

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

and

**IN THE MATTER OF STEPHEN RICE, P. Eng.
EGBC File No. T16-081**

DETERMINATION OF THE DISCIPLINE COMMITTEE

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|------------------------------|--|
| Hearing Date: | June 15 and 18, 2020 |
| Discipline Committee Panel: | Paul T. Adams, P. Eng., Chair, Colin Smith, P. Eng., Frank Denton, P. Eng. |
| Counsel for the Association: | Andrew D. Gay, Q.C., Adrian D. A. Greer |
| Counsel for the Member: | Nicholas Hughes, Patrick Williams |

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CONCLUSION AND SUMMARY

INTRODUCTION

1. This panel of the Discipline Committee (the “Panel”) of the Association of Professional Engineers and Geoscientists of the Province of British Columbia, doing business as Engineers and Geoscientists BC (the “Association”), has been struck to conduct an inquiry concerning the Respondent, Stephen Rice, pursuant to s. 32 of the *Engineers and Geoscientists Act* (the “Act”).
2. Mr. Rice became a professional engineer in British Columbia in 1981. He resigned his membership in the Association in January 2018. The Association retains jurisdiction over former members for the purpose of discipline proceedings.
3. The allegations against Mr. Rice are set out in the Notice of Inquiry issued by the Association, as amended April 8, 2020 (Exhibit 1)(the “Notice of Inquiry”):
 1. You demonstrated unprofessional conduct from January 2013 to February 2014, when, as the most senior engineer at AMEC Foster Wheeler (“AMEC”) working on the Mount Polley Tailings Storage Facility (the “TSF”), you allowed Laura Fidel, P. Eng. (“Ms. Fidel”), a relatively junior engineer with little experience with embankment design, who had never previously acted as the Engineer of Record (“EOR”) on a project, to act as the EOR for the TSF.
 2. Having allowed an engineer with insufficient expertise and experience to act as the EOR for the TSF, you demonstrated unprofessional conduct by:
 - a. failing to ensure that a geotechnical engineer or engineers with appropriate experience and knowledge of the design of the embankments visited the site on a regular basis to observe the TSF for potential indicators of safety or stability issues, including bulging, cracking,

sloughing, seepage, shrinking or absent beaches, impoundment water levels including a risk of water overtopping, and generally to check that the embankments were functioning as intended and in a safe condition; and

b. failing to ensure that field inspectors and personnel conducting construction monitoring at the TSF embankments were appropriately experienced and trained, and failing to ensure that either you or the EOR warned Mount Polley Mining Corporation (“MPMC”) that they were not appropriately experienced and trained.

3. You demonstrated unprofessional conduct when you accepted professional responsibility as the review engineer for the Stage 9 Design of the TSF embankments in circumstances where you were not qualified by training or experience to adequately fulfil that role, and in particular had insufficient expertise with the design of rockfill tailings embankments on soil foundations necessary to assess or critique the elements of the Stage 9 design or the assumptions underpinning it.

4. You demonstrated unprofessional conduct or negligence by failing to properly fulfill the role of a review engineer, particulars of which are:

a. relying upon the fact that Todd Martin, P. Eng., P. Geo., was the design engineer for the embankment raises as a basis to conduct a superficial review of the Stage 9 Design;

b. failing to acquire sufficient knowledge of the design and site conditions, including the foundation conditions, to be able to critically analyze the Stage 9 design;

c. signing the Stage 9 design as reviewer when your review was not founded upon adequate knowledge of the Stage 9 design and stability analysis; and

d. failing to question the Stage 9 perimeter embankment design slope of 1.3H:1V, which was unusually steep for rockfill tailings embankments on a soil foundation built by the centreline method with a relatively narrow crest, particularly when you knew or ought to have known that there was significant uncertainty as to the foundation conditions.

5. You failed to document your review of the Stage 9 Design and stability analysis, contrary to section 14(b)(2) of the Bylaws of the Association.

6. You demonstrated unprofessional conduct or negligence from in or about February 2014 to August 2014 when, after Ms. Fidel ceased to be the EOR and you were the senior-most engineer at AMEC responsible for the engineering work at the TSF, you:

- a. failed to appoint a new EOR, or designate any engineer who would have the responsibility to observe and monitor the TSF embankments to ensure they were working as intended and remained in a safe condition;
- b. never visited the TSF yourself;
- c. failed to ensure that a geotechnical engineer or engineers with appropriate experience and knowledge of the design of the embankments was conducting observation and monitoring of the embankments, including by regularly visiting the site to observe the TSF for potential indicators of safety or stability issues;
- d. failed to ensure that you, or another engineer with appropriate experience, received regular updates on the volume and level of water in the TSF impoundment and the status of the beaches within the TSF; and
- e. failed to ensure that the implications, both in terms of embankment stability and consequences if failure occurred, of any changes in the matters referred to in paragraph (d) were assessed.

7. You demonstrated unprofessional conduct or negligence from March 2014 to August 2014 when you became aware of an excavation at the toe of the perimeter embankment of the TSF that had remained unfilled for a number of months and you did not take steps to:

- a. have an appropriately qualified geotechnical engineer assess the excavation to determine what impact, if any, the excavation would have on the stability of the embankment if it was left unfilled; and
- b. determine whether the excavation should be filled as soon as possible and if so to see that this was done.

8. The conduct set out above at paragraphs 1 to 7 is contrary to Principle 1 of the Association's *Code of Ethics* which requires that all members and licensees shall hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace.

9. The conduct set out above at paragraph 3 is contrary to Principle 2 of the Association's *Code of Ethics* which requires that all members and licensees shall undertake and accept responsibility for professional assignments only when qualified by training or experience.
10. The conduct set out above at paragraph 4(c) is contrary to Principle 3 of the Association's *Code of Ethics* which requires that all members and licensees shall provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction.
4. The Panel will use the same defined terms in this decision as were used in the Notice of Inquiry.
5. In May 2020, the Association brought a preliminary application seeking an order that, at the hearing, it shall be permitted to conduct an examination of Mr. Rice in the form of a cross-examination, as part of the Association's case, pursuant to a subpoena. Mr. Rice opposed the application. After argument by both parties, on May 28, 2020, the Panel issued a written decision granting the requested order and stipulating further terms regarding the process to be employed.
6. On June 3, 2020, by correspondence from his counsel (Exhibit 2), Mr. Rice advised the Association and this Panel that he would not dispute the allegations against him in the Notice of Inquiry, although he does not admit that the allegations are true:
- ...We write to advise that Mr. Rice will not be contesting the allegations against him in the Notice of Inquiry at the inquiry set to proceed on June 15, 2020. For clarity, Mr. Rice does not admit that the allegations are true, but will not take steps at the inquiry to dispute them. Mr. Rice reserves the right to make submissions on any (i) penalty under s. 33 of the *Engineers and Geoscientists Act* and (ii) costs award under s. 35 of the Act. Mr. Rice takes this course of action in reliance on the fact that the Association is not alleging that Mr. Rice's conduct caused or contributed to the breach of the Mount Polley Tailings Storage Facility on August 4, 2014.
7. The hearing proceeded over two days rather than the two weeks initially set.¹ Mr. Rice and his counsel attended. On June 15, 2020, the Association submitted its evidence, described more fully below, which included an Agreed Statement of Facts signed by Mr. Rice, two expert reports, extracts from an Association interview of Mr. Rice and other documentary evidence. Mr. Rice did not challenge or oppose any of the evidence adduced by the Association. Mr. Rice did not adduce any additional evidence. On June 18, 2020, the Association made lengthy submissions as to the determinations to

¹ The hearing was conducted by video-conference owing to public health restrictions due to the Covid-19 pandemic.

be made by this Panel. Mr. Rice provided limited submissions, confined to matters that might be relevant to any penalty and costs award and general matters of procedural fairness. As stated in his counsel's letter of June 3, 2020 (Exhibit 2), Mr. Rice did not dispute the allegations.

8. For the reasons set out more fully below, this Panel finds that the allegations in the Notice of Inquiry are proven. However, the Panel declines to make determinations on paragraphs #8-10 of the Notice of Inquiry since such findings would be a duplication of the findings made on paragraphs #1-7.

BURDEN AND STANDARD OF PROOF

9. The burden of proof is on the Association.

10. The standard to be met by the Association is proof on the "balance of probabilities", meaning this Panel must find that it is "more likely than not" that the alleged facts occurred.

11. The Association referred to *R. v. Schoenborn*, 2010 BCSC 220 for a description of the standard. This standard was adopted in *Kaminski v. Assn. of Professional Engineers and Geoscientists of British Columbia*, 2010 BCSC 468, at paragraph 52.

12. While Mr. Rice did not adduce evidence or dispute the Association's allegations, the Panel has nevertheless carefully considered the evidence and arguments made to assess whether the allegations are proven on the balance of probabilities.

EVIDENCE AND FINDINGS OF FACT

Sources of Evidence

13. There was no oral testimony given and the case proceeded on the basis of documentary evidence only.

14. Mr. Rice and the Association entered into an Agreed Statement of Facts dated June 10, 2020 ("ASF") (Exhibit 3). The ASF addressed the basic chronology of events underlying the allegations and set out facts drawn from the extensive documentation regarding the Mount Polley dam, contained in numerous appendices to the ASF (collectively marked as Exhibit 4).

15. During the hearing the Panel was advised by the parties that appendices 120-126 in Exhibit 4 were erroneously included and should not be considered evidence in this hearing. The Panel has disregarded those appendices for the purposes of reaching its determination.

16. The appendices in Exhibit 4 include contracts and amendments, design documentation, analyses, construction manuals, interim construction reports, “as-built” reports, daily reports, time sheets, field notes and other communications between engineers and other personnel involved in the Mount Polley dam.

