

Avoiding complaints outside of the Building Code environment

by Max Perera, MAsc, MBA, P.Eng.

It's not just building code infractions that can land an engineer in the hot seat before a PEO Discipline Committee. Even licensed practitioners who do not engage in building design or construction may be named in a complaint and are at just as much risk as their structural colleagues if they do not take sufficient precautions.

Complaints can be made about PEO members for any number of reasons. They often fall under two general categories—professional misconduct and/or incompetence. PEO also receives complaints relating to such issues as unethical behaviour, employment and breach of confidentiality agreements.

The definition of Professional Misconduct in Section 72 of Regulation 941 and Section 28(2) of the *Professional Engineers Act* list the offences for which a professional engineer can be charged with professional misconduct, which include negligence. Section 28(3) of the Act describes the circumstances under

which PEO's Discipline Committee may find a PEO member incompetent. A member who has displayed a lack of knowledge, skill or judgment, or disregard for the public's welfare in a manner that demonstrates that he or she is unfit to carry out the responsibilities of a professional engineer, may be found incompetent. A member suffering from a physical or mental condition that makes it necessary to either suspend or restrict his or her ability to practise engineering may also be found incompetent.

Areas of practice

Here are some examples of situations where complaints could arise:

- ◆ pumping stations and sewage works that are not designed to MOE criteria and good standards of practice and that cause basement flooding and pollution claims;
- ◆ industrial equipment that does not comply with the requirements of the *Ontario Health and Safety Act* and other applicable regulations that gives rise to workplace injuries;
- ◆ electrical switchgear that is not adequately protected from faults and/or lightning strikes and that causes catastrophic fires and/or equipment damage;
- ◆ product designs that are inherently unsafe and require recalls;
- ◆ chemical process equipment that generates hazardous waste that is not adequately controlled or treated and escapes to the environment; and
- ◆ custom-engineered transportation equipment that fails in service and causes injuries.

Causes of complaints

Norbert Becker, PhD, P.Eng., who has served on both the PEO Complaints and Discipline committees reports that one of

the most common areas where complaints can arise is when an engineer fails to investigate site conditions adequately before the design work is commenced. One cannot engineer in a vacuum. What we engineer, we must know where and how it will be operated and maintained. Proper site reconnaissance is vital.

Providing an incomplete and inadequate engineering service in a misguided attempt to cut costs or reduce fees is also a good way to engender complaints. This is often done at the beckoning of a penny-wise, pound-foolish employer or client. An engineer cannot lower the service below that required to achieve a reasonable outcome in a quest for competitive advantage—particularly when the minimum level of service is prescribed by code, statute or regulation.

As well, poor communications between the engineer and the client and/or others can give rise to disputes. Clients and contractors cannot read minds and all too often develop amnesia when a problem arises with an executed design. Poor communications between engineering specialists on a project is another area: The engineering functions must be coordinated and integrated so that the end result meshes cleanly and achieves the original intent.

The failure of an engineer to explain the alternatives and/or limitations of a design can also lead to problems. This includes preventive maintenance, dangers of unauthorized changes or modifications. A failure of imagination can bring trouble down the road as well. Specifically, it could be a failure to imagine how an engineered system or product will be used, abused or misused in service.

Engineering by rote, meaning following codes blindly or copying previous designs in a way that does not fit the situation, is a certain prescription for failure. Codes set out the minimum standards and cannot foresee all of the special conditions that can adversely effect the outcome.

And lastly, engineering that defies reasonable fabrication and/or construction skills, or engineering that cannot be implemented without shortcuts or changes that are difficult to discover, can lead to unpleasant outcomes long after the work is completed.

Avoidance measures

If you want to avoid becoming the subject of a complaint, here are some general precautions to take:

- ◆ if providing engineering services to the public, make sure that you (or the company you are working for) have a current Certificate of Authorization (C of A) issued by PEO. It must be renewed on an annual basis;
 - ◆ undertake only work that you are competent to perform by virtue of your training and experience;
 - ◆ sign, seal and date only final drawings, specifications, plans, reports or other engineering documents you have personally prepared or that were prepared under your direction;
 - ◆ ensure that the engineering drawings, plans or other documents you submit to your client or regulatory officials comply with applicable statutes, regulations, standards, codes, by-laws and rules related to the work undertaken; and
 - ◆ enter into contracts with clients and sub-consultants that clearly set out the scope of work, fees and other relevant issues. Misunderstandings are at the root of many complaints. PEO's *Guideline on Use of Agreements Between Clients and Engineers*, including a sample agreement, may be of assistance in drafting contracts.
- Although engineers generally deal with a knowledgeable clientele, it is also advisable to document appropriately all meetings with clients and worksite visits. Have all of the parties involved sign off on what was agreed to at meetings to ensure there is agreement on the issues under discussion. ◆

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