

## DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act*, R.S.O. 1990, c. P.28; and in the matter of a complaint regarding the conduct of RAOUF H.M. BALBAA, P.ENG., a member of the Association of Professional Engineers of Ontario, and HITE ENGINEERING COMPANY INC., a holder of a certificate of authorization.

This matter came on for hearing before a panel of the Discipline Committee on February 18 and 19, 2009; July 13 and 14, 2009; July 27 and 28, 2009; and May 16 and 17, 2011 at the offices of the Association of Professional Engineers of Ontario at Toronto.

The issue in the case is as to whether the design of Mr. Raouf H.M. Balbaa, P.Eng., and HITE Engineering Company Inc. for a suspended stage and associated mechanisms, including a cable crawler, met the standards of practice of the profession.

### THE ISSUES IN DISPUTE

The allegations of the Association of Professional Engineers of Ontario (PEO) were that Raouf H.M. Balbaa (Ralph Balbaa) and HITE Engineering Company Inc. (HITE):

- a. Approved engineering design documentation containing insufficient and incorrect information which the respondents knew, or ought to have known, would be inadequate to meet the technical requirements of the bid to design and produce the main cable access platform for the Halifax-Dartmouth Bridge Commission;
- b. Approved engineering design documentation which did not meet the minimum standard expected of mechanical design drawings in so far as material specifications, weld specifications, assembly details, component details and tolerances were missing on several drawings;
- c. Approved engineering design documentation which failed to adhere to an intelligible revision scheme contrary to standard engineering practice and bid requirements;
- d. Approved engineering design documentation which was inadequate for the purpose of fabrication of the main cable access platform;
- e. Withdrew the HITE design of the main cable access platform on the false pretence that the welding fabrication did not meet the CSA W47.1 standard specified in the bid document; and
- f. Acted in a disgraceful, dishonourable and unprofessional manner.

Other issues relating to the performance of the design that were raised in the proceeding were the inability of the cable crawler to go all the way to the top of the bridge (a technical requirement), and that the designs caused indentations in the main bridge cable; thus, damaging property of the bridge owner.

### THE ALLEGATIONS OF PROFESSIONAL MISCONDUCT

PEO alleges that Ralph Balbaa, P.Eng., is incompetent and/or guilty of breaching the Code of Ethics, and that Ralph Balbaa and HITE are guilty of professional misconduct as defined in the following subsections of section 72 of Regulation 941 made under the *Professional Engineers Act*:

Section 72(2)(a): negligence as defined at section 72(1); in this section “negligence” means an act or an omission in the carrying out of the work of a practitioner that constitutes a failure to maintain the standards that a reasonable and prudent practitioner would maintain in the circumstances;

Section 72(2)(b): failure to make reasonable provision for the safeguarding of life, health or property of a person who may be affected by the work for which the practitioner is responsible;

Section 72(2)(c): failure to correct or report a situation that the practitioner believes may endanger the safety or the welfare of the public;

**ENFORCEMENT HOTLINE** Please report any person or company you suspect is practising engineering illegally or illegally using engineering titles. Call the PEO enforcement hotline at 416-840-1444 or 800-339-3716, ext. 1444. Or email [enforcement@peo.on.ca](mailto:enforcement@peo.on.ca). Through the *Professional Engineers Act*, Professional Engineers Ontario governs licence and certificate holders and regulates professional engineering in Ontario to serve and protect the public.

- Section 72(2)(d): failure to make responsible provision for complying with applicable statutes, regulations, standards, codes, bylaws and rules in connection with work being undertaken by or under the responsibility of a practitioner;
- Section 72(2)(e): signing or sealing a final drawing, specification, plan, report or other document not actually prepared or checked by the practitioner;
- Section 72(2)(h): undertaking work the practitioner is not competent to perform by virtue of the practitioner's training and experience; and
- Section 72(2)(j): conduct or an act relevant to the practice of professional engineering that, having regard to all the circumstances, would reasonably be regarded by the engineering profession as disgraceful, dishonourable or unprofessional.

In written submissions, PEO withdrew the allegations of incompetence, as well as allegations relative to subsections 72(2)(c) and 72(2)(h) of the regulation.

#### PLEA OF THE MEMBER AND/OR HOLDER

Raouf H.M. Balbaa, P.Eng., and HITE Engineering Company Inc. denied the allegations set out in the Statement of Allegations.

