

COUNCIL APPROVES PRACTICE STANDARDS

By Bernard Ennis, P.Eng.

Three new practice standards have been approved by PEO council and, once proclaimed by the lieutenant governor, will be incorporated into O. Reg. 260/08, which contains all of PEO's practice standards. Since these are regulations, practitioners are legally required to comply with the measures identified in the standards.

NEW PRACTICE STANDARDS

The three new standards cover practice issues in the areas of environmental, civil and structural engineering. The first establishes a standard for the form and content of engineering evaluation reports for drinking water systems that must be submitted to the Ministry of the Environment. This standard was prepared in response to the ministry's concerns about the number of reports they received that were deemed unacceptable. Rather than impose their standards on professional engineering work, the ministry relied on PEO to prescribe how practitioners are to obtain the information needed for the reports and to describe the reporting requirements.

The second standard deals with the preparation of environmental site assessment reports. These reports are typically done for the purpose of producing a record of site condition subject to O. Reg. 170/03. However, sometimes engineers carry out these assessments for other reasons and, if compliance with O. Reg. 170/03 is not necessary, will not prepare a report acceptable to the Ministry of the Environment. Yet the ministry often receives reports that were clearly not intended to comply with regulation. To ensure reports are not used for purposes for which they were not intended, the practice standard requires practitioners to clearly state in the opening of the report whether the assessment complies with the requirements of O. Reg. 170/03, is done according to a different standard, or is not done in accordance with any standards.

The third standard requires all professional engineers submitting drawings for permits for buildings subject to the exemption provided by section 12(6)2 of the *Professional Engineers Act*—that is, buildings that do not require an architect—to include a building code compliance data table on the drawings. The standard prescribes the information that must be included in the data table. Rules under the *Architects Act*

make it necessary for architects to provide a similar table for all buildings that require an architect, but there is no formal requirement for engineers to do the same when they provide similar drawings. Building officials have noted the discrepancy and the fact that engineers rarely provide these tables. PEO has produced this standard to facilitate the permit process by making information provided by the building designers consistent, regardless of whether they are engineers or architects.

NEW GUIDELINE

PEO council also recently approved a new practice guideline, *Professional Engineers Developing Software for Safety Critical Engineering Applications*. This guideline recommends good due diligence practices for practitioners developing software to be used in hardware or systems that impact on health and safety, such as railway signaling systems, power plant control systems or medical devices. Guidelines do not have the legal force of practice standards. These documents are intended to clarify the legal, ethical and professional obligations of practitioners carrying out specific engineering activities. They provide advice and recommendations on how practitioners should act to provide professional services in a manner consistent with the reliance on the profession made by society. The guideline is available from the Publications or How we Protect the Public sections of the PEO website.

Bernard Ennis, P.Eng., is PEO's director, policy and professional affairs.

REGULATION 260/08 AMENDED

On March 28, 2014, the government filed Regulation 91/14, amending Regulation 260/08, (performance standards), made under the *Professional Engineers Act*. The amendments will be effective on July 1, 2014. Following is the text of the amended or new sections of Regulation 260 as of July 1. To view Regulation 260, as amended, visit www.peo.on.ca.

DEFINITIONS

1. In this regulation, ...
 "building code" means Ontario Regulation 332/12 (Building Code) made under the *Building Code Act, 1992*. O. Reg. 91/14, s. 1, 4.

DESIGN OF CERTAIN BUILDINGS

- 1.1 The following are prescribed as performance standards with respect to the preparation and provision by a professional engineer of a design for the construction, enlargement or alteration of a building described in paragraph 2 of subsection 12(6) of the act:
 1. In preparing the design, the professional engineer shall provide information about the building's compliance with the building code. The information shall be organized in a table and shall be listed under the following headings:

- i. Project description (new, addition, alteration, change of use).
 - ii. Major occupancy or occupancies.
 - iii. Importance category.
 - iv. Building area.
 - v. Gross area of building.
 - vi. Number of storeys above and below grade.
 - vii. Building height.
 - viii. Number of streets and access routes.
 - ix. Building classification.
 - x. Sprinkler system proposal.
 - xi. Standpipe requirements.
 - xii. Fire alarm requirements.
 - xiii. Adequacy of water service or supply for fire fighting purposes.
 - xiv. Whether the building is a high building.
 - xv. Construction restrictions (combustible, non-combustible or both).
 - xvi. Mezzanine information (number, area, locations).
 - xvii. Occupancy load per floor and method of determination.
 - xviii. Provision of barrier-free design.
 - xix. Presence of hazardous materials in the building.
 - xx. Requirements respecting fire resistance rating of horizontal assemblies and supporting members.
 - xxi. Exterior wall construction type and requirements respecting spatial separations.
 - xxii. Plumbing fixture requirements.
2. The professional engineer shall ensure that the table is affixed to the topmost sheet of the drawings that he or she prepares as part of the application for a building permit for the building's construction, enlargement or alteration, or is included in the drawings in a similarly prominent location.
 3. The professional engineer shall provide a copy of the table to any other person who the professional engineer knows to be responsible, for the purposes of the building code, for any portion of the design of the construction, enlargement or alteration of the building. 2014, O. Reg. 91/14, s. 2.

