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August 14, 2020

VIA EMAIL

Ms. Christine Long
Board Secretary
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4

Dear Ms. Long:

Re: Enbridge Gas Inc. (Enbridge Gas)
Ontario Energy Board (OEB) File: EB-2019-0294
Low Carbon Energy Project (Project)
TSSA responses to OEB Staff Interrogatories

In response to the Ontario Energy Board's (the "Board") Procedural Order No. 3, dated July 22, 2020, please find the Technical Standards and Safety Authority's (TSSA's) responses enclosed.

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OEB staff No. 1
Ref.: TSSA evidence, page 1
Applicant's response to OEB staff interrogatory No. 16
Applicant's response to CCC interrogatory No. 7
Applicant's response to SEC interrogatory No. 1
Preamble
The TSSA explained that its mandate and authority in respect of the Project arise from:
 the *Technical Standards and Safety Act, 2000*

 Ontario Regulation 210/01

 FS-238-18, through which it adopted the CSA Z662

The TSSA explained that it licenses and audits gas distributors, reviews all leave to construct applications filed with the OEB, and can issue orders for non-compliance.
The TSSA's explanation appears to be limited to its Fuels Safety mandate. However, it is OEB staff understanding that the TSSA also has mandate and authority over other matters including pressure vessels and Operating Engineers.
Enbridge Gas stated that approvals from the TSSA will be required as part of hydrogen station fabrication and commissioning.
Enbridge Gas explained that when there is a fuel related installation (e.g., new technology) that is not specifically covered by existing codes, a Field
Development Project (or project-specific review by the TSSA) may be required.
Enbridge Gas provided a copy of a slide deck on the Project that was presented to its executive management. On one slide, Enbridge Gas noted that a variance from the TSSA would be required if any pipe and fittings were used for the Project that are not already approved for general use by Enbridge Gas.

Question

a) Please confirm that the TSSA has mandate and authority over pressure vessels and Operating Engineers. If so, please explain how that mandate and authority may relate to the Project.

b) Please confirm that the TSSA has mandate and authority over the hydrogen station fabrication and commissioning. If so, please explain the nature and extent of that mandate and authority.

c) Please confirm that the Project is a Field Development Project and will receive (or has received) a project-specific review by the TSSA. If so, please explain what is involved in this type of review and the TSSA's key findings. If not, please explain why not.

d) Under what circumstances is a variance required? How might the variance process be applied in respect of the Project? Please include in the response whether Enbridge Gas has applied to the TSSA for any variances for the Project, and whether the TSSA has issued Enbridge Gas any variances to date for the Project (and if so for what?).

e) Does the TSSA have mandate and authority over any other activities that may relate to the Project? Please explain.

Response

a) TSSA has jurisdiction on pressure vessels and Operating Engineers, according to Ontario Regulation 220/01: Boilers and Pressure Vessel Regulation and Ontario Regulation 219/01: Operating Engineers Regulation. However, for a "pipeline system", O.Reg. 220/01 does not apply, according to section 2(2)(u) of this regulation. "Pipeline" and "pipeline system" are defined in O.Reg.210/01 and CSA Z662-15. A pressure vessel needs a Canadian Registration Number (CRN); however, the requirement comes from CSA Z662-15, which refers to CSA B51. Also, the audit of periodic inspections of the vessels and their associated equipment is under O.Reg. 210/01. If the activity is considered as a 'process' rather than related to 'fuel' (to be used in an appliance), then O.Reg. 220/01 applies, and TSSA's Boiler and Pressure Vessels department has jurisdiction on the pressure vessel. Regarding O.Reg.219/01, all the requirements apply.

b) TSSA has jurisdiction and mandate for some portion of the hydrogen station and fabrication but not the whole operation (similar to TSSA's mandate for refineries). For instance, if there is a boiler in the hydrogen station and fabrication, it needs to be field approved by TSSA; or, if there is piping in which the pressure is higher than what is allowed in the gas installation Code, registration is needed on those lines. If there is any pressure vessel in the facility, it is under the mandate of TSSA for initial approval and periodic inspections either by O.Reg.210/01 or O.Reg.220/01. TSSA does not have a mandate for or jurisdiction over the process side of this project when the pressure boundaries are below the thresholds mentioned on the regulations (similar to refineries).

