AUC
Alberta Utilities Commission

ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd.

Errata to Decision 2014-010

Urban Pipeline Replacement Project

February 21, 2014

The Alberta Utilities Commission
Decision 2014-010 (Errata): ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd.
Urban Pipeline Replacement Project
Application No. 1608617
Proceeding ID No. 1995

February 21, 2014

Published by
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The Alberta Utilities Commission
Calgary, Alberta

Decision 2014-010 (Errata)
ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd. Application No. 1608617
Urban Pipeline Replacement Project Proceeding ID No. 1995

1. On January 17, 2014, the Alberta Utilities Commission (AUC or the Commission) issued Decision 2014-010. There are typographical errors in paragraphs 70, 78 and 138. In paragraphs 70 and 78, there are several instances where the phrase "consequence of failure" should instead be "probability of failure". In the last sentence of paragraph 138, the word "removing" is missing.

2. Further to Section 48 of the Commission's Rule 001: *Rules of Practice*, this errata decision is issued to correct the errors.

3. Paragraphs 70, 78 and 138 of this errata decision have been amended to include the corrected wording.

Dated on February 21, 2014.

The Alberta Utilities Commission

(original signed by)

Anne Michaud
Panel Chair

(original signed by)

Mark Kolesar
Vice-Chair

(original signed by)

Neil Jamieson
Commission Member

AUC
Alberta Utilities Commission

ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd.

Urban Pipeline Replacement Project

January 17, 2014

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1 Introduction

1. On March 19, 2013, ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd., filed an application with the Alberta Utilities Commission (AUC or the Commission) requesting approval of the need for its urban pipeline replacement (UPR) initiative. The UPR initiative was subsequently relabelled by ATCO Pipelines as the UPR project and is generally referred to in this decision as UPR project or UPR proposal.

2. In its UPR proposal, ATCO Pipelines reconfigures the existing high-pressure natural gas pipeline transmission systems within the cities of Edmonton and Calgary (the Edmonton and Calgary systems) by constructing new high pressure systems in the Edmonton and Calgary transportation and utility corridors (TUCs). The UPR proposal is comprised of 12 individual pipeline projects, four in Edmonton and eight in Calgary.[1] ATCO Pipelines stated that the need for the UPR is driven by safety, reliability and future growth. The existing Edmonton and Calgary systems that ATCO Pipelines proposes to replace with the projects that make up the UPR will either be transferred to ATCO Gas for conversion to distribution use, or abandoned. ATCO Pipelines proposes to complete the UPR project over a period of five years.

3. ATCO Pipelines' application presented three alternatives to the UPR proposal: the integrity alternative, the replacement in place alternative and the distribution alternative. The integrity alternative involves extensive testing and maintenance of the existing Edmonton and Calgary systems in order to facilitate the continued use of these existing pipelines. The replacement in place alternative consists of installing new pipelines in place of the existing pipelines in the existing rights-of-way in Edmonton and Calgary. The distribution alternative involves removing all urban high-pressure facilities from service and installing new distribution pressure pipelines throughout Edmonton and Calgary, and where practicable, converting some existing high-pressure pipelines to distribution service. ATCO Pipelines argued that the UPR proposal is superior to these alternatives and requested that the UPR project be approved, as filed.

4. Thirty organizations and individuals registered to participate over the course of the proceeding. The proceeding participants and a brief description of the nature of their participation are listed in Appendix 1.

5. A number of participants supported the UPR proposal. Some participants advocated that it was necessary for ATCO Pipelines to address safety concerns associated with its aging pipelines but disagreed that the UPR proposal was superior to the integrity alternative. As the proceeding progressed, a fourth, hybrid alternative was introduced. The hybrid alternative was a

[1] One of the 12 UPR projects, the Northwest Edmonton Connector project has already been approved and was constructed in late 2011 and early 2012.

combination of the integrity alternative and the UPR proposal that involved commencing some UPR projects while pursuing in-line inspection (ILI) and other integrity measures on other parts of the Edmonton and Calgary systems with the goal of extending the use of parts of the existing systems for 10 or more years.

2 History of the UPR proposal and proceeding

2.1 The approval process for new gas utility pipelines

6. Approval for new gas utility pipelines in Alberta generally follows two separate application processes. One process sets rates to allow the gas utility to recover its prudently incurred costs. In this process, the gas utility seeks the Commission's approval for the forecast capital expenditures for new pipeline facilities within the context of a utility rate application pursuant to the *Gas Utilities Act*. In its general rate application (GRA), the gas utility includes a business case for the new pipeline project that describes the need or justification for the new project, the alternatives available to meet that need and the utility's choice of the best alternative. The Commission's assessment of the business case is 'economic' in nature and includes a cost benefit analysis, supply-demand forecasts, safety and security of supply analyses and rate impact analyses. However, there is generally little consideration of site-specific impacts, and consequently, potentially affected landowners have generally not been part of the GRA process.

7. In the other process, the gas utility seeks the Commission's approval to construct and operate a pipeline pursuant to the *Pipeline Act*. This process is generally known as a "facility" application where the focus is on the site-specific impacts of the project. When deciding whether to approve a facility application, the Commission evaluates the justification for the project as configured and its site-specific impacts. The need for the project, including its economic benefits, is weighed or balanced against any adverse social, economic and environmental effects to determine the proposed project's acceptability.

8. While gas utilities in Alberta generally follow these two application processes for the approval of new gas utility pipeline projects in the order presented above, there is no statutory requirement that they proceed in this fashion. A gas utility can seek approval to construct and operate a new gas utility pipeline under the *Pipeline Act* without prior approval of the associated forecast capital expenditures. In that case, the Commission would consider the need for the project, the alternatives, and the specific routing, all within the facility proceeding, without approving the forecast rate increases necessary to recover the project's costs.

2.2 The Commission's authority to convene the UPR need proceeding

9. Because the UPR proposal involves multiple pipeline projects to be implemented over a period of years, the Commission decided in Decision 2012-170[2] to evaluate the need for the entire UPR proposal rather than to individually test the merits of each constituent project.

10. The Commission's authority to consider the need for the UPR project in a single proceeding is provided in the *Gas Utilities Act*, the *Pipeline Act* and the *Alberta Utilities Commission Act*.

[2] AUC Decision 2012-170: ATCO Pipelines 2012 Interim Revenue Requirement, Application No. 1608058, Proceeding ID No. 1666, June 20, 2012.

11. Section 4.1 of the *Gas Utilities Act* states that the Commission exercises all of the powers, functions and duties of the Alberta Energy Regulator set out in the *Pipeline Act* with respect to gas utility pipelines. Sections 4(a) and (b) of the *Pipeline Act* provide that the Commission may inquire into and examine any matter relating to:

> (a) the economic, orderly and efficient development in the public interest of pipeline facilities in Alberta;
>
> (b) the observance of safe and efficient practices in the construction, operation, discontinuation and abandonment of pipelines;[3]

12. The authority under Section 4 of the *Pipeline Act* is consistent with the authority granted to the Commission by sections 22 and 24 of the *Gas Utilities Act*. Section 22 authorizes the Commission to exercise "general supervision" over all gas utilities and their owners and to make any orders regarding "equipment, appliances, extensions of works or systems, reporting and other matters necessary for the convenience of the public". Section 24 empowers the Commission to investigate on its own motion any matter concerning a gas utility.

13. Finally, Section 8(2) of the *Alberta Utilities Commission Act* empowers the Commission to "act on its own initiative or motion and do all things that are necessary for or incidental to the exercise of its powers and the performance of its duties and functions."

14. Should the Commission decide to approve, in whole or in part, the UPR project application, ATCO Pipelines will be required to file facility applications for the exact routing and siting of each of the constituent UPR projects.

2.3 Prior AUC decisions related to the UPR proposal

15. It was in the context of five applications filed with the Commission that ATCO Pipelines introduced its intention to pursue the UPR project.[4]

16. ATCO Pipelines first identified three of the UPR projects, the Northwest Edmonton Connector Pipeline Extension, the Southeast Calgary Connector and the East Calgary Connector in its 2011 interim revenue requirement application. These projects were described as "growth" projects in that application. In Decision 2010-613,[5] the Commission deferred its consideration of ATCO Pipelines' forecast capital expenditures, including those related to these three projects, to the 2011 final revenue requirement proceeding.

17. ATCO Pipelines filed its 2011 final revenue requirement application on June 29, 2011. Included in that application were forecast capital expenditures for the Northwest Edmonton Connector, the Southeast Calgary Connector and the East Calgary Connector, which were again described as "growth" projects. The business cases supporting each project made reference to an ATCO Pipelines' plan to construct a high-pressure pipeline network in the Edmonton and

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[3] *Pipeline Act*, sections 4(a) and (b).

[4] ATCO Pipelines 2011 Interim Revenue Requirement, Application No. 1606838, Proceeding ID. 985; ATCO Pipelines 2011 Final Revenue Requirement, Application No. 1607451, Proceeding ID No. 1314; ATCO Pipelines Northwest Edmonton Connector Licence, Application No. 1607680, Proceeding ID No. 1452; ATCO Pipelines Southeast Calgary Connector Licence, Application No. 1608219, Proceeding ID No. 1755; ATCO Pipelines 2012 Interim Revenue Requirement, Application No. 1608058, Proceeding ID No. 1666.

[5] Decision 2010-613: ATCO Pipelines 2011 Interim Revenue Requirement and 2011 Interim Rates, Application No. 1606838 Proceeding ID No. 985, December 22, 2010.

Calgary TUCs. The Commission approved the forecast capital expenditures for the Northwest Edmonton Connector, the Southeast Calgary Connector and the East Calgary Connector projects in Decision 2011-494.[6]

18. On September 20, 2011, ATCO Pipelines sought approval from the Commission to construct and operate the Northwest Edmonton Connector project. This application was filed after ATCO Pipelines filed its 2011 final revenue requirement, which included the business plan and forecast capital expenditures for this project, but before the Commission had approved the forecast capital expenditures for those projects. In the Northwest Edmonton Connector application, ATCO Pipelines stated that the purpose of the high-pressure pipeline network that it was constructing in the Edmonton TUC was to ensure continued, safe reliable service to existing customers and to meet the long-term growth in the area. On October 14, 2011, the Commission approved the Northwest Edmonton Connector pipeline facility application in Decision 2011-409[7] wherein it found that "the project is necessary as part of a larger plan to provide continued safe, reliable service to existing customers".[8]

19. On December 1, 2011, ATCO Pipelines filed a facility application for the Southeast Calgary Connector project.[9] It identified that project as the first stage of its "Calgary Urban Initiative program" and the East Calgary Connector project as the second stage. In a letter dated December 21, 2011, the Commission stated that it was closing the facility application for the Southeast Calgary Connector pipeline and requested that ATCO Pipelines file a single combined application for the Southeast Calgary Connector project and the East Calgary Connector project because the two projects were closely interrelated and had been advertised together.

20. On January 17, 2012, ATCO Pipelines filed its 2012 interim revenue requirement application wherein it requested approval of its 2012 forecast capital expenditures for six UPR projects, including the Northwest Edmonton Connector project, the Southeast Calgary Connector project and the East Calgary Connector project. In that application the UPR projects were described as "improvement" projects. ATCO Pipelines also identified six other UPR projects for which it would seek future approval.

21. On March 1, 2012, ATCO Pipelines refiled its facility application[10] for the Southeast Calgary Connector project wherein ATCO Pipelines requested that the Commission accept the Southeast Connector project as a stand-alone project. It stated that it was reviewing the scope and route of the East Calgary Connector project and that the construction schedules for the two projects no longer coincided.

22. On June 20, 2012, the Commission issued Decision 2012-170 with respect to ATCO Pipelines' 2012 interim revenue requirement application. The Commission found that ATCO Pipelines had failed to provide sufficient evidence to support the reasonableness of, and justification for, the UPR proposal. The Commission concluded as follows:

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6 Decision 2011-494: ATCO Pipelines 2011 Final Revenue Requirements, Final Rates Filing and Deferral Account, Application No. 1607451, Proceeding ID No. 1314, December 20, 2011.

7 Decision 2011-409: ATCO Gas and Pipelines Ltd. (South) New Construction and Hydrostatic test with Water-Methanol Mix Edmonton Transportation Utility Corridor, Application No. 1607680, Proceeding ID No. 1452, October 14, 2011.

8 Ibid, at paragraph 14.

9 Application No. 1607950, Proceeding ID No. 1601.

10 Application No. 1608219, Proceeding ID No. 1755.

> The Commission considers that a large, multi-year, multi-project initiative of this nature and magnitude should be evaluated as a whole and not on a project-by-project basis in an individual test year, as filed previously in ATCO's 2011 and 2012 forecast capital expenditures. Although the Commission has already approved certain capital expenditures for 2011 that have since been identified in Proceeding ID No. 1666 as UPI projects, the Commission is of the view that approval of a forecast capital program for revenue requirement purposes is not the equivalent of an assessment of the technical solution and justification of the specific facilities that may be applied for, particularly in a larger context. An evaluation of the full scope of ATCO's UPI from an overall perspective is required to ensure a greater understanding of the reasonableness and justification for the multi-year pipeline initiative before additional capital expenses in connection with the UPI projects are incurred. The Commission concludes that a full scope evaluation of the need for the UPI projects and ATCO's selection of those projects as the best technical solution to address that need will help to ensure that the continued development of the high-pressure pipeline networks in Edmonton and Calgary occur in a manner that is safe, economic, orderly and efficient.[11]

2.4 UPR process meeting

23. The Commission issued a notice of proceeding for the UPR need proceeding on July 5, 2012. The notice of proceeding set a date for a process meeting and also included a preliminary list of application requirements. In response to this notice, 11 parties registered to participate in the UPR need proceeding. In addition, on July 4, 2012, the Commission informed ATCO Pipelines that it was suspending its consideration of the Southeast Calgary Connector project application pending its decision on the UPR need proceeding.[12]

24. The Commission held the UPR process meeting in the AUC Calgary hearing room on August 15, 2012, before Commission member Anne Michaud. Oral submissions were made by ATCO Pipelines, EnCana Corporation, the Office of the Utilities Consumer Advocate (UCA), The City of Calgary (Calgary), NOVA Gas Transmission Ltd. (NGTL), the Consumers' Coalition of Alberta (CCA), and the Canadian Association of Petroleum Producers (CAPP). On September 4, 2012, the Commission issued Decision 2012-233[13] which addressed the scope, application requirements, process and schedule for the UPR need proceeding (see Appendix 4).

2.5 The Commission's independent expert

25. By letter dated October 15, 2012, the Commission advised registered parties that it had issued a request for proposal for an independent pipeline expert to assist it in the UPR need proceeding. The Commission described the role of the expert as follows:

> The role of the expert will be to review and analyze evidence filed in the UPI proceeding relating to pipeline integrity, pipeline risk assessment and pipeline safety. The expert will be independent; the Commission will not be directing the expert as to information requests, evidence or other issues prior to or during the proceeding. The expert will be an independent, not a Commission, witness in the proceeding and will utilize independent counsel that the Commission will fund. Apart from establishing the scope of work in the

[11] Decision 2012-170, paragraph 41.
[12] Proceeding ID No. 1755, Exhibit 31.01.
[13] Decision 2012-233: ATCO Pipelines Initiative - Application Scope, Requirements and Process, Application No. 1608617, Proceeding ID No. 1995, September 4, 2012.

> RFP and reimbursing the expert for work performed, the Commission will have no involvement in, or direction of, the work of the expert.[14]

26. By letter dated January 16, 2013, the Commission announced that it had retained Dr. Alan Murray, from Principia Consulting Inc. as an independent expert. The letter also explained that Dr. Murray would be represented by independent counsel retained and funded by the Commission. The Commission retained Mr. Bill Kennedy, General Counsel of the Natural Resources Conservation Board (NRCB),[15] to represent Dr. Alan Murray under a shared services arrangement between the NRCB and the AUC.

2.6 The UPR project application and notice of application

27. On April 9, 2013, the Commission issued a notice of application for the UPR need proceeding. The notice was advertised in the Calgary Herald, Calgary Sun, Edmonton Journal, Edmonton Sun, Rocky View Weekly and Sherwood Park News on April 16, 2013 and in the St. Albert Gazette on April 17, 2013. The notice was also sent by direct mail, using a Canada Post mail drop, during the last week of April 2013, to residences and businesses near existing high-pressure pipelines in Edmonton and Calgary and near the Edmonton and Calgary TUCs. In addition, it was sent to those parties on the Commission's electronic distribution list for gas utility pipeline matters. The notice was also posted on the Commission's website.