#### DECISION

The panel finds Raouf H.M. Balbaa, P.Eng., and HITE Engineering Company Inc. not guilty of the allegations of professional misconduct.

The panel finds Raouf H.M. Balbaa, P.Eng., not guilty of the allegations of breaching the Code of Ethics.

#### OVERVIEW

The panel heard allegations against Ralph Balbaa and HITE which related to the design of a cable crawler device. The cable crawler device and issues encountered during the design, fabrication and installation of the device are described in the following paragraphs.

On December 20, 2002, the Halifax-Dartmouth Bridge Commission (commission) awarded a contract to Suspended Stages, a division of Yorke Hi-Lo Stages & Hoists Inc. (SSI), for the engineering design and installation of a cable crawler device for the commission. The cable crawler device was described by the commission as "the main cable access platform" or MCAP. The MCAP was intended to carry bridge maintenance staff up and down the bridge along the main support cables of the Macdonald and MacKay bridges located between Halifax and Dartmouth, Nova Scotia.

SSI retained the services of HITE Engineering Company Inc. (HITE) for the design of the MCAP, supervision of the MCAP installation on site in Nova Scotia and assistance in developing an owner's manual. Testing of the MCAP was not included in the scope of services from HITE.

Raouf H.M. Balbaa (Ralph Balbaa) was one of the professional engineers responsible for the services provided by HITE.

The design phase of the project dated from December 20, 2002 to June 25, 2003. Throughout the design process, PEO alleges that the performance of HITE was questionable due to schedule delays, missing information on the drawings, an increase of MCAP weight (which in turn required a larger winch), and a lack of a concise revision history.

On or about June 25, 2003, SSI began fabrication of the MCAP with incomplete fabrication design drawings.

On September 4, 2003, SSI shipped the MCAP to Halifax.

On September 19, 2003, the commission advised SSI that the MCAP wheels were damaging the metal wire wrapping on the main support cable of the bridge. HITE suggested a revised wheel design to address the reported problems.

On September 28, 2003, the MCAP was damaged during a hurricane and sent back to SSI for a damage assessment and repair. At this point, HITE had concerns that the welding performed on the MCAP did not meet the CSA W47.1 standard. Issues relating to the welding were dealt with, and the MCAP was shipped back to Halifax on May 13, 2004.

On June 30, 2004, the commission advised SSI that the new wheel design was not working properly and voiced their concern over the "trial and error" method of addressing design and performance issues. The commission also indicated the MCAP was incapable of fully ascending the support cable.

#### WITNESSES FOR THE CASE

The panel heard evidence from the following three witnesses in this case:

Mr. Keith Yorke, president of Suspended Stages (SSI). Mr. Yorke testified for PEO.

Mr. Jon Eppell, P.Eng., an employee of the MCAP Project Consultant, O'Halloran Campbell, during the time of the project. Mr. Eppell also testified for PEO.

Mr. Nino Balbaa, P.Eng., an employee of HITE. Mr. Nino Balbaa testified for HITE.

## MOTION TO QUALIFY AN EXPERT WITNESS

PEO sought to qualify an expert witness to provide opinion evidence. Defence counsel for Ralph Balbaa and HITE objected and argued that he should not be qualified as an expert witness as he did not meet the legal requirements for expert witnesses.

The panel reviewed submissions by both parties and declined to qualify him as expert in the area of the quality and standards for engineering design documentation related to mechanical structures and mechanisms, including those that support people. The panel previously provided a written decision on this issue.

## REASONS FOR DECISION

The panel considered the evidence and submissions before it in reaching its decision, and finds that the six allegations put forward by PEO fail to make out a case of professional misconduct for the reasons that follow.

### Allegation (a):

Allegation (a) refers to engineering design documentation containing insufficient and incorrect information. The “engineering design documentation” in this case refers to drawings which were submitted to SSI by HITE. Specifically, the drawings at issue in this matter are the drawings that, in the opinion of HITE, were “95 per cent complete” and were issued on or around April 17, 2003. These drawings were not the final drawings issued for fabrication (build authorized). The panel heard testimony from Mr. Eppell (witness for PEO) and from Mr. York (witness for PEO) that these drawings were incomplete and lacking details. The panel also heard testimony from Mr. Eppell and from Mr. Nino Balbaa (witness for HITE) that these April 17, 2003 drawings did not represent drawings that were issued for fabrication. For this reason, the panel placed more weight on the testimony of the witness for HITE.

