

GUIDELINE

Professional Engineers Providing Reports for Pre-Start Health and Safety Reviews

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November, 2001

Notice: The Professional Practice Committee has a policy of reviewing guidelines every five years to determine if the guideline is still viable and adequate. However, practice bulletins might be issued from time to time to clarify statements made herein or to add information useful to those professional engineers engaged in this area of practice. Users of this guideline who have questions, comments or suggestions for future amendments and revisions are invited to submit these to PEO using the form provided in Appendix 3.

Vision Statement:

Professional Engineers Ontario strives to meet the needs of Ontario society by licensing and regulating the entire practice of professional engineering in an open, transparent, inclusive manner.

Published by
Association of Professional Engineers of Ontario

CONTENTS

- 1. PEO MANDATE AND CRITERIA FOR GUIDELINES.....4
- 2. PREFACE5
- 3. PURPOSE AND SCOPE OF GUIDELINE5
- 4. INTRODUCTION6
- 5. PROFESSIONAL RESPONSIBILITY, LIABILITY AND SCOPE OF WORK6
 - 5.1 Professional Responsibility6
 - 5.2 Scope of Work7
 - 5.3 Liability7
- 6. PRE-START HEALTH AND SAFETY REVIEW PROGRAM7
 - 6.1 Data Collection7
 - 6.2 Review of Information.....7
 - 6.3 Evaluation7
 - 6.4 Report.....8
- 7. EQUIVALENCY8
- 8. ADDITIONAL CONSIDERATIONS8
 - 8.1 Cautionary Advice.....8
 - 8.2 Evaluation as to Whether a PSR is Required9
 - 8.3 Other Compliance Issues9
- 9. REFERENCES.....10

- APPENDIX 1. SCOPE OF WORK FOR PRE-START HEALTH AND SAFETY REVIEWS
AND ASSOCIATED ACTIVITIES11
- APPENDIX 2. PRE-START HEALTH AND SAFETY REVIEW REPORT12
- APPENDIX 3. AMENDMENT AND REVISION SUBMISSION FORM13
- APPENDIX 4. PEO PROFESSIONAL PRACTICE GUIDELINES14

1. PEO MANDATE AND CRITERIA FOR GUIDELINES

Professional Engineers Ontario produces guidelines for the purpose of educating both licensees and the public about standards of practice. This is done to fulfill PEO's legislated objectives. Section 2(4)2 of the *Professional Engineers Act* states: "For the purpose of carrying out its principal object" PEO shall "establish, maintain and develop standards of qualification and standards of practice for the practice of professional engineering." The association's Professional Practice Committee is responsible for developing practice standards and preparing guidelines.

This guideline has been developed by a task group of the Professional Practice Committee, reviewed and approved for publication by the full Professional Practice Committee and by PEO Council.

Professional Engineers Ontario produces guidelines to meet the following objectives, which were used to develop the content of this document.

1. Guidelines are intended to aid engineers in performing their engineering role in accordance with the *Professional Engineers Act* and *Regulation 941*.
2. Guidelines are intended to define processes required by regulatory, administrative or ethical considerations associated with specific professional services provided by engineers. They do not aim to be short courses in an engineering subject.
3. Guidelines provide criteria for expected practice by describing the required outcome of the process, identifying the engineer's duty to the public in the particular area of practice, and defining the relationships and interactions between the various stakeholders (government, architects, other engineers, and clients).
4. Guidelines add value to the professional engineer licence for licensed engineers and for the public by establishing criteria for professional standards of competence.
5. Guidelines help the public to understand what it can expect of engineers in relation to a particular task within the practice of professional engineering. By demonstrating that the task requires specialized knowledge, higher standards of care, and responsibility for life and property, guidelines help reinforce the public perception of engineers as professionals.

See Appendix 4 for a list of PEO professional practice guidelines.

2. PREFACE

Regulation 528/00 amending Section 7 of the *Regulation for Industrial Establishments, Regulation 851* became effective on October 7, 2000. This regulation replaced previous legislation that had implemented a process described as a “predevelopment review”. Shortly after the original legislation became effective, the Ministry of Labour (MOL) began work on new legislation to improve and clarify the objectives of predevelopment reviews. Professional Engineers Ontario was involved in the process of developing the new legislation, on behalf of professional engineers responsible for industrial safety, either as employees in the manufacturing sector or as providers of engineering services.