28. The notice of application included information about public information sessions to be held in Edmonton and Calgary for anyone who wished to learn more about the application process and to understand their opportunity for participation. The Calgary sessions were held on May 1 and 2, 2013, and the Edmonton sessions were held on May 6 and 7, 2013.

29. By letter dated May 15, 2013, the Commission issued a revised process and schedule for the UPR need proceeding. In response to a variety of requests for extensions from various parties, the schedule was subsequently adjusted by the Commission in a number of letters issued in June and July 2013.[16]

30. On August 1, 2013, the Commission issued a notice of hearing which included a finalized proceeding schedule. The notice of hearing was published in the Calgary Herald, Calgary Sun, Edmonton Journal and Edmonton Sun; and also sent directly to registered parties and posted on the Commission's website.

31. The public hearing was held in the AUC's hearing room in Calgary from September 16 to September 20, 2013 before Commission members Anne Michaud (Panel Chair), Mark Kolesar (Commission Vice-Chair) and Neil Jamieson.

32. Written arguments were filed by participants on October 11, 2013, and reply arguments were filed on October 21, 2013. The Commission considers that the record of the proceeding closed on October 21, 2013.

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[14] Exhibit 23.

[15] The NRCB was not a participant in the UPR need proceeding. Dr. Murray was not appearing on behalf of the NRCB or any other registered party in the proceeding. See Exhibits 75.01, 76.01 and 77.01.

[16] Letters dated June 6, 2013; June 17, 2013; June 26, 2013; July 10, 2013; and July 12, 2013.

2.7 Pre-hearing and interlocutory motions

33. On July 10, 2013, the UCA filed a motion with the Commission for further and better responses from ATCO Pipelines to its information requests.[17] Specifically, the UCA requested further and better responses to UCA-AP-24 (a, d, e and g), which requested information about a possible 10-year implementation period for the UPR proposal, as opposed to ATCO Pipelines' proposed five-year implementation period.[18]

34. By letter dated July 23, 2013,[19] the Commission granted the UCA's request for further and better responses to UCA-AP-24 (a,d, e and g). In accordance with the ruling, ATCO Pipelines provided updated information responses on September 3, 2013.[20,21]

35. On September 18, 2013, Mr. Jim Graves, on behalf of Graves Engineering Corp. (Graves), sent an email to Commission counsel requesting permission to file additional evidence. In addition, on September 20, 2013, Mr. Graves sent an email to Commission counsel seeking permission to file new evidence on behalf of Chief Calvin Bruneau and the Papaschase First Nation. Attached to the email was a map showing the boundaries of the Papaschase First Nation's traditional territory and a document containing inter alia a history of the Papaschase First Nation. The Commission issued an oral ruling on September 20, 2013, denying Graves' request to file additional evidence but allowing, in part, the request of the Papaschase First Nation.[22,23]

36. On September 26, 2013, Graves requested that the Commission review and vary its September 20, 2013, ruling. By letter issued September 27, 2013, the Commission denied Graves' request to review and vary its prior ruling disallowing the late filing of new evidence.[24]

37. On October 1, 2013, the Papaschase First Nation submitted a request to the Commission to review and vary its September 20, 2013 ruling with respect to the admissibility of the late filed evidence. By letter dated October 4, 2013, the Commission denied the Papaschase First Nation's request to review and vary its prior ruling to exclude the late filed evidence.[25]

3 Background

3.1 Integrity management

3.1.1 Review of regulatory requirements and regulatory history for integrity management

38. Clause 3.2 of Canadian Standards Association (CSA)[26] Standard Z662 specifies that "operating companies shall develop and implement an integrity management program that

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17 Exhibit 103.02.
18 Exhibit 93.01.
19 Exhibit 117.01.
20 Exhibit 136.
21 A copy of the ruling is attached as Appendix 9.
22 Exhibit 174.01, request to file late evidence by Mr. Jim Graves and Chief Calvin Bruneau.
23 A copy of the ruling is attached as Appendix 10.
24 A copy of the ruling is attached as Appendix 11.
25 A copy of the ruling is attached as Appendix 12.
26 The Canadian Standards Association (CSA) is a not-for-profit standards organization which develops standards for industry. CSA standards are guidelines and are not binding unless they are adopted by reference.

includes effective procedures (see Clauses 10.3 and 10.5) for managing the integrity of a pipeline system so that it is suitable for continued service, including procedures to monitor for conditions that can lead to failures, to eliminate or mitigate such conditions, and to manage integrity data." Guidelines for developing, documenting and implementing pipeline system integrity management programs are contained in Annex N of CSA Z662-11. However, it is noted in CSA Z662-11 that these guidelines are included for information purposes only and that adherence to them is not mandatory.

39. Prior to 1968, there was no requirement for pipeline operators to hydrostatically pressure test a pipeline. However, applicants were required to provide information to their regulator on the test pressure to which the pipeline had been subjected. The first version of the CSA standard was issued in 1968 and was referred to as CSA Z184 Gas Transmission and Distribution Piping Systems. The CSA Z184 standard specified requirements for post-construction hydrostatic pressure testing of pipelines prior to the operating the pipeline. No requirement for subsequent hydrostatic pressure testing or in-line inspection was specified in CSA Z184.

40. In 1999, CSA Z184 was replaced by CSA Z662. Several revisions to CSA Z662 have been issued since 1999, including the current version CSA Z662-11. The 2003 revision to CSA Z662 included a non-mandatory (informative) Annex N - Guideline for Pipeline Integrity Management Programs. In the Z662-03 revision, Annex N.6.1 required pipeline owners to prepare and manage records related to their pipeline system design, construction, operation and maintenance that are needed for performing the activities included in their integrity management programs. Annex N.6.1 listed 11 items for integrity management program records, organized by type of pipeline system.

41. In July 2006, the Alberta Energy and Utilities Board (EUB), the Commission's predecessor, issued Directive 041, specifying that CSA Z662 Annex N would now be a mandatory requirement. Prior to Directive 041, Annex N was used only as a pipeline integrity management guidance document.

42. In CSA Z662-11, Annex B provides guidelines for risk assessment of pipelines. Risk is defined in Annex B as "a compound measure, either qualitative or quantitative, of the frequency and severity of an adverse effect".[27] A quantitative risk assessment is based upon probabilistic estimates that provide an absolute measure of risk by combining numerical estimates of frequencies, probabilities and consequences.[28] A qualitative risk assessment is based upon methods using a matrix or index to provide a relative measure of risk amongst several scenarios.[29]

3.1.2 ATCO Pipelines' integrity management programs

43. ATCO Pipelines stated that its integrity management programs and practices include many of the measures listed in CSA Standard Z662[30] to reduce the frequency of failure associated with imperfections in its pipelines. These measures include:

- close-interval surveys
- coating assessment surveys and repairs

[27] Adverse effect is a term used by the CSA to describe the consequences that could result from a pipeline failure.
[28] CSA Z662-11 Annex B.5.2.6(c).
[29] CSA Z662-11 Annex B.5.2.6(c).
[30] Clause 10.3 of CSA Z662 deals with integrity of pipeline systems.

- cathodic protection system improvement
- improved quality measures in design, materials and construction
- operations and assessment repair
- in-line inspection programs
- hydrostatic pressure testing
- pipeline replacement programs[31]

44. The AUC engaged BHTSerge Consulting Ltd. (BTHSerge) to review and provide a written report on ATCO Pipelines' gas utility pipeline integrity management program focusing on ATCO Pipelines' Pipeline Integrity Program documentation. ATCO Pipelines filed the results of the BHTSerge pipeline integrity program review.[32] The review focused on the 16 elements of CSA Z662-11 Annex N to verify that documented policies, methods and procedures were in place to manage the pipeline integrity requirements as mandated in Annex N.[33]

45. The BHTSerge report found that, while ATCO Pipelines' program generally complied with CSA Z662-11 Annex N, certain information and procedures were not evident. The report identified five deficiencies in ATCO Pipelines' integrity management program and included recommendations to address those deficiencies. ATCO Pipelines responded that it would add procedures to address the deficiencies documented in the BHTSerge report.[34]

46. In response to an information request, ATCO Pipelines stated that its detection and monitoring activities provide information that is used to plan pipeline maintenance and capital improvements, and that currently there are 13 ongoing ATCO Pipelines operation and maintenance and capital expenditure programs and activities related to integrity management.[35]

3.1.3 The existing Edmonton and Calgary systems and related records

47. Most of ATCO Pipelines' Edmonton and Calgary urban high-pressure gas transmission pipelines were constructed prior to 1970 in rural areas on the outskirts of the two cities.[36] Since the original installation, urban development has surrounded the previously installed rural network of transmission pipelines, which are now located in highly developed areas referred to by ATCO Pipelines in the application as "high consequence areas".

48. ATCO Pipelines filed detailed information on its existing pipeline integrity records containing information required by CSA Annex N.5.1.[37] The summary is organized by pipeline segment for each of the cities of Edmonton and Calgary and includes information on:

- pipeline description and specifications
- pipeline strength
- corrosion protection
- documented leaks and failures
- crossings (water, road, rail and ravine)

[31] Exhibit 30.04, ATCO evidence, paragraph 39.
[32] Exhibit 92.01, Murray-AP-1(d).
[33] Exhibit 92.01, Murray-AP-1 (d), Attachment 1, page 2.
[34] Exhibit 92.01, Murray-AP-1(d) pages 2-3.
[35] Exhibit 92.01, Murray-AP-1 (h-i).
[36] Exhibit 30.04, Application, paragraph 34.
[37] Exhibit 30.06, Application.

- repair and construction history
- assessment of pipeline integrity (ILI, direct assessment and digs, leaks and repair, casings, cathodic protection, pressure tests, fittings and appurtenances)[38]

49. Table 1 below summarizes age and ILI capability information for each pipeline segment. Appendix 5 provides additional information, including the installation date, specifications, and current known condition of each of these pipelines.

Table 1. Age and in-line inspection capability of the existing Edmonton and Calgary systems

Pipeline	Year	In-line inspection capable
North Edmonton Loop	1950-1979	No
Bittern Lake Transmission Pipeline	1952[39]	No
Swan Hills Transmission Pipeline	1964	Yes
Pembina Transmission Pipeline	1958	No
Bonnie Glen Transmission Pipeline	1954-1958	Yes
Devon Transmission Pipeline	1950	Yes
Ardrossan Transmission Pipeline	1954-1989	No
Chestermere Lake Branch Pipeline	2009	Yes
Carbon Transmission Pipeline	1958	No
Petrogas-Airdrie Transmission Pipeline	1966	No
Petrogas-Meadowfield Transmission Pipeline	1966	No
Mainline North Transmission Pipeline – Mainline North	1954	No
Mainline North Transmission Pipeline – Mainline Branch	1965	No
Mainline North Transmission Pipeline – Fish Creek Branch	1978	No
Mainline North Transmission Pipeline – Conmac Branch	1950	No
Loop Line Transmission System – Mainline North	1948	No
Loop Line Transmission System – Mainline Loop 273	1956	No
Turner Valley No.2 Transmission Pipeline – Turner Valley No.2	1954-1978	No
Turner Valley No.2 Transmission Pipeline – Woodlands Branch	1976	No
Turner Valley No.2 Transmission Pipeline – Canyon Meadows Branch	1968	No
Turner Valley No.2 Transmission Pipeline – Cedarbrae Branch	1977	No
Turner Valley No.2 Transmission Pipeline – Hull Boys Estate Lateral	1961	No
Jumping Pound Transmission Pipeline	1950	Yes
Jumping Pound West	1966-1990[40]	Yes
Simons Valley Transmission Pipeline	1967	No

[38] Exhibit 30.12, Application, Appendix 6, Pipeline integrity records.

[39] Exhibit 83.01, AUC-AP-36(b) indicates that the correct date is 1967. However, Exhibit 30.12, Application, Appendix 6, Pipeline integrity records, page 63 of 93 indicates the correct date is 1952.

[40] Exhibit 83.01, AUC-AP-36(b) indicates that the correct date range is 1966-1988. However, Exhibit 30.12, Application, Appendix 6, Pipeline integrity records, page 46 indicates the correct date range is 1966-1990.

3.1.4 In-line inspection

50. In-line inspection involves running an instrumented device (also referred to as a "smart pig"), of which there are various types, through a pipeline to locate and characterize anomalies such as corrosion-caused metal loss, material defects, dents, and other geometric irregularities that could indicate compromised pipeline integrity.[41] The information gathered from the smart pig run through the pipeline provides reasonably accurate information on the size of the anomalies to allow the operator to prioritize the examination of the anomalies by their severity.

51. ATCO Pipelines stated that significant modifications to the existing pipelines would be required to allow the passage of ILI tools, including cutting out existing fittings and replacing them with suitable fittings and straight pipe, and installing tool launching and receiving valve assemblies. ATCO Pipelines advised that 36 ILI tool runs would be required to inspect the existing Edmonton and Calgary systems.[42]

3.1.5 Hydrostatic pressure testing

Dr. Murray submitted that the purposes of hydrostatic pressure testing are threefold; to:

- ensure sufficient strength in the pipeline
- ensure the pipeline is leak tight
- establish the maximum allowable operating pressure[43]

52. The hydrostatic pressure test involves filling the pipeline with water, pressurizing the pipeline to a specified test pressure and observing if there is a pressure loss, indicating a failure or leak(s). The pressure in a hydrostatic test will exceed the maximum allowable operating pressure by some predetermined-margin and thereby would ensure that sufficient strength remains in the tested pipeline. Defects that have deteriorated since the last hydrostatic pressure test but did not fail a previous hydrostatic pressure test may fail the current test, thereby identifying a critical weakness since the last test. Sequential hydrostatic pressure testing is performed to identify defects that have become critical since the last test, and to ensure that any remaining defects are insignificant enough to allow continued operation at design pressures.[44]

53. The 1994 version of CSA Z662 required that all high-pressure natural gas pipelines, where practicable, be hydrostatic pressure tested after installation but before being put into operation.[45] This requirement has remained in place in all subsequent revisions to CSA Z662.

3.2 The Edmonton and Calgary transportation and utility corridors

54. The Edmonton and Calgary Transportation and Utility Corridors (TUCs) are located in restricted development areas established by the Alberta government in the mid-1970s. The *Government Organization Act* describes the purposes for which the restricted development areas were established. Two of the listed purposes of a restricted development area are to confine

[41] Exhibit 131.03, INGAA Foundation Final Report No. 2012.04, The Role of Pipeline Age in Pipeline Safety, John F. Keifner and Michael J. Rosenfeld, November 8, 2012, pages 26-27.
[42] Exhibit 30.04 ATCO Pipelines' evidence paragraphs 257-259.
[43] Exhibit 131.02, UCA-Murray-3(e).
[44] Exhibit 131.03, INGAA Foundation Final Report No. 2012.04, The Role of Pipeline Age in Pipeline Safety, John F. Keifner and Michael J. Rosenfeld, November 8, 2012, pages 26-27.
[45] CSA Z662-11 Clause 8.1.2. High pressure means pipelines to be operated at a pressure greater than 700 kPa.

activities that are potentially harmful to the environment within the restricted development area and to separate these activities from other operations or activities on adjacent lands.[46]

55. In Decision 2011-436,[47] the Commission reviewed the history and development of the restricted development areas and the Edmonton and Calgary TUCs. In that decision, the Commission found that plans for formal transportation and utility corridors in Edmonton and Calgary were completed in 1979 and that those plans allotted space for major power lines, pipelines, municipal services and other related facilities. The Commission also noted that a TUC policy document published by Alberta's Department of Infrastructure in 2004 described the objective of the TUC program as follows:

> The objective of the TUC Program is to facilitate the development of the cities of Calgary and Edmonton, their surrounding regions, and the province by accommodating within the TUCs the development of ring roads, storm water management facilities, major pipelines and power lines, and municipal services...
>
> The TUCs were established on the principle that long-term planning for the accommodation of a ring road and major utilities within a TUC can maximize its use. The TUCs protect ring roads and utility alignments from advancing urban development and offer a long-term solution to many of the land use problems associated with developing major linear facilities in urban areas.[48]

56. In Edmonton, the TUCs form a complete ring around the city with development or the potential for development on each side of these TUCs. A similar ring exists in Calgary with the exception of a portion of the southwest part of the city which borders Tsuu T'ina Nation land. The Edmonton and Calgary maps provided below and in Appendix 8 show the TUCs as well as the proposed UPR pipelines.[49]

Map of Edmonton TUC and Pipeline Segi

Map of Calgary TUC and Pipeline Segment

4 Is there a need to upgrade or relocate the Edmonton and Calgary systems?

4.1 ATCO Pipelines

57. In the application, ATCO Pipelines proposed to address integrity concerns associated with high-pressure pipelines in Edmonton and Calgary by:

- developing a high-pressure pipeline ring around the cities of Edmonton and Calgary within the TUCs surrounding these cites
- reconfiguring existing high-pressure natural gas pipeline networks in both cities to ensure safe and reliable gas supply service for its customers
- meeting metropolitan growth in the long-term[50]

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46 *Government Organization Act*, Schedule 5, Subsections 5(e) and (f).
47 Decision 2011-436: AltaLink Management Ltd. and EPCOR Distribution & Transmission Inc. Heartland Transmission Project, Application No. 1606609, Proceeding ID No. 457, November 1, 2011.
48 Decision 2011-436, paragraph 698.
49 Exhibit 88.01, Cal-AP-13(a), attachments 1 and 2.
50 Exhibit 30.04, paragraph 17.