c) A field development application was submitted to TSSA in July 15, 2016, under Service Request (SR) numbers 1924370 and 2159182. Field development was required to review the piping and all related components, according to the hydrogen Code Can/BNQ 1784. The application was reviewed by TSSA engineers and approved on December 09, 2016, and December 01, 2017. The installation was inspected by TSSA inspectors during multiple visits from February 2017 to May 2018. As this is a field development project, the expiry date of SR#2159182 was in December 2019; a new application needed to be submitted to TSSA for review of the project, which was communicated to EGI.

d) Variances might be required if compliance to the requirements of the regulation or adopted standard is not possible. This can happen due to technical advancement or any other reasons. In order for any variance to be considered by TSSA, there must a reason that the regulation or adopted standard cannot be met and equivalent safety measures in place in lieu of not meeting the requirements. Enbridge did not obtain any variance for this project, as there was no need for a variance. In other words, there were no clear non-compliances to any section of the regulation or standard, according to TSSA's review.

e) TSSA has a mandate for a portion of this project that falls under one of the regulations under the TSSA-Act, namely O.Reg.210/01, O.Reg.219/01 and O.Reg.220/01 (if it is considered as process and only for specific pressure boundaries).

OEB staff No. 2

Ref.: TSSA evidence, page 1
EB-2019-0294, Exhibit D, Tab 1, Schedule 1, Page 12
Preamble
The TSSA currently audits gas distributors once every five years. The TSSA is in the process of adopting a risk-based approach to rating the performance of the gas distributors. The ratings may be used to change the audit process and the audit interval. The TSSA may implement changes to its audit process and intervals by the end of 2020.
Enbridge Gas is planning to begin construction of the Project in April 2021 in order to meet an August 2021 in-service date.

Question

If, by the TSSA's new rating criteria, Enbridge Gas is rated as a low risk distributor, could the frequency with which it is audited be decreased? Please include in the response an explanation of whether the Project could attract less attention from the TSSA than it otherwise might have and whether that could have an impact on the technical safety related aspects of the Project.

Response
The audit of this project is separate from the overall operator's audit that is explained in the introduction of the report. TSSA future involvement only includes comprehensive audits of the operators in Ontario. This project will be fully audited and inspected as many times as deemed required by the auditor and\or inspectors.

OEB staff No. 3

Ref.: TSSA Safety Value Chain (https://www.tssa.org/en/about-tssa/about-tssa.aspx)
Question
Please comment on whether the TSSA is currently, or may in future be, engaged in each of the following activities as they relate to the Project and/or the distribution of blended gas in Ontario:
 Development/amendment of regulations, codes and standards

 Informing and educating end-users and industry participants

 Influencing training institutions

 Reviewing the design of new technology, new installations, changes to existing equipment and plants for compliance to codes and regulations

 Inspection and auditing of trades people, contractors, plants, equipment and sites

 Taking regulatory action to resolve non-compliance situations or actions before or after safety incidents

 Investigating safety incidents or near-misses

Response

- TSSA patriciates on various CSA committees, including CSA Z662 Gas Distribution Technical Sub-committee (TSC) and gas installation code and by participating on these committees influences on the development of these standards. Hydrogen blending is already on the future agenda to various levels of CSA standards, including gas distribution TSC and appliances standard.
- One of TSSA's mandates is public education. However, TSSA spends its resources on activities deemed as 'high risk' by its Process Safety and Risk Management (PSRM) department. A good example is TSSA's campaign on CO poisoning, http://www.cosafety.ca/. At this point in time, the EGI LCEP project is not on the selected category for public education.
- TSSA has a training and certification department. TSSA develops the curriculum required for specific certificates. In terms of this specific project involving hydrogen blending, it is a new technology, and no specific certificate is envisioned in any of the regulations. However, if there is a need for a certificate in future, regulatory changes will be required.
- An example of reviewing new technology is evident in this project that started in 2016 as field development and is still ongoing.
- TSSA issues certificates to individual contractors and contracting companies. TSSA has a program to audit these certificate holders. Similar to the audit of operating company, this auditing program is currently under review and modernization. TSSA inspects plants and equipment that fall under any of the TSSA-Act regulations. One example is this project that falls under O.Reg.210/01., O.Reg.220/01 and O.Reg.219/01.
- TSSA audits the pipeline operating companies (proactive measures). Also, TSSA investigates (reactive) the incidents: Common TSSA investigations that are typically reported to Spill Action Centre (SAC) are: a) Natural Gas Main Strikes, b) Oil leaks, c) Gas Leaks, d) Fires / Explosions / Incidents, and e) Carbon Monoxide Calls.
- All incidents that are reportable according to the regulation will be investigated by TSSA. At this point in time, near miss incidents are not reportable to TSSA. However, when TSSA is informed about near misses that are of high consequence to public safety, TSSA starts a separate audit for that specific near miss. As an example, TSSA is auditing the near miss of a failure of the first-cut regulator for one of the operators; this audit is still in progress.

