

# Recommended Orders

Date: May 15, 2017

Case No.: 17-005-RDO

## **IN THE MATTER OF THE ENGINEERING, AND GEOSCIENCE PROFESSIONS ACT AND IN THE MATTER OF THE CONDUCT OF SUPREME STEEL LP**

The Investigative Committee of the Association of Professional Engineers and Geoscientists of Alberta (APEGA) has conducted an investigation into the conduct of Supreme Steel LP (Supreme) with respect to a December 18, 2015 letter written to the Investigative Committee regarding the erection of steel girders for the 102nd Avenue bridge crossing over Groat Road in Edmonton, Alberta.

### **BACKGROUND**

Supreme was engaged to supply, fabricate and erect the structural steel girders forming a part of the 102nd Avenue Bridge over Groat Road in Edmonton, Alberta. During the erection of steel girders on March 6, 2015, 3 of the 6 girders in place failed through lateral torsional buckling.

Two separate investigations determined that the failure was caused by incorrect lateral bracing. Supreme's authenticated erection drawings called for the permanent lateral bracing to be installed as the girders were erected. Permanent bracing was installed for the first 3 girders, however only temporary bracing was in place for the next 3 girders which subsequently failed.

The first 3 girders installed with permanent bracing did not fail, even under the additional lateral loading from the 3 failed girders.

Following this event, the APEGA Practice Review Board (PRB) initiated an inquiry into Supreme with respect to their practice of engineering. In the course of their inquiry, the PRB made the decision to forward their concerns to the Investigative Committee as a formal complaint.

### **A. COMPLAINT ALLEGATIONS**

1. Supreme has engaged in unprofessional conduct that was detrimental to the best interests of the

public contrary to Section 44(1)(a) and (b) of the *Engineering and Geoscience Professions Act* ("the Act") and Rule of Conduct #1 of the *APEGA Code of Ethics* ("the Code"). Supreme and its Members did not hold paramount the best interests of the public.

2. Supreme has engaged in unskilled practice that displayed a lack of judgment in the work undertaken contrary to Section 44(1)(b) and (d) of the Act and Rule of Conduct #2 of the Code. Supreme displayed a lack of skill or judgment in the practice of the profession by engaging in a project that was outside their field of expertise.
3. Supreme has engaged in unskilled practice that displayed a lack of judgment in the work undertaken contrary to Section 44(1)(b) and (e) of the Act and Rule of Conduct #2 of the Code. Supreme displayed a lack of knowledge of or lack of skill or judgment in the carrying out or their supervisory duties while engaged in the project.
4. Supreme has engaged in unprofessional conduct that displayed a lack of judgment in the carrying out of a duty contrary to Section 44(1)(b) of the Act and Rule of Conduct #4 of the Code. Supreme displayed a lack of skill or judgment in complying with the requirements of a professional management plan as per the requirements outlined in Section 48(1)(d) of the regulations.
5. Supreme has engaged in unprofessional conduct that displayed a lack of judgment in the carrying out of a duty contrary to Section 44(1)(b) of the Act and Rule of Conduct #5 of the Code. The actions of Supreme did not uphold or enhance the reputation of the profession.

### **B. AGREED STATEMENT OF FACTS**

As a result of the investigation, it is agreed by and between the Investigative Committee, Supreme and their Responsible Member, [Professional Member A], P.Eng., that:

- a. Supreme held a valid Permit to Practice at all relevant times.
- b. Supreme was engaged to fabricate and erect the 102nd Avenue bridge girders.

*Case No. 17-005-RDO continued*

- c. Supreme was the engineer of record responsible for girder erection drawings and girder erection scheming.
- d. Supreme was required to use the services of Professional Engineers throughout the process required to erect the bridge girders.
- e. Supreme, through the bridge girder erection process, did encounter change orders, modifications and/or alterations.
- f. Supreme had in place, at the relevant time, a Professional Practice Management Plan (PPMP) created in 2004 entitled, *SSL PPMP SP-02 Design and Drafting*, which had been created in response to the requirements made by APEGA at that time.
- g. Supreme failed to provide an appropriately labelled and updated PPMP manual to APEGA's Investigation Panel. The documents provided by Supreme did not meet APEGA's *Guideline for Professional Practice Management Plans, V1.4, February 2013*, specifically Section 2.4 which states, "Each permit holder should review its Plan at least annually to verify its suitability and effectiveness."
- h. Supreme, despite failing to provide an appropriate PPMP, had in place adequate policies and procedures intended to ensure the erection process of the girders was followed accurately and as required by design.
- i. Supreme issued 5 final erection drawings for the Project, one of which (Drawing *EP140312-R3*, revised March 13, 2015) included the details on the delivery, erection sequence, stability requirements and step-by-step installation procedures as well as crane locations for the 7 drop-in girders between the west and east abutment girders.
  - On the morning of March 14, 2015, Supreme's two engineers (Professional Member A, P.Eng., and Professional Member B, P.Eng.), and [Engineering and Construction Company Engineer C] involved with the Project were on site as the first of the drop-in girders was installed.
  - At 7:00 P.M., after the 3rd girder was installed, which included the permanent diaphragm framing, the engineers provided instructions to continue as per the plan and left the site.
  - On March 15, 2015, girders 4 through 6 were installed, but with only temporary bracing — the permanent bracing was not installed. The drop-in girder installation procedure was not followed in the same sequence as girders 1 through 3. Specifically, the permanent diaphragm frame installation was not completed.
  - At approximately 1:30 A.M. on March 16, lateral torsional buckling of girders 4 and 5 was noted and by 2:15 A.M. extensive buckling had occurred between girders 4, 5 and 6.
- j. An independent report ("the Report") was completed on June 22, 2015, regarding the causation of damages during erection. The Report was completed at the request of [Supreme's insurer], by [Engineering Company D]. The intent was to apply forensic engineering principles to address the most probable cause of the damages that occurred during the drop-in girder installation. The Report indicates that a procedural mistake was made by the experienced Supreme site foreman who did not fully understand the importance of the diaphragm frame installation. Specifically, it states:
 