4.1.1 Risk assessment - Edmonton and Calgary systems

58. ATCO Pipelines engaged three consultants to provide risk assessment and integrity management evidence: Dynamic Risk Assessment Systems Inc. (DRAS); Kiefner and Associates (Kiefner); and M C Felts Co. Expert witnesses who appeared at the hearing were Mr. Michael Rosenfeld of Kiefner, Mr. Jim Mihell of DRAS, and Ms. Margaret Felts of M C Felts Co.

59. ATCO Pipelines contracted Kiefner to: (1) assess the integrity of the existing Edmonton and Calgary systems, including an assessment of ATCO Pipelines' current integrity management practices; (2) define potential failure modes that can be expected in pipeline systems similar to ATCO Pipelines' Edmonton and Calgary systems, and (3) identify potential threats to ATCO Pipelines' urban pipelines and estimate the probability of failure and the relative risk reduction that can be expected by removing the existing pipelines from high-pressure service by relocating this service into TUC locations.

60. Kiefner provided a report in which it concluded that ATCO Pipelines had insufficient records pertaining to its pre-1970 urban pipelines regarding manufacture, pressure testing and existing condition of its pipelines to conduct a risk analysis sufficient to meet AUC requirements for which CSA Z662, including Annex N,[51] are mandatory.[52] Kiefner advised that ATCO Pipelines must either gather the appropriate data to conduct a thorough risk assessment, or assume a high risk and take appropriate measures to eliminate or mitigate the potential causes of failure.

61. DRAS was contracted to complete a consequence evaluation of the urban pipelines that compared the relative public safety consequences of the existing Edmonton and Calgary systems to the proposed TUC pipeline routes. DRAS provided a report titled, "Consequence Evaluation of Urban Pipeline Projects".[53] DRAS used the C-FER model to evaluate the integrated consequences[54] of failure in any ATCO Pipelines' UPR pipeline projects, compared to the integrated consequences of failure in any of the existing pipelines. Mr. Mihell explained that the C-FER model is a standard that has been widely adopted throughout the industry to predict the potential impact radius in the event of a worst-case failure of a pipeline.[55] DRAS concluded that replacing the existing pipelines with the ones proposed in the UPR proposal in both cities would result in an overall 86.4 per cent reduction in public safety consequences.[56]

62. During cross-examination, ATCO Pipelines explained that it previously concentrated its risk assessment and ILI programs on the gas transmission lines that connect gas supply with ATCO Pipelines' Edmonton and Calgary systems because its first priority was to address the security of major supply sources that it considered to be the greatest risk.[57]

63. Regarding population densities in proximity to the TUCs, DRAS noted that development around the TUC in Calgary is already approximately 72 per cent complete on the inside edge and

[51] Annex N – Guidelines for Pipeline System Integrity Management Programs.
[52] Exhibit 30.09, Application, Appendix 4(A), Urban Pipeline Replacement Project Integrity Option, PDF page 12 of 108.
[53] Exhibit 30.07, Application, Appendix 3(A), Consequence Evaluation of Urban Pipeline Projects.
[54] Integrated consequences is defined as people within the potential impact radius times the length of the pipeline.
[55] Transcript, Volume 3, page 605, line 25 to page 606, lines 1-4.
[56] Exhibit 30.07, PDF page 9 of 129.
[57] Transcript, Volume 1, pages 38-41, lines 13-20.

51 per cent compete on the outside edge. DRAS concluded that the population density immediately adjacent to the pipelines within the TUC would never reach the same level as the population along the existing urban alignments.

64. ATCO Pipelines noted that some questions were raised with respect to the consequence analysis not incorporating impacts on traffic. The consequence analysis measures the thermal hazard which is a function of heat intensity and the duration of exposure to that heat intensity.[58] ATCO Pipelines referred to testimony from Dr. Murray and DRAS. Dr. Murray said that the reason traffic is not a consideration in the industry standard consequence analysis is that people inside a moving vehicle would have to be exposed to the heat intensity for more than 20 minutes before the heat would set fire to the vehicle.[59] DRAS stated that vehicular traffic is present around both the existing pipelines and in the TUCs and it is likely that the traffic around the existing urban pipelines travels at much slower speed than typical traffic near the TUCs.[60]

65. ATCO Pipelines submitted that historical pipeline record keeping practices were not performed at the level of detail required to meet the standards for current integrity assessments.

66. Expert evidence provided by Ms. Felts advised on the general state of ATCO Pipelines' records and record keeping practices. Ms. Felts confirmed that she had reviewed every document in all of ATCO Pipelines' work order files and licence files from 1945 to 1968 and concluded that the pipeline data and files are highly organized and indexed making them easily retrievable. She observed that the data used in ATCO Pipelines' integrity management program appears to be traceable, verifiable and complete as well as reasonably retrievable and that the primary missing piece for integrity management information is the identification of the manufacturer of the transmission pipes. Ms. Felts also commented in her report that, prior to 1968, there appeared to be no expectation in regulatory correspondence that hydrostatic pressure testing should be performed. Gas and air pressure tests appeared to be acceptable.[61] ATCO Pipelines concluded that the evidence indicates that ATCO Pipelines did retain its historical records and that they are retrievable.[62]

67. In the application, ATCO Pipelines filed a summary of its existing pipeline integrity records[63] which it had also provided to Kiefner and DRAS. ATCO Pipelines noted that 84 per cent of pipeline length in Edmonton and 81 per cent of pipeline length in Calgary was installed prior to 1968, when the CSA Z184[64] standard was released. ATCO Pipelines stated that in the period prior to 1968, pipelines were not subjected to post-construction hydrostatic pressure tests. In addition, for pipe manufactured prior to 1968, handling processes and construction practices in other jurisdictions have been shown to cause defects in pipelines. ATCO Pipelines also observed that the pre-1968 urban pipelines were subject to lesser standards for pipe material, construction, operational and maintenance practices, relative to modern standards.[65]

68. ATCO Pipelines acknowledged that its historical pipeline record keeping practices were not kept to the level of detail that would meet modern standards and which are required to

[58] Exhibit 193.01, ATCO Pipelines argument, paragraph 84.
[59] Transcript, Volume 4, pages 770-771, lines 11-25.
[60] Transcript, Volume 3, page 606, lines 9-19.
[61] Exhibit 150.02, Rebuttal evidence, Ms. Felts, pages 3, 4, 5 and 7.
[62] Exhibit 205.01, ATCO reply argument, paragraph 111.
[63] Exhibit 30.12, Application, Appendix 6, Pipeline integrity records.
[64] Predecessor to CSA Z662.
[65] Exhibit 30.04, Application, paragraphs 75-76.

complete the current integrity assessments.[66] ATCO Pipelines therefore concluded that CSA Z662-11[67] made it clear that ATCO Pipelines had only three choices if the required information was not available: (1) conduct inspections, (2) conduct testing, or (3) make conservative assumptions.

69. ATCO Pipelines submitted that the attributes of the Edmonton and Calgary systems were evaluated on an overall risk basis. ATCO Pipelines' risk assessment was based upon the product of the probability of failure and the consequence of failure and considered that the greatest reduction in overall risk would be achieved by reducing each of these factors. ATCO Pipelines submitted that the risk of maintaining the status quo for its Edmonton and Calgary systems was unacceptably high based on the assessment of the probability of a rupture failure coupled with an assessment of the consequences of such a failure.[68] This conclusion was primarily due to the severe consequences associated with a rupture of a high-pressure pipeline in the current locations. In the event of a "full bore rupture and auto ignition",[69] ATCO Pipelines predicted that severe consequences could include loss of life or severe injury to persons in the proximity, destruction of property, and loss of gas supply for an extended period of time.[70]

70. ATCO Pipelines claimed that the UPR proposal provides the best option to reduce the risk amongst the identified alternatives. It stated that the consequence of failure is related to the location of the pipelines and can only be reduced by a relocation of the pipelines or people. The probability of failure is related to pipeline integrity threats and can only be reduced by the mitigation or elimination of integrity threats. ATCO Pipelines submitted that in order to fully assess the probability of failure of the existing pipelines, additional surface facilities and pipeline upgrades are required to complete hydrostatic pressure testing and ILI. It stated that improvements made as a result of the integrity testing may result in a reduction in the probability of failure; however the probability of failure would not be reduced to the level achieved with new construction in the TUCs. As a result, ATCO Pipelines asserted that the greatest reduction in overall risk would be to implement the UPR project, because it would reduce the consequence of failure significantly and also result in a greater reduction in the probability of failure as compared to the status quo or the replacement in place alternative.[71]

4.1.2 Growth

71. ATCO Pipelines stated that its service area includes the major residential areas in Alberta where growth in demand is forecast to continue and argued that as the cities of Edmonton and Calgary continue to grow in size and population, the proposed UPR pipelines will be better positioned to accommodate that growth.[72]

72. ATCO Pipelines said that its long-term plan included the development of high-pressure pipeline rings around the cities of Edmonton and Calgary to ensure safe and reliable gas supply

[66] Exhibit 130.04, Application, paragraph 77.
[67] 2011 version of CSA Z662.
[68] Exhibit 30.04, Application, page 7 of 140, paragraph 10.
[69] A "guillotine" type of rupture allowing gas to feed from both ends to form a plume, followed by automatic ignition of the gas.
[70] Exhibit 30.04, Application, paragraphs 35 and 71.
[71] Exhibit 30.04, Application, page 16 of 140, paragraph 33.
[72] Exhibit 193.01, ATCO argument, paragraph 1(iii).

service for ATCO Pipelines' customers and to meet metropolitan growth requirements in the long-term.[73]

4.1.3 Reliability

73. ATCO Pipelines characterized its high-pressure gas pipeline service as an essential service that would experience significant consequences from a supply interruption. ATCO Pipelines asserted that in cold weather conditions the consequences associated with a natural gas supply interruption would be especially significant. ATCO Pipelines stated that it must ensure it is capable of meeting its customers' demand for gas under all foreseeable conditions.[74]

74. In Edmonton, the high-pressure gas transmission pipelines currently in place do not have the hydraulic capability to tolerate a loss of connectivity. In that event, ATCO Pipelines would be unable to meet the requirements under peak demand conditions. In contrast, a loss of pipeline connectivity in Edmonton would be mitigated by the UPR project.[75] Similarly, should a loss of connectivity occur in Calgary, ATCO Pipelines stated that the existing infrastructure would be unable to meet demand under peak conditions.[76]

75. ATCO Pipelines stated that loss of parts of the existing high-pressure pipelines would result in significant outages in gas supply and advised that the consequences associated with a natural gas supply interruption are significant in Alberta due to loss of heat that would result if any part of its existing high-pressure pipeline were severed. ATCO Pipelines demonstrated that with the UPR pipelines in place, its ability to supply gas from other sources in the event of a loss of a single major gas supply point for many scenarios would be enhanced in both the Edmonton and Calgary areas.[77] ATCO Pipelines proposed that upon completion of the constituent components of the UPR project, the ring system of pipelines would provide operational flexibility such that gas service would be retained under extreme weather conditions if a loss of connectivity occurred in any part of the ring. With the UPR ring, security of supply would be enhanced in the event of the loss of a single major supply by using the capability of moving gas in either clockwise or counter-clockwise directions within the ring.[78] ATCO Pipelines argued that the UPR project would provide a significant improvement in supply flexibility and reliability.[79]

4.2 Dr. Murray

76. Consistent with the terms of his engagement, Dr. Murray prepared two reports, the first, dated July 12, 2013, on ATCO Pipelines' application and the second, dated August 26, 2013, on the intervener evidence. Dr. Murray was explicit in his report on the application, stating: "The uncertainty surrounding the condition of much of ATCO's pipeline means the status quo is not acceptable."[80] In his report on intervener evidence, Dr. Murray agreed that ATCO Pipelines did not provide a complete risk assessment.[81] In response to an information request, Dr. Murray agreed that ATCO Pipelines has insufficient information about both the physical properties and

[73] Exhibit 30.04, Application, paragraph 17.
[74] Exhibit 30.04, Application, paragraph 224.
[75] Exhibit 30,04, Application, paragraph 228.
[76] Exhibit 30.04, Application, paragraphs 225 and 238.
[77] Exhibit 30.04, Application, Section 4.1.1 paragraphs 229 to 254.
[78] Exhibit 30.04, Application, paragraphs 224 to 254.
[79] Exhibit 193.01, ATCO Pipelines' argument, paragraph 111.
[80] Exhibit 112.02, Dr. Murray report on the application, page 4.
[81] Exhibit 134.02, Dr. Murray report on intervener evidence, page 5.

the current condition of its entire system, (the number and severity of defects that are present) to enable a quantitative assessment to be performed.[82]

77. In his first report to the Commission, Dr. Murray advised that central to effective integrity management is knowledge of the condition of the pipeline system. He stated that this starts with having a good set of records describing the material properties of the pipe and its coating, and the results of pre-commissioning hydrostatic pressure testing. Dr. Murray observed that many older pipelines lack this information and this appears to be the case for ATCO Pipelines' Edmonton and Calgary systems.

78. Dr. Murray stated that when assessing pipeline risk, there is sometimes insufficient information available to enable a quantitative assessment of either or both probability of failure and consequence of failure risk components. In that event, qualitative measures such as high, medium and low risk are used by risk experts to characterise risk for segments of a pipeline system. Dr. Murray stated that this relative risk ranking is useful for prioritizing maintenance and integrity efforts. He also observed that ATCO Pipelines did not attempt to determine absolute risk, its focus being a determination of whether the UPR proposal would be intrinsically safer than continuing to operate the existing Edmonton and Calgary system, suitably modified to monitor and mitigate the integrity threats to which it would be exposed.[83]

79. Dr. Murray referred to CSA Z662-11 Annex N, stating:

> …When dealing with an assessment of the integrity of existing pipelines Clause 3.3.3.3 states that "where the information required in Clauses 3.3.3.1 and 3.3.3.2 is not available, [i.e. the aforementioned records], the operating company shall conduct inspections or testing, or make conservative assumptions that can be supported by rational analysis and valid system experience, to enable the engineering assessment to be carried out." As AP has not performed in line inspections of its entire system, nor has it the required complete set of test records, it is obligated to make conservative assumptions.[84]

80. Dr. Murray agreed that the default condition in the pipeline standard, which requires the proponent, in the absence of inspection and test records, to make conservative assumptions regarding the condition of its existing pipeline, creates a bias in favour of the proponent's position.[85]

81. Dr. Murray also agreed that the models used by ATCO Pipelines in its assessment of relative risk were appropriate for the data available, that they have been applied properly and that the relative results produced were credible.[86]

82. Regarding the issue of traffic in the TUCs, Dr. Murray explained that if a person is travelling in a vehicle, that person is protected from the heat radiation for the short duration of exposure, unless that person was parked within the area of radiation for 20 minutes, and allowed

[82] Exhibit 131.02, UCA-Murray-2(a).
[83] Exhibit 112.02, Dr. Murray report on the application, paragraph 83.
[84] Exhibit 134.02, Dr. Murray report on intervener evidence, page 6.
[85] Exhibit 134.02, Dr. Murray report on intervener evidence, page 5.
[86] Exhibit 112.02, Dr. Murray report on the application, paragraph 82.

the heat to set fire to the vehicle. Dr. Murray advised that the model used by DRAS is predicated on extended exposure and would not apply if a person was driving through it.[87]

83. Dr. Murray noted that the March, 2013 BHTSerge Consulting Ltd. external review of ATCO Pipelines' integrity management plan, did not involve field audits or verify that ATCO Pipelines had followed the procedures in its integrity management program.[88]

4.3 Interveners

84. The Blake Group was comprised of Ms. Brenda Blake and Ms. Joan Blake, both of whom reside in northeast Calgary. The Blake Group submitted that it will be directly and adversely affected by the approval of the application. Specifically, ATCO Pipelines proposed to construct high-pressure pipelines in close proximity to the Blake Group's properties. The Blake Group opposed the application, filed evidence and one of its members testified at the oral hearing.