In response to the new legislation, the Professional Practice Committee formed a subcommittee to prepare this guideline, which replaces the previous *Guideline for Professional Engineers Providing Reports as Required by Sections 7 and 8 of the Regulation for Industrial Establishments, Reg. 851 of the Ontario Occupational Health and Safety Act*. The subcommittee met for the first time on December 8, 2000. Over the next 10 months, the members participated in stakeholder meetings, reviewed and commented on the guideline prepared by MOL, debated the roles and responsibilities of professional engineers in specific real-world situations, and prepared the content of this document.

At various stages of the development process, drafts of this guideline were distributed to a network of reviewers. These reviewers were a valuable source of additional comments and questions.

This guideline is to be used in conjunction with *Guidelines for Pre-Start Health and Safety Reviews: How to Apply Section 7 of the Regulation for Industrial Establishments*, published by the Ministry of Labour.

3. PURPOSE AND SCOPE OF GUIDELINE

The purpose of this guideline is to provide professional engineers undertaking a pre-start health and safety review (PSR) with guidance on the level of diligence, methodology and reporting acceptable to Professional Engineers Ontario. To determine when a PSR is required, refer to regulations and guidelines issued by the Ministry of Labour (MOL). It is also important to read Section 8.1 of this guideline, since requests for service may differ from the regulatory requirements for PSRs.

For the purposes of this guideline, “pre-start health and safety review” means the production of a report as required by *O.Reg. 528/00* amending Section 7 of the *Regulations for Industrial Establishments of the Ontario Occupational Health and Safety Act* (hereafter referred to as *Regulation 851*). Clients may request reviews by professional engineers for purposes other than to fulfill the requirements for a PSR. It is prudent to ascertain the client’s needs. (Refer to Section 8.1 Cautionary Advice). This guideline deals only with PSRs required by the amended Section 7 of *Regulation 851*.

For the purposes of this guideline, the client is the person or entity who owns or controls the equipment or process to be reviewed and who is primarily responsible for its safe operation. The professional engineer is the person who undertakes to do the review. The relationship between the client and the engineer can be one of a specific contract, e.g. the engineer is an outside consultant, or one of employer and employee.

4. INTRODUCTION

Section 7 of *Regulation 851* of the *Occupational Health and Safety Act* (OHSA) requires that in certain circumstances an owner, lessee or employer obtain a written report signed and sealed by a professional engineer containing:

- a) details of the measures to be taken for compliance with the relevant provisions listed in Table 1 of Section 7 of *Regulation 851* (the Table);
- b) if testing is required before the apparatus or structure can be operated or used, or before the process can be used, details of measures to protect the health and safety of workers that are to be taken before the testing is carried out; and
- c) if item 3 or 7 of the Table applies, details of the structural adequacy of the apparatus or structure.

This will be referred herein as the report.

The purpose of the report is to ensure that a timely professional review identifies non-compliance, including non-compliance associated with exposure to chemicals and other designated substances, in those specific circumstances identified in the Table. A PSR is required:

- a) because a new apparatus, structure or protective element is to be constructed, added or installed or a new process used, as identified in the Table; or
- b) because there is to be a modification to an existing apparatus, structure, protective element or process, as identified in the Table.

The report should identify the items of non-compliance and must indicate what measures are necessary to bring the apparatus, structure, protective element or reviewed process into compliance with applicable sections referenced in Section 7 of *Regulation 851*. Where no items of non-compliance are identified in the course of the PSR, the report should indicate that the apparatus, structure, protective element or process complies with the applicable sections referenced in Section 7 of *Regulation 851*.

PSRs are mandatory only in factories that are provincially regulated. A factory is broadly defined in the OHSA but does not include federally regulated workplaces or workplaces such as mines or mining plants, construction sites, logging operations, health care facilities or educational facilities. (See Section 8.1 Cautionary Advice).

To obtain more information on the OHSA and *Regulation 851*, contact the local district office of MOL. The address of the local district office can be found in the blue pages of the local telephone directory. In addition, a list of local district offices is maintained on the MOL website at <http://www.gov.on.ca/LAB/mol/minoffice.htm>.