*"...the primary cause of the girder deflection and damages is as a result of the Supreme site foreman not following the unique stamped and sealed Supreme erection drawing procedures..."*

Further:

*"...the cause of damages to the drop-in girders would be as a result of faulty workmanship due to the Supreme erection procedures not being followed..."*
- k. Supreme utilized Professional Members appropriately with respect to managing change orders, modifications and/or alterations related to the bridge girder erection.
- l. Supreme did not have constant, professional supervision at the site; however, they demonstrated there were adequate policies and procedures in place intended to ensure the girder erection process was followed accurately and as required by design. Having designed an appropriate erection scheme and passed it on to an experienced crew there would be no requirement for the engineer to be continuously on site to ensure his directions were being followed.

*Case No. 17-005-RDO continued*

### C. CONDUCT

Supreme freely and voluntarily admits that its conduct described above in relation to its failure to have a Professional Practice Management Plan in place constitutes unprofessional conduct and that Complaint Allegation #4 set out above is admitted and proven.

With regards to the Complaint Allegations #1, #2, #3 & #5 set out above, the Investigation Panel determined there was insufficient evidence that Supreme contravened Sections 44(1) of the Act or Rules of Conduct #1, #2, #3 or #5 of the Code.

### D. SECTION 44(1) OF THE ACT AND THE CODE OF ETHICS

#### Section 44(1) of the Act states:

*Any conduct of a professional member, licensee, permit holder, certificate holder or member-in-training that in the opinion of the Discipline Committee or the Appeal Board*

- (a) is detrimental to the best interests of the public;*
- (b) contravenes a code of ethics of the profession as established under the regulations;*
- (c) harms or tends to harm the standing of the profession generally;*
- (d) displays a lack of knowledge of or lack of skill or judgment in the practice of the profession, or;*
- (e) displays a lack of knowledge of or lack of skill or judgment in the carrying out of any duty or obligation undertaken in the practice of the profession*

*whether or not that conduct is disgraceful or dishonourable, constitutes either unskilled practice of the profession or unprofessional conduct, whichever the Discipline Committee or the Appeal Board finds.*

#### The Rules of Conduct of the APEGA Code of Ethics state:

- 1 Professional engineers, geologists and geophysicists shall, in their areas of practice, hold paramount the health, safety and welfare of the public and have regard for the environment.*
- 2 Professional engineers, geologists and geophysicists shall undertake only work that they are competent to perform by virtue of their training and experience.*
- 3 Professional engineers, geologists and geophysicists shall conduct themselves with integrity, honesty,*

*fairness and objectivity in their professional activities.*

- 4 Professional engineers, geologists and geophysicists shall comply with applicable statutes, regulations and bylaws in their professional practices.*
- 5 Professional engineers, geologists and geophysicists shall uphold and enhance the honour, dignity and reputation of their professions and thus the ability of the professions to serve the public interest.*

### E. RECOMMENDED ORDERS

On the recommendations of the Investigative Committee, and by agreement with [Professional Member A], P.Eng., (Supreme Steel's Responsible Member) with those recommendations, following a discussion and review with the Discipline Committee Case Manager, the Discipline Committee hereby orders that:

1. Supreme Steel LP shall receive a Letter of Reprimand, a copy of which will be maintained permanently in their registration file and be considered at any future date should new cases of unprofessional conduct or unskilled practice be considered by APEGA.
2. Supreme Steel shall submit, to the satisfaction of the Practice Review Board of APEGA, a revised version of their Professional Practice Management Plan. The revised version shall be completed and submitted within 60 days of the Case Manager's approval of this Recommended Order. Should the Permit Holder not adequately complete the PPMP in the timeline provided, the Permit Holder's Permit to Practice shall be suspended until such time as the PPMP has been appropriately completed.
3. This matter and its outcome will be published by APEGA as deemed appropriate and such publication will name Supreme.

**[PROFESSIONAL MEMBER A], P.ENG.**

*Responsible Member, on behalf of Supreme Steel*

**KEVIN WILLIS, P.ENG.**

Panel Chair, APEGA Investigative Committee

**APEGA Discipline Committee**

*Approved this 15th day of May 2017*

*By Case Manager John Nicoll, P.Eng.*