17. The Panel was also provided with the written opinions of two experts, Dr. Andrew Robertson Ph.D., P. Eng., dated November 8, 2019 (Exhibit 6) (the “Robertson Report”) and Dr. Marg Latham, P. Eng., CMC, dated December 31, 2019 (Exhibit 7) (the “Latham Report”).

18. The Panel was provided with extracts of a transcript of an interview of Mr. Rice on October 18, 2016 conducted by counsel for the Association (Exhibit 8) (the “Transcript”).

19. As indicated above, other than the Transcript, no testimony was provided by Mr. Rice, nor was any other evidence led on his behalf.

20. The Association did not call either of the experts it relied upon or any other witnesses, so there was no cross examination and no opportunity for questioning by the Panel. As set out above in paragraph 6, Mr. Rice chose to not contest the allegations or lead any evidence on his behalf. Mr. Rice could have asked that the Association’s experts appear, but chose not to.

Findings of Fact

21. The Panel accepts the Agreed Statement of Facts and finds those facts to be proven.

22. The Panel summarizes the relevant facts below. Additional findings of fact relevant to the specific allegations are addressed in the section of this decision concerning each individual paragraph in the Notice of Inquiry.

23. The Mount Polley Mine is a copper and gold mine located outside Likely, British Columbia. It was owned by Mount Polley Mining Corporation (“MPMC”). MPMC discharged mine tailings into a storage facility (“TSF”) which was bounded by a U-shaped dam comprised of three embankments (“Embankments”). On August 4, 2014, there was a breach of one of the Embankments, referred to as the “Perimeter Embankment”, releasing approximately 21 million cubic meters of tailings into Hazeltine Creek (the “Breach”) (ASF para.1-5).

24. The Embankments are earth and rockfill dams built on a soil foundation of glacial sediments (ASF para. 8). The starter dam was constructed in 1996. Over the years, the

Embankments were increased in size and height to accommodate the growing volume of tailings and water impoundment; each raise was referred to as a “Stage”.

25. From the outset of the project until 2011, the engineering firm of Knight Piésold had engineering responsibility for the TSF and design of the Embankment raises up to Stage 6B. These raises used an upstream construction design (ASF para. 22).

26. In 2011, AMEC Americas Limited, which later became AMEC Foster Wheeler (all of which are referred to herein as “AMEC”) assumed engineering responsibility for the TSF in place of Knight Piésold. AMEC personnel designed the raises for Stages 7-9 (ASF para. 27).

27. The senior engineer and EOR on the project in 2011 and 2012 was Todd Martin, P. Eng., P. Geo. Mr. Martin left AMEC at the end of 2012 (ASF para. 46). He joined another engineering firm, BGC Engineering Inc. (“BGC”). Other engineers on the Mount Polley project also left AMEC around this time.

28. Mr. Rice joined AMEC in 2000 and worked there until he retired in 2017. He first became involved in the TSF when he acted as the review engineer on the annual review conducted after Stage 7 in 2012 (ASF para. 40). As set out more fully below, Mr. Rice acted as the review engineer on further AMEC reports on the TSF in 2013. In 2013 and 2014 he was the most senior AMEC engineer on the Mount Polley project (ASF para. 41, 44).

29. The conduct that is the subject of the present proceeding occurred in 2013 and 2014.

30. After the departure of Mr. Martin and others, on about March 6, 2013, AMEC submitted to MPMC a Budget Update and Preliminary Estimate for 2013 Engineering Services at the TSF for Stage 9, which was accepted (ASF para. 33). On March 8, 2013, AMEC submitted a proposal for engineering services for a further raise (Stage 10), which was not accepted and instead awarded to BGC (ASF para. 34). In April of 2014, a further proposal by AMEC was accepted by MPMC for 2014 services on Stage 9 (ASF para. 35). Accordingly, while BGC was preparing for Stage 10, AMEC remained responsible for engineering services on Stage 9.

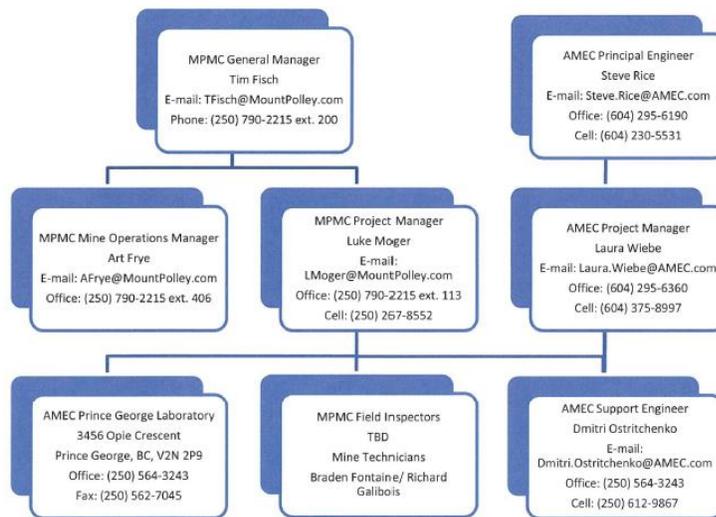
31. Construction of the Stage 9 raise took place over two construction seasons, one in 2013 and one in 2014 (ASF para. 84).

32. With the departure of earlier AMEC engineers, different personnel were named in senior roles. Mr. Rice remained the review engineer. On or shortly before April 11,

2013, Laura Fidel, P. Eng. (née Laura Wiebe) was designated the Project Manager and EOR for the TSF (ASF para. 58(f)).

33. Mr. Rice was designated “Principal Engineer” in the organization chart shown in following Figure 2.1 of the Stage 9 2013 Construction Monitoring Manual dated April 11, 2013 (Exhibit 4, Appendix 14) (the “Stage 9 2013 Construction Monitoring Manual”).

Figure 2.1: 2013 Construction Organization Chart



34. After Ms. Fidel departed on leave in February 2014, no other individual within AMEC was designated to take over as EOR (ASF para. 85).

35. Construction of the Embankment raises was undertaken by contractors hired by MPMC (ASF para. 64). To conduct quality control on the Stage 9 construction (as it had on earlier raises), MPMC hired undergraduate engineering students to provide full time construction monitoring and quality control from May to September. They were referred to as “Field Inspectors”. These Field Inspectors were trained by AMEC personnel and they sent daily reports regarding their activities to AMEC. AMEC Engineers in Training (including Mr. Ostrichenko, referred to in the chart above) visited the TSF approximately monthly during the construction season, and provided construction monitoring and quality control outside the May-September period (ASF para. 65).

36. Ms. Fidel visited the site in October 2011, May 2012, June 2012 and August 2013 (ASF para. 87). After August 2013, no AMEC engineer, other than engineers in training, visited the site prior to the Breach, which occurred on August 4, 2014 (ASF para. 89).

37. The volume of water in the TSF increased steadily, from 900,000 cubic meters in 2010 to between 8 and 9 million cubic meters in 2014. The TSF was generally in a water surplus condition over this period. MPMC was generally unable to discharge the volume of water allowed by their permit due to water quality issues (ASF para. 93-94).

38. On May 24, 2014, which was at the beginning of the 2014 construction season, water overtopped the Embankment. MPMC informed AMEC. MPMC did not re-establish the minimum required freeboard; that is, the distance between the height of the water and the height of the Embankment, until July 4, 2014 (ASF para. 100-101).

39. On August 4, 2014, during the construction of Stage 9, the Breach occurred in the Perimeter Embankment.

40. The purpose of the present case is not to assess the cause of the Breach. As submitted by both parties, the Panel's findings are restricted to the allegations in the Notice of Inquiry. The ASF includes admitted facts about engineers who are not participants in the present hearing, including those who are subject of other proceedings before the Association. The Panel does not make any findings about the propriety of any engineer's conduct other than that of Mr. Rice and then only with respect to the allegations in the Notice of Inquiry.

41. For present purposes, a simple overview of the complexities and inherent risks of the dam is necessary because it relates to Mr. Rice's professional obligations.

42. Dr. Robertson opined that the Embankments were "of complex design and construction" (Robertson Report p. 8), and described in further detail the source of the complexity of the project. He emphasized that "each raise has an effect on the performance and the core, filter and transition layers of prior construction" (p. 18). More particularly:

Tailings embankments constructed by the centreline method and which include a low permeability core with filters and an internal drainage system are typically the most complex type of such embankments. This complexity arises from the nature of the elements and materials of the embankment as well as the complexity of construction. Embankment sections are included in the 12 March 2014 report by AMEC '2013 As-Built and Annual Review Report'. These figures indicate that there have been a number design adaptations made during the years resulting in a complex shape and complex arrangement of material zones and drains within the embankment. (Robertson Report p. 18)

43. Dr. Robertson opined that the composition of the subsurface has an impact on stability, noting that AMEC had identified the presence of Glaciolacustrine foundation soils (“GLU”) when it first conducted a review in 2006.

44. In summarizing the complexities and risks of the dam, Dr. Robertson opined:

With increase in the height of the embankments, with each raise, or steepening of the downstream slope there are incremental increases in loading, deformation, hydraulic pressures on the core, shear stresses in the foundation. The significance of the complexity to dam stability increases with increasing dam height.

(Robertson Report p. 19)

45. Dr. Robertson also noted that the TSF was generally in a water surplus condition as the anticipated discharge could not be achieved due to water quality issues.

46. The Panel accepts Dr. Robertson’s analysis of the complexity of the dam and the associated risks.

DETERMINATIONS UNDER S. 33 OF THE ACT

47. The findings available to the Panel are set out in section 33 of the Act:

33 (1) After an inquiry under section 32, the discipline committee may determine that the member, licensee or certificate holder [...]

(b) has contravened this Act or the bylaws or the code of ethics of the association, or

(c) has demonstrated incompetence, negligence or unprofessional conduct.

48. Mr. Rice is a former member of the Association; however, section 28 of the Act provides that a former member remains subject to the discipline provisions of the Act.