5. PROFESSIONAL RESPONSIBILITY, SCOPE OF WORK AND LIABILITY

5.1 Professional Responsibility

Before undertaking to provide engineering services associated with a PSR, a professional engineer should be familiar with the *Ontario Occupational Health and Safety Act* and applicable regulations. Refer also to PEO's *Guideline to Professional Practice 1988 (Revised 1998)*.

PSRs are intended to identify potential hazards to workers in a factory and recommend remedial measures to control or remove these potential hazards before an apparatus, structure, protective element or process (or modification to an apparatus, structure, protective element or process) is operated or used in that factory. "Control or removal" means that measures are identified to provide that the sections referenced in Section 7 (and, where applicable, the standards or codes approved by the MOL) are met. Professional engineers should understand that the requirements for PSRs are limited to the circumstances defined in the Table.

Professional engineers are reminded of their obligations under Section 31(2) of the OHSA, which specifies that a professional engineer, as defined in the *Professional Engineers Act*, will have contravened the OHSA if a worker is endangered as a result of the professional engineer's negligent or incompetent advice or certification.

While professional engineers who undertake PSRs are responsible for identifying and addressing issues of compliance with the applicable sections of Regulation 851, professional engineers do not bear responsibility for implementing the report recommendations. The employer remains responsible for ensuring that all requirements of the Occupational Health and Safety Act and Regulations are complied with in the workplace. Even where a Pre-Start Health and Safety Review is not required or an exemption from the requirements of Section 7 applies, the employer must ensure that workers are protected before operating any apparatus, structure, protective element or process in the workplace.

5.2 Scope of Work

Professional engineers providing PSRs under *Regulation 851* should:

- ◆ submit in writing to owners/lessees/employers their proposed PSR and hazard analysis programs for the work, as outlined in Appendix 1; and
- ◆ on completion of a PSR, confirm in writing that the PSR has been carried out in accordance with the requirements of this guideline and Section 7 of *Regulation 851*.

Professional engineers performing a PSR where the owner/lessee/employer is their employer, may find other formats for work proposals more appropriate.

The ongoing maintenance of an apparatus, structure, protective element or process is outside of the scope of the PSR.

A PSR does not include follow-up to confirm correction of deficiencies or operating compliance with the sections of *Regulation 851* referenced in the Table. Although it may be part of the scope of work requested by the owner/lessee/employer, it is not part of the PSR.

5.3 Liability

A professional engineer providing services to the public, such as a PSR, must be a holder of a *Certificate of Authorization* and must either carry professional liability insurance as stipulated in *Regulation 941*, Section 74, or disclose in writing to the client that the holder is not insured.

An employee doing work within the employer's facilities does not need a Certificate of Authorization but may require professional liability insurance coverage to cover his or her personal liabilities for the work.

A professional engineer undertaking a PSR must be aware that Section 31(2) of the OHS Act sets out the personal liabilities incurred by an engineer who gives advice and provides reports required under the Act. These liabilities are personal liabilities and apply to the engineer whose seal and signature are found on the report or drawings and not to the company that employs that engineer.

6. PRE-START HEALTH AND SAFETY REVIEW PROGRAM

A Pre-Start Health and Safety Review involves four steps:

1. data collection;
2. review of information;
3. evaluation; and
4. reporting.

6.1 Data Collection

Professional engineers should obtain sufficient information to permit an evaluation of compliance with the applicable sections of *Regulation 851* referenced in the Table in Section 7 for the apparatus, structure, protective element or process to be reviewed. The client, typically, supplies the documentation.

6.2 Review of Information

The review is typically based on documentation supplied by the client, such as building plans, equipment specifications and operating process manuals, which is in sufficient detail to permit the engineer to identify non-compliance with the sections of *Regulation 851* identified in the applicable provisions of the Table in Section 7. Where they exist, the PSR will also comprise a review of design drawings, layout and specifications of an apparatus, structure, protective element or process.

A PSR may include an on-site review of an apparatus, structure or process, if deemed necessary to determine items of non-compliance. If a site visit is required, it should be noted in the scope of work.

6.3 Evaluation

Professional engineers must evaluate the information reviewed in the context of the sections of *Regulation 851* identified in the Table in Section 7. If applicable, the professional engineer may also refer to codes and standards of practice referred to in Appendix II of the MOL guidelines. The professional engineer may be assisted in conducting the evaluation by other professionals, such as engineers in other disciplines, or other special experts such as industrial hygienists.