COMMENCEMENT

4. REVOKED, and the following substituted:

ENGINEERING EVALUATION REPORTS UNDER SAFE DRINKING WATER ACT, 2002 (DRINKING WATER SYSTEMS)

- 4.(1) In this section, "available" means, in reference to a document, that it is present at or immediately accessible from the site

of a drinking water system, whether in paper or electronic format;

"distribution system", "drinking water system", "raw water" and "raw water supply" have the same meaning as in the *Safe Drinking Water Act, 2002*;

"Drinking Water Systems Regulation" means Ontario Regulation 170/03 (drinking water systems) made under the *Safe Drinking Water Act, 2002*;

"operational check equipment" means equipment installed in a drinking water system, or portable equipment present at the site of a drinking water system, for the purpose of carrying out,

- (a) operational checks, sampling and testing under Schedule 6 to the Drinking Water Systems Regulation, and
- (b) the maintenance and operational checks under Schedules 8 and 9 to that regulation. O. Reg. 91/14, s. 3.

- (2) The following are prescribed as performance standards with respect to the assessment of a drinking water system and the preparation of an engineering evaluation report on a drinking water system under Schedule 21 to the Drinking Water Systems Regulation by a holder of a licence, temporary licence or limited licence:

1. Subject to paragraph 17, the holder shall complete and deliver the report in a timely manner that gives the owner of the drinking water system a reasonable opportunity to meet the timing requirements set out in Schedule 21 to the Drinking Water Systems Regulation.
2. The holder shall ensure that the report contains all of the information that section 21-5 of Schedule 21 to the Drinking Water Systems Regulation requires in order for the report to comply with that section.
3. The information and opinions that the holder provides in the report shall be based on observations made during one or more visits to the drinking water system by the holder or by a person under his or her supervision, and the holder shall include in the report,
 - i. the date of every visit to the drinking water system for the purposes of preparing the report by the holder or by a person under his or her supervision,
 - ii. in each case, the name of the person who visited the drinking water system, and
 - iii. in the case of a visit by a person under the holder's supervision, the person's title and relationship to the holder.
4. The holder shall determine and identify the location of the raw water supply for the drinking water system and shall provide as part of the report,
 - i. an indication as to whether the source of the raw water supply is ground water, surface water, or a combination of the two,
 - ii. a site plan showing,

- A. the boundary of the drinking water system, any significant topographic features within those boundaries, and an indication of site grading that may impact on the source of the raw water supply,
 - B. the location of all parts of the drinking water system used for the collection, storage and treatment of raw water, and
 - C. the distribution system used for distributing treated water to users of the drinking water system, and
- iii. the information described in paragraph 5 or 6 or both, as the circumstances require.
5. If any part of the source of the raw water supply is ground water, the holder shall,
- i. include in the site plan the location of any wells that form part of the drinking water system and the location of any known water courses, drains, septic tanks, tile fields and any other structures that may affect the quality of the well water, and
 - ii. a description of the physical characteristics of each well that forms part of the drinking water system including, if available, a copy of the well record, and an indication of whether any of the wells obtains water from a raw water supply that was determined for the purposes of section 2 of the Drinking Water Systems Regulation to be ground water that is under the direct influence of surface water.
6. If any part of the source of the raw water supply is surface water, the holder shall state the name of the surface water body.
7. The holder shall provide in the report a description of the drinking water system, which shall include, at a minimum,
- i. an estimate of the number of persons served by the drinking water system,
 - ii. a schematic diagram of any treatment process used in the drinking water system for the purpose of meeting the requirements of Schedule 2 to the Drinking Water Systems Regulation, and
 - iii. a list of all water treatment equipment and operational check equipment installed in the drinking water system.
8. The opinion that the holder provides for the purposes of subclause 21-5 (b)(i) of Schedule 21 to the Drinking Water Systems Regulation respecting whether all equipment required in order to ensure compliance with Schedule 2 to that regulation is being provided, shall be with respect to all expected flow conditions and quality variations.
9. In addition to the opinions required to be included in the report by section 21-5 of Schedule 21 to the Drinking Water Systems Regulation, the holder shall provide in the report his or her opinion regarding,
- i. the reliability of the water treatment equipment and operational check equipment listed under subparagraph 7 iii and whether there are any redundancies in or observable problems with it, and
 - ii. the operating conditions that must be maintained for the water treatment equipment listed under subparagraph 7 iii in order to ensure that the requirements of Schedule 2 to the Drinking Water Systems Regulation are met.
10. The holder shall,
- i. list in the report all equipment installed or used at the drinking water system, including water treatment equipment and operational check equipment listed under subparagraph 7 iii, that requires periodic maintenance, and
 - ii. review the relevant maintenance records and maintenance schedules that are available for the equipment listed under subparagraph i, and give his or her opinion as to,
 - A. whether the equipment has been inspected, tested, replaced and calibrated at the frequency recommended by the equipment manufacturer,
 - B. if the equipment manufacturer does not recommend a maintenance schedule, whether the existing maintenance schedule for inspection, testing, replacement and calibration of the equipment would provide for reliable operation of the drinking water system, and
 - C. whether the equipment is being inspected, tested, replaced and calibrated so that the drinking water system is in compliance with the applicable requirements set out in Schedules 2, 6, 8 and 9 to the Drinking Water Systems Regulation.
11. The holder shall provide reasons for the opinions required to be provided by paragraphs 8, 9 and 10, along with the technical and other information he or she relied on in reaching those opinions.
12. The holder shall attach to the report,
- i. a list of all available manuals and similar information relevant to the operation and maintenance of the water treatment equipment and operational check equipment listed under subparagraph 10 i, and

