

**IN THE MATTER OF THE ENGINEERS AND GEOSCIENTISTS ACT
R.S.B.C. 1996, CHAPTER 116 as amended**

and

IN THE MATTER OF KULDIP RANDHAWA, P.Eng.

PANEL:

John F. Watson, P. Eng., Chair
Philip W. Sunderland, P. Eng.
Robert D. Handel, P. Eng.

APPEARING:

Robert W. Hunter	For the Association
John S. Piamonte	For Mr. Randhawa

DETERMINATION

INTRODUCTION:

The Panel of the Discipline Committee of the Association of Professional Engineers and Geoscientists of British Columbia (the "Association"), met at Suite 200, 4010 Regent Street, in the City of Burnaby, in the Province of British Columbia on Tuesday the 26th of April, Wednesday the 27th of April and Thursday the 28th of April 2005, for the purpose of taking evidence or otherwise causing an inquiry to be made with respect to the allegations set out below pursuant to the *Engineers and Geoscientists Act*, R.S.B.C. 1996, Chapter 116, (the "*Act*").

Mr. Kuldip Randhawa, P. Eng. placed his seal on design drawings for a large steel water tank to be constructed by Blue Water Systems Ltd. ("Blue Water") in Venezuela. After construction, the water tank failed catastrophically when it was unable to resist the hydrostatic forces for which it should have been designed.

The specific allegations against Mr. Kuldip Randhawa, P. Eng. set forth in the Notice of Inquiry were:

1. *“Contrary to the Act, you have demonstrated unprofessional conduct by your signing and sealing two drawings prepared by Blue Water Systems Ltd. for a 2,000 cubic metre water storage tank (the "Drawings"), when the Drawings were deficient because of one or more of the following:*
 - (a) the date and issue of the Code and/or standards to which the design conforms was not stated on the Drawings;*
 - (b) the dimensions of the spacing between the bands, strut location, weld sizes and steel member material specifications were not stated on the Drawings;*
 - (c) seismic and wind loads and thermal effects were not stated on the Drawings; and/or*
 - (d) the hydrostatic loading on the bands and the bands' connector brackets greatly exceeded the allowable yield stress of the band material and the connector bracket material.*
2. *Contrary to bylaw 14(b)(3) you failed to have your structural design, in the Drawings, subjected to a concept review, prior to construction of the storage tank.”*

BURDEN AND STANDARD OF PROOF

Mr. Hunter on behalf of the Association opened the hearing by informing the Panel of the rules of evidence, the burden of proof upon the Association and the standard of proof that the Panel must apply in reaching its decision. Mr. Hunter submitted that the burden of proof always rests upon the Association, and that the onus falls upon the Association to demonstrate that the allegations in the Notice of Hearing had been proven to the appropriate standard of proof.

The Panel accepted that the standard of proof required is that stated by Madame Justice McLachlan in *Dr. William Jory v. The College of Physicians and Surgeons of British Columbia* (unreported December 13, 1985)

The passage from the Jory decision to which the Panel was referred reads in part:

“The standard of proof in cases such as this is high. It is not the criminal standard of proof beyond a reasonable doubt. But it is something more than a bare balance of probabilities. The authorities establish that the case against a professional person on a disciplinary hearing must be proved by a fair and reasonable preponderance of credible evidence... The evidence must be sufficiently cogent to make it safe to uphold the findings with all the consequences for the professional person’s career and status in the community.”

In coming to this Determination, the Panel has endeavored to apply this standard of proof.

THE EVIDENCE BEFORE THE PANEL

Mr. Hunter introduced to the Panel as Exhibit 3 an Agreed Statement of Facts with drawings, the substance of which are set out below:

1. Mr. Randhawa, P. Eng. is, and was at all material times, a member in good standing of the Association. Mr. Randhawa was first registered as a member of the Association on June 25, 1996.
2. Mr. Randhawa, in 2002, signed and sealed two drawings prepared by Blue Water, Drawing No. Delcan D-103-T2 Rev. 0 and Drawing No. Delcan D-104-T2 Rev. 0, (the "Drawings") for a 2,000 cubic metre water storage tank (the "Tank"). True copies of the Drawings were attached and marked **Exhibit (3) A**.
3. Mr. Randhawa's invoice for his services was sent by his company, Acumar Consulting Engineering Ltd., to Blue Water as Invoice No. 1005, dated February 19, 2002. A true copy of this Invoice were attached and marked **Exhibit (3) B**.

4. By April 2003, the Tank had been installed on Margarita Island, Venezuela and by late April was put into service. Deformation of some of the bolted connection brackets between radial band couplers on the wall panels was then observed. At the request of Blue Water, Mr. Randhawa conducted a tensile load test on a sample connector bracket. Mr. Randhawa reported to Blue Water on his testing by letter dated May 2, 2003. A true copy of this letter was attached and marked **Exhibit (3) C**.
5. True copies of accurate photographs of the Tank and the connection brackets before and after failure were attached and marked **Exhibit (3) D**.