85. The Blake Group submitted that the risk methodology used by ATCO Pipelines in its analysis is flawed and results in only one possible alternative – the UPR proposal. The Blake Group argued that ATCO Pipelines only presented a qualitative risk assessment that was based on an assumption of full bore rupture and that the frequency of failure evaluation ignored less severe hazard scenarios such as leaks or partial ruptures.[89]

86. The Blake Group also criticized ATCO Pipelines' risk analysis, submitting that ATCO Pipelines considered the risk of the existing urban pipelines as a whole rather than conducting a quantitative risk assessment of each representative pipeline. The Blake Group contended that the integrity of each pipeline segment built from the 1950s to the 1970s may be different depending on when a segment was constructed. It submitted that the AUC should reject ATCO Pipelines' UPR proposal because it was based on an intrinsically imperfect process. The Blake Group proposed that the Commission should not make a decision on every existing pipeline needing to be replaced if the risk analysis performed pertained only to the oldest pipeline in operation.[90]

87. The CCA argued that ATCO Pipelines should be directed to refile its risk analysis to account for vehicular traffic moving near the UPR pipelines on ring roads and overpasses. The CCA considered that there is a fundamental difference between residential and commercial areas, and ring and commuter roads. The CCA argued that ring and commuter roads move traffic from different areas and unrelated areas; therefore, while it might be reasonable to ignore traffic in residential and commercial areas, it should not be ignored for ring and commuter roads.[91]

88. The CCA also argued that ATCO Pipelines needs to refile its risk analysis to reflect population densities over the life of the UPR project. The CCA observed that ATCO Pipelines used satellite imagery from 2008 for its risk analysis and argued that population projections should be undertaken for the proposed TUC project because entire sections of the TUC were

[87] Transcript, Volume 4, pages 770-771, lines 11-25.
[88] Exhibit 112.02, Dr. Murray report on the application, paragraph 15.
[89] Exhibit 190.01, Blake Group argument, paragraph 8.
[90] Exhibit 114.01, Blake group evidence, paragraph 12(c).
[91] Exhibit 191.01, CCA argument, paragraphs 14 and 17.

undeveloped in 2008. The CCA submitted that it is not appropriate to compare the risk of undeveloped land with the risk of developed land.[92]

89. The UCA accepted the overall qualitative conclusion that the UPR project would improve public safety relative to the integrity alternative. It stated its acceptance of Dr. Murray's evaluation of the risk model, subject to concerns about the potential mismatch of the consequence of failure model related to the transportation corridor. The UCA argued that vehicular traffic within the TUC should be included in the consequence of failure analysis.[93]

90. The City of Edmonton (Edmonton) submitted a letter supporting the UPR proposal. Edmonton supported the objectives of increased public safety, service reliability and reduced neighbourhood disruptions that the UPR proposal addresses.[94]

91. Calgary submitted that the evidence established that there is likely a need to upgrade or relocate the high-pressure gas pipelines within the city of Calgary for the purposes of addressing safety, reliability and growth. Calgary therefore did not object to the UPR proposal. However, Calgary could not conclude that the need was imminent or instead could be addressed over the course of time through implementing either the UPR proposal or an integrity management program.[95]

92. CAPP took no position on whether there is a need to upgrade the Edmonton and Calgary systems. It submitted that it will leave it to the Commission to decide whether it has sufficient information to make that decision.[96]

93. No intervener addressed the issue of providing capacity for forecast growth in supply demand. However, as noted above, Calgary acknowledged growth as one of the reasons it supported the UPR proposal.

94. As mentioned above, both Edmonton and Calgary supported the objective of increased service reliability.[97]

4.4 Commission findings

95. One of the adjunct benefits of the UPR proposal is an opportunity to provide additional capacity that would meet growth in the long-term.

96. The ATCO Pipelines/NGTL Alberta System Integration Agreement anticipates that the selection of specific facilities to meet customer requirements on the Alberta system will be based on an annual review of natural gas supply and demand.

97. In Decision 2010-228,[98] the Commission approved the proposed Integration of the regulated gas transmission service in Alberta of ATCO Pipelines and NOVA Gas Transmission

[92] Exhibit 191.01, CCA argument, paragraph 18.
[93] Exhibit 194.02, UCA argument, paragraphs 65 and 67.
[94] Exhibit 29.01, Edmonton letter to Mr. Brendan Dolan, President of ATCO Pipelines.
[95] Exhibit 192.01, Calgary argument, paragraphs 22 and 23.
[96] Exhibit 189.01, paragraph 2.
[97] Exhibit 29.01, Edmonton letter to Mr. Brendan Dolan, President of ATCO Pipelines.
[98] Decision 2010-228: ATCO Pipelines 2010-2012 Revenue Requirement and Alberta System Integration, Application No. 1605226, Proceeding ID No. 223, May 27, 2010.

Ltd. under a single rates and services structure while maintaining separate ownership, management and operation of their respective assets.[99]

98. The ATCO Pipelines/NGTL Alberta System Integration Agreement states that:

> …NGTL shall be responsible for determining whether any new Alberta System Pipeline Facilities (other than Minor Modifications) are required, or whether any existing Alberta System Pipeline Facilities should be retired, abandoned or removed, in accordance with such ongoing single system design philosophy, with such determination by NGTL to be made in consultation with ATCO and provided that no ATCO Pipeline facilities in the ATCO Footprint will be retired, abandoned or removed without the consent of ATCO, and based on an annual (or as required from time to time)assessment of the Alberta System Pipeline Facilities and gas supply and demand forecast that the Alberta System will serve.[100]

99. In response to a Commission information request, ATCO Pipelines stated:

> As such, based on an annual review of supply and demand on the Alberta System, NGTL is responsible for selecting the specific facilities solution (other than Minor Modifications) required to meet customer requirements on the Alberta System…[101]

100. In the ATCO Pipelines South 2011 revenue requirement application, ATCO Pipelines stated:

> In addition the new Southeast Calgary Connector has been sized to take into consideration the long term growth forecasts for the City of Calgary (20+ years). Without the initiative to construct a high pressure pipeline network in the City of Calgary TUC the existing mainline North and Mainline North loop Transmission lines will require replacement and upsizing in the future due to age and to accommodate growth.[102]

101. The Commission agrees that where practicable and economically beneficial, the size of the pipeline installed should be selected with consideration for additional capacity to provide for future growth. However, it is the Commission's view that the evidence tendered in this proceeding was insufficient to draw any conclusion that growth was a significant driver for ATCO Pipelines' proposals.

102. However, the scope of this proceeding does not include examination of the specific pipe sizes proposed for each segment to determine if the size will meet the forecast demand growth for some time in the future. Capacity required for growth is instead a subject for review in the specific facility application for each segment.

103. Customers connected to ATCO Pipelines rely on delivery of natural gas from supply contract points on the NGTL system through the pipelines to meet demand under all foreseeable conditions. As the owner of a public utility, as defined in the *Public Utilities Act*, ATCO Pipelines is obligated to provide safe and reliable utility service on a continuous basis.[103]

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[99] Decision 2010-228, paragraphs 184 (1) and 184 (2).
[100] ATCO Pipelines/NGTL Alberta System Integration Agreement, Section 4.5 (b)(i).
[101] Application No. 1609158, Proceeding ID No. 2322, Exhibit 81.01, response to AUC-AP-11(a).
[102] Application No. 1607451, Proceeding ID No. 1314, Exhibit 3, Application, PDF page 88 of 110.
[103] *Public Utilities Act*, Section 1, Definitions.

104. The Commission accepts that significant gas supply outages would likely result in the event of a loss of connectivity or a loss of a major supply point. For example, a connectivity loss along the East Calgary Connector during a period of peak winter demand (-36°C for the south integrated system) would likely result in loss of service at gate stations in the south portion of the city and at the end of Peigan Trail lateral without the proposed pipelines located in the TUC.[104]

105. The Commission considers that any proposed pipeline installations for the purposes of reducing risk would likely also provide an opportunity to increase system reliability. It is clear that ATCO Pipelines has studied a number of operating scenarios with the system under duress and has sufficiently demonstrated that an overall improvement in reliability would result from relocating or replacing portions of the existing Edmonton and Calgary systems. The amount of increase in reliability for any scenario must however be assessed by ATCO Pipelines by balancing the consequences of any outage with the cost of the incremental facilities required to mitigate the outages.

106. The construction standards at the time of installation (pre-1968) of much of ATCO Pipelines' high-pressure gas pipeline system did not require ATCO Pipelines (or its predecessors) to hydrostatic pressure test the pipeline installations after construction and immediately prior to placing them into service. Hydrostatic pressure testing was not introduced in the CSA standard for pipeline installations until 1968 and, as a result, was not performed at the time of installation of those sections of ATCO Pipelines' Edmonton and Calgary systems installed prior to 1968.

107. Hydrostatic pressure testing did not become mandatory for ATCO Pipelines' integrity program until 2007, and only a few of the pre-1968 pipeline installations in Edmonton and Calgary have, as yet, been hydrostatic pressure tested as part of the company's integrity program.

108. ATCO Pipelines is required by EUB Directive 041 and Alberta Energy Regulator Directive 077 to adopt CSA Z662 Annex N for pipeline integrity management and, accordingly, ATCO Pipelines is required to do at least one of the following:

- Perform an engineering critical assessment of the risk associated with the Edmonton and Calgary systems by evaluating information in its records for a number of factors related to its pipelines.
- Undertake an ILI inspection of the Edmonton and Calgary systems and hydrostatic test the Edmonton and Calgary systems where necessary, in order to replace or repair sections of the Edmonton and Calgary systems as required.
- In the absence of adequate information, adopt conservative assumptions regarding the condition of the Edmonton and Calgary systems to enable the engineering assessment.

109. With respect to the first alternative, to undertake an engineering critical assessment of risk, Dr. Murray found that ATCO Pipelines did not provide a complete risk assessment, and that ATCO Pipelines has insufficient information about both the physical properties and the current condition of its Edmonton and Calgary systems (the number and severity of defects that are present) to enable an adequate risk assessment to be performed. The Commission accepts Dr. Murray's findings.

[104] Exhibit 30.04, Application, paragraphs 224-254.

110. Under today's standards, ATCO Pipelines is required to perform hydrostatic pressure testing upon installation and to create a record of the test results prior to putting a pipeline into service. However, given the standards at the time the pre-1968 pipeline sections were installed, ATCO Pipelines was under no obligation to create records that satisfy the current standards, and accordingly the integrity records of the company are not sufficient to complete a record-based engineering critical assessment of risk.

111. With respect to the second alternative, to undertake an ILI of the Edmonton and Calgary systems, while certain segments of the Edmonton and Calgary systems are ILI compatible, a comprehensive ILI inspection has not been undertaken to date, and one of the alternatives explored by ATCO Pipelines and considered in this proceeding is the full scale implementation of an ILI program for the entire Edmonton and Calgary systems.

112. In the absence of an adequate record-based engineering assessment of risk or a comprehensive ILI inspection of the Edmonton and Calgary systems, the Commission concludes that conservative assumptions about the risk of continued long-term operation of the existing Edmonton and Calgary systems are warranted.

113. Dr. Murray, the UCA, Calgary and Edmonton all supported, or did not object to ATCO Pipelines' position that the status quo is unacceptable. The Commission agrees that the risk of continued long-term operation of the existing Edmonton and Calgary systems is unacceptable without engaging in some risk mitigating activity.

114. Because the Commission finds the status quo unacceptable, the Commission agrees with ATCO Pipelines and Dr. Murray that there is a need to either upgrade or replace the existing Edmonton and Calgary systems.

115. The Commission was presented with the following alternatives to upgrade or replace the existing Edmonton and Calgary systems to reduce the existing risk associated with the continued operation of the systems.

- UPR proposal
- integrity alternative
- replacement in place alternative
- distribution alternative
- hybrid alternative

116. In the sections that follow, the Commission will consider each of these alternatives.

5 Which alternative will best meet the need to upgrade or replace the Edmonton and Calgary systems?

5.1 ATCO Pipelines

5.1.1 Alternatives proposed

117. On the basis of its risk assessment, ATCO Pipelines concluded that the risk of maintaining service through its existing high-pressure pipelines is unacceptably high.[105] ATCO

[105] Exhibit 30.04, Application, paragraph 386.

Pipelines proposed the UPR project on the basis that relocating the high-pressure pipelines into the TUCs would reduce the risk to an acceptably low level.

118. As introduced earlier in this decision, two alternatives to ATCO Pipelines' UPR proposal are the integrity alternative and replacement in place alternative. The integrity alternative proposes to continue using the existing pipelines with repairs and replacements as identified by an ILI and hydrostatic pressure testing program. The replacement in place alternative simply replaces the existing pipelines in place. Two other alternatives are the distribution alternative, discussed by ATCO Pipelines, and a hybrid alternative presented by the UCA.

5.1.1.1 UPR proposal

119. The UPR proposal involves a reconfiguration of the existing Edmonton and Calgary systems by constructing new high-pressure natural gas pipeline networks predominantly within the Edmonton and Calgary TUCs and subsequently reconnecting the ATCO Gas system to the new locations.

120. The UPR proposal consists of the following 12 projects:

Edmonton: 52 kilometres (km)

- Northwest Edmonton Connector[106]
- Southwest Edmonton Connector
- Northeast Edmonton Connector
- South Edmonton Connector

Calgary: 99 km

- Southeast Calgary Connector
- East Calgary Connector
- Northeast Calgary Connector
- Peigan Trail Lateral
- Jumping Pound Tie-in
- Northwest Calgary Connector
- West Calgary Connector
- Southwest Calgary Connector

121. The total capital expenditures in both cities over the 20-year analysis for the UPR proposal, inclusive of ATCO Gas's expenditures, were estimated at approximately $900 million. The expenditures include those necessary to accommodate growth in demand for the next 20 years.[107]

122. Attached as Appendix 8 are two maps prepared by ATCO Pipelines showing the Edmonton and Calgary TUCs and the location of the UPR pipeline segments. ATCO Pipelines stated that the pipeline location is within a 50 m wide corridor and is generally located on one or the other side of the TUC near the edge of the roadway.