- ii. a list of the water treatment equipment and operational check equipment listed under that subparagraph for which such manuals or information are not available.
13. In preparing the maintenance schedule referred to under clause 21-5 (d) of Schedule 21 to the Drinking Water Systems Regulation, the holder shall, subject to paragraph 14, base the maintenance schedule on the applicable maintenance schedules contained in the manuals and information referred to in subparagraph 12 i.
 14. If a maintenance schedule for a piece of equipment is not available, or if the holder is of the opinion that the available maintenance schedule would not provide for the reliable operation of the drinking water system or ensure compliance with the applicable requirements of Schedules 2, 6, 8 and 9 to the Drinking Water Systems Regulation, the holder shall develop a maintenance schedule for the equipment that would, if followed, provide for such operation and compliance.
 15. If the holder determines that water treatment equipment or operational check equipment at a drinking water system may be bypassed, or discovers any other problem with the drinking water system that, in his or her opinion, may lead to improperly treated water being delivered to users of the drinking water system but does not constitute a failure to comply with Schedule 2, 6, 8 or 9 to the Drinking Water Systems Regulation, he or she shall include in the report a description of the problem, together with recommendations that would rectify the problem or mitigate risks associated with it.
 16. If at any time during the assessment of the drinking water system or the preparation of the report the holder determines that the drinking water system does not comply with a requirement in Schedule 2, 6, 8 or 9 to the Drinking Water Systems Regulation and that the lack of compliance may lead to improperly treated water being delivered to users of the drinking water system, he or she shall immediately inform the owner of the drinking water system in writing of the fact, identifying those provisions of the Drinking Water Systems Regulation with which the drinking water system does not comply and the problems that need to be resolved, and recommending changes that would bring the drinking water system into compliance.
 17. If the holder makes the determination described in paragraph 16, the holder shall not complete the report, subject to paragraph 18.
 18. If the owner of the drinking water system notifies the holder in writing that the changes recommended under paragraph 16 have been made, the holder shall review the changes, and if, in the holder's opinion, the altered drinking water system is in compliance with Schedules 2, 6, 8 and 9 to the Drinking Water Systems Regulation, the holder shall complete the report.
 19. On completing a report, the holder shall promptly sign and give to the owner of the drinking water system a declaration, in the form provided for the purpose by the Ministry of the Environment, containing the opinion of the holder that is required to be provided for the purposes of clause 21-5 (b) of Schedule 21 to the Drinking Water Systems Regulation. O. Reg. 91/14, s. 3.

ENVIRONMENTAL SITE ASSESSMENT REPORTS

- 5.(1) In this section,
 - “environmental site assessment” means an investigation in relation to land to determine the environmental condition of property, and includes a phase one environmental site assessment or a phase two environmental site assessment under Ontario Regulation 153/04 (Records of Site Condition—Part XV.1 of the act) made under the *Environmental Protection Act*. O. Reg. 91/14, s. 3.
- (2) A holder of a licence, temporary licence or limited licence who prepares or supervises the preparation of a report as part of an environmental site assessment shall ensure that the following is included on the signature page of the report:
 1. In the case of a report for a phase one environmental site assessment or a phase two environmental site assessment under Ontario Regulation 153/04 (Records of Site Condition—Part XV.1 of the act), a statement that the objectives and requirements set out in that regulation for a phase one environmental site assessment or a phase two environmental site assessment, as the case may be, were applied in carrying out the environmental site assessment and preparing the report.
 2. In any other case, a statement specifying which objectives, requirements or standards were applied in carrying out the environmental site assessment and preparing the report. O. Reg. 91/14, s. 3.