ATCO Pipelines

June 28, 2016

Mr. Brian Shand, P.Eng.
Director, Gas Facilities
Alberta Utilities Commission
Fifth Avenue Place East
4th Floor, 425 – 1st Street S.W.
Calgary, AB T2P 3L8

Dear Mr. Shand:

Re: Potential for substandard pipeline materials and design for gas utility pipelines

In response to your letter of March 3, 2016, ATCO Pipelines ("AP") has completed an assessment of its quality management, procurement, installation, and design procedures. This assessment did not identify a cause for concern that potentially substandard pipeline materials are installed or may be installed in the future. However, it is recognized that improvements can be made to these procedures, and AP endeavors to make such improvements as a result of recent industry findings and subsequent National Energy Board ("NEB") Safety Advisories.

AP works with fellow Canadian Energy Pipeline Association (CEPA) and Canadian Standards Association (CSA) membership companies to develop and implement industry best practices.

Furthermore, AP has confirmed that it has not ordered, received, or installed materials identified in the NEB Order MO-001-2016 (issued in conjunction with NEB Safety Advisory SA 2016-01, referenced in your letter).

Please refer to the attachment titled "Substandard Pipeline Material and Design Assessment" for a summary of the assessments of each set of procedures referenced in your letter.

Should you have any questions regarding this response or require further assistance, please contact the undersigned at (780) 420-7225 at your earliest convenience.

Thank you,

Digitally signed by Graeme Feltham
DN: cn=Graeme Feltham, o=ATCO Pipelines & Liquids a Global Business Unit, ou=VP, Engineering & Construction, email=graeme.feltham@atco.com, c=CA
Date: 2016.06.28 13:05:34 -06'00'

Graeme Feltham, P.Eng., MBA
Vice President, Engineering & Construction

7210 – 42 Street, Edmonton, AB T6B 3H1
Tel: 780.420.8957 Fax: 780.420.7411
www.atcopipelines.com

ATCO Pipelines	Substandard Pipeline Material and Design Assessment	
	Summary	June 28, 2016

Please find below a summary of the assessment to ensure substandard materials are not installed, and the methodologies to ensure appropriate design and operational criteria.

QUALITY MANAGEMENT

ATCO Pipelines continues to improve its Quality Management practices to provide safe and reliable natural gas transportation services to its customers. The Quality Management System at ATCO Pipelines is very closely linked to the Pipeline Integrity Program in that it provides a mechanism to verify that the Program is identifying, assessing and mitigating integrity risks on the pipeline system.

ATCO Pipelines is upgrading its system to make in-line inspection possible on pipelines 219mm diameter and larger that are 5km in length and greater. One of the drivers for this upgrade is to run in-line inspection tools through the pipeline system to identify integrity risks that need to be addressed, such as less than specified wall thickness that is potentially a result of substandard pipeline materials being installed.

Another method that ATCO Pipelines uses to identify integrity risks on its pipeline system is through its leak detection program. Annually, and more frequently in densely populated areas, ATCO Pipelines performs a leak detection survey on 100% of its pipelines. Any indication of a leak is then investigated and repaired. Any leaks that originate from potentially substandard materials would be discovered through this program.

As the in-line inspection process identifies integrity features on the pipeline material and the leak detection surveys identify leaks, there are many instances where the pipeline materials are exposed and replaced. ATCO Pipelines is currently developing a program in which these pipeline materials are being both destructively and non-destructively tested to confirm the quality of the material and serve as a representative sample of the pipeline system from which it originated.

Additionally, ATCO Pipelines has implemented a Material Failure Report process. Throughout the life of the pipeline material in the ATCO Pipelines system, it is handled, installed, operated, and maintained by various personnel and each of them are evaluating the condition of the material to ensure it remains fit for service. If for any reason, the material is deemed to have failed or be unfit for service, a Material Failure Report is completed and flagged for a follow-up investigation to rectify the problem.

PROCUREMENT

ATCO Pipelines has Procurement policies and practices that determine how pipeline materials are specified, how these materials are verified upon receipt, and how their quality is confirmed before they are installed and put into service.

For large pipe orders that necessitate a mill run at the pipe manufacturing facility, ATCO Pipelines participates in a review of the manufacturing procedure specifications (MPS) prior to production, and uses a third party inspector to audit the pipe manufacturing process during production. The audit reports produced by the third party inspector are reviewed and approved by ATCO Pipelines to ensure a high quality product has been produced and that it meets the required specifications.