123. ATCO Pipelines explained that the ATCO Gas component of the UPR project would require the construction of approximately 92.9 km of feeder mains and 19 gate stations within

[106] The Northwest Edmonton Connector was constructed in late 2011 and early 2012.
[107] Exhibits 93.01 to 93.07, UCA-AP-28(a) and Exhibits 135.02 and 135.03, ATCO Pipelines updates.

the cities of Edmonton and Calgary. The feeder mains would be tied into the existing distribution systems. In addition, existing stations currently connected to vintage high-pressure pipelines would be decommissioned and removed, and the station sites would be reclaimed.[108] In response to a Commission information request, ATCO Pipelines submitted that the existing vintage high-pressure pipelines that are not converted to distribution service would be abandoned in place. Typically abandonment in-situ is the preferred option, but there are circumstances that would require portions of the abandoned pipeline to be removed depending upon a site-specific assessment. Each pipeline would be evaluated and the appropriate form of abandonment would be implemented. Where the pipeline is abandoned and left in place, the pipeline would remain under an ATCO Pipelines license, the right-of-way would be maintained, and crossings would be administered by ATCO Pipelines.[109]

124. ATCO Pipelines submitted that the proposed UPR pipelines would be amenable to ILI operations because quadrants of the UPR pipelines would be segmented and the existence of control stations at key locations would allow pipeline pressure to be reduced to a level that would result in the appropriate gas velocity for successful ILI.[110]

125. ATCO Pipelines said that the new pipelines proposed to be within the TUCs would be designed to accept ILI and would be subjected to regular integrity testing with ILI tools. The new pipelines would only require 11 ILI tool runs because their aggregate length would be 43 per cent less than the aggregate length of the existing pipelines in Edmonton and Calgary.[111] In response to a Commission information request, ATCO Pipelines added that supply outages to accommodate ILI would not be necessary since the pipeline rings would have two-way feed capability; therefore, the tools could be run through each pipeline segment at different times between control stations. Subsequent tool runs would be more efficient as longer pipeline lengths could be ILI-inspected once the total project was in service.[112]

126. DRAS submitted that the Alberta TUCs are an excellent example of "forward thinking urban planning". It noted that the ability to operate in a designated corridor such as the TUC presents pipeline companies with an advantageous alternative to minimize potential impacts on public safety in the event of a catastrophic pipeline failure.[113]

127. One of the UPR pipeline segments, the Southwest Calgary connector would extend from approximately Sarcee Trail and 50th Avenue S.W., south to Spruce Meadows Trail and 24 Avenue S.W. (15 km), planned for installation in 2017. ATCO Pipelines advised that it would pursue a pipeline route right-of-way in consultation with the Tsuu T'ina Nation and the City of Calgary if an official TUC for this segment was not in place.[114] ATCO Pipelines confirmed that it would work with the Tsuu T'ina Nation in moving forward with the details of implementing the UPR project should it be approved.[115] ATCO Pipelines also explained that should a right-of-way

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[108] Exhibit 30.04, Application, pages 73-78 of 140, paragraphs 185, 190, 193, 196, 199, 202, 208, 213, 218 and 222; Exhibit 35.01, ATCO Pipelines' errata sheet; Exhibit 135, ATCO Pipelines' updates.
[109] Exhibit 83.01, AUC-AP-36(f).
[110] Exhibit 150.01, Rebuttal evidence, page 7 of 16.
[111] Exhibit 30.04, Application, page 93 of 140, paragraph 259.
[112] Exhibit 83.01, AUC-AP-28(b).
[113] Exhibit 30.07, Application, Appendix 3A – Consequence Evaluation of Urban Pipeline Projects, PDF page 25 of 129.
[114] Exhibit 83.01, AUC-AP-19.
[115] Exhibit 193.01, ATCO Pipelines argument, paragraph 167.

on Tsuu T'ina Nation lands not be acquired, the alternative would be to build the replacement pipeline within the city of Calgary.[116]

128. ATCO Pipelines also committed to include the Papaschase First Nation in future discussions. Specifically, Mr. Dolan stated at the hearing that now that ATCO Pipelines is aware of the Papaschase First Nation's interests, ATCO Pipelines would be including the Papaschase First Nation in discussions should new facilities be located in the Edmonton TUC. Mr. Dolan stated:

> Sir, now that we are aware of the issue, we will definitely be including you and your Nation into discussions we have as we look to build new facilities in the transportation utility corridor in the TUC if that's the direction we go with this project.[117]

5.1.1.2 Integrity alternative

129. The integrity alternative requires ATCO Pipelines to investigate its existing Edmonton and Calgary systems to determine with some certainty that the consequence of failure remains acceptably low. The integrity alternative would require the resolution of as many threats to the existing Edmonton and Calgary systems as possible using ILI, hydrostatic pressure testing and, where necessary, excavating to verify ILI inspection results, assessing the nature of the defect, completing a necessary repair of the defect, or replacing the section of the pipeline associated with the defect.

130. Total capital expenditures in both cities for the integrity alternative were estimated at $844 million. The expenditures would include those necessary to accommodate growth during the 20 years.[118] However, the costs of any remedial work that would be identified during integrity testing were not included in the estimate.

131. With respect to the integrity alternative, ATCO Pipelines summarized the integrity threats applicable to its existing Edmonton and Calgary systems in Table 1 of the application.[119] Kiefner identified the potential threats to the existing Edmonton and Calgary systems that must be addressed.[120] The process to identify certain threats requires ILI followed by hydrostatic pressure testing of the entire existing pipeline network.

132. ATCO Pipelines stated that the majority of the existing urban pipelines were constructed prior to the introduction of ILI technology and that the existing systems were not configured to allow hydrostatic pressure testing for threat elimination. Therefore, significant modifications to the existing pipeline network would be required to allow the passage of ILI tools. The construction of the facilities to accommodate ILI would be problematic due to the lack of land area available to site the facilities and to provide for the required work space to complete the improvements. Thirty-six ILI tool runs would be required to inspect the existing Edmonton and

[116] Transcript, Volume 3, page 554, lines 10-25 to page 555, lines 1-7.
[117] Transcript, Volume 2, page 436, lines 18-22.
[118] Exhibits 93.01, UAC-AP-29(a), Attachments 1 and 2.
[119] Exhibit 30.04, Application, page 33 of 140, Table 1.
[120] Exhibit 30.09, Application, Appendix 4(A), Urban Pipeline Replacement Project Integrity Option, pages 46-47.

Calgary systems[121] and 72 launch and receive facilities would be required for the integrity alternative.[122]

133. ATCO Pipelines advised that the ILI program described in the integrity alternative would consist primarily of baseline ILI runs, including four separate tool runs over a four day period. First-time tool runs would be more likely to encounter obstructions that may damage or restrict the propulsion of the tool and therefore would require an outage to retrieve the tool. Further, as this would be the first inspection, in many cases, there would be a higher likelihood of a feature or anomaly that would require pressure reduction to conduct investigations and repairs following the run. Depending upon the pipeline and the required pressure reduction, the deliverability of gas to customers might be affected. Therefore, the ILI program can only be undertaken in the summer months.[123]

134. ATCO Pipelines submitted that ILI of an older pipeline in an urban area would locate pipeline defects that would have to be evaluated. Many defects would require excavation to verify the information from the tool run and consequently require an assessment of the defect and its repair, or replacement of the section of the pipeline associated with the defect. This activity could result in serious impacts within the area such as excavation within residential yards and city streets, and curtailing of traffic. Further, because the defect could be located in intersections or other major road crossings where excavation is not possible, pipeline replacement would be the option in these circumstances. Because many urban pipelines have no alternate source of gas supply, a pipeline with a known critical defect would have to operate at a restricted pressure or be shut in until replacement of a section of pipeline could be completed. The event would result in outages and the severity of such outages would depend on the specific circumstances. Any such repair work could only be undertaken during the summer months.

135. ATCO Pipelines stated that the optimum ILI tool speed to ensure the accurate collection of data is a rate of three to five metres per second. Tool speed might vary significantly[124] for smaller diameter pipelines with low flow rates or wall thickness changes resulting in reduced ILI data accuracy. ATCO Pipelines submitted that ILI signals may be distorted due to a variety of factors including line cleanliness, bends, casings, speed excursions or tool and electronic sensor malfunctions which could lead to some uncertainty in the assessment of the ILI data.

136. In addition, ATCO Pipelines stated that hydrostatic pressure tests would have to be repeated at regular planned intervals on an ongoing basis because the pipeline would continue to be vulnerable to growth of defects that were small enough to avoid exposure during the last hydrostatic pressure test.[125] A successful hydrostatic pressure test requires that the water pressure in the pipeline be stabilized at a specific required hydrostatic test pressure over the duration of the test. It may be difficult to achieve a successful test in a pipeline with unknown defects, because small leaks may occur that are difficult if not impossible to find.

[121] Exhibit 30.04, Application, page 93 of 140, paragraphs 257 and 259.
[122] Exhibit 150.01, Rebuttal evidence, page 7 of 16, paragraph 31.
[123] Exhibit 150.01, Rebuttal evidence, page 8 of 16, paragraph 35.
[124] Exhibit 30.04, Application, page 98 of 140, paragraph 268.
[125] Exhibit 30.04, Application, pages 104-105 of 140, paragraphs 289-294.

137. ATCO Pipelines discussed in detail the challenges associated with hydrostatic pressure testing the existing Edmonton and Calgary systems:

- Some pipeline upgrades to accommodate ILI would be necessary prior to testing in order to avoid repeated failures of the pipe during a test. This is required where pipeline locations are in close proximity to people and structures and, following suitable notification, would require the public to be evacuated from the immediate area containing the pipeline testing equipment or other surface facilities.
- Pipeline fittings which may cause a leak, even though potentially minor, may need to be removed prior to conducting the hydrostatic pressure test, as such leaks could cause a failure of the test.
- Maintenance of service during the testing outage period may require connection of an alternate supply to avoid a supply disruption.
- Water acquisition, management and disposal present logistical challenges.
- Extended gas service outages could result from failed tests.
- Traffic disruptions could result due to the need to close roads.
- The time period under which service disruptions can be tolerated is very small and can be unpredictable due to weather conditions.
- The fluid from the in-service pipeline could contain undesirable contaminants, which would be released uncontrolled into the urban environment in the event of a fluid release.
- The hydrostatic pressure tests would have to be restricted to a very tight time window in the summer months due to the requirement to maintain critical service to downstream markets.
- Technical limitations of hydrostatic pressure testing are also a consideration.

138. To avoid a failure of a hydrostatic pressure test, ATCO Pipelines stated that isolation of existing branch lines and laterals connected to the pipelines would require disconnection. Maintaining gas supply during the testing period may require connection of an alternate supply to avoid a supply disruption for affected markets. ATCO Pipelines submitted that without the installation of temporary bypass facilities for certain segments, service interruptions would be unavoidable. Because some pipelines are the single source of gas supply for customers and risk of extended service outages may result from testing, it may not be feasible to hydrostatic pressure test these pipelines. Integrity threats in such segments could therefore only be resolved by removing the pipeline from service.

139. ATCO Pipelines pointed out that another risk to consider when testing in-service vintage pipelines is that an ILI of the pipeline would not be able to identify crack-like defects, and consequently the pipeline could fail a hydrostatic pressure test as a result of a rupture from a crack-like defect. Further, upon repair of the failed defect, a subsequent successful test would have to be achieved prior to returning the pipeline to service. There is no guarantee that another rupture would not occur. Given that these pipelines are providing critical service to downstream

markets, an extended outage to complete a successful hydrostatic pressure test would be unacceptable.[126]

140. ATCO Pipelines stated that the integrity alternative would involve ongoing ILI and hydrostatic pressure testing of the existing pipelines. The data identified by the ILI program might result in the need for incremental investments to resolve integrity concerns with the pipelines.[127]

141. ATCO Pipelines recognized that some threats to the integrity of its high-pressure pipeline system identified in the Kiefner report, such as circumferential weld cracking, long seam and girth weld defects, are beyond the detection capability of the magnetic flux leakage (MFL) tools. Although these defects could be found using conventional ultrasonic crack tools, the process would require the use of a liquid couplant (placing the tool in a liquid slug) in a gas pipeline and would not be easily undertaken.

142. With the relatively recent emergence and application of electromagnetic acoustic technology (EMAT) in ILI tools, ultrasonic sound waves are introduced into the pipe body of a gas line without the need for a couplant. ATCO Pipelines contended that it does not have experience with EMAT tools, there is no wide spread acceptance of the reliability of EMAT tools and EMAT tools are also considerably more costly to run than MFL tools.[128]

5.1.1.3 Replacement in place alternative

143. The replacement in place alternative entails installing new pipelines of the same size in the urban areas in the exact same location and alignment as the existing pipelines.

144. The total capital expenditures in both cities over the 20-year forecast period for the replacement in place alternative were estimated at $1.018 billion. The expenditures included those necessary to accommodate growth during the 20 years.[129]

145. ATCO Pipelines stated that in many circumstances, constructing the replacement in place alternative would be very challenging due to the lack of work space, proximity to above ground structures, the existence of other buried infrastructure, major roads, and the disturbance to the public in the area of construction. Replacement of the vintage pipe with new pipe of the same size would be challenging in the limited workspace within urban locations because the area around the existing rights-of-way is well developed. There would also be a risk that the landowners may not grant ATCO Pipelines the additional workspace to complete the replacements.[130]

146. ATCO Pipelines stated that because the new pipelines would have to be piggable, a pig launcher and receiver as well as valve assemblies would have to be installed at the ends of each pipeline segment. Obtaining sufficient surface area to install these facilities would be challenging in most urban areas.[131] In addition, ATCO Pipelines said that it would have to disrupt traffic to

[126] Exhibit 30.04, Application, page 102 of 140, paragraphs 273 to 288.
[127] Exhibit 30.04, Application, page 92 of 140, paragraph 256.
[128] Exhibit 150.01, Rebuttal evidence, pages 10 to 11 of 16, paragraph 49.
[129] Exhibit 93.01, UAC-AP-30(a), Attachments 1 and 2.
[130] Exhibit 30.04, Application, pages 105 to 106 of 140, paragraphs 295 to 297.
[131] Exhibit 30.04, Application, page 108 of 140, paragraphs 297 and 298.

obtain a reasonable amount of workspace and provided examples of the traffic disruption that would result from the replacement in place alternative.[132]

5.1.1.4 Distribution alternative

147. ATCO Pipelines submitted that it worked with ATCO Gas "to develop the DA, wherein all urban high-pressure facilities would be removed from high-pressure service and replaced by new distribution pressure pipelines throughout Edmonton and Calgary, while converting existing high-pressure pipelines to distribution pressure where practicable."[133]

148. ATCO Pipelines provided the following description:

> The Distribution Alternative would entail AP abandoning or transferring to distribution service, all those urban HP pipelines not currently located within the TUCs. Those facilities that would be hydraulically beneficial to AG's system would be transferred to AG. Under this scenario, AG would be required to construct significant distribution infrastructure to offset the loss of HP supply. [134]

149. The total combined capital expenditures of the distribution alternative for ATCO Pipelines and ATCO Gas in both cities would be nearly $1.3 billion over a 20-year period, most of which would occur in the first five years.[135]

150. ATCO Pipelines noted that the distribution alternative in Edmonton is similar to the UPR proposal because a significant portion of ATCO Pipelines' high-pressure infrastructure in Edmonton is already located in the TUC. However, ATCO Pipelines would nevertheless have to construct the Northeast Connector to maintain adequate gas supply to west Edmonton. In addition, ATCO Pipelines would be required to loop a significant portion of the Swan Hills system because much of it would be transferred to ATCO Gas under this alternative. Some looping of pipeline segments in the south would be required and the South Edmonton Pipeline Connector project in the UPR proposal would have to proceed.[136]

151. Distribution pressures in ATCO Gas' system are much lower than the transmission pressures in ATCO Pipelines' system, therefore the distribution alternative would require incremental facilities that would not be required in the UPR proposal. ATCO Pipelines claimed that the distribution alternative would present logistical challenges because ATCO Pipelines' transmission system would not have interconnectivity and the security of supply would be significantly reduced.[137]

152. ATCO Pipelines stated that unique Edmonton and Calgary hydraulic models were developed to determine which facilities would be required to facilitate the distribution alternative. Models for the full 20-year forecast period were not developed for the distribution alternative owing to the high capital costs and impracticality of this alternative.[138]

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132 Exhibit 30.04. Application, pages 106 to108 of 140, figures 34 to 39.
133 Exhibit 30.04, Application, page 108, paragraph 300.
134 Exhibit 30.04, Application, page 109, paragraph 301.
135 Exhibit 30.04, Application, page 113 of 140, paragraph 312.
136 Exhibit 30.04, Application, page 109, paragraph 302.
137 Exhibit 30.04, Application, page 113, paragraph 312.
138 Exhibit 30.04, Application, page 115, paragraph 324.