The “build authorized” drawings were issued on May 16, 2003 (Exhibit 6), however, these drawings were not at issue with this case.

The panel was also presented various email correspondence between HITE and SSI during the design period between April 17, 2003 and May 16, 2003. It is clear from these email messages that there were still

outstanding issues that would have affected the final design of the MCAP (Exhibit 8, Tab 18, 20).

While the panel can see that the project schedule appears to have fallen behind, the panel finds Raouf H.M. Balbaa, P.Eng., or HITE Engineering Company Inc. not guilty of professional misconduct as described in allegation (a).

### Allegation (b):

Allegation (b) refers to engineering design documentation which did not meet the minimum standard expected of mechanical design drawings.

For the same reasons as stated for allegation (a), the panel finds Raouf H.M. Balbaa, P.Eng., or HITE Engineering Company Inc. not guilty of professional misconduct as described in allegation (b).

### Allegation (c):

Allegation (c) refers to engineering design documentation which failed to adhere to an intelligible revision scheme.

These allegations stem from a change in the numbering scheme for the drawings. The panel was presented evidence, and heard testimony, on how the drawings numbers of the first six (6) drawings did not correlate to any drawings numbers of a subsequent set of drawings. Mr. Nino Balbaa testified that the final drawing count for the project was 41 drawings.

While the panel agrees a more consistent system of drawing numbers would have been less confusing to the end user, the panel also views the original six (6) initial drawings as being preliminary in the design stage and would not necessarily be part of the final drawings.

Although the panel agrees the defendant could have done a better job in adhering to a more stringent drawing numbering sequence and revision identifiers, the panel does not find these deficiencies sufficient to amount to professional misconduct. The panel finds Raouf H.M. Balbaa, P.Eng., or HITE Engineering Company Inc. not guilty of professional misconduct as described in allegation (c).

### Allegation (d):

Allegation (d) refers to engineering design documentation which was inadequate for the purpose of fabrication of the main cable access platform.

The panel heard testimony from Mr. Eppell that he approved the HITE drawings for fabrication. The reasons stated by Mr. Eppell for approving the drawings were to maintain the schedule for the project. In the view of the panel, had the drawings been inadequate for the purpose of fabrication, Mr. Eppell would not have been able to approve the drawings for fabrication.

The panel finds Raouf H.M. Balbaa, P.Eng., or HITE Engineering Company Inc. not guilty of professional misconduct as described in allegation (d).

**Allegation (e):**

Allegation (e) refers to HITE withdrawing the design during the course of the project on the basis that HITE believed the MCAP was not being fabricated in accordance with the specifications.

The panel is unaware of the practice of an engineer withdrawing a design on the pretence that fabrication is not going in accordance with the design drawings.

The specific issue at hand was that the welding did not meet the requirements of CSA W47.1 and was shown through subsequent weld inspections and testing that the welds, in fact, did have deficiencies. The panel placed little weight on any underlying reasons for withdrawing the design as the panel found this to be an unusual practice.

In the view of the panel, an appropriate action of Mr. Balbaa should have been to inform the client that Hite would not be responsible for the design of the structure unless it has been fabricated in accordance with the drawings and specifications.

It is the view of the panel that, while Mr. Balbaa's action of "withdrawing" the design for the reasons of improper fabrication is unusual, it does not constitute disgraceful, dishonourable and unprofessional conduct, although a better approach by Mr. Balbaa could have been used. The panel finds Raouf H.M. Balbaa, P.Eng., or HITE Engineering Company Inc. not guilty of professional misconduct as described in allegation (e).

**Allegation (f):**

Allegation (f) is that Mr. Raouf H.M. Balbaa, P.Eng., and/or HITE Engineering Company Inc. acted in a disgraceful, dishonourable and unprofessional manner. Throughout the lengthy testimony heard by the panel, the panel found no compelling evidence which shows Mr. Ralph Balbaa or HITE acted in a disgraceful, dishonourable and unprofessional manner. The panel finds Raouf H.M. Balbaa, P.Eng., or HITE Engineering Company Inc. not guilty of professional misconduct as described in allegation (f).

**Other Allegations:**

Two other allegations relating to the performance of the MCAP were:

- i) The MCAP did not make it to the top of the bridge; and
- ii) The wheels of the MCAP were damaging the main bridge cable.