49. The Notice of Inquiry alleges that Mr. Rice engaged in unprofessional conduct, negligence and breaches of the Code of Ethics and Bylaws. Therefore, we deal with the definitions of unprofessional conduct and negligence in more detail.

50. The Association relied upon the definition of unprofessional conduct as set out in a decision of a discipline committee of the Association, *Re: Ian Foreman P.Geo.*, August 25, 2015:

[93] The Association’s Code of Ethics Guidelines addresses the standard of professional conduct as follows:

“The APEGBC Code of Ethics serves several purposes. It designates the standard of conduct expected of engineers and geoscientists in easily understandable terms. It distinguishes appropriate professional conduct from that which fails to meet a required standard. The Code also provides a basis on which allegations of unprofessional conduct are adjudicated by the Discipline Committee or other groups charged with responsibilities related to the conduct of members.”

[94] Hence, unprofessional conduct is that which does not meet the standard expected through application of the Code of Ethics. The Panel accepts the submission of the Association based on *Law Society of British Columbia v. Martin*, 2005 LSBC 16, that professional misconduct is established where there is a marked departure from the standard to be expected of a competent professional, and that minor or inadvertent failure to comply with professional standards does not constitute unprofessional conduct.

51. *Salway v. Assn. of Professional Engineers and Geoscientists of British Columbia*, 2010 BCCA 94, concerned an appeal of a discipline panel’s finding that an engineer engaged in unprofessional conduct for failing to respond to certain communications from his clients. The BC Supreme Court (2009 BCSC 262) set aside that finding. The Court held that the panel had found that “Dr. Salway did not perform up to an acceptable standard of practice” (para. 31). However, it held that this was not sufficient for a finding of unprofessional conduct because there was no finding that the conduct was “blatant or cavalier” (para. 32-33). The Supreme Court held that the discipline panel had “equated simple negligence with unprofessional conduct and thereby erred in law” (para. 34).

52. The Court of Appeal restored the finding of the discipline panel. Dr. Salway relied upon earlier case law, including *Reddoch v. The Yukon Medical Council*, 2001 YKCA 13, which incorporated some element of dishonour or moral turpitude into cases of professional discipline. The Court of Appeal rejected that analysis:

[32] ... Reasonableness requires courts to give deference to a professional body’s interpretation of its own professional standards so long as it is justified, transparent and intelligible. The pre-Dunsmuir decisions relied on by the respondent, including *Reddoch*, no longer set the standard for professional misconduct as conduct that is dishonourable, disgraceful, blatant or cavalier. Rather, it is the disciplinary body of the professional organization that sets the professional standards for that organization...

53. This reasoning was affirmed in *Kaminski v. Association of Professional Engineers*, 2010 BCSC 468, at paragraphs 57-59.

54. The “marked departure” test was used by the panel in *Re: Eric Chysanthous, P. Eng.*

55. The Panel accepts the “marked departure” test and has applied it in its deliberations.

56. The Association submits that negligence is “the legal term for carelessness”, measured against accepted norms or standards of conduct within an industry or amongst persons in like circumstances. Counsel referred to *Hill v. Hamilton-Wentworth Regional Police Services Board*, 2007 SCC 41, at paragraph 69:

The general rule is that the standard of care in negligence is that of the reasonable person in similar circumstances. In cases of professional negligence, this rule is qualified by an additional principle: where the defendant has special skills and experience, the defendant must “live up to the standards possessed by persons of reasonable skill and experience in that calling”.

57. The Association also refers to *Davidson v. British Columbia*, 1995 CanLII 1334, at paragraph 24:

... the standard of skill and care which a professional man is required to exercise may be defined as follows: that degree of skill and care which is ordinarily exercised by reasonably competent members of the profession, who have the same rank and profess the same specialization (if any) as the defendant...

58. The Panel notes that unlike the civil cases from which this definition is drawn, a finding of negligence in a professional discipline case does not require a finding of harm or damage.

59. The definition of negligence in *Davidson v. British Columbia* was adopted in *Re: Foreman*.

60. Both unprofessional conduct and negligence involve a departure from expected standards of practice and therefore potentially overlap. The term unprofessional conduct is informed by reference to the ethical standards expected of members of the profession. A finding of negligence is informed by reference to the “technical” skills, abilities, and performance expected of members of the profession.

61. This is illustrated in *Re: Foreman*. There, the panel found that an engineer engaged in unprofessional conduct by taking on the role of the company’s Qualified Person, responsible for the scientific and technical information disclosed by the company in securities disclosures, when he was not sufficiently familiar with the requirements of the role, and when he ought to have known that much of the material disclosed was misleading, inaccurate, or was otherwise disclosed contrary to legal requirements. It also found that the engineer was negligent (and incompetent, which is not alleged here) by failing to fulfill his duties in a manner commensurate with that of a reasonably competent member of the profession who takes on the role of a Qualified Person.

62. The Panel notes that the Notice of Inquiry in some paragraphs alleges unprofessional conduct *or* negligence, not both. In its closing, the Association submitted that it had proved both unprofessional conduct *and* negligence. In the analysis on these paragraphs of the Notice of Inquiry, where the Panel makes a determination of unprofessional conduct, it does not in addition make any finding of negligence, pursuant to the rule against multiple convictions for the same conduct: *R. v. Kienapple*, 1974 CanLII 14 (SCC), [1975] 1 SCR 729.

63. The relevant provisions of the Code of Ethics and Bylaws are referred to below in the discussion of the relevant paragraph of the Notice of Inquiry.

DETERMINATIONS ON THE NOTICE OF INQUIRY

64. The Panel's decision deals with each paragraph in the Notice of Inquiry, identifies the relevant facts, and sets out the Panel's analysis and finding.

Notice of Inquiry paragraph #1

65. This paragraph alleges that Mr. Rice permitted Ms. Fidel to act as EOR when she did not have sufficient expertise to do so, and thereby engaged in unprofessional conduct.

66. For reference paragraph #1 of the Notice of Inquiry reads:

1. You demonstrated unprofessional conduct from January 2013 to February 2014, when, as the most senior engineer at AMEC Foster Wheeler ("AMEC") working on the Mount Polley Tailings Storage Facility (the "TSF"), you allowed Laura Fidel, P. Eng. ("Ms. Fidel"), a relatively junior engineer with little experience with embankment design, who had never previously acted as the Engineer of Record ("EOR") on a project, to act as the EOR for the TSF.

67. In 2016, the Association published a Professional Practice Guideline on Legislated Dam Safety Reviews, which includes a description of the responsibilities of an EOR (part 2.2.3 page 15). This Guideline was not in place at the material time and does not form part of the Panel's analysis.

68. Paragraph 44 of the ASF states "in 2013 and 2014, Mr. Rice was the senior-most engineer at AMEC involved in the Mount Polley project".

69. It is also admitted in the ASF that "on or shortly before April 11, 2013...Ms. Fidel was designated the Project Manager and the Engineer of Record for the TSF" and this

was the first time she had been designated the Engineer of Record for any project (ASF para. 58(f)).

70. Underlying this paragraph of the Notice of Inquiry is consideration of the role of the EOR.

71. Dr. Robertson opined about the responsibilities of the engineer designated as EOR in relation to a TSF. Dr Robertson states that at the relevant time, and prior to publication of the Guideline, the use of the term EOR was common amongst geotechnical engineers responsible for tailings dams (Robertson Report p. 3). He set out the following description of the role:

This term is used in North America when it is important that a large, high risk, civil engineering structure is designed, constructed and operated under the control of a “responsible person” with the necessary technical understanding to make appropriate and informed decisions about the structure and to supervise its use and operation. It is the responsibility of “The Engineer of Record” (EOR) to be fully familiar with the site investigation, design basis, as built conditions, operating requirements, monitoring results and any permit requirements such that he can make informed and responsible decisions about the structure. The EOR is responsible for periodic reviews of the monitoring results from the structure and for periodic inspections such that he is satisfied that the structure is built, operated, and maintained in accordance with the design intent and in a safe manner. The EOR is required to approve all material decisions regarding changes to the structure, its operating or monitoring requirements.

It is usually a requirement that the EOR be a suitably qualified professional engineer with appropriate training and experience. Typically, an EOR is a civil engineer for civil structures, but geotechnical engineers and engineering geologists with appropriate experience also serve in this role for primarily earth structures.

With smaller mining companies, without in-house civil or geotechnical engineers with appropriate experience, the EOR for any major civil structures would typically be [the] engineer (consultant) who designed the structure. For larger mining companies the EOR can be an in-house engineer with the necessary technical training and experience.

Regulatory agencies, the Board of Directors of the company and the public, typically rely on the EOR for the safety and due care and performance of the structure.

72. The Panel accepts Dr. Robertson's opinion and finds that this sets out in general terms the role of an EOR as it was employed in the profession at the relevant time.

73. In the Stage 9 2013 Construction Monitoring Manual, the terms project manager and EOR are used synonymously to denote the engineer with "overall responsibility for AMEC's role with upcoming and future dam raises" (Exhibit 4, Appendix 14 p. 7). As set out in the ASF and in the Stage 9 2013 Construction Monitoring Manual, Ms. Fidel was the EOR/project manager.

74. In Mr. Rice's interview, he stated Ms. Fidel was the person with overall responsibility for assessing any risks relating to embankment stability (Transcript p. 51).

75. The Panel is therefore satisfied that Ms. Fidel was performing the role of EOR and the nature of those responsibilities were as described in the passage above from Dr. Robertson's report.

76. Dr. Robertson opined specifically about the level of skill and expertise required to act as EOR and, in particular, an EOR on the Mount Polley dam.