Pipe orders that can be fulfilled from the vendor's inventory, and pipeline fittings that can originate from different manufacturing processes, are verified that they meet the required design specifications by using the Material Test Report (MTR) from the manufacturer. Furthermore, ATCO Pipelines' primary vendor for pipeline fittings has a quality assurance process that includes periodic destructive and non-destructive testing to ensure the materials meet the qualified specification on the MTR.

Once any pipeline material is received from a vendor, ATCO Pipelines verifies the condition, quantity, grade, specified standard, design, construction, size, type, model, and colour of the material to ensure that it conforms to the requirements of the purchase order or contract.

Due to the findings from recent industry events, ATCO Pipelines has initiated a review of its Procurement processes to determine if additional verification of materials or inspection of manufacturing processes is required to confirm that the pipeline material that is received meets or exceeds the required specifications.

In addition, ATCO Pipelines is developing a preferred vendor listing that will be used when ordering pipeline materials for projects. Vendors on this list will have been approved due to the high quality materials and service that they have historically provided. ATCO Pipelines will regularly review these vendor's qualifications and policies, including their quality management systems, to ensure that they have the processes in place to keep delivering at a high standard and remain on the preferred vendor listing.

INSTALLATION

Once the pipeline materials received from the vendor are verified to meet or exceed the required design specifications, the construction policies and procedures in place for installation focus on the identification and traceability of the material to ensure that it is installed in the intended location as per the pipeline design.

Each piece of pipe and each fitting are marked with their heat numbers and material grade to create a linkage back to their individual MTRs or inspection reports. During the pre-fabrication process, the groupings of components that are joined together are then given a unique identification number that matches the pre-fabrication as-built for traceability purposes when completing the in-place installation. Once the in-place installation is complete, a final as-built is compiled that identifies the heat number of each piece of pipeline material that can be traced back to its MTR, as well as any other report that verifies that it meets or exceeds the required design specifications.

In order to confirm that the entire system of components that were joined during the installation of the pipeline meet the required design criteria, ATCO Pipelines' construction specification requires 100% radiographic testing on all joining of pipeline materials and all required pressure testing of pipeline materials prior to a pipeline being put into operation as per CSA Z662-15. Additionally, destructive testing is performed on all induction bend batches prior to installation to prove the bending process will maintain the integrity of the pipeline materials and that the materials continue to meet or exceed the design specifications.

DESIGN

ATCO Pipelines follows the pipeline design criteria outlined in CSA Z662-15 and the Alberta Pipeline Act – Pipeline Rules AR 91/2005.

In regard to the preventative actions outlined in NEB Safety Advisory SA 2016-01, ATCO Pipelines exceeds the minimum pipeline material specification in certain situations, for example:

- When specifying Line Pipe for new steel or pipe mill production. ATCO Pipelines' specification for this pipeline material exceeds the requirements outlined in CSA Z245.1; and
- When specifying Induction Bends in the pipeline. ATCO Pipelines' specification for this process exceeds the requirements outlined in CSA Z245.11.

In regard to the preventative actions outlined in NEB Safety Advisory SA 2016-02, ATCO Pipelines has established quality assurance processes and procedures in the design phase of a pipeline that are outlined in its Professional Practice Management Plan where it is a requirement for two qualified Professional members to review and approve engineering designs. Other quality assurance processes include, but are not limited to:

- The specification of design pressure and temperatures. These parameters are specified by a thorough analysis of the pipeline system requirements, both current and future,

and are noted on the authenticated design drawings to mitigate any potential communication issues between stakeholder groups;

- Ensuring the pipeline's operating envelope is within its design limits. Prior to operating a pipeline, an operating procedure is created or reviewed for the pipeline and, the design limits are reviewed as part of ATCO Pipelines' Control Room Management processes. Control room monitoring alarms are then set accordingly to ensure that design limits are not exceeded;
- Verification of design assumptions. ATCO Pipelines is developing a process to verify design criteria once a pipeline is put into service. Currently, once the pipeline installation is complete and operational, verification is only completed if irregularities are discovered in operation. Once the new process is initiated, all design criteria and assumptions will be validated and re-evaluated as operating conditions change; and
- Consideration of thermal expansion during design. Thermal expansion is a factor that is considered during the design of a pipeline. Any potential impacts to the pipeline introduced by thermal expansion are accounted for in the design.

Inadequate design is considered as a risk that could impact ATCO Pipelines' business of providing safe and reliable natural gas transportation service to its customers. This risk is identified, assessed, and mitigated through department risk registers which is part of the ATCO Pipelines Risk Management program.