6.4 Report

The report issued following the PSR must be in writing, and should identify the design drawings, layout, specifications and procedures reviewed and the applicable codes and standards used in evaluating the apparatus, structure, protective element or process. The report should also indicate the non-compliance identified during the PSR, and the measures recommended so that the apparatus, structure, protective element or process will comply with the applicable sections of *Regulation 851* referenced in Section 7. The report must be signed and sealed by the professional engineer who undertook the review. Where the undertaking has involved a multidisciplinary team, it is recommended that the PSR report indicate the identities of the team members, their professional designations, the nature of their expertise, and the role played by each team member. It is also recommended that the report be signed (and sealed, where applicable) by all team members.

The PSR report should be separate from other reporting required by the scope of work.

7. EQUIVALENCY

The OHSA and *Regulation 851* permit meeting the safety performance objectives by alternative or equivalent means. The equivalency section in *Regulation 851* (Section 2) allows for workplaces to change the means by which the standard is met, as long as the proposed standard provides a level of safety that is equal to, or greater than, that required by the relevant section of the regulation. See also subsections 32.1 to 32.4 of the (1990) OHSA, as amended, which permit the approval of all or a part of a code or standard of practice by the Minister of Labour. These subsections also enable an accused to defend himself or herself by proving that what was done afforded protection for the health and safety of workers at least equal to the protection they would have been afforded had the approved code or standard of practice been complied with.

If equivalency is used in the design being reviewed, an analysis should be made to ensure that the alternative provides a level of safety that is equal to, or greater than, that required by the regulation or the approved code or standard of practice. The results of such an analysis should be mentioned in the report. The analysis and rationale on which the equivalency was determined should be clearly documented, and retained on file by owners/lessees/employers. It should be noted that the MOL guideline qualifies equivalency.

8. ADDITIONAL CONSIDERATIONS

8.1 Cautionary Advice

A client may ask for a review of an apparatus, structure, protective element or process to ensure compliance with the OHSA or regulations for a variety of reasons, such as, but not limited to:

- a) a PSR as required by Section 7 of *Regulation 851* as set out herein;
- b) a request or order by MOL for the client to have a safety review performed by a professional engineer;
- c) a requirement for a professional engineer's report following an accident; or
- d) an order by an MOL inspector with respect to the load units of a floor, roof or temporary work or part of a building.

This guideline deals only with the reason in point a). Before proceeding with a review, it is prudent to ascertain the client's motives for requesting such services.

The client's needs and expectations may differ from what is required herein if the review is the result of the reasons in points b), c), and/or d).

A review of an apparatus, structure, protective element or process for a PSR may, in some circumstances, need a review of the environment in which the equipment or device will operate. Clients, however, may simply ask for a review of and provision of documentary details on the apparatus, structure, protective element or process.

Professional engineers involved in such situations should:

- ◆ attempt to determine if the environment, or installation, should be investigated; or
- ◆ limit the description of the PSR by specifically excluding a review of the actual workplace environment; or
- ◆ arrange with the client to expand the investigation to include whatever other aspects of the client's situation that may need review as the work progresses outside the scope of a PSR; or

- ◆ advise the client that if the equipment environment is not inspected, the client may not, in the opinion of the engineer, have undertaken a PSR as required.

In situations where the client expects more than a PSR, the professional engineer must attempt to provide for the client's actual needs, and the safety of the public, while at the same time accepting liability for only that which has actually been provided. Careful drafting of contractual arrangements between the client and the professional engineer is paramount in clarifying the client's expectations, and the professional engineer's deliverables.

As in other aspects of engineering, describing the scope of work clearly before entering into an agreement will help to eliminate confusion in this area.

PSRs may identify that potential hazards should be corrected in a manner that might require redesign or a new design by a professional engineer. The client's desired end result is a system that complies with the regulatory requirements. This may involve much more than a PSR. Clarifying in contractual arrangements, prior to conducting the PSR, how non-compliance will be dealt with will help to prevent problems and misunderstandings. In all cases, a report must be prepared outlining the results of the PSR.

In situations involving safety, clients, especially small organizations, may place reliance on professional engineers beyond what would normally be considered to be the responsibility of the engineering profession. Professional engineers and their clients are advised to consult with appropriate MOL personnel, or appropriate professionals, in situations where compliance requirements are unclear.