77. As to general requirements to be an EOR, Dr. Robertson opines:

The experience and training of the EOR must be such that during site visits and inspections the EOR is able to recognize and evaluate all aspects contributing to TSF (not only the dam embankments) performance, including stability and safety. In particular, the EOR should have the experience to observe conditions that were not considered or different from what were considered during design, signs of unexpected performance or TSF management that is different from that provided for in the design. This requires a broad and extensive experience. The EOR must be informed at all times of TSF operation and performance to be able to continuously maintain their understanding of TSF conditions and during site visits, reviews and inspections and to perform such evaluations and assessments of dam performance required to identify any signs of conditions not allowed for in design, not in accordance with the operating manual, or performance not consistent with design expectations. (Robertson Report p. 4)

78. As to acting as EOR on the Mount Polley dam, Dr. Robertson opines firstly that "the Mount Polley TSF embankments are of complex design and construction", explaining:

...While the dam section is described as ‘Modified Centreline’, the crest advances upstream and it is an upstream design in which reliance is placed on the tailings to support the upper earth/rockfill raises. Upstream design has come under considerable scrutiny after the most recent failures at Samarco and Corrego do Feijao. Such a design is sensitive to settlement in the tailings. The design provides for tailings sand placement in cells adjacent to the upstream face as well as installed upstream drains to improve consolidation of these upstream tailings. The dam sections incorporate a thin core, filter and transition zones placed to a complex geometry. The placement and compaction of these zones requires careful and diligent work during construction and a high level of QC. These zones are vulnerable to cracking during deformations caused by settlement under the upstream raises and increase the potential for piping type failures. The unusual feature of an upstream drains [sic] is also installed for the purpose reducing the phreatic surface and therefore the hydraulic pressures on the core. This reduction in the phreatic surface also reduces the high seepage gradients through the core. The installed upstream drainage and more permeable zones upstream of the core result in a complex seepage regime. The upstream drainage also requires pipe penetrations under or through the dam embankment, which are considered undesirable for dams, and require monitoring to ensure their continued adequate performance. The materials used during construction are variable, due to the nature of the sources, and due diligence is needed to ensure that they always meet design specifications. The downstream slope has been steepened progressively as the dam height increases, resulting in reduced factors of safety for downstream dam stability. Construction by mine personnel and mine equipment and not by a specialist earth/rockfill dam constructor requires that quality control by observation of field placement and quality control testing has to be particularly diligent. These various factors result in a reduction of the robustness of Mount Polley tailings dam. In my opinion the complexity of the Mount Polley TSF requires that the role of EoR be filled with a well-qualified and experienced EoR with experience in all the aspects related to the embankments and TSF and not with just a few of these aspects. (Robertson Report p. 8)
(emphasis added)

79. Dr. Robertson further opines that typically 15 years of geotechnical engineering practice, with at least ten years in progressively increasing responsibility, would be required to act as EOR in dams that are not very complex or high-risk. For a complex and high-risk tailings dam, he opines that 20 years or more experience is typically appropriate (Robertson Report p. 9).

80. The Panel accepts Dr. Robertson's opinion that the Mount Polley dam was complex and high-risk, requiring an engineer with extensive experience to act as EOR.

81. Turning to Ms. Fidel's experience, the ASF provides that Ms. Fidel obtained a Bachelor of Engineering degree from McMaster University in 2005 (ASF para. 54) and became an engineer in Ontario in May 2011 and BC in January 2012 (ASF para. 56). Her area of practice was geotechnical engineering (ASF para. 57).

82. Ms. Fidel's experience is described at length in paragraph 58 of the ASF:

58. Ms. Fidel's work experience in relation to tailings dams from 2005 to 2014 includes the following:

(a) Starting in 2005, Ms. Fidel began working for AMEC as an Engineer in Training ("EIT") in AMEC's Hamilton office.

(b) In 2007 Ms. Fidel began work on a project in Kupol, Russia during which she was engaged in construction monitoring and supervision in relation to a rock-fill tailings dam over several years. She had some involvement with embankment raise designs and stability analyses but in general the dam had already been designed by others.

(c) From 2009 to 2012, Ms. Fidel worked on the Huckleberry Mine in British Columbia doing construction monitoring in relation to a tailings dam, and was involved in site investigation and slope stability analyses for two dams at the site, including the raising of a plug dam for a pit known as the East Pit.

(d) From 2010 to 2013, Ms. Fidel worked at the Red Chris mine in British Columbia as a project engineer, primarily coordinating fieldwork, including supervision of foundation investigations, borrow pit investigations, and other site investigations. She was also involved in the preparation of construction drawings for the tailings impoundment area. She was not the engineer responsible for the design of the tailings storage area embankments.

(e) Commencing in October, 2011, Ms. Fidel began working at Mount Polley on the 2011 subsurface geotechnical site investigation and the assessment of the materials properties thereof and she was one of the authors of the Tailings Storage Facility 2011 Geotechnical Site Investigation Report dated March 28, 2012. She continued her direct involvement with the TSF as a project engineer under the supervision of Mr. Martin and Mr. Dufault through 2012. In particular, under Mr.

Martin's supervision, she prepared the stability analyses for the Stage 9 design in late 2012.

(f) On or shortly before April 11, 2013 (the date of the Stage 9 Construction Monitoring Manual) Ms. Fidel was designated the Project Manager and the Engineer of Record for the TSF. This was the first time Ms. Fidel had been designated the Engineer of Record for a project.

(g) In August of 2013, Ms. Fidel worked on projects in relation to the San Bartolomé Mine in Bolivia. She undertook a stability analysis and assessed the filter compatibility of materials used to construct a toe drain for the tailings embankment.

(h) Prior to being designated the Project Manager and Engineer of Record for the TSF in 2013, Ms. Fidel had not previously been the Design Engineer with responsibility for the design of a tailings dam.

83. The assumptions provided by the Association to Dr. Robertson when seeking his opinion differ slightly from the list in paragraph 58 of the ASF. In particular, the ASF provides some additional detail with respect to Ms. Fidel's work on the TSF in paragraph (e) and her work on the San Bartolomé Mine in Bolivia in paragraph (g). The Panel has reviewed these differences and accepts the Association's contention that they are not significant to the opinion given by Dr. Robertson.

84. Dr. Robertson was asked to provide an opinion about the suitability of Ms. Fidel as EOR.

85. Dr. Robertson noted that Ms. Fidel's experience was relevant but insufficient for a senior role:

Of significance during the period 2005 to 2007, prior to her work on Kupol, Ms. Fidel's work experience related primarily to geotechnical investigation and construction monitoring for foundations and roads and not to tailings dam facilities. During 2011 and 2012 her experience was again primarily site investigation, slope stability analyses and some aspects of design under direct supervision of senior engineers. Her training and experience does not reflect competence in aspects seepage and deformation assessments and analyses, hydrology, water balance and water management, tailings deposition and management, selection and specification of design criteria, overall TSF design management, operating plan development and emergency response plan

development. Taking these observations into consideration, in addition to the information provided in (a) to (i) above, it's my opinion that Ms. Fidel had the training, experience and expertise to perform site geotechnical investigations and construction monitoring and supervision, but did not have the training and experience required for design and overall technical assessment and control of a complex TSF of the nature of Mount Polly [sic]; that she had insufficient training and expertise in aspects relevant to the design, construction, operation and surveillance of tailings dams, and that she did not have experience to act as the EOR for the Mount Polley TSF in 2013 and 2014. (Robertson Report p. 11-12)

86. The Panel notes that Ms. Fidel was not called as a witness and Mr. Rice did not contest the experience outline provided to Dr. Robertson.

87. The Panel accepts Dr. Robertson's analysis. On the basis of the evidence before this Panel, Ms. Fidel did not have the experience to act as EOR for a complex project such as the Mount Polley TSF.

88. The Panel finds that the facts alleged are proven on a balance of probabilities: Mr. Rice was the senior-most engineer at the relevant time on the Mount Polley project and the AMEC Regional Manager for British Columbia (Transcript p. 7). As such he was in a position to select the person identified as EOR on the project. Ms. Fidel was a junior engineer relative to the complexity of the Mount Polley TSF. Further, while she had some involvement with embankment raise designs and stability analyses in Kupol in 2007, and was involved in the preparation of construction drawings for the tailings impoundment area at the Red Chris Mine in BC prior to beginning work on the Mount Polley TSF, she had little experience with embankment design and had never previously acted as EOR on a project.

89. The next issue is whether the appointment of an insufficiently experienced engineer as EOR amounts to unprofessional conduct.

90. The Association refers to the opinion of Dr. Robertson, who states that Mr. Rice acted contrary to reasonably prudent practice as senior engineer and contrary to professional practice (Robertson Report p. 12).

91. The Association also relies upon the opinion of Ms. Latham, who opines that, as the senior engineer, Mr. Rice ought not to have allowed Ms. Fidel to act as EOR and that it is the professional duty of the senior engineer to ensure a project is properly resourced (Latham Report p. 11).

92. It is the view of this Panel that given the complexity and risk associated with the Mount Polley TSF, as senior engineer, Mr. Rice must have known that he was obliged to fill the role of EOR with an engineer who had the qualifications and experience to appropriately perform that function. He did not do so.

93. Indeed, when asked whether the fact that BGC would be designing future dam raises influenced the decision to appoint Ms. Fidel as the EOR, Mr. Rice said “yes” because “we saw it as being a construction monitoring project from that point forward” (Transcript p. 45). This underplays the importance of the EOR, which is dealt with above in paragraphs 71 and 77.

94. In the Panel’s view, employing the test set out in *Re: Foreman*, Mr. Rice’s conduct was a “marked departure from the standard to be expected of a competent professional” and amounts to unprofessional conduct.

Notice of Inquiry paragraph #2

95. This paragraph alleges that Mr. Rice failed to ensure qualified engineers and other personnel properly monitored the site, thereby demonstrating unprofessional conduct.