Mr. Nino Balbaa and Mr. Eppell testified that HITE continued to work on the issue and the MCAP did make it to the top in 2005. The testimony of Mr. Nino Balbaa was that the

issues were partially related to the tension of the slack cables. The panel found no compelling evidence the MCAP could not meet the specifications.

The issue of the wheels damaging the main cable was thought to be caused by higher than desired friction in the wheels. This issue was eventually addressed with a new roller design as well as a revised bearing configuration.

Given the limitations of the testing apparatus used, the panel finds that these performance issues could not have been detected during the testing phase, and that the respondents could not have reasonably anticipated, from test results, that such issues would arise during actual conditions of use.

**Allegations of Professional Misconduct:**

The above allegations [(a) though (f)] were put forward by PEO in an effort to prove professional misconduct. The panel finds no compelling evidence which would lead the panel to believe Mr. Raouf H.M. Balbaa and HITE Engineering Company Inc. are guilty of the allegations.

To the specific charges of professional misconduct, the panel finds the following:

Section 72(2)(a): In light of the above reasons, the panel finds there is insufficient evidence to support negligence as defined at section 72(1);

Section 72(2)(b): In light of the above reasons, the panel finds there is insufficient evidence to support a failure to make reasonable provision for the safeguarding of life, health or property of a person who may be affected by the work for which the practitioner is responsible;

Section 72(2)(d): In light of the above reasons, the panel finds there is insufficient evidence to support a failure to make responsible provision for complying with applicable statutes, regulations, standards, codes, bylaws and rules in connection with work being undertaken by or under the responsibility of a practitioner;

Section 72(2)(e): No evidence was put forward to support that final drawings, specifications, plans, or reports were sealed by Mr. Ralph Balbaa without having being prepared or checked by the practitioner. For this reason, the panel finds there is insufficient evidence to support that Mr. Ralph Balbaa or HITE are culpable

of signing or sealing a final drawing, specification, plan, report or other document not actually prepared or checked by the practitioner;

Section 72(2)(j): In light of the above reasons, the panel finds there is insufficient evidence to conclude the conduct or an act relevant to the practice of professional engineering that, having regard to all the circumstances, would reasonably be regarded by the engineering profession as disgraceful, dishonourable or unprofessional.

PEO provided very little submissions in its closing argument in support of the allegation that Mr. Balbaa breached the Code of Ethics. In the view of the panel, there is no merit to this allegation.

If Ralph Balbaa or HITE would like the panel's determination in this matter published in the official publication of the association, then they are directed to make this request to independent legal counsel (ILC) within two weeks of the date of this decision.

Ravi Gupta, P.Eng., signed this Decision and Reasons for the decision as chair of this discipline panel and on behalf of the members of the discipline panel: Santosh Gupta, P.Eng., Colin Cantlie, P.Eng., Daniela Iliescu, P.Eng., and David Spacek, P.Eng.

## SUMMARY OF DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act* and in the matter of a complaint regarding the conduct of a member of the Association of Professional Engineers of Ontario and a holder of a certificate of authorization. This decision and its reasons are published without names.

### AGREED STATEMENT OF FACTS

The parties introduced an Agreed Statement of Facts that included the following:

1. At all material times, the member was a licensed professional engineer and held a certificate of authorization pursuant to the *Professional Engineers Act*.
2. At all material times, the member operated as an unincorporated sole proprietorship and provided structural engineering services for commercial and residential applications.
3. On or about September 1, 2014, a construction company retained the holder "to design concrete columns to support the new steel columns and reinforce the existing concrete wall" for the new waste storage building (the project).
4. On or about September 22, 2014, the member signed and sealed a drawing, without a title block, that appeared to provide wall modifications and column design details for the project.
5. On or about October 16, 2014, the municipality issued a building permit for the building relying in part on the member's September 22 drawing.
6. On or about November 24, 2014, the member signed and sealed a letter to the municipality's senior building inspector affirming that the project had been "built in substantial conformance with the approved construction drawing for their intended use."
7. On or about May 2015, the project was substantially destroyed by fire.

### THE ALLEGATIONS

Counsel for the Association of Professional Engineers Ontario (the association) introduced a statement of allegations against the member and the holder that included the information in Agreed Statement of Facts above and the following:

1. The member's September 22, 2014 drawing was deficient in several ways, including without limitation:
  - a. That it proposed a design that was not compliant with applicable standards, codes and regulations;