8.2 Evaluation as to Whether a PSR is Required

A client may ask a professional engineer for advice as to whether a PSR is needed in a particular situation. In this case, the professional engineer should refer to the flowcharts in the MOL guideline. An evaluation may require an assessment of some or all of the information necessary to perform a full PSR. Professional engineers should make contractual arrangements before undertaking this activity. Reference to flowcharts in guidelines issued by MOL may be of assistance in evaluation activities.

8.3 Other Compliance Issues

A PSR in a particular situation may require compliance with more than a single provision of the Table in Section 7. A professional engineer should ensure that the client is aware of all the provisions that may apply.

Further, the professional engineer should be aware that there may be other associated regulations, standards or requirements that may apply in conducting the review of compliance with the regulatory sections referred to in the Table. Refer to the MOL guideline for guidance in this regard.

When doing work such as a PSR, professional engineers may become aware of other compliance issues. The following quotation from the MOL guideline outlines the ministry's expectations.

"If the employer does not have an effective process in place to assess other compliance issues and incorporate them into design and installation, broadening the scope of the regulated Pre-Start Health and Safety Review to include these issues would help ensure compliance and avoid costly retrofit. In such cases, the reviewer should identify requirements to comply with all related sections of the *Regulation for Industrial Establishments* not specified in Table 1. A related section is one that directly relates to the particular circumstance listed in Appendix I. Organizations that do not have processes to assess and manage these other compliance issues should refer to Table 2 in Appendix I."

9. REFERENCES

1. *Occupational Health and Safety Act and Regulations for Industrial Establishments*, R.R.O. 1990, Reg. 851 as amended by O. Reg. 528/00, Toronto: Queen's Printer.
2. *Guideline to Professional Practice*, Toronto: Professional Engineers Ontario, 1998.
3. *Guidelines for Pre-Start Health and Safety Reviews: How to Apply Section 7 of the Regulation for Industrial Establishments*, Toronto: Ministry of Labour, April 2001 (Also available on-line at <http://www.gov.on.ca/LAB/main.html>).

APPENDIX 1. SCOPE OF WORK FOR PRE-START HEALTH AND SAFETY REVIEWS AND ASSOCIATED ACTIVITIES

A professional engineer offering to provide a PSR report should provide the client with a scope of work for a pre-start health and safety review that includes, as applicable:

- ◆ an opening sentence indicating the work is related to a pre-start health and safety review;
- ◆ a reference to the client and what they do or make;
- ◆ the location of the client's facility that will be involved;
- ◆ a description of the apparatus, structure(s), protective element(s) or process(es) being reviewed;
- ◆ a notation as to whether the apparatus, structure(s), protective element(s) or process(es) are new or modified;
- ◆ the item or items in the Section 7 Table that may apply to each item of apparatus, structure, protective element or process;
- ◆ a list of other professionals who may be involved, referenced to the items being reviewed and the applicable items in the Section 7 Table;
- ◆ a list of the materials, manuals, design documents and other reference materials that it may be necessary for the client to provide;
- ◆ a list of reference materials that may be needed that the professional engineer or others will provide;
- ◆ the time frame in which the review and report will be developed, together with a schedule that outlines dates by which the client or others will provide review materials, documents and design drawings;
- ◆ a list of activities to be carried out by the professional engineer or others working on the project;
- ◆ a list of items that may require review but are not included in the scope of work for a PSR;
- ◆ a clear statement indicating that the design of remedial measures is outside the scope of a PSR;
- ◆ where remedial design is carried out by others, an indication as to whether a further review is included or excluded from the scope;
- ◆ the standards or specifications, if any, that the client may specify to be used;
- ◆ a notation as to whether a site visit or visits are to be part of the scope;
- ◆ a notation as to whether testing or provision and/or supervision of testing is to be part of the scope;
- ◆ where appropriate, a notation as to whether the client wishes to correct non-compliant items before a PSR report is issued;
- ◆ a copy of the work plan for the defined scope of work and a request for notification prior to proceeding where the client may wish to apply additional items or requirements;
- ◆ the level of detail that is to be provided in the report;
- ◆ the milestones of the program;
- ◆ the numbers of copies of the report and associated documents that are to be provided to the client;
- ◆ the terms and conditions of payment for the professional services being provided.