96. For reference it reads:

2. Having allowed an engineer with insufficient expertise and experience to act as the EOR for the TSF, you demonstrated unprofessional conduct by:

a. failing to ensure that a geotechnical engineer or engineers with appropriate experience and knowledge of the design of the embankments visited the site on a regular basis to observe the TSF for potential indicators of safety or stability issues, including bulging, cracking, sloughing, seepage, shrinking or absent beaches, impoundment water levels including a risk of water overtopping, and generally to check that the embankments were functioning as intended and in a safe condition; and

b. failing to ensure that field inspectors and personnel conducting construction monitoring at the TSF embankments were appropriately experienced and trained, and failing to ensure that either you or the EOR warned Mount Polley Mining Corporation (“MPMC”) that they were not appropriately experienced and trained.

Notice of Inquiry paragraph #2(a)

97. The Association relies on the admitted facts that, while Ms. Fidel was EOR, she visited the site once, and no engineer senior to Ms. Fidel visited the site at all (ASF para. 86-89).

98. Dr. Robertson opines that during periods of active construction and sand cell placement a reasonably prudent engineer would ensure there are at least monthly inspections of the TSF by an appropriately experienced geotechnical engineer, which could be reduced to quarterly inspections in winter months, when activities are reduced to tailings placement and water management. He further opines that the obligation to ensure that adequate inspections are performed ultimately falls upon the senior engineer, Mr. Rice.

99. The Panel notes that the evidence is that other, less qualified engineers attended and that instrumentation at the site provided data. But this is not a substitute for inspections. In the Panel's view, the rate of inspections by an appropriately qualified engineer was thoroughly inadequate.

100. The Panel finds that paragraph #2(a) is proven on a balance of probabilities. This conduct is a marked departure from the standard to be expected of a competent professional and therefore amounts to unprofessional conduct.

Notice of Inquiry paragraph #2(b)

101. During submissions regarding paragraph #2(b) of the Notice of Inquiry, the Association abandoned the first clause; that is, that Mr. Rice "fail[ed] to ensure that field inspectors and personnel conducting construction monitoring at the TSF embankments were appropriately experienced and trained". The Association noted that the evidence showed that MPMC hired the personnel to perform the function directly and therefore Mr. Rice was not in a position to "ensure" their suitability.

102. However, the Association submitted that the second allegation in 2(b) is proven; that is, that Mr. Rice failed to ensure that either he or the EOR warned MPMC that the people MPMC had hired were not appropriately experienced and trained.

103. It is an agreed fact that MPMC hired first and second year engineering students to perform construction monitoring and quality control on the Stage 9 construction during the period May to September, referred to as "Field Inspectors". They were trained by AMEC personnel, including in relation to the content of the relevant Construction

Monitoring Manual. These Field Inspectors then sent daily reports regarding their activities to AMEC personnel (ASF para. 65).

104. The role of a field inspector is to ensure that all the elements of the construction meet specifications for the construction of the dam raise, both as to the design and materials used.

105. Dr. Robertson opines that first and second year students would not have sufficient education or expertise for the job of a field inspector (Robertson Report p. 15). The Panel agrees. Such students do not have enough training to be relied upon to recognize when specifications are not met or to be in a position to bring such an opinion to the attention of their employer.

106. The Association submitted that the students had not noticed deficiencies that ought to have been addressed, citing in particular that Ms. Fidel observed that compaction procedures were not being followed and that unsuitable construction material was being used. These things were not detected or at least not recorded by the students in their reports. This shows the inadequacy of the students in the task.

107. It is admitted that Mr. Rice had no communications with any representative of MPMC concerning its use of students as field inspectors (ASF para. 79), nor did he have any communications with Ms. Fidel about this subject (ASF para. 80).

108. No evidence was provided to the Panel that deficiencies in the performance of any of the Field Inspectors caused or contributed to the Breach.

109. The Panel is satisfied on a balance of probabilities that Mr. Rice did not ensure that he or the EOR warned MPMC that its Field Inspectors were not appropriately experienced or trained to act as such.

110. The Panel then considered whether this amounts to unprofessional conduct on Mr. Rice's part.

111. The Panel notes Dr. Robertson's opinion. He was asked if the senior engineer had an obligation to ensure that the Field Inspectors were appropriately trained and experienced and/or to warn the client. In responding, Dr. Robertson stated that a senior engineer would be well aware of the limitations of using inspectors with minimal training and experience and concluded:

It is my opinion that as senior engineer on the project Mr. Rice should have identified the training and capability of the construction inspectors employed by

the mine as a concern, and ensured that the client was informed of this concern. (Robertson Report p. 15)

112. The senior engineer is responsible for ensuring that the dam is built in accordance with the design. This does not mean that the senior engineer is personally responsible for the performance of each and every person involved in each and every aspect of a project. However, as stated above, the function of a field inspector is to ensure that construction meets specifications. Inadequate field inspectors pose a risk to the successful completion of the project. Here, Mr. Rice ought to have known that the Field Inspectors had inappropriate training and experience for this important role. He took no steps, either directly or through the EOR, to alert MPMC to this or the risks these inadequacies posed to the integrity of the project.

113. The Panel finds that the failure to ensure that MPMC was suitably warned is a marked departure from the standards of conduct expected of a competent professional engineer and amounts to unprofessional conduct.

Notice of Inquiry paragraph #3

114. Paragraphs #3-5 of the Notice of Inquiry address Mr. Rice's role as review engineer.

115. Paragraph #3 reads:

3. You demonstrated unprofessional conduct when you accepted professional responsibility as the review engineer for the Stage 9 Design of the TSF embankments in circumstances where you were not qualified by training or experience to adequately fulfil that role, and in particular had insufficient expertise with the design of rockfill tailings embankments on soil foundations necessary to assess or critique the elements of the Stage 9 design or the assumptions underpinning it.

116. The relevant facts as to Mr. Rice's training and expertise are:

- a) Mr. Rice graduated with a Bachelor of Science in 1976. In his interview, he stated that his expertise and experience since then had been in tailings management facilities and encompasses all of the disciplines required to design, construct, and operate tailings facilities (Transcript p. 6).
- b) Mr. Rice did not undertake specialized training or education in geotechnical engineering (Transcript p. 6);

- c) Prior to AMEC, Mr. Rice worked in “tailings management” (Transcript p. 6, 10);
- d) Mr. Rice had since 2003 been AMEC’s Area Manager for South America, and from 2010 also held the position for BC. He described that work as 90-95% managerial (Transcript p. 8-9);
- e) Mr. Rice was the engineer responsible for the design of a TSF embankment 10-20 times “but I would always have disciplines reporting to me doing most of the work, most of the engineering. As I say, I was more on the project management side” (Transcript p. 11);
- f) Mr. Rice never carried the title of senior geotechnical engineer on an embankment project (Transcript p. 13).

117. During the interview, Mr. Rice described Mr. Martin as one of the top geotechnical engineers with tailings management facility design experience in the province (Transcript p. 29). Mr. Rice agreed that Todd Martin had the title of “senior geotechnical engineer” because he had an expertise in geotechnical engineering that Mr. Rice did not (Transcript p. 36).

118. Mr. Rice stated that he was not in a position by virtue of his own experience to challenge Todd Martin’s thinking or analysis:

Q Were you in a position, by virtue of your own experience and by virtue of your own review of the Mount Polley file, to challenge any of Todd Martin's thinking when it came to the design?

A No, I had every confidence in Todd and still do.

Q All right. And then dealing with the stability analysis, which is about halfway through tab 3, do the same answers that you've just given hold true here, as well? In other words, that as a reviewer, your concern here was to satisfy yourself that the stability analysis had been overseen by Todd Martin?

A That's correct.

Q And again, it would be fair for me to say that in March of 2013 you were not in a position by virtue of your experience and your knowledge of the Mount Polley TSF to challenge or question Todd Martin on his stability analysis; is that fair?

A That's correct. (Transcript p. 82)

119. Mr. Rice was the review engineer for the following AMEC reports relating to the TSF Stage 9 work:

- a. the Stage 9 Tailings Storage Facility Construction Drawings and Stability Analyses dated March 8, 2013 (Ex. 4, Appendix 13);
 - b. the Stage 9 2013 Construction Monitoring Manual, dated April 11, 2013 (Ex. 4, Appendix 14); and
 - c. the Stage 9 Stability Analyses included in the Stage 9 2013 Construction Monitoring Manual (Ex. 4, Appendix "A" to Appendix 14). (ASF para. 41)
120. We next turn to the role of a review engineer.
121. The Association submits that a review engineer acts as a "second set of qualified eyes".
122. Both experts have offered opinions about the role of a review engineer. Dr. Robertson states that a review engineer must check the design for completeness and technical competence (Robertson Report p. 15). In order to do so, he or she must "be able to critically analyze the design" and arrive at an independent assessment (Robertson Report p. 16).
123. Ms. Latham states that the review of engineering work is carried out to confirm that the work is correct, complete, meets all input requirements and is suitable for its purpose (Latham Report p. 5).
124. Both opine that the level of review is impacted by the risk and complexity of the matter under review.
125. In *Re: Tacy and others* (June 12, 1989), a discipline committee of the Association stated:

An acceptable review engagement must allow the review engineer the authority to perform as extensive an investigation as he deems necessary. The responsibility to the public of a review engineer is equal to that of the engineer of record. The requirement for the review is, in most cases, an indication of a potential or unique problem.

The review engineer must guard against undue pressure to restrict the completeness of the investigation, brought by a tight completion schedule or for any other reason.

126. AMEC’s documentation was consistent: requiring a “technically qualified” engineer who “shall be a ‘second set of qualified eyes’ that reviews the technical aspects of the project and project deliverables” (ASF para. 42; Ex. 4, Appendix 15).