153. ATCO Pipelines submitted that this alternative, unlike the other alternatives, was not forecast to the 20 year +/- 30 per cent cost accuracy standard, as specified by the Commission in its final requirements list. However, the combined capital cost of the distribution alternative for ATCO Pipelines and ATCO Gas was estimated to be nearly $1.3 billion over a 20-year period. For these reasons, ATCO Pipelines did not analyze the distribution alternative in detail and, therefore, the economic model was not completed.[139]

154. Projects comprising the $1.3 billion cost estimate were:

- ATCO Pipelines' costs of $150 million for approximately 100 km of new transmission pipeline ranging in size from 168 millimetre (mm) to 508 mm.
- long-term supply projects assumed to be equivalent in the integrity alternative and replacement in place alternative in the amount of $480 million
- ATCO Gas costs of $640 million for approximately 270 km of distribution mains
- an additional $30 million comprised of 19 measurement related projects[140]

155. ATCO Pipelines included only those facilities required to facilitate conversion to the distribution alternative. ATCO Pipelines assumed that future costs to provide gas for the distribution alternative would be at least equivalent to the integrity alternative and the replacement in place alternative, therefore a full 20-year supply/demand assessment was not completed for the distribution alternative.[141]

156. While the distribution alternative addressed the consequence of failure concerns, the associated costs would be prohibitive. The transition to the new facilities would have to be coordinated in a manner that would limit impacts to downstream markets. ATCO Pipelines considered that the distribution alternative was not a prudent alternative because it would significantly reduce security of supply, may not be implementable, and would be significantly more expensive than the UPR project.[142]

157. None of the interveners disputed ATCO Pipelines' submission with respect to the distribution alternative nor did they suggest that the distribution alternative would be a viable alternative.

5.1.2 Hybrid alternative

158. The UCA submitted that given the uncertainties of the cost estimates in the integrity alternative, the Commission should create a process that requires ATCO Pipelines to assess as early as possible whether a lower-cost alternative to the UPR proposal is available, even while the UPR project is being pursued. The UCA referred to this as an "off-ramp" identification process that would direct ATCO Pipelines to begin ILI and hydrostatic pressure testing its Edmonton and Calgary systems in conjunction with the implementation of the UPR project.[143] The UCA quoted Dr. Murray's evidence and testimony that integrity testing must be an integral and ongoing part of ATCO Pipelines' operation of its Edmonton and Calgary pipeline systems

[139] Exhibit 93.01, UCA-AP-26(a).
[140] Exhibit 93.01, UCA-AP-26(a).
[141] Exhibit 30.04, Application, page 116, paragraph 327.
[142] Exhibit 30.04, Application, page 8, paragraph 12
[143] Exhibit 194.02, UCA argument, paragraphs 12 and 70.

even if the UPR proposal is approved by the Commission (see also Section 5.3 for intervener submissions).

159. A combination of the integrity alternative and UPR proposal was also explored by the Commission and other parties. The Commission asked ATCO Pipelines if an integrity management variation, using assessment methods that do not include ILI and hydrostatic pressure testing would significantly reduce the probability of failure and enable the existing Edmonton and Calgary systems to be operated for 10 more years or longer. ATCO Pipelines responded that this was not realistic.[144]

160. In response to information requests from CAPP and the UCA, ATCO Pipelines replied that combining elements of the integrity, replacement in place and distribution alternatives, although theoretically possible, would not achieve the full benefit of the UPR project.[145] ATCO Pipelines also pointed to an explanation in the application:

> The UPR Project was carefully considered in light of potential alternatives. These alternatives included an integrity alternative ("Integrity Alternative"), a replacement in place alternative ("RP Alternative") and a distribution alternative ("Distribution Alternative"). The Integrity Alternative, while potentially more economic (though not significantly so and with a strong possibility that any economic advantage will be overwhelmed by repair or replacement work identified by integrity digs) is not a prudent option as it does not address the core public safety concern arising from the severe consequences of a failure of high pressure pipelines in their present locations. In addition, the Integrity Alternative suffers from significant practical and technical limitations. The RP Alternative is not a prudent option as it again does not address the prime public safety threat and may not be practically achievable. Finally, the Distribution Alternative is not a prudent option as it significantly reduces security of supply, may not be implementable, and is significantly more expensive than the UPR Project...[146]

5.1.3 Economic analyses of the alternatives

161. Consistent with the direction from Decision 2012-233,[147] ATCO Pipelines filed economic analyses for the UPR proposal, the integrity alternative, and the replacement in place alternative. The analyses were cumulative present value cost of service (CPVCOS) based upon a 20-year forecast period using costs estimated with a +/- 30 per cent accuracy tolerance. Appendix 6 provides the key assumptions used by ATCO Pipelines in the CPVCOS calculations and Appendix 7 provides a summary of the results of the CPVCOS analyses. ATCO Pipelines prepared supply and demand forecasts over the 20-year period to identify where new facilities would be required to be added to the Edmonton and Calgary systems to meet the forecast growth in demand. The analyses included any associated costs for changes to the Edmonton and Calgary ATCO Gas systems and other affected utilities and public works. ATCO Pipelines explained that ATCO Gas costs are included in the UPR project cost estimate at +/- 30 per cent as directed by the Commission, but excluded from the estimated integrity alternative and replacement in place alternative because neither alternative requires any reconfiguration of the Edmonton and Calgary ATCO Gas systems.[148]

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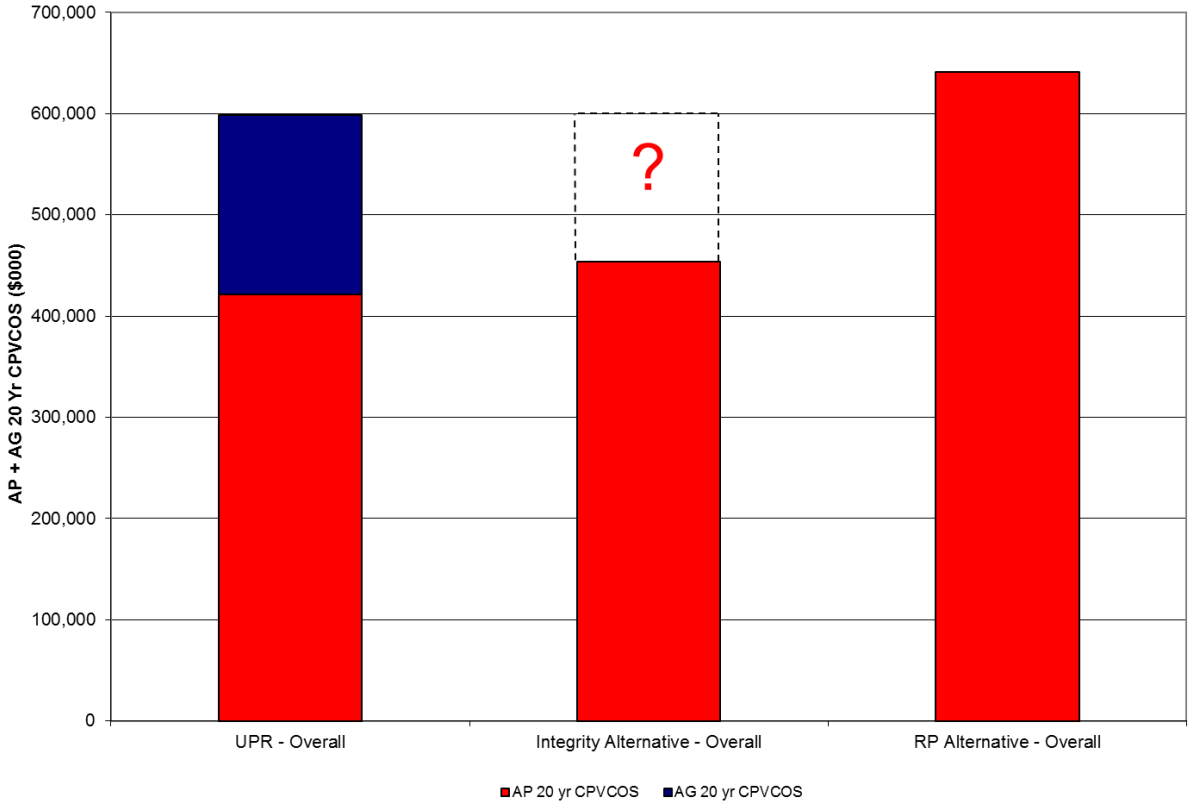
144 Exhibit 83.01, AUC-AP-27(a) and (b).
145 Exhibit 89.01, CAPP-AP-8(a) to (c); Exhibit 93.01, UCA-AP-3(g).
146 Exhibit 30.04, Application, paragraph 12.
147 Decision 2012-233, Appendix 3, page 16.
148 Exhibit 205.01, ATCO Pipelines reply argument, page 41.

162. On August 29, 2013, ATCO Pipelines provided updates to the application and to its responses to certain Commission and UCA information requests.[149] The update included the forecast costs to reflect:

- Corrections to duplicate inflation and measurement costs for forecast UPR projects.
- The Northeast Calgary Connector Phase 2 was eliminated as it was included in the requirements for the Shepard Energy Centre project.
- A schedule update to reflect a shift in the timing of capital expenditures for the East Calgary and Northeast Calgary Connector projects from 2014 to 2015. The timing was updated to reflect an expected AUC decision in the first quarter of 2014.

163. As part of the update, ATCO Pipelines provided an updated comparison of the 20-year CPVCOS among the three main alternatives as shown below in revised Figure 43.[150]

Revised Figure 43 and UCA-AP-28(a) Attachment 7 – Edmonton + Calgary AP+ AG 20yr CPVCOS



164. ATCO Pipelines submitted that it was important to keep in mind that the integrity alternative costs include the unrealistic assumption that ATCO Pipelines' existing vintage urban pipelines would not require any additional cut-outs and/or replacement work. ATCO Pipelines did not incorporate costs for replacements likely to be triggered by the integrity alternative because estimation of the costs would be highly speculative. ATCO Pipelines represented those potential costs in the chart by a question mark and stated that further expenditures for repair and

[149] Exhibit 135.01, ATCO Pipelines updates submission, August 29, 2013.
[150] Exhibit 135.01, ATCO Pipelines' updates submission, August 29, 2013, page 125 of 140.

replacement work resulting from integrity testing would likely push the cost of the integrity alternative beyond the cost of the UPR proposal. It explained that the worst case for the costs that could result from the integrity alternative can be illustrated by adding the replacement in place alternative column to the integrity alternative column.[151]

165. ATCO Pipelines stated that, due to the inability to reasonably estimate repair and replacement costs with any level of accuracy, the costs included in the integrity alternative were only those necessary to assess the current pipelines and did not contemplate any replacement work. ATCO Pipelines submitted that it had attempted to show by order of magnitude how little replacement and repair work would be required before the integrity alternative costs equal those of the UPR proposal.[152]

166. ATCO Pipelines submitted that the costs related to the ILI program for the existing pipeline network have a high degree of risk associated with them. It explained that the work necessary to install pigging facilities and remove all buried obstacles to permit the passage of the ILI tool is similar to undertaking a large renovation project. There is considerable cost uncertainty due to the age of the facilities and the unknowns associated with working on pipelines of this vintage. In addition, the potential costs for digs, repairs and replacements could be significantly higher depending on the data gathered.[153] ATCO Pipelines estimated that the capital costs to upgrade its systems for ILI and hydrostatic pressure testing alone would be $33 million for Edmonton and $43 million for Calgary over a five-year period.[154]

167. ATCO Pipelines submitted that a number of simplifying assumptions were made to develop the 10-year implementation plan for the UPR project. Consequently, ATCO Pipelines anticipated that changes to the assumptions in the 10-year scenario would likely be required if ATCO Pipelines was ordered to implement the UPR project over a different time period. It explained that the 10-year scenario for the UPR project was based on the following key assumptions:

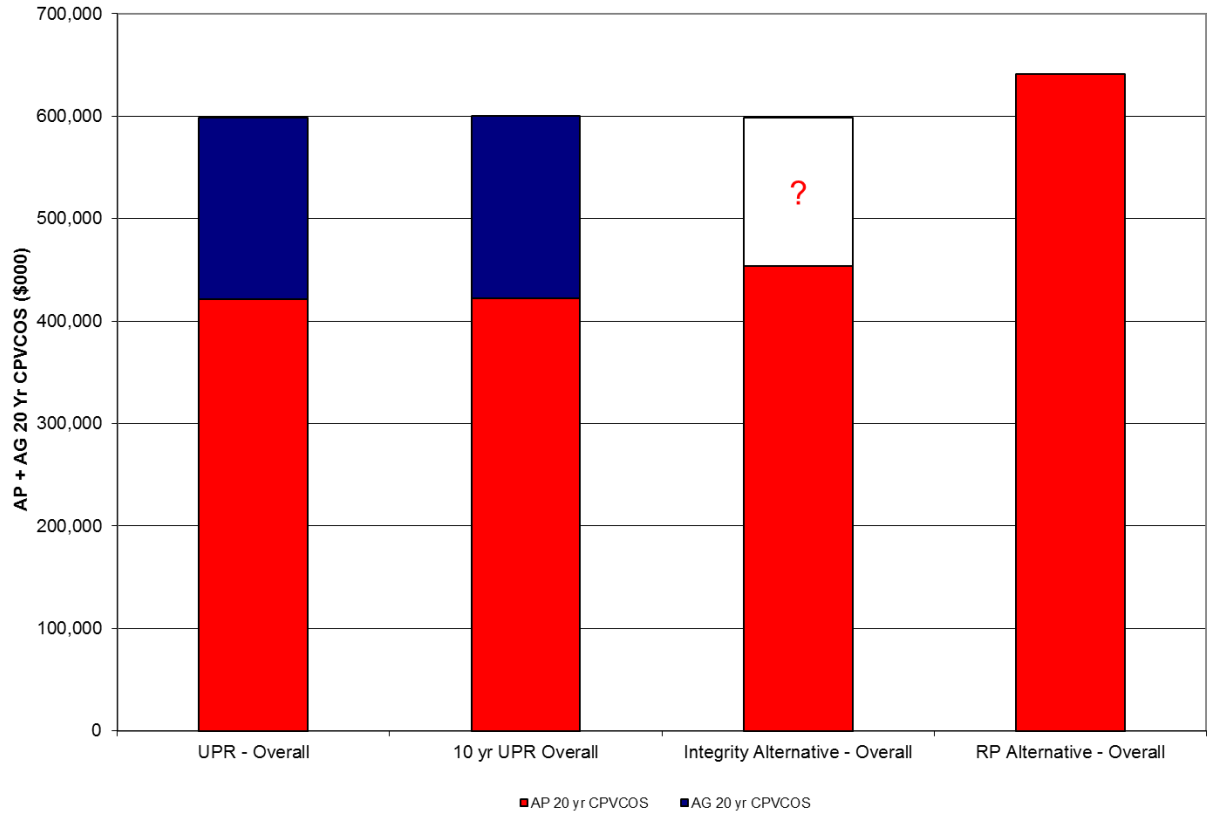
- Project sequencing:
  - Hydraulic necessity: Certain projects must be constructed in a particular year or in a particular order due to system hydraulics and supply considerations.
  - Consequence reduction: Where possible, higher consequence Edmonton and Calgary systems were prioritized for removal from high-pressure service.
  - Minimization of additional spending to support integrity work. In the 10-year scenario, ATCO Pipelines delayed action on those Edmonton and Calgary systems that were already capable of accepting ILI tools.
- Hydrostatic pressure testing and ILI were assumed to be conducted on those Edmonton and Calgary systems that were left in service one year longer than would be the case under the five-year UPR project implementation plan, as proposed in the application.

[151] Exhibit 30.04, Application, page 121 of 140, paragraph 335.
[152] Exhibit 150.01, Rebuttal evidence, paragraph 66.
[153] Exhibit 30.04, Application, paragraph 265.
[154] Exhibit 83.01, AUC-AP-32.

- Assumptions from Section 6 of the application were unchanged with the exception of the deletion of the assumption that no new upgrades to facilitate ILI and hydrostatic pressure testing would be completed on the existing Edmonton and Calgary systems.
- Certain connector projects were split into multiple phases to delay capital expenditures. Costs were pro-rated on a mm/km basis. In some cases, additional integrity work would be required during the intervening period to safely achieve these deferrals.
- The location of future ATCO Gas demand would be unaffected by the delay in UPR project implementation.[155]

168. As part of its response to the Commission's direction to file the CPVCOS requested by the UCA in its motion, ATCO Pipelines provided the following chart (a modified and updated Figure 43) showing the total CPVCOS for Edmonton and Calgary for both the five-year and the 10-year UPR project implementation timeframes, as well as the integrity and replacement in place alternatives for comparison.[156] A summary of the results of the 10-year CPVCOS analyses is provided in Appendix 7.

