demands and ongoing projects.
- 3. You took on increasing client interaction and management responsibilities over time.
- 4. You showed increased engagement in project planning and collaboration in training.
- 5. You helped manage and adjust project schedules.
- 6. You stayed aware of how issues related to other fields could impact the project and maintained communication to address them.

COMPETENCY 3.3

You adjust expectations based on available resources. Minimum Rating: 1

Indicators

- 1. You regularly updated and communicated the status of the schedule and budget.
- 2. You provided market and materials availability assessments for a project.
- 3. You met deadlines.

COMPETENCY 3.4

You understand the financial aspects of the work. Minimum Rating: 1

Indicators

- 1. You showed awareness of the project budget during design and construction.
- 2. You provided technical and financial reports and compared available options.
- 3. You demonstrated the role of finance in business decisions.
- 4. You demonstrated principles of budgeting and financing.
- 5. You demonstrated relevant business processes.
- 6. You showed an understanding of working with and developing contracts.

COMPETENCY 3.5

You request and respond to feedback. Minimum Rating: 1

Indicators

- 1. You applied lessons learned after receiving feedback.
- 2. You demonstrated a willingness to accept comments and criticism.
- 3. You demonstrated how you responded to feedback.
- 4. You demonstrated how you responded when the project scope changed.

CATEGORY 4: TEAM EFFECTIVENESS

In this category, you must demonstrate the ability to work with diverse professionals, actively engage in discussions, and resolve conflicts within a team. There are two competencies in this category. Minimum Average: 3

COMPETENCY 4.1

You collaborate respectfully with others, including those from other disciplines. Minimum Rating: 1

Indicators

- 1. You showed respect for the responsibilities and expertise of others.
- 2. You integrated input from other professionals into engineering work.
- 3. You actively participated in team discussions.

COMPETENCY 4.2

You work to resolve differences. Minimum Rating: 1

- 1. You showed leadership in achieving team goals and resolving conflicts.
- 2. You facilitated conflict resolution.
- 3. You received training in conflict resolution.

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CATEGORY 5: PROFESSIONAL ACCOUNTABILITY

In this category, you must demonstrate adherence to ethical standards and the ability to fulfill professional obligations, seek guidance when needed, and understand the responsibilities of self-regulation within engineering practice. There are six competencies in this category. Minimum Average: 3

COMPETENCY 5.1

You can apply the Code of Ethics principles or its international equivalent in the engineering environment. This is a professional standards competency. **Minimum Rating: 3**

Indicators

- 1. You complied with the Code of Ethics in your jurisdiction of practice.
- 2. You upheld professional ethics and met obligations to employers, clients, colleagues and the profession while complying with corporate directives.
- 3. You understood the concept of self-governance and the rights and responsibilities granted to professional engineers.
- 4. You adhered to engineering legislation in your jurisdiction of practice.
- 5. You used practice guidelines in the context of self-regulation and professional practice.

COMPETENCY 5.2

You are aware of the scope of practice and professional limitations. Minimum Rating: 1

Indicators

- 1. You requested assistance and integrated feedback.
- 2. You showed engagement with your supervisor.
- 3. You asked questions when necessary.

COMPETENCY 5.3

You understand how conflict of interest affects professional practice. Minimum Rating: 1

Indicators

1. You showed an understanding of how conflict of interest affects your practice.

COMPETENCY 5.4

You understand professional accountability. Minimum Rating: 1

Indicators

1. You showed awareness of professional liability in all stages of design, construction and inspection.

COMPETENCY 5.5

You understand the appropriate use of the stamp and seal. Minimum Rating: 1

Indicators

1. You showed awareness and understanding of the appropriate use of the stamp and seal.

COMPETENCY 5.6

You understand your strengths and weaknesses and how they affect your work. Minimum Rating: 1

Indicators

1. You created a self-criticism list and identified ways to address weaknesses.

The closer a validator has worked with you, the stronger your application.