127. Both Ms. Latham and Dr. Robertson opine that, to fulfill this role, the reviewer must have current expertise in the work under review. Dr. Robertson opined on the skills required in this case as follows:

To perform as a competent reviewer of the Stage 9 embankment raise design the reviewer would need to have the training and experience of a senior tailings dam embankment designer. This would typically be attained by a civil engineer with a post graduate degree in geotechnical engineering and at least 15 to 20 years of experience in geotechnical structures design relevant to tailings dams with increasing responsibility to the stage [of] being a senior tailings dam design engineer and had been the lead designer on several tailings dams of equivalent size and complexity. (Robertson Report p. 19)

128. The Association’s Quality Management Guideline on Documented Checks of Engineering and Geoscience Work (published October 4, 2012)², defines the nature and purpose of a review. It defines it as a “documented process to confirm that the professional engineering or professional geoscience work is complete, meets all input requirements and is suitable for its intended use or purpose” and provides:

3.4 WHO IS QUALIFIED TO CHECK?

3.4.1 *Checks* must be carried out by a professional engineer, professional geoscientist, licensee, EIT, GIT or other party, who is appropriately qualified. The supervising *APEGBC professional* may be the checker. To be qualified a person conducting the *check* must:

- have current expertise in the discipline and type of work being *checked*;
 - be sufficiently experienced and have the required knowledge to identify the elements to be *checked*;
 - understand the *checking* process;
 - have reviewed and understood all relevant *input requirements*;
 - be objective;
 - be thorough and diligent in *checking* and recording observations, corrections and *corrective action*; and
 - be aware of any tools required to assist in the *checking*.
- (emphasis in original)

² All references to the Quality Management Guideline on Documented Checks of Engineering and Geoscience Work in this Determination are to the October 4, 2012 publication.

129. The Association's published guidelines serve to inform members of the profession of the expected standards of conduct. As stated in that Guideline:

2.2 Proper and appropriate *checks* are fundamental to upholding the *APEGBC* Code of Ethics, which first and foremost requires that all professional engineers and geoscientists hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety in the workplace.

130. The Panel is of the view that a review engineer, in a situation where he or she is acting alone, must have training and experience sufficient to assess the work of the engineer responsible for performing the initial work. Reviewers must be capable of themselves carrying out work of the kind under review. In the circumstances of this case, where he was acting alone, Mr. Rice's training and experience was such that he could not fulfil the role of review engineer as, by his own admission, he was not in a position to assess Mr. Martin's design.

131. As a professional engineer Mr. Rice ought to have been aware of the nature of the role of a review engineer and of the elevated importance of the review function given the risk and complexity of the TSF Mount Polley project. The Panel therefore finds that, in the circumstances, accepting the role of review engineer for the Stage 9 design was a marked departure from the standards expected of an engineer and amounts to unprofessional conduct.

Notice of Inquiry paragraph #4

132. Paragraph #4 alleges unprofessional conduct or negligence by Mr. Rice in the execution of his role as review engineer. In particular, Mr. Rice signed off as the review engineer on three reports, which are listed above in paragraph 119.

4. You demonstrated unprofessional conduct or negligence by failing to properly fulfill the role of a review engineer, particulars of which are:

a. relying upon the fact that Todd Martin, P. Eng., P.Geo., was the design engineer for the embankment raises as a basis to conduct a superficial review of the Stage 9 Design;

b. failing to acquire sufficient knowledge of the design and site conditions, including the foundation conditions, to be able to critically analyze the Stage 9 design;

c. signing the Stage 9 design as reviewer when your review was not founded upon adequate knowledge of the Stage 9 design and stability analysis; and

d. failing to question the Stage 9 perimeter embankment design slope of 1.3H:1V, which was unusually steep for rockfill tailings embankments on a soil foundation built by the centreline method with a relatively narrow crest, particularly when you knew or ought to have known that there was significant uncertainty as to the foundation conditions.

Notice of Inquiry paragraph #4(a)-(c)

133. Paragraph #4(a) alleges that, having taken on the role of review engineer, Mr. Rice deferred to Mr. Martin and did not separately undertake a proper review.

134. This is established in Mr. Rice's interview in questions regarding the Stage 9 TSF Construction Drawings and Stability Analyses, which Mr. Rice signed as reviewer:

Q And can you tell us what you recall doing or reading or analyzing before you signed off on this design package³?

A Well, I was I would have spoken to Todd Martin before he left. And then reviewed the document when it was presented to me the end of March.

Q And the conversation with Todd Martin, is that the one that you've already referenced, where you talked about the slicken side issue?

A Yeah, it was part of it. I mean, my main concern was that -- the analysis that had been done under his direction and he confirmed that.

Q Sorry. Just explain that to me. What was your main concern?

A That the analysis and the design had been done under his direction.

Q As opposed to being done by Laura herself --

A Right.

Q -- without his direction?

A Right. (Transcript p. 81).

135. As set out above, Mr. Rice admitted he was not in a position by virtue of his own experience to challenge Mr. Martin's thinking when it came to the design or his stability analysis (Transcript p. 81-82).

³ The term "design package" is used in the interview to refer to the Stage 9 TSF Construction Drawings and Stability Analyses (Transcript p. 80).

136. Mr. Rice also agreed with the proposition that “as a reviewer, your concern here was to satisfy yourself that the stability analysis had been overseen by Todd Martin” (Transcript p. 81).

137. Notice of Inquiry paragraphs #4(b) and (c) overlap. Again we turn to the interview of Mr. Rice. To paraphrase, Mr. Rice stated:

- a) He didn’t have a basis for questioning the stratigraphy used in the model for the stability analysis as he didn’t know and had not sought to educate himself on the soil stratigraphy at the site (Transcript p. 68, 69, 86).
- b) He did not turn his mind to the question of whether the glaciolacustrine soil unit was appropriately modeled (Transcript p. 87).
- c) He did not question whether other models were run and not included in the report (Transcript p. 87).
- d) He did not recall reading AMEC’s site investigation report resulting from a 2011 site investigation, entitled the “Mount Polley TSF Storage Facility 2011 Geotechnical Site Investigations Final” (Transcript p. 63-65).
- e) While after the Breach there had been considerable talk about groundwater monitoring well drill holes, he had not as of spring 2013 been aware of their existence or what they showed (Transcript p. 91-92).
- f) As of spring 2013, he was not aware of any other data or drill results that spoke to the existence of GLU in the vicinity of the TSF (Transcript p. 92). This is important because this was the central focus of the 2011 site investigation report.
- g) He did not read reports by the prior firm, Knight Piésold when he initially became involved in the project (Transcript p. 63).
- h) When asked what he recalled having read or analyzed before signing off on the design package for Stage 9, Mr. Rice said that he would have spoken to Mr. Martin before he left and reviewed the document that was presented to him (Transcript, p. 80).

138. There are no records which document any review work of the Stage 9 design.

139. Mr. Rice's time records for 2013 include four hours in April, which was when the Stage 9 2013 Construction Monitoring Manual was issued.

140. No time was recorded by Mr. Rice in 2013 prior to April, although the Stage 9 TSF Construction Drawings and Stability Analyses is dated March 8, 2013.

141. The facts set out above in support of Notice of Inquiry paragraphs #4(a) to (c) indicate that the review was, at most, superficial.

142. The Panel finds on a balance of probabilities that Mr. Rice's superficial review and undue reliance on Mr. Martin's work is a marked departure from the standard to be expected of a competent professional. The role of the review engineer epitomizes an engineer's professional duty to provide expertise to the client and to safeguard public health and safety and the environment. Mr. Rice failed to perform any meaningful review, when this important role was precisely that which he undertook. His conduct therefore amounts to unprofessional conduct.

Notice of Inquiry paragraph #4(d)

143. Notice of Inquiry paragraph #4(d) deals with a specific technical topic – failing to question the Stage 9 perimeter embankment design slope of 1.3H:1V⁴.

144. It is clear on the facts set out above and throughout the ASF that Mr. Rice did not do so.

145. The design slope of 1.3H:1V is an agreed fact in ASF para. 75. It is reflected in numerous documents.

146. 1.3H:1V is a very steep slope. In his report, Dr. Robertson describes other dams, built at a lesser slopes and notes that a Peruvian dam with a slope of 1.4H:1V as “exceptional and aggressive”. Dr. Robertson writes:

The factor of safety for steep rockfill dams is governed near the downstream face by the rockfill shear strength at shallow depth. Compaction near the downstream face of the dam poses some risk to the equipment performing the compaction. For these reasons downstream slopes for compacted rockfill tailings dams are typically constructed with face angles not exceeding 1.4H:1V, and then only when constructed on good rock foundations. The Cerro Corona tailings dam in Peru is designed and built to a height of approximately 150 m as a centreline rockfill

⁴ For every metre of vertical rise the base extends 1.3 metres horizontally.

tailings dam on rock foundations with a downstream slope 1.4H:1V. This design was considered exceptional and aggressive. The foundation conditions at Cerro Corona was competent rock and the rockfill of excellent quality. Construction was supervised by a team of experienced dam engineers and technicians from the designer.

Other rockfill tailings dams with which I am familiar (Antamina tailings dam in Peru, Phu Bia tailings dam in Lao, and Martin tailings dam in Guatemala) are all constructed with slope angles of 1.7 to 2.0H:1V. I am not aware of any prior compacted rockfill tailings dam of a height comparable to that at Mount Polly [sic] with a downstream slope constructed with a slope angle of 1.3H:1V on a soil or rock foundation. (Robertson Report p. 19)

147. In his interview, Mr. Rice agreed that a 1.3H:1V slope is “not typical”. He had seen it in bench construction; that is, where there were flattened benches between lifts of rock, but not in a “full” slope (Transcript p. 109).

148. As referred to above, the height of the Embankments and steepness of the slope contribute to the aggressive design and complexity of the dam. The consequence of the height and steep slope is summarized by Dr. Robertson:

The steeper and the higher the slope the higher are the shear stresses along horizontal planes in the foundation and therefore a need for strong foundation materials without weak layers. (Robertson Report p. 20)

149. As to whether a review engineer ought to make inquiries regarding the slope of 1:3H:1V, the Association relies on Dr. Robertson’s opinion:

It would be prudent in performing a technical review of a design of a tailings dam with a 1.3H:1V downstream face to both recognize that such a slope is aggressive and its appropriateness is dependent on the strength of both the embankment and of the foundation materials.