Application Figure 43, Edmonton + Calgary: AP + AG 20-yr CPVCOS Including 10-Year Scenario



169. The basis for the economic analyses were the same, using a 20-year period and estimates of costs with a +/- 30 per cent accuracy. The analyses included any associated costs for changes to the Edmonton and Calgary ATCO Gas systems and other affected utilities and public works. ATCO Pipelines forecast supply and demand requirements over the 20-year period to identify

[155] Exhibit 136.06, ATCO Pipelines' response to UCA motion, UCA-AP-24(a), pages 1 and 2 of 6.
[156] Exhibit 136.06, ATCO Pipelines' response to UCA motion, UCA-AP-24(a), page 5 of 6.

where new facilities would be required to be added to the pipelines system to meet the forecast growth in demand.

170. ATCO Pipelines described the analysis of the 10-year scenario:

- CPVCOS of the 10-year scenario would be approximately $2 million more than the five-year plan due to increased capital spending over a longer timeframe.
- ATCO Gas capital spending over the 10-year timeframe would be approximately $52 million higher than over the five-year timeframe because more significant distribution infrastructure would be required to accommodate growth prior to full implementation of the UPR project.
- ATCO Pipelines capital spending over the 10-year timeframe would be approximately $70 million higher than over the five-year timeframe due to inflation and the need for additional integrity work and supply projects for the 10-year scenario.[157]

171. ATCO Pipelines explained that the facility solutions were developed based on least cost estimates developed from its iterative hydraulic modelling. The result was that the cost of the integrity alternative would exceed the cost of the UPR proposal (assuming all other estimates are accurate) if the cost of pipeline replacements contained in the integrity alternative exceeded $17.5 million per year.

172. ATCO Pipelines disagreed with the UCA's proposed 10-year timeframe, submitting that pursuing the UPR proposal and the integrity alternative at the same time would lead to duplication of costs rather than economic, orderly and efficient development due to the fact that integrity sampling on one pipeline provides no information on the condition of other pipelines. Any "off-ramp" decision would not become apparent until both the UPR proposal and the integrity alternative were well advanced. ATCO Pipelines submitted that if the UCA had raised this scenario earlier in the proceeding, the ATCO Pipelines' witnesses and experts would have been able to explain its serious flaws. ATCO Pipelines stated that parties should not be "fooled into believing that mixing and matching amongst the options presented will provide an optimized result".[158]

173. In reply argument, ATCO Pipelines disagreed with CAPP's understanding of the CPVCOS, indicating that CAPP got it backwards in stating the UPR proposal CPVCOS was $2 million more for the five-year implementation than for the 10-year plan. In addition, ATCO Pipelines disagreed with the inclusion of the integrity costs in the five-year build, arguing that the incremental costs are only for the 10-year build and therefore properly belong in the 10-year scenario.[159]

5.2 Evidence of Dr. Murray

174. Dr. Murray stated that ATCO Pipelines' account of the integrity alternative in the application, for the most part, described obstacles to making the integrity alternative realistic. These difficulties included modifying the Edmonton and Calgary systems, service curtailments and difficulties in gaining access to make any necessary repairs. Dr. Murray was of the opinion

[157] Exhibit 136.06, ATCO Pipelines' response to UCA motion, UCA-AP-24(a), page 6 of 6.
[158] Exhibit 205.01, ATCO reply argument, paragraphs 126-127.
[159] Exhibit 205.1, ATCO Pipelines reply argument.

that if "more detailed information had been made available, it would have allowed a determination to be made on whether these difficulties would be significantly large or had been overstated."[160] Dr. Murray stated that "significant effort would be required to make the integrity intensive alternative viable". Dr. Murray also stated that the ATCO Pipelines system is not configured to allow hydrostatic pressure testing for threat elimination.[161]

175. The following lists Dr. Murray's principal findings on the condition of the Edmonton and Calgary systems and ATCO Pipelines' integrity management program:

- ATCO Pipelines has an awareness of the threats to its system but cannot deploy the appropriate technology, in many cases, to be able to locate and deal with the threats.
- ATCO Pipelines has a well-staffed, professionally qualified integrity group.
- Almost two thirds of the pipelines in ATCO Pipelines' system are at risk from the threat of manufacturing defects.
- The ATCO Pipelines system would require substantial modification to run the type of ILI tools capable of finding the type of planar defects that may be present on its system.
- The ATCO Pipelines system is not configured to allow hydrostatic pressure testing for threat elimination.
- The risk models used are appropriate for the data available, they have been applied properly and the results produced are credible.
- Significant effort would be required to make the integrity intensive alternative viable.
- The replace in-situ alternative is not a practical solution.
- There is insufficient evidence available to determine the precise effect of a project delay on the long-term integrity of the ATCO Pipelines system.
- The uncertainty surrounding the condition of much of ATCO Pipelines' pipeline means the status quo is unacceptable.[162]

176. During questioning by the Commission, Dr. Murray advised that if ATCO Pipelines were to engage in a prudent ILI program on the existing Edmonton and Calgary pipeline systems while it implements the UPR project, ATCO Pipelines could reasonably implement over a longer period of time.

> Q. So if they were to engage in what you have said is a prudent ILI or integrity management program on the existing pipe while they transfer to UPR, could they reasonably do the transfer to UPR over an even longer period of time? Rather than ten years, maybe do it over 15 years or over 20 years if the economics of the combined approach over a longer period of time made sense?
> A. Well, I concluded that I had not that information or enough information to allow me to make that statement.

[160] Exhibit 134.02, Dr. Murray report on intervener evidence, page 9.
[161] Exhibit 112.02, Dr. Murray report on the application, pages 3-4.
[162] Exhibit 112.02, Dr. Murray report on the application -2013-07-15, page 3.

That's a bold statement to make -- for anyone to make that this is good for 10 years or 15 years when you don't know the condition of the pipe. And that's what I put in the report, and that's what I truly believe.
Q. But my point is if they implemented the ILI --
A. Yes.
Q. -- in the first three years or four years while they're

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gradually moving pipe to UPR, and they find that --
A. Yes.
Q. -- okay, we spent $42 million while we were starting to implement UPR and it might give them an opportunity to find out, look, it's not as bad we as thought, it might allow them to extend the time over which they've invested what is basically half a billion dollars in replacing pipe in the UPR over an extended period of time thereby being able to sort of spread the cost out and not have potentially as much of an impact from a rates -- on the rates side.
Would that be potentially an alternative which I know hasn't been explored but could be explored?
A. I understand. It's my fault I didn't understand before.
The answer would be yes. And the basis for that answer is the Kiefner report that age in and of itself is not a factor for the safety of the pipe. What's really critical is do you know, and are you managing.
So if they've got the capability increasingly to do that, then they could keep the thing going indefinitely.
Q. But in -- that would then potentially involve some more complications about how do you stage --
A. Exactly.
Q. -- the move to UPR, what pipe do I do first and so on and so forth.

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A. Exactly.
Q. It does add an extra layer of complication.
A. Absolutely.[163]

177. Dr. Murray agreed that the success of the integrity alternative would be highly dependent on the effective deployment of ILI tools and to a lesser extent, the use of hydrostatic pressure testing. Dr. Murray stated that a constant tool speed is not necessary to obtain reliable results as long as the tool speed stays within the range of three to five metres per second. Once all improvements are made to allow the passage of ILI tools, the ILI run must be planned for a seasonal period when gas flow velocity allows the ILI tool to travel at the most efficient rate for data gathering (three to five metres per second). Dr. Murray agreed with ATCO Pipelines that

[163] Transcript, Volume 3, page 777, lines 10-25, page 778, lines 1-25 and page 779, lines 1-3.

ILI tools are not foolproof and it is possible to fail to detect, improperly identify, or incorrectly size and locate anomalies.[164]

178. Dr. Murray recommended the use of an ILI ultrasonic tool and electromagnetic acoustic tool, which may be useful in the reduction of risk on the ATCO Pipelines system. Dr. Murray concluded that if the entire Edmonton and Calgary systems could be made amenable to ILI, appropriate tool runs made and suitable remediation practices determined, there would be a high likelihood that the technology-based integrity option would be an alternative to the UPR proposal.[165]

179. Dr. Murray noted that ATCO Pipelines is correct in stating that space for ILI tool runs would be difficult to find within its existing rights-of-way but should not preclude the possibility of creative solutions requiring a smaller footprint.[166] Dr. Murray provided an example of an angled chute launcher.[167] He contended that dual-diameter tools are widely used in the industry to meet such a challenge and there was no indication that ATCO Pipelines considered this option, or if it had done so, how many fewer ILI runs or pig trap facilities would result.[168]

180. Dr. Murray concurred that notifying a potentially large number of people and addressing their concerns could impact the inspection schedule, which could impact tool availability and result in missed opportunity to minimize gas flow curtailments. He stated that scheduling of tool runs at the appropriate time of day or season of the year to minimize service disruption should not pose an insuperable difficulty. In the absence of quantitative data from ATCO Pipelines, Dr. Murray was of the view that the ATCO Pipelines concern about possible service restrictions due to tool runs, while real, was overstated.[169]

181. Dr. Murray stated that the replacement in place alternative would require extensive drilling and micro tunnelling and would involve working around other infrastructure. Similar problems would arise when trying to locate pig launching and receiving facilities. He stated in his findings that the replacement in place alternative would not be a practical solution.[170]

5.3 Interveners

5.3.1 Alternatives

182. CAPP took no position on alternatives to the UPR proposal, stating that the lack of sufficient information provided by ATCO Pipelines leaves the Commission with a difficult job in assessing the various alternatives described in the UPR application. CAPP stated that there may be legitimate and effective options to the UPR proposal but the absence of either strong data or creative options from ATCO Pipelines made it nearly impossible for parties and the Commission to gauge whether there are any other options or how effective they might be. CAPP recommended that, if the Commission approved the UPR proposal, ATCO Pipelines should be

[164] Exhibit 112.02, Dr. Murray report on the application, page 21, paragraph 110.
[165] Exhibit 131.02, UCA-Murray-9(a) and (b).
[166] Exhibit 112.02, Dr. Murray report on the application, page 21, paragraph 111.
[167] Exhibit 133.02, AUC-Murray-6.
[168] Exhibit 112.02, Dr. Murray report on the application, page 22, paragraph 113.
[169] Exhibit 112.02, Dr. Murray report on the application, pages 22-23, paragraphs 114 and 115.
[170] Exhibit 112.02, Dr. Murray report on the application, page 27, paragraph 125.

directed to develop an integrated capital and integrity management program that results in a UPR project built over a period of at least 10 years.[171]

183. CAPP submitted that it seemed obvious that Dr. Murray's recommended continuation of integrity management activities over however long it would take to complete the UPR proposal is a recommendation that both the five-year and 10-year scenarios become a hybrid of the UPR proposal and the integrity alternative. CAPP observed that the UCA recommends a similar approach and CAPP supports both recommendations.[172]

184. The Blake Group was the only party that opposed the UPR proposal, submitting that "the risk assessment conducted by ATCO, and the conclusions that ATCO invites the Commission to draw based on comparing the two alternatives, should be rejected because the alternatives, in the light presented by ATCO, can lead to no other conclusion but the approval of the UPR project".[173] The Blake Group submitted that "ATCO has not presented any substantial evidence, including potential costs, of whether it can maintain the existing gas pipeline system through a combination of the integrity option and the replacement in place alternative. For the Commission to properly analyze the application, the costs of such options should be presented to the Commission."[174]

185. The UCA endorsed the views of Dr. Murray and concluded that the status quo was unacceptable.[175] The UCA proposed that the Commission create a process requiring ATCO Pipelines to assess as soon as possible whether a lower cost alternative to the UPR proposal is available.[176] The UCA referred to this as an "off-ramp" identification process that would direct ATCO Pipelines to immediately begin ILI and hydrostatic pressure testing its Edmonton and Calgary systems in conjunction with the implementation of the UPR project.[177] The UCA proposed that the results should be filed with the Commission, be subject to review by a qualified pipeline expert, discuss the integrity inspection results and reassess the costs and viability of reversion to the integrity alternative if it would be a more cost-effective option.[178] In support of this argument, the UCA quoted Dr. Murray's evidence and testimony that integrity testing must be an integral and ongoing part of ATCO Pipelines' operation of its pipeline system even if the UPR proposal were approved by the Commission. During questioning by the Commission, Dr. Murray agreed that if ATCO Pipelines did ILI during the first three or four years of the UPR proposal implementation and found out that the condition of the pipe was favourable, ATCO Pipelines might have an opportunity to extend the time period over which it would be investing the large amount of capital required to implement the UPR project. This would enable the costs to be spread out and to potentially reduce the impact on customers rates.[179]

186. Calgary expressed concern that the UCA's off-ramp proposal only addressed one aspect of the public interest factor, that being cost. Therefore, in Calgary's submission, a modified UPR project would not be in the public interest, based on any evidence on the record of this

[171] Exhibit 189.01, CAPP argument, paragraphs 8 and 18.
[172] Exhibit 199.01, CAPP reply argument, paragraph 8.
[173] Exhibit 190.01, Blake Group argument, paragraph 10.
[174] Exhibit 114.01, Blake Group evidence, paragraph 12(a).
[175] Exhibit 194.02, UCA argument, paragraph 9.
[176] Exhibit 194.02, UCA argument, paragraph 7.
[177] Exhibit 194.02, UCA argument, paragraph 76.
[178] Exhibit 194.02 UCA argument, paragraphs 70-75.
[179] Transcript, Volume 4, page 777, lines 10-25 and page 778, lines 1-20.

proceeding. Calgary was particularly concerned about the potential for more public disruption (and higher costs) under a hybrid approach than under either of the UPR proposal or the integrity alternative.[180]

187. Calgary observed that the UCA raised the off-ramp proposal for the first time in argument, and only on the basis of the Commission's questions to Dr. Murray at the oral hearing. Calgary stated that it would be concerned if the Commission approved a form of hybrid approach without a full testing and consideration by all affected parties.[181]

5.3.2 Feasibility

188. The Blake Group submitted that CSA Z662-11 Annex N9.3 does not require a replacement of the entire Edmonton and Calgary systems if risk is significant; rather it requires a more refined analysis. The Blake Group argued that because ATCO Pipelines' risk assessment was based upon relative risk and not on a convincing evidentiary basis, ATCO Pipelines' evidence did not support replacing the entire Edmonton and Calgary systems.[182]

189. Edmonton supported the objectives of increased public safety, service reliability and reduced neighbourhood disruption that the UPR project would address. Generally, Edmonton supported moving the high-pressure transmission of natural gas to a network within the TUC because removal of the high-pressure transmission function from Edmonton neighbourhoods would avoid disruption for Edmonton's citizens and business operations associated with essential maintenance of the network and would reduce the challenges of maintaining and operating city infrastructure in coordination with ATCO Pipelines operations.[183]

190. The UCA acknowledged the operational challenges ATCO Pipelines described concerning hydrostatic pressure testing and ILI in the urban environment and agreed that the UPR proposal presented fewer public disturbance challenges.[184]

191. The CCA considered that ATCO Pipelines should be directed to report back to the Commission on an assessment of its ILI program with respect to Dr. Murray's concerns with using an ILI crack ultrasonic tool and electromagnetic acoustic tool to reduce the risk on the ATCO Pipelines system.[185]

192. The Tsuu T'ina Nation advised that the Commission did not have jurisdiction to consider and approve any route using reserve lands.[186] The Tsuu T'ina Nation submitted that the Province of Alberta was engaged in discussions with various stakeholders, one of which is the Tsuu T'ina Nation, regarding a potential location of a southwest Calgary TUC. It noted that it was possible that the outcome of these discussions will materially impact the location of the Southwest Calgary Connector and may result in the implementation of a less intrusive route from the Tsuu T'ina Nation's perspective than the route outlined in the application.[187]

[180] Exhibit 203.01, Calgary reply argument, paragraph 28.
[181] Exhibit 203.01, Calgary reply argument, paragraph 29.
[182] Exhibit 190.01, Blake Group argument, paragraphs 57 to 58.
[183] Exhibit. 29.01, Edmonton letter to ATCO Pipelines dated 2013-02-14.
[184] Exhibit 204.01, UCA reply argument, paragraph 12.
[185] Exhibit 191.01, CCA argument, paragraph 26.
[186] Exhibit 115.02, Tsuu T'ina Nation evidence, paragraph 13.
[187] Exhibit 115.02, Tsuu T'ina Nation evidence, paragraph 18.