CATEGORY 6: SOCIAL, ECONOMIC, ENVIRONMENTAL AND SUSTAINABILITY

In this category, you must demonstrate consideration of public safety and sustainability in project design while understanding the broader impact of engineering work on society and the environment. There are five competencies in this category. Minimum Average: 2

COMPETENCY 6.1

You know the safeguards to protect the public and methods to mitigate adverse impacts. Minimum Rating: 1

Indicators

1. You prepared public safety regulations and advice during project design and implementation.

2. You showed an understanding of the effects of climate change.

COMPETENCY 6.2

You understand the relationship between engineering activity and the public. This is a professional standards competency. **Minimum Rating: 2**

Indicators

1. You recognized the value and benefits of engineering work to the public.

2. You prepared a project public impact report.

COMPETENCY 6.3

You understand the role of regulatory bodies in the practice of engineering. Minimum Rating: 1

Indicators

- 1. You recognized the need to respect regional traditions or Indigenous regulations on a project.
- 2. You showed an understanding of the role and regulations of other professions that overlap with engineering.

COMPETENCY 6.4

You understand why sustainability clauses are added to practice guidelines applicable to your discipline. Minimum Rating: 1

Indicators

1. You demonstrated awareness of sustainability clauses added to practice guidelines applicable to your area.

COMPETENCY 6.5

You consider how to apply and promote sustainability principles in engineering work. Minimum Rating: 1

- 1. You included a sustainability analysis in a project description or proposal.
- 2. You made revisions during project design and implementation and can list them.

CATEGORY 7: PERSONAL CONTINUING PROFESSIONAL DEVELOPMENT

In this category, you must demonstrate the ability to engage in self-directed and formal learning activities, address knowledge gaps and actively participate in professional communities to stay current in your practice. There are three competencies in this category. Minimum Average: 3

COMPETENCY 7.1

You demonstrate completion of professional development activities. Minimum Rating: 1

Indicators

- 1. You participated in community, technical, industry or professional association committees and task forces.
- 2. You engaged in self-directed and formal professional development activities to learn, stay current in your practice and report progress to relevant parties.

COMPETENCY 7.2

You are aware of your knowledge gaps and areas requiring development. Minimum Rating: 1

Indicators

1. You performed a gap analysis of your knowledge and skills. 2. You identified areas of weakness requiring additional training.

COMPETENCY 7.3

You have a professional development plan to address knowledge gaps and stay current in your practice. Minimum Rating: 1

Indicators

1. You established a plan to pursue training to remedy gaps in knowledge.

2. You participated in self-directed or formal professional development activities to stay current in your practice.

APPENDIX B: COMPETENCY RATING GUIDE

This section shows how each number on the rating scale aligns with an applicant's degree of experience. **The Rating Level Summary** provides an overview of the experience level associated with each rating. **The Rating Level Descriptions** section shows ratings in relation to the level of experience within specific competency categories.

	RATING LEVEL SUMMARY	
0	Has little or no experience with the competency. Supervision needed = Significant Responsibility and risk = Minimal Work complexity = Minimal	The applicant has no exposure to the competence, cannot independently perform tasks of minimal risk and complexity, and requires significant, ongoing supervision or intervention to ensure safety in their performance.
1	Work experience shows some awareness of the competency. Supervision needed = Significant Responsibility and risk = Minimal Work complexity = Minimal	The applicant cannot independently perform tasks of basic complexity and risk and requires a significant and ongoing level of supervision or intervention to ensure quality and safety in their performance.
2	Shows awareness of the competency but minimal practical experience. Supervision needed = Considerable Responsibility and risk = Some Work complexity = Some	The applicant demonstrates competence in key areas but requires considerable supervision, guidance and correction to safely and effectively perform tasks with some complexity and risk.
3	Has moderate experience with the competency while working under supervision. Supervision needed = Some Responsibility and risk = Considerable Work complexity = Moderate	The applicant can work mostly independently, demonstrating competence in key areas, but may need support to perform moderately complex tasks that involve considerable risk safely and effectively.
4	Has advanced knowledge of the competency and conducts complex activities with minimal supervision. Supervision needed = Minimal Responsibility and risk = Significant Work complexity = Considerable	The applicant requires occasional supervision to ensure quality and safety while performing considerably complex tasks with significant risks.
5	Shows ability to carry out competency activities with advanced skills and complexity without supervision. Supervision needed = None Responsibility and risk = Total Work complexity = Significant	The applicant can independently perform highly complex, high-risk tasks safely and effectively without supervision.