Since foundation materials can be variable across a site dependent on the geomorphological process by which the foundation soil strata formed or were placed and consolidated, the prudent review engineer would carefully review the site investigation, sampling and testing materials characterization work to be satisfied that these had been adequately characterized and material strength and permeability parameters selected for use in the stability analyses were appropriate... (Robertson Report p. 21)

150. Dr. Robertson stated that in its 2011 Geotechnical Investigation report AMEC had noted the potential for soft weak layers in the GLU. He opined that the potential for weak layers should have been questioned and commented upon during the review of the Stage 9 raise:

Given the increasing dam height, steeped downstream slope and prior observations of weaker layers in the GLU, as well as observations of embankment deformation a reasonably prudent review engineer would complete detailed and thorough review of the Stage 9 embankment raise including all the aspects raised in this question. (Robertson Report p. 22)

151. This Panel agrees with this analysis. The steepness of the slope and proposed height of the dam clearly ought to have precipitated an in-depth review. It was particularly important to conduct a review in light of the fact that AMEC's 2013 As-Built and Annual Review Report dated March 12, 2014 (Ex. 4, Appendix 23), showed that there had been adaptations to the design, and that the water retained was much greater than that originally planned. Accordingly, it was necessary to look at the fundamentals.

152. The Panel finds that Mr. Rice's failure to identify and address the implications of the steep slope is a marked departure from the expected standards of a professional engineer. The circumstances posed a serious risk, calling for an in-depth review. The failure to do so departed from every engineer's fundamental ethical and professional obligation to protect public safety, and therefore amounts to unprofessional conduct.

Notice of Inquiry paragraph #5

153. This paragraph of the Notice of Inquiry pertains to the failure to meet the standards required by the Association's Bylaw for documenting review:

5. You failed to document your review of the Stage 9 Design and stability analysis, contrary to section 14(b)(2) of the Bylaws of the Association.

154. The ASF provides:

74. For the Stage 9 design package for which Mr. Rice was a reviewer, including the Stage 9 stability analysis and the Stage 9 Construction Monitoring Manual, in AMEC's or Mr. Rice's files there are no copies of drafts of such documents marked up by Mr. Rice, electronic or otherwise. There are emails indicating that

Mr. Rice had reviewed the documents referred to above and was scheduled to meet with Ms. Fidel to discuss his comments.

155. There is no record of Mr. Rice's review in the evidence before this Panel. This is consistent with the minimal time spent on the project by Mr. Rice at the relevant time.

156. We then turn to Mr. Rice's professional obligations.

157. The Association's Bylaw 14(b)(2) provides:

Members and licensees shall establish and maintain documented quality management processes for their practices, which shall include, as a minimum:

...

(2) regular, documented checks of engineering and geoscience work using a written quality control process appropriate to the risk associated with the work;

158. The Association's Quality Management Guideline on Documented Checks of Engineering and Geoscience Work provides:

3.5 HOW ARE CHECKS DOCUMENTED AND WHAT RECORDS ARE RETAINED

3.5.1 *Checks* must be documented. These records must be retained to confirm that a required *check* has occurred. The record must identify the project or work, the *APEGBC professional of record*, checker, purpose of the *check*, and when the *checking* occurred. The documentation may include mark-ups or *checked* work, completed forms or checklists, or e-mails or other communication documenting comments corrections and *corrective action*. Documentation may be electronic or hard copy.

3.5.2 Checklists and other tools act as a reminder of aspects of the work that must be *checked*. They can also be used as a record that the *check* occurred. Checklists and other tools may be developed based on the discipline, type of work, stage or phase of work, deliverable or product, or other content and structure suited to the *APEGBC professional's work*. Checklists and other tools must never replace the professional judgment of the checker.

3.5.3 The detail and volume of *check* records retained will depend on the complexity and duration of the work.
(emphasis in original)

159. The Association further relies upon statements by both experts regarding the importance of documenting engineering work.

160. The Panel notes the statement contained in the Association's Quality Management Guidelines on Retention of Project Documentation (published October 4, 2012):

3.1.1 Retaining complete and easily retrievable project documentation is critical to professional practice, and assists *APEGBC professionals* in holding public safety paramount and serving the public interest as required by the *Act*. It allows for an orderly handoff from one project manager or other team member to another, even when the requirement to do so comes without warning. It can make the difference between a well-run project that meets client objectives and professional standards, and one that does not. After the completion of the project or work, complete documentation enables *APEGBC professionals* to demonstrate that they have met the intent of *Bylaw 14 (b)(1)*. The documentation may also allow *APEGBC professionals* to resolve issues, meet legal and regulatory requirements, document decision making, defend claims, facilitate undertaking future work or make intellectual property readily retrievable for future solutions. (emphasis in original)

161. While this passage was written directly with reference to s. 14(b)(1) of the Bylaws, it applies equally to the requirement to retain records of the review.

162. No evidence was presented to the Panel that any records were retained. The Panel finds that Mr. Rice failed to document his reviews contrary to *Bylaw 14(b)(2)* and that this paragraph of the Notice of Inquiry is proven on a balance of probabilities.

Notice of Inquiry paragraph #6

163. This paragraph alleges unprofessional conduct or negligence for failing to take appropriate steps after Ms. Fidel's departure from AMEC on a leave. It reads:

6. You demonstrated unprofessional conduct or negligence from in or about February 2014 to August 2014 when, after Ms. Fidel ceased to be the EOR and you were the senior-most engineer at AMEC responsible for the engineering work at the TSF, you:

- a. failed to appoint a new EOR, or designate any engineer who would have the responsibility to observe and monitor the TSF embankments to ensure they were working as intended and remained in a safe condition;
 - b. never visited the TSF yourself;
 - c. failed to ensure that a geotechnical engineer or engineers with appropriate experience and knowledge of the design of the embankments was conducting observation and monitoring of the embankments, including by regularly visiting the site to observe the TSF for potential indicators of safety or stability issues;
 - d. failed to ensure that you, or another engineer with appropriate experience, received regular updates on the volume and level of water in the TSF impoundment and the status of the beaches within the TSF; and
 - e. failed to ensure that the implications, both in terms of embankment stability and consequences if failure occurred, of any changes in the matters referred to in paragraph (d) were assessed.
164. Paragraph #6(a) is supported by paragraphs 44 and 85 in the ASF:
44. In 2013 and 2014 Mr. Rice was the senior-most engineer at AMEC involved in the Mount Polley project.
85. Ms. Fidel went on maternity leave in February 2014, before the 2014 construction season began. After Ms. Fidel went on maternity leave, no other individual within AMEC was designated to take over as Engineer of Record.
165. Paragraph #6(b) is supported by paragraph 86 of the ASF:
86. Mr. Rice did not visit the TSF at any time prior to the Breach.
166. Paragraph #6(c) is supported by paragraphs 87-89 of the ASF. Ms. Fidel last visited the TSF in August 2013 (ASF para. 87). After that:
89. No AMEC engineer, other than EITs, visited the TSF following Ms. Fidel's August 2013 site visit and prior to the Breach.
167. We now turn our attention to paragraph #6(d) and (e).

168. During 2013-2014, BGC was beginning its work on a Stage 10 design. In memoranda to MPMC, BGC raised concerns that while the original design of the TSF called for tailings beaches to protect the dam's low permeability core, those beaches were shrinking as the volume of water impounded was rapidly increasing.

169. The BGC memorandum to MPMC of June 18, 2013 (Ex. 4, Appendix 109) states in part:

- The original TSF design prescribed significant above-water beaches against the dam, for the its [sic] entire perimeter. A good example of wide, above-water, beaches is shown in the 2010 aerial photo with a small pond near the right abutment of the South Embankment, right abutment.
- A continuous beach along the complete upstream length of the dam is the design requirement necessary for dam stability and needs to be achieved moving forward regardless of the final targeted crest elevation. The current water pond surplus does not allow for the development/maintenance of above-water beaches.
- Site personnel revealed that there is no long term (or short term) plan to manage the surplus TSF water pond or a means to reduce the volume of excess water currently stored in the pond.

170. There is no evidence that the BGC memoranda were provided to AMEC, however, they underscore the importance of water management and maintenance of the tailings beaches.

171. Dr. Robertson opines that the water management issue was of particular importance on the Mount Polley dam:

The consequences [sic] of excessively high water volumes in storage on the Mount Polley TSF was the risk of having insufficient freeboard to be able to store flood flows and the risk of overtopping failure. As the beach lengths decrease with increasing water storage volumes there is also increased seepage into the beaches, which increases water pressure heads on the low permeability zone of the centerline section, reducing stability and increasing deformation of the embankment and increasing the risk of piping failure (internal erosion in the embankment by seepage). In the event of slope instability the potential for pool water overtopping the embankments increases with increased volume of water stored. The subsequent erosion of tailings by the draining pond water results in a large increase of mass of tailings and water discharge and of downstream impacts.

The critical controls for these risks requires pond water management to minimize the water stored and maximize the beach widths together with monitoring of pore pressures in the embankments with piezometers as well as seepage flow rate monitoring...(Robertson Report p. 24)

172. Mr. Rice stated in his interview that he did not discuss “the shrinking size of the beaches” with anyone at AMEC (Transcript p. 136).

173. Mr. Rice also agreed that AMEC did not know that water was approaching crest elevation until informed of the overtopping incident (Transcript p. 151) and the monitoring of water levels was left to MPMC (Transcript p. 152):

Q And do you know what the communication was between the Mount Polley personnel and AMEC in the days leading up to that overtopping incident?

A Well, I think they -- one of the tailings inspectors called our Prince George office and I think there's a document in here that covers --

Q I thought that was once the overtopping incident had been detected?