193. In addition, the Tsuu T'ina Nation advised that the provincial Crown has a constitutional duty to consult regarding conduct that may potentially adversely impact the Nation's Treaty right to the Reserve Lands. In this case, the Tsuu T'ina Nation advised that the Commission has the capacity and the duty to assess the adequacy of the Crown's consultation.[188]

194. The Tsuu T'ina Nation requested that:

- The Commission confirm that it did not have jurisdiction to approve, in a general matter or otherwise, a route for the Southwest Calgary Connector that would traverse through the Reserve Lands.

- ATCO Pipelines consult with the Tsuu T'ina Nation with respect to any facility application or detailed route application for the Southwest Calgary Connector that would occupy or impact the Reserve Lands.

- ATCO Pipelines should conduct a study in consultation with the Tsuu T'ina Nation to determine the most appropriate alternative route for the Southwest Calgary Connector prior to filing the facility application or detailed route application for the same.[189]

5.3.3 Cost

195. Calgary submitted that expenditures arising from the implementation of ATCO Pipelines' UPR proposal or any alternative approved by the Commission should be carefully and thoroughly tested for prudence in specific proceedings, as opposed to having the project segments approved for rates on a piecemeal basis in individual GRAs. Calgary was concerned that if the latter approach were adopted, it would result in a repeat of the concerns noted by the Commission in Decision 2012-170 with respect to full scope assessments. These UPR project-specific rate proceedings could be established at reasonable intervals, for example every two years or on a frequency that the circumstances require, recognizing that implementation of the project would take place over five years or more.[190]

196. CAPP argued that, assuming the Commission approves the UPR proposal, ATCO Pipelines should be directed to develop an integrated capital and integrity management program that would have the UPR project built over an extended period of at least 10 years. CAPP concluded that a properly planned 10-year construction timeframe combined with an integrity management program could result in a lower CPVCOS and would minimize the impact on ATCO Pipelines' ratepayers while, most importantly, maintaining a safe pipeline. CAPP based this conclusion on ATCO Pipelines' CPVCOS of the five-year build being only $2 million greater than the CPVCOS of the 10-year build and on its interpretation that the $42 million of integrity costs are required as much in the five-year scenario as the 10-year scenario. CAPP based its five-year $42 million assumption on Dr. Murray's opinion that as much of the $42 million as required should be spent starting right away.[191] CAPP supported Calgary's recommendation that the prudence of ATCO Pipelines' expenditure on the UPR project be rigorously examined throughout the period of any approved build.[192]

[188] Exhibit 115.02, Tsuu T'ina Nation evidence, paragraphs 19-20.
[189] Exhibit 115.02, Tsuu T'ina Nation Evidence paragraph 23.
[190] Exhibit 192.01, Calgary argument, paragraphs 42-44.
[191] Exhibit 189.01, CAPP argument, paragraphs 13-18.
[192] Exhibit 199.01, CAPP reply argument, paragraph 3.

197. The CCA agreed with CAPP's position that if the UPR project can be extended, resulting in a lower CPVCOS while maintaining safe and efficient operations of the ATCO Pipelines Edmonton and Calgary systems, it should be extended.[193]

198. The UCA agreed with ATCO Pipelines that the UPR proposal offers more certain costs and improved safety relative to the integrity alternative. Given that both options would meet necessary safety standards, the UCA submitted that the key issue facing the Commission is whether or not customers should accept the cost risk of the integrity alternative on the basis of potential cost savings, relative to the UPR proposal, recognizing that the UPR proposal also offers additional benefits, such as improved public safety. The UCA recognized that this decision will be difficult to make because a lot of the relevant information is missing. In the UCA's view, this was a result of how ATCO Pipelines has chosen to manage its Edmonton and Calgary systems in the past. It asserted that if ATCO Pipelines had developed more ILI capability in the past, the choice before the Commission could be made on a more informed basis.[194]

199. The UCA argued that there are four reasons that it expects the integrity alternative may be less costly than the UPR proposal:

- The base cost of the integrity alternative is less than the base cost of the UPR proposal.
- Additional ATCO Gas costs are not reflected in the UPR proposal estimate.
- Based on Dr. Murray's experience and evidence, Edmonton and Calgary systems modification and dig and replacement costs may be less than ATCO Pipelines expects, i.e., less than the "question mark box" costs.
- According to Dr. Murray, the largest cost component of the integrity alternative hydrostatic pressure testing, could be reduced by relying on less expensive ILI work.[195]

200. Although the UCA was concerned with the lack of detail included in ATCO Pipelines' CPVCOS and forecast growth projects, it supported ATCO Pipelines' UPR proposal because of the cost risk of replacements under the integrity alternative and the significant benefits of:

- improved public safety
- security of supply
- operational flexibility
- avoided public inconvenience

201. The UCA also recommended that the Commission create a process that requires ATCO Pipelines to assess, as early as possible, whether a lower-cost alternative to the UPR project is likely available, even while the UPR project is being pursued.[196]

202. In addition, the UCA stated that the integrity alternative included the costs of projects for growth over the next 20 years that would be obviated by the UPR proposal. These projects were only identified by ATCO Pipelines in the CPVCOS calculations provided in response to information requests (with additional qualitative descriptions provided during the oral hearing).

[193] Exhibit 202.01, CCA reply argument, paragraph 19.
[194] Exhibit 194.02, UCA argument, paragraph 11.
[195] Exhibit 194.02, UCA argument, paragraph 63.
[196] Exhibit 194.02, UCA argument, paragraph 70.

The UCA expected that, with more refinement, the project estimates could be coordinated to result in a lower overall cost.[197]

203. In the UCA's view, ATCO Pipelines had unduly downplayed the reasonableness of the integrity alternative. It stated that the integrity alternative would meet applicable safety standards and the public inconvenience associated with it reflects what other cities have had to deal with. On balance, the UCA expected that the integrity alternative would be less costly than the UPR proposal, but recognized a risk that it could be more expensive.[198]

204. In argument, the CCA submitted that the record was unclear on the full cost of the project, and expressed concern that ATCO Gas failed to include a contingency provision in its +/- 30 per cent cost estimation.[199] In addition, ATCO Gas was expected to have significant costs to reconfigure its Edmonton and Calgary systems to interconnect with ATCO Pipelines' redesigned Edmonton and Calgary systems. Consequently, the CCA argued that ATCO Gas's significant forecast capital costs[200] should be included in the economic and risk analysis of the UPR proposal and the integrity alternative.[201]

205. The CCA noted ATCO Pipelines' conclusion:

> The record, as noted particularly in Section 4(d), supports the UPR Project as the option with the most cost benefits. Compared to the alternatives, it is AP's view that the UPR Project is likely to be the least cost alternative. This conclusion is subject to some uncertainty, given the inherent uncertainty in costs for pipeline replacement and repair work that will result from the Integrity Alternative. However, it is AP's view that such costs are likely to overwhelm the CPVCOS advantage of the Integrity Alternative. At best, the costs of the UPR Project and the Integrity Alternative can be considered to be in the same "ballpark." The cost of the RP Alternative, which can be more accurately estimated, is higher than the cost of the UPR Project.[202]

206. The CCA was unsure how ATCO Pipelines arrived at the conclusion that the UPR proposal is likely to be the least cost alternative without fully costing out the responsibilities or liabilities which will fall to ATCO Gas and the lack of integrity costs in the UPR proposal.[203] The CCA noted CAPP's conclusion and agreed that a properly planned 10 year build combined with an appropriate integrity management program could result in a lower CPVCOS for the project as a whole and would minimize any impact on ATCO Pipelines' ratepayers while, most importantly, maintaining a safe pipeline.[204]

207. CAPP supported the recommendation of the UCA that ATCO Pipelines be directed to conduct ILI and related hydrostatic pressure testing of its Edmonton and Calgary systems and that the results of these inspections and tests be examined to further assess the value of

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197 Exhibit 194.02 UCA argument, paragraph 64.
198 Exhibit 194.02 UCA argument, paragraph 10.
199 Exhibit 191.01, CCA argument, page 20.
200 Exhibit 160.01, ATCO Pipelines undertaking for the UCA, updating CAPP-AP-10(b) which shows ATCO Gas's capital costs associated with the UPR project from 2012-2019 resulting in total capital costs of $229,207,000.
201 Exhibit 202.01, CCA reply argument, page 20.
202 Exhibit 202.01, CCA reply argument, paragraph 14.
203 Exhibit 202.01, CCA reply argument, paragraph 14.
204 Exhibit 202.01, CCA reply argument, paragraphs 18-19.

continuing the UPR. CAPP further agreed that the UPR project should be implemented over not less than a 10-year period in order to accommodate the recommended inspections and tests.[205]

208. The UCA submitted that when the cost risks of the integrity alternative are "considered in conjunction with the UPR's improvement to public safety, security of supply and operational flexibility, and avoided public inconvenience, the UPR Project should be preferred."[206]

5.3.4 Interim integrity management

209. Calgary requested that the Commission direct ATCO Pipelines to carry out interim integrity management practices. Calgary proposed that within 30 days after the decision, ATCO Pipelines should be required to file a detailed plan for integrity management during the implementation of the UPR project.[207]

210. CAPP also proposed that the Commission encourage ATCO Pipelines to continue developing its pipeline integrity management program. CAPP supported ongoing improvement in ATCO Pipeline's integrity management practices.[208]

211. The UCA proposed that the Commission direct ATCO Pipelines to immediately commence ILI of its Edmonton and Calgary systems and also proceed with the UPR project. The results of the ILI should be filed with the Commission and subject to review by Dr. Murray. The UCA argued that if the results of the "off-ramp" inspections and potentially associated hydrostatic pressure testing demonstrate that the pipe is in sufficiently good condition to diminish ATCO Pipelines' safety concern and create a clear and certain cost advantage in favour of the integrity alternative, the integrity alternative should be pursued.[209] In addition, the UCA proposed that the Commission direct ATCO Pipelines to perform ILI on one of its major high-pressure pipelines followed by proof hydrostatic pressure testing of the worst pipe first, as part of ATCO Pipelines' integrity work.[210]

212. The Blake Group submitted that ATCO Pipelines should conduct an integrity program on its pre-1968 pipelines to determine if there is any evidence to support its assumption that integrity risks exist.[211]

5.4 Commission findings

213. As mentioned earlier, the Commission was presented with five alternatives to upgrade or replace the existing Edmonton and Calgary systems, in order to reduce the existing risk associated with the continued operation of the systems.

214. It was ATCO Pipelines' evidence that neither the replacement in place nor the distribution alternatives were prudent.[212] Dr. Murray agreed with ATCO Pipelines that neither of these alternatives are viable. The Commission agrees with those assessments.

[205] Exhibit 199.01, CAPP reply argument, paragraphs 4 and 6.
[206] Exhibit 194.02, UCA argument, page 16, paragraph 68.
[207] Exhibit 192.01, Calgary argument paragraph 69.
[208] Exhibit 189.01, CAPP argument, paragraph 5.
[209] Exhibit 194.02, UCA argument, paragraph 12.
[210] Exhibit 194.02, UCA argument, paragraph 77.
[211] Exhibit 190.01, Blake Group argument, paragraph 31.
[212] Exhibit, 30.04, Application, paragraphs 305 and 306.

215. Regarding the replacement in place alternative, the Commission finds that the public disruption associated with this alternative would be considerable because it would involve the installation of approximately 276 km of new high-pressure pipeline in densely populated areas. While the estimated cost of the replacement in place alternative is similar to that of the UPR proposal, it lacks the risk reduction advantages associated with the UPR proposal. The Commission accepts that implementation of the replacement in place alternative would reduce the probability of failure given its new construction. However, the fact that the Edmonton and Calgary systems would remain in densely populated areas means that adoption of this alternative would do little to address the consequence of failure.

216. ATCO Pipelines provided limited information in the application regarding the distribution alternative. On the basis of the proceeding record, the Commission finds that there was insufficient information to adequately assess this alternative.

217. No party to the proceeding supported either the replacement in place or the distribution alternatives. In the Commission's view, no further consideration of these two alternatives is warranted.

218. In assessing the three remaining alternatives, the Commission considered the extent to which each alternative ensures the safe, economic, orderly and efficient operation of the Edmonton and Calgary systems and facilitates on-going integrity management.

219. With respect to the assessment of these alternatives, parties spoke to:

- managing risk assessment, system integrity and the reliability of supply
- associated disruption, technical feasibility and siting
- the comparative costs of the alternatives

220. The Commission considers that these are the principal elements to be assessed in making its determination on which alternative best meets the need identified in section 4. The Commission's findings on its assessment are set out below.

221. Additionally, certain parties raised issues with respect to growth, timing, the supply of gas to the Edmonton Ethane Extraction Plant (EEEP), the impact on natural gas vehicle fuelling, and a proposal by the UCA regarding shareholder cost responsibility. These Commission matters are addressed in Section 6.

5.4.1 Managing risk management, system integrity and security of supply

222. Each of the three remaining alternatives (the UPR proposal, the integrity alternative and the hybrid alternative) address the on-going risk management, system integrity and security of supply issues to some extent. However, based on the evidence in the proceeding, the Commission finds that the UPR proposal is superior for the following reasons.

223. First, the Commission finds that the UPR proposal results in the greatest reduction of consequence of failure when compared to the other two alternatives. This is because of its location within the TUC which is designated and designed for the placement of utility infrastructure including transmission pipelines. The TUC provides for larger setbacks from developed areas than is currently provided for on the existing Edmonton and Calgary systems. Further, the UPR proposal is 124 km shorter than the integrity alternative and potentially the

hybrid alternative, both of which contemplate keeping the current Edmonton and Calgary systems largely in place for a longer period of time. The effect of shorter pipelines in the TUC is that it reduces the number of people exposed to the pipeline along its length. [213] Finally, placement of the pipeline in the TUC reduces the consequence of failure because the vast majority of people travelling in the TUC are in cars.[214] Dr. Murray concurred with this view. The Commission is of the view that the TUC presents a unique opportunity to relocate infrastructure of this type away from densely populated areas and into a restricted development and use corridor designed to accommodate pipelines of this type.

224. Second, the Commission finds that the UPR proposal results in the greatest reduction in the probability of failure. This is because its shorter length and its placement in the TUC reduces the opportunity for accidental contact given the restrictions that exist on development in the TUC and the designated separation of utility infrastructure within the TUC. In addition, the probability of failure is greatly reduced through the UPR proposal because the Edmonton and Calgary systems will be entirely new, thicker walled, high quality steel will be hydrostatically pressure tested before being placed into service and will facilitate ongoing ILI and hydrostatic pressure testing over its life. The Commission recognizes that the integrity and hybrid alternatives, if fully implemented, would also result in a reduction in probability of failure. The Commission concludes that the reduction in probability of failure cannot match the reduction resulting from the implementation of the UPR alternative.

225. Finally, the Commission finds that the UPR proposal uniquely enhances system reliability and security of supply because of its ring structure. This structure allows gas to flow in both directions on the Edmonton and Calgary systems so that a connectivity failure at any point in the systems can be circumvented. In addition, the consequence resulting from a loss of gas from a major supply source would be reduced by the ring structure. This opportunity is not available in either the integrity alternative or the hybrid alternative.

226. For all of the above reasons, the Commission finds that the UPR proposal is superior to the other two alternatives having regard to risk management, system integrity and security of supply.

5.4.2 Associated disruption, technical feasibility and siting

227. The Commission finds, for the reasons that follow, that the UPR proposal provides the fewest challenges from the perspective of feasibility of construction and ongoing operations.

228. The integrity and hybrid alternatives both require construction of new facilities to accommodate ILI and hydrostatic pressure testing in congested areas of Edmonton and Calgary. The existing Edmonton and Calgary systems cross neighbourhood roads and major thoroughfares and are located close to many homes, businesses, schools, parks, etc. The potential for public disruption associated with the upgrading of