	RATING LEVEL DESCRIPTIONS				
	CATEGORY 1	2-6	7		
0	• Has little or no exposure to the competency.	• Has little or no exposure to the competency.	 Has not completed continuing professional development (CPD). Has not completed a gap analysis to determine weak areas. Has not developed a plan for future CPD. 		
1	 Receives training in various office, plant, field or laboratory engineering phases. Assigned tasks may include preparing simple plans, designs, plots, calculations or costs of material following established codes, standards and drawings. May carry out routine technical surveys or inspections and prepare reports. Has no supervisory role. 	 Receives on-the-job training. At an early, beginner or basic level; substantial development needed for competency. Carries out low-complexity activities. Has no supervisory role. 	 Has completed a few CPD activities. Incomplete gap analysis or weakness assessment. No or inadequate CPD plan; multiple gaps in knowledge not sufficiently addressed. 		
2	 Given tasks of limited scope and complexity or works on minor phases of broader projects. Uses standard engineering methods and tech- niques to solve problems. Assists senior engineers with technical tasks needing calculation accuracy, complete data and adherence to prescribed testing, analysis or design. May assign and check the work of up to five non-engineering staff. Often considered part of an engineer's training and development. 	 Performs activities of limited scope and complexity. Usually relies on predetermined standards and techniques to solve problems. Assists senior engineers. Typically considered a continuation of an engineer's training and development. Marginally skilled; needs training to bring skills to a professional level. 	 Has completed some CPD activities. Gap analysis is marginal; weak areas not sufficiently assessed. Has developed a marginal CPD plan, but not all knowledge gaps are addressed. 		
3	 Given tasks of moderate scope and complexity or during standalone phases of major projects. Usually solves problems by combining standard procedures and their modifications or methods developed in previous assignments. May assign and check the work of up to five non-engineering staff. Often considered ready to assume professional engineering responsibilities. 	 Performs activities of moderate scope and complexity. Provides significant assistance to senior engineers. Usually solves problems by combining standard procedures and their modifications or methods developed in previous assignments. Possesses adequate skills in this competency. Often considered ready to assume pro- fessional engineering responsibilities. 	 Has completed sufficient CPD. Gap analysis adequate; weak areas adequately assessed. Has developed an adequate CPD plan; knowledge gaps addressed. 		

	RATING LEVEL DESCRIPTIONS				
	CATEGORY 1	2-6	7		
4	 Conducts tasks requiring general engineering knowledge and understands the impact on other fields. Uses a combination of standard procedures and new approaches to solve problems. Solves assigned problems by devising new approaches, applying existing criteria in new ways and drawing conclusions from comparable situations. Participates in planning to meet objectives. May give technical guidance to junior engineers, technologists and technicians. Often considered working at a fully qualified professional engineering level. 	 Carries out and is responsible for varied activities. Solves assigned problems by devising new approaches, applying existing criteria in new ways and drawing con- clusions from comparable situations. Participates in planning to meet objectives. May guide junior engineers, technolo- gists and technicians. Possesses strong skills in this com- petency; above-average ability is apparent. Often considered working at a fully qualified professional engineering level. 	 Has completed a significant amount of CPD activities. Robust gap analysis; areas of weak- ness are well-assessed. Has developed a robust CPD plan; gaps in knowledge are well- addressed. 		
5	 Applies extensive engineering knowledge to projects, independently plans and coordinates complex tasks. Solves problems using skill, creativity and proficiency by adapting established guidelines, creating new approaches, applying existing criteria in new ways, and drawing conclusions from comparable situations. Participates in short- and long-term planning. Makes independent decisions to develop practical and cost-effective solutions. Assigns and outlines work; provides advice on approaches to more challenging problems. 	 Conducts engineering activities of advanced scope and complexity. Independently coordinates complex tasks. Solves problems using skill, creativity and proficiency by adapting established guidelines, creating new approaches, applying existing criteria in new ways, and drawing conclusions from comparable situations. Participates in short- and long-term planning. Makes independent decisions to develop practical and cost-effective solutions. Has superior skills in this competency; provides mentorship or supervision. 	 Shows leadership in CPD activities. Excellent gap analysis: very well assessed areas of weakness. Has developed a superior CPD plan to address all gaps in knowledge and stay current in the field of practice. Develops CPD plans with others and may instruct courses 		