APPENDIX 2. PRE-START HEALTH AND SAFETY REVIEW REPORT

A pre-start health and safety review report should include, where appropriate,

- ◆ an opening statement indicating:
 - what in general terms was carried out,
 - the client and the basic client activities involved,
 - the apparatus, structure(s), protective element(s) or process(es) involved and their general relationship to the operations,
 - the location of the client's facility;
- ◆ a statement of the review of documents containing:
 - the list of documents reviewed (including drawings, specifications, manuals, and manufacturers' instructions), referenced to the individual items in the scope of work),
 - standards to which the designs, procedures, measures, apparatus, structure, protective element or process were evaluated, referenced to the individual items in the scope of work,
 - the sections in *Regulation 851* that were applied or used in the review by items in accordance with the Table in Section 7 and applicable associated sections,
 - documentation of site visits if part of the scope;
- ◆ a statement containing:
 - details of the measures to be taken to achieve compliance with relevant provisions of *Regulation 851* by item of review and by item in the Table of Section 7, if any,
 - where testing is part of the review, details of measures to protect the health and safety of workers that are to be taken before testing is carried out, by items reviewed and by item in the Table in Section 7, if any,
 - where items 3 or 7 of the Table in Section 7 applies, details of the structural adequacy of the apparatus or structure, if any,
 - other measures that should be taken,
 - an indication where more than one person is involved of who has reported on the individual items,
 - items, if any, that were in the original scope but could not be adequately reviewed because the client provided insufficient documentation within the time frame for the work to be completed,
 - where no additional measures are identified as necessary to achieve compliance with *Regulation 851*, the report should indicate that the apparatus, structure, protective element or process complies with the applicable sections of the *Regulation for Industrial Establishments* referenced in Section 7; and
- ◆ a concluding statement indicating that the scope of work has been completely carried out per the original agreement.

The report should be signed, sealed and dated by the professional engineer or engineers and others who carried out the work.

The following are not requirements of *Regulation 851* and if agreed to in a contract between the engineer and the client should be outside the scope of work of the PSR:

- ◆ documentation of completed facilities reviewed if part of the scope;
- ◆ acknowledgment of compliance with the recommendations made in the report; and
- ◆ further review work if any that might be required that is not part of the scope.

Note: *While professional engineers providing PSRs are dealing with issues of worker safety, the requirement to be met by the apparatus, structure(s), protective element(s) or process(es) involved is "compliance" with Regulation 851. Compliance, according to regulators, should achieve the goal of minimizing safety hazards. Therefore, professional engineers should use the term "compliance" rather than "safe" or "safety" when writing reports.*

APPENDIX 3. AMENDMENT AND REVISION SUBMISSION FORM

Guideline:

Statement of proposed amendment or revision:

Reason:

Submitted by:

Date:

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APPENDIX 4. PEO PROFESSIONAL PRACTICE GUIDELINES

1. Acting as Contract Employees (2001)
2. Acting as Independent Contractors (2001)
3. Acting Under the Drainage Act (1988)
4. Acoustical Engineering Services in Land-Use Planning (1998)
5. Building Projects Using Manufacturer-Designed Systems & Components (1999)
6. Commissioning Work in Buildings (1992)
7. Communications Services (1993)
8. Engineering Services to Municipalities (1986)
9. Environmental Site Assessment, Remediation and Management (1996)
10. General Review of Construction as Required by the Ontario Building Code (1996)
11. Geotechnical Engineering Services (1993)
12. Guideline to Professional Practice (1998)
13. Human Rights in Professional Practice (2000)
14. Land Development/Redevelopment Engineering Services (1994)
15. Mechanical and Electrical Engineering Services in Buildings (1997)
16. Professional Engineer as an Expert Witness (1997)
17. Professional Engineer's Duty to Report
18. Project Management Services (1991)
19. Reports for Pre-Start Health and Safety Reviews (2001)
20. Roads, Bridges and Associated Facilities (1995)
21. Selection of Engineering Services (1998)
22. Solid Waste Management (1993)
23. Structural Engineering Services in Buildings (1995)
24. Temporary Works (1993)
25. Transportation and Traffic Engineering (1994)
26. Use of Agreements between Client and Engineer for Professional Engineering Services (including sample agreement) (2000)
27. Use of Computer Software Tools Affecting Public Safety or Welfare (1993)



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