The Panel heard evidence from four witnesses in respect of the allegations against Mr. Randhawa:

1. Mr. W. Lane Rud, President of Blue Water and the complainant
2. Mr. Mehdi. Amini principal of Blue Water
3. Mr. Paul Hoo, P. Eng. of Westmar Consultants Inc.
4. Mr. Kuldip Randhawa, P. Eng

The evidence with respect to each of the allegations is summarized below:

Allegation 1

1a It was agreed by all witnesses that the date and issue of the Code and/or standards to which the design conforms was not stated on the Drawings.

1b The witnesses were also in agreement that the dimensions of the spacing between the bands, strut location, weld sizes and steel member material specifications were not stated on the Drawings.

In his defense, Mr. Randhawa stated that Blue Water did not want to show such detail as dimensions, weld details and other generally accepted detail on the drawings for reasons of protection of the design from copying by others. Mr. Rud confirmed that he was concerned about copying.

Mr. Randhawa assumed that the necessary detail would be available to the fabricators of the tank components as the detail could be determined from the computer drawing system operated by Blue Water.

These explanations do not answer the allegation that the information was missing from the sealed drawings. The Panel is not persuaded that Mr. Randhawa adequately addressed the need to be certain that sufficient detail was available to ensure construction in accordance with his design.

1c It was agreed that seismic and wind loads and thermal effects were not stated on the Drawings.

In his defense, Mr. Randhawa stated that he felt that his responsibility was to determine whether an existing design could be modified to provide a tank of different dimensions, and that he could accept that the original design was properly engineered. He stated that he saw his responsibility was limited to determining the number and spacing of the tension bands for the new tank application.

Again the Panel is not persuaded by this evidence of Mr. Randhawa by reason that it does not alter his failure to include this necessary information upon his sealed drawings.

1d The evidence of Mr. Hoo demonstrated that the hydrostatic loading on the bands and the bands' connector brackets greatly exceeded the allowable yield stress of the band material and the connector bracket material. The deformation of the connectors to the bands demonstrates that the bands were overstressed. This is further proven by photographs taken after assembly of the tank and filling with water.

The allegation is that Contrary to the *Act*, Mr. Randhawa demonstrated unprofessional conduct by signing and sealing two drawings prepared by Blue Water Systems Ltd. for a 2,000 cubic metre water storage tank (the "Drawings"), when the Drawings were deficient.

The Evidence shows that Mr. Randhawa did in fact sign and seal the Drawings in question, and that he did not determine that the design shown on the drawings was either adequate or that it met acceptable engineering standards.

Further, the title block for one drawing showed "Issued for Construction" when insufficient information was shown to facilitate construction, and the second showed "Issued for As Built" when, in fact, the tank had not even been fabricated at the time.

The Panel finds that others should have been able to assume that Mr. Randhawa's seal on those Drawings was his assurance that the design was adequate and met acceptable standards. The Panel finds that his failure to ensure that drawings signed and sealed by him reflected a design that was both adequate and in conformity with accepted design standards constitutes unprofessional conduct.

Allegation 2

Mr. Randhawa argued that since the design was provided to him by Blue Water that he was, in fact, the concept reviewer. There was no evidence presented to indicate that any professional engineer, other than Mr. Randhawa, had played any part in the design of the tank in question.

The Panel finds that contrary to bylaw 14(b)(3) Mr. Randhawa failed to have his structural design evidenced in his sealed Drawings, subjected to a concept review prior to construction of the storage tank.

DETERMINATION AND CONCLUSION

The Panel has concluded that the allegations have been proven by the Association against its Member Kuldip Randhawa, P. Eng.

The Panel directs that counsel for the parties are to contact the Association's Mr. Geoff Thiele to arrange a time mutually convenient to the parties and the Panel in order to reconvene at the offices of the Association to hear submissions as to the appropriate Order to follow our determination in accordance with Section 33(2) of the *Act*.

The Panel further directs that counsel to the Association is to provide a written outline of its submissions and any materials it intends to rely upon to the Panel and the Member's counsel two weeks prior to the hearing on penalty. Counsel for Mr. Randhawa is to provide his submissions to counsel for the Association and the Panel no less than one week before the hearing reconvenes.

Dated in the City of Vancouver, British Columbia

May 3 , 2005

For the Discipline Committee

"John F. Watson"

John F. Watson, P. Eng., Chair
Member, Discipline Committee

"R.D. Handel"

Robert D. Handel, P.Eng.
Member, Discipline Committee

"PW Sunderland"

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ORDER

On May 3, 2005, the Panel delivered its Determination in respect of this matter in which it found that the Association had proved the allegations set forth in the Notice of Inquiry.

The Panel convened on May 31, 2005 to hear arguments as to the appropriate penalty and costs to be imposed upon Mr. Randhawa pursuant to Sections 33(2) and 35 of the *Engineers and Geoscientists Act* (the "Act").

Penalty:

Mr. Randhawa proposed that there be no further penalty as he had already suffered considerable distress as a result of the investigation and hearing, and that his lessons have been learned. In the view of the Panel, Mr. Randhawa does not accept that the sealing of incomplete drawings and his breach of Bylaw 14(3)(b) was a serious departure from the standards of professional conduct and practice expected of a member of the Association.

The Association asked for a three month suspension, the successful passing of the Professional Practice exam, peer review of his work for a period of twelve months and a practice review at his cost.