A Oh, yeah, that's the first we heard of it.

Q That's what I'm asking.

A Yeah.

Q So in other words, are you saying that staff at AMEC did not know that the water was approaching crest elevation?

A We did not know until that call.

[...]

Q All right. And so things such as monitoring what's happening with the beaches and monitor[ing] what's happening with the water level is left the responsibility of the company? It's not AMEC responsibility at that point?

A. As far as I remember, yes.

174. It follows, then, that both paragraphs #6(d) and (e) are proven. Mr. Rice failed to monitor or ensure that he, or another engineer with appropriate experience, received regular updates on the water impoundment and status of the beaches and failed to ensure that the implications were assessed.

175. Dr. Robertson opines that due to the risks, the EOR needs to make frequent site visits, monitor information from the mine regularly, and that, in the absence of an EOR, the duty should have been performed by Mr. Rice as the senior engineer.

176. The Panel finds that all subparagraphs of paragraph #6 are proven on a balance of probabilities.

177. As the senior engineer on a project of the size and complexity of Mount Polley and with a significant environmental risk, it was up to Mr. Rice to ensure that suitable arrangements were in place. Instead, he did not appoint an EOR and did not fulfil the role himself. He did not perform the necessary oversight of the water management issue. This is a marked departure from the standard to be expected of a competent professional and therefore amounts to unprofessional conduct.

Notice of Inquiry paragraph #7

178. This paragraph of the Notice of Inquiry concerns an excavation at the bottom of one of the Embankments. It reads:

7. You demonstrated unprofessional conduct or negligence from March 2014 to August 2014 when you became aware of an excavation at the toe of the perimeter embankment of the TSF that had remained unfilled for a number of months and you did not take steps to:

a. have an appropriately qualified geotechnical engineer assess the excavation to determine what impact, if any, the excavation would have on the stability of the embankment if it was left unfilled; and

b. determine whether the excavation should be filled as soon as possible and if so to see that this was done.

179. The relevant facts are set out in the ASF:

106. During the 2013 and 2014 construction, AMEC and MPMC field inspectors issued Daily Site Reports in respect of the TSF [...] The Daily Site Reports from October 19 to October 30, 2013 include depictions and descriptions of an excavation (and filling-in thereof) that was occurring along part of the downstream toe of the Perimeter Embankment in an area several hundred meters distant from the Breach area (the "Excavation").

107. The Excavation was undertaken by MPMC personnel in the Summer and Fall of 2013 to prepare the foundation for the placement of additional rock on the downstream side of the perimeter embankment. It was not carried out at AMEC's direction.

108. AMEC personnel approved part of the excavated area for backfilling in the Fall of 2013. Part of the excavated area could not be approved for backfilling because snow had covered the area preventing a proper inspection.

109. A portion of the Excavation which was approximately 200 to 300 meters in length was not backfilled, and remained unfilled as of the date of the Embankment failure on August 4, 2014.

110. No embankment stability analyses were undertaken by AMEC personnel in 2014 in connection with the Excavation, or in connection with the changes in volume or elevation of water in the TSF impoundment.

111. Mr. Rice learned of the Excavation in or about March of 2014.

180. In his interview, Mr. Rice stated that when he became aware of the excavation, he did not take steps to learn about its purpose and took no steps to assess whether the excavation could have an impact on the results of a stability analysis (Transcript p. 156).

181. Dr. Robertson opines that given the steep slope and substantial size of the excavation, a prudent engineer had an obligation to assess the potential effect and, if necessary, take remedial action. Dr. Robertson opines that the size of the excavation was sufficient to warrant that investigation.

182. No evidence was provided to the Panel that the excavation caused or contributed to the Breach.

183. Nevertheless, the Panel finds that the senior engineer had a professional responsibility to assess the effect of a substantial excavation at the toe of the dam site due to its potential risk to the project.

184. The Panel finds that paragraph #7 is proven on a balance of probabilities and is a marked departure from the standard to be expected of a competent professional and therefore amounts to unprofessional conduct.

Notice of Inquiry paragraph #8

185. Paragraph 8 of the Notice of Inquiry states:

8. The conduct set out above at paragraphs 1 to 7 is contrary to Principle 1 of the Association's *Code of Ethics* which requires that all members and licensees shall

hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace.

186. The Code of Ethics is s. 14(a) of the Bylaws adopted by the Association under the Act.

187. The preamble to the Code of Ethics provides:

14 a) The purpose of the code of ethics is to give general statements of the principles of ethical conduct in order that members and licensees may fulfill their duty to the public, to the profession and their fellow members and licensees.

Members and licensees shall act at all times with fairness, courtesy and good faith to their associates, employers, employees and clients, and with fidelity to the public needs. They shall uphold the values of truth, honesty and trustworthiness and safeguard human life and welfare and the environment. In keeping with these basic tenets, members and licensees shall...

188. Following the preamble, the Code of Ethics lists a series of principles. Principle 1 is as follows:

1) Hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace...

189. The Panel is satisfied that the conduct as found above regarding paragraphs 1-7 of the Notice of Inquiry violates Principle 1 of the Code of Ethics. Mr. Rice failed to fulfil the responsibilities he undertook to perform as senior engineer and review engineer. The duty to hold paramount the safety, health and welfare of the public and the protection of the environment is especially important in a project as large and complex as Mount Polley, and given the obvious risk of harm in the event of a breach of the dam. The evidence is that, as the Association puts it, there was a lack of rigour and even inattention to the project, regardless of the consequences that did in fact ensue.

190. Given that the Panel has made the determination of unprofessional conduct on paragraphs #1-4, 6 and 7 of the Notice of Inquiry and a contravention of the Bylaws on paragraph #5, the Panel declines to make a duplicative finding on paragraph #8 of the Notice of Inquiry.

Notice of Inquiry paragraph #9

191. Paragraph #9 of the Notice of Inquiry states:

9. The conduct set out above at paragraph 3 is contrary to Principle 2 of the Association's *Code of Ethics* which requires that all members and licensees shall undertake and accept responsibility for professional assignments only when qualified by training or experience.

192. Following the preamble in the Code of Ethics quoted above, Principle 2 is as follows:

2) Undertake and accept responsibility for professional assignments only when qualified by training or experience

193. As set out in this Panel's analysis of paragraph #3 of the Notice of Inquiry, Mr. Rice accepted professional responsibility as review engineer when, in the circumstances, he did not have the training or experience to do so. This allegation is proven.

194. As the Panel has determined that Mr. Rice's conduct as set out in paragraph #3 amounts to unprofessional conduct, the Panel declines to make a duplicative finding on paragraph #9 of the Notice of Inquiry.

Notice of Inquiry paragraph #10

195. Paragraph #10 of the Notice of Inquiry reads:

10. The conduct set out above at paragraph 4(c) is contrary to Principle 3 of the Association's *Code of Ethics* which requires that all members and licensees shall provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction.

196. Following the preamble in the Code of Ethics quoted above, Principle 3 is as follows:

3) Provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction

197. As set out in this Panel's analysis of paragraph #4 of the Notice of Inquiry, Mr. Rice failed to fulfill the responsibilities of a review engineer by relying unduly on others and by failing to conduct an independent analysis. We make no finding he lacked "honest conviction". However, by signing as review engineer in the circumstances, Mr. Rice clearly provided an opinion without adequate knowledge. This allegation is proven.

198. As the Panel has determined that Mr. Rice's conduct as set out in paragraph #4 amounts to unprofessional conduct, the Panel declines to make a duplicative finding on paragraph #10 of the Notice of Inquiry.

CONCLUSION AND SUMMARY

199. In summary, the Panel makes the following determinations, pursuant to s. 33(1)(b) and (c) of the Act:

- a) paragraphs #1, 3, 4, 6 and 7 have been proven as alleged in the Notice of Inquiry on the balance of probabilities and Mr. Rice has thereby demonstrated unprofessional conduct;
- b) paragraph #2, except for the first clause of paragraph 2(b) which was withdrawn by the Association, has been proven on the balance of probabilities and Mr. Rice has thereby demonstrated unprofessional conduct; and
- c) paragraph #5 has been proven as alleged in the Notice of Inquiry on the balance of probabilities and Mr. Rice has thereby contravened section 14(b)(2) of the Bylaws of the Association.

200. Paragraphs #4, 6, and 7 of the Notice of Inquiry allege negligence as an alternate determination to unprofessional conduct. Based upon the Panel's findings of fact on each of these paragraphs, Mr. Rice's conduct meets the legal test for negligence, described above under the heading "Determinations Under s. 33 of the Act". However, in this Panel's view, Mr. Rice's conduct was more than "carelessness" or a failure to meet a required level of skill and care. In addition, Mr. Rice failed to fulfill standards that are fundamental ethical obligations of members of the profession. These standards are reflected in the Code of Ethics, discussed above. For this reason, the Panel has found the determination of unprofessional conduct to better reflect the gravity of Mr. Rice's conduct.

201. As the Panel has made adverse determinations regarding the conduct of Mr. Rice pursuant to s. 33(1)(b) and (c) of the Act, the next step in this proceeding is to ascertain whether sanctions should be imposed upon Mr. Rice pursuant to s. 33(2) of the Act and whether to direct the payment of costs pursuant to s. 35 of the Act. The Panel will therefore reconvene the hearing to receive submissions on penalty and costs.

202. If the parties wish to conduct the next segment of the hearing solely by way of written submissions, the Panel is prepared to entertain a request to do so. The parties are requested to contact the Panel's counsel in this regard within 15 days of issuance of this decision.

203. In the absence of a request for written submissions, the hearing on penalty and costs will take place by video conference, on a date and time to be arranged.

<original signed by>

Paul T Adams, P. Eng., Chair

<original signed by>

Colin Smith, P. Eng.

<original signed by>

Frank Denton, P. Eng.