OEB Staff No. 4

Ref.: TSSA evidence, page 3
Preamble
The TSSA states that it will audit and inspect Enbridge Gas to ensure compliance with applicable technical and safety standards for construction and operation of the Project.

Questions

a) Will the TSSA be performing field or office audits, or both? Please explain.

b) Will the TSSA use its existing tools (e.g., inspection checklists) to perform the audits, or will it develop Project specific audit and inspection tools? Please explain.

c) Has (or will) the TSSA required Enbridge Gas to develop an emergency response plan for the Project or to amend an existing plan to include the blended gas system and the BGA? If so, is the TSSA satisfied with the plan?

Response

a) Depending on the project, the audit could include reviewing the documents or a field audit. In case of this project, it is envisioned to audit both documents that will be generated by EGI and perform a field audit of some selected locations and customers.
b) TSSA is in process of developing an official standard field verification manual. TSSA envisions using some part of the manual for this project. However, the inspector\auditor may use his\her discretion to use some project-specific testing, as well.
c) No specific emergency plan has been reviewed for this specific project. However, EGI has a comprehensive emergency management plan for all of its operations that are regularly audited by TSSA.

OEB staff No. 5

Ref.: Exhibit B, Tab 1, Schedule 1, Attachment 1
Applicant's response to H2GO interrogatory No. 1
Applicant's response to OEB staff interrogatory No. 10
TSSA evidence, pages 2-3

Preamble
Enbridge Gas filed summaries of the findings of its technical review and reports from consultants. Enbridge Gas believes that there is sufficient information on the record related to the safety and technical aspects of the Project. Enbridge Gas is not prepared to file into evidence copies of any engineering assessments, consultant reports, working papers and datasets.
In March 2020, Enbridge Gas filed an Application for Review of Pipeline Project with the TSSA, which is a standard requirement for any pipeline project. In April 2020, the TSSA provided a number of technical questions to Enbridge Gas, which the Company is in the process of answering.
The TSSA requested from Enbridge Gas computational fluid dynamics (CFD) modelling for indoor leaks, dispersion modelling for outdoor leaks, fault tree analysis on end-user equipment, and an overall risk assessment. At the time the TSSA filed its evidence, this information had not been received from Enbridge Gas.

Enbridge expressed concerns that the risk report is proprietary. However, the TSSA states that the TSSA Act s. 24(1) protects the document and the TSSA may only be required to share the results of its review of the document.
Notwithstanding that it has yet to review certain risk related information, the TSSA states that, in general, it "is in support of this project."

Questions

a) Has the TSSA now received the requested documents? If so, please provide a summary of the results of the TSSA's review of the documents. Please indicate in the response whether the TSSA's support for the Project has changed and if so, in what way and why.

b) Does the TSSA believe it is necessary for it to review the requested information prior to the OEB issuing a decision in this proceeding? If not, please explain.

c) Does the TSSA support a condition of approval that Enbridge Gas must obtain from the TSSA and file with the OEB prior to beginning construction a letter that states that Enbridge Gas' risk assessment work to date is satisfactory to the TSSA?

Response

a) Yes. TSSA received, reviewed, evaluated and discussed the requested documents. In summary, the results of the review indicate:
    1. Enbridge followed Risk Assessment/ Management processes as established in the CSA-Z662, Annex B of the pipeline standard.
    2. Adequate risk science methodologies were used in the risk assessment report for identification of operational hazards and qualitative evaluation of both likelihood and consequences of the hazard scenarios.
    3. Enbridge adequately used data/methods for quantitative estimation of failure frequencies and consequence impact of the identified hazard scenarios.
    4. Maximum exposed Individual Risk was estimated quantitatively and found to be in the "conditionally tolerable region" when compared with UK-HSE (ALARP-as low as reasonably practicable) risk acceptability criteria; therefore, Enbridge will conduct an additional risk assessment during the engineering detailed design stage of the project to further reduce the risk.
    5. TSSA did not find any non-compliances to the regulations, CADs and adopted standard on its review. TSSA support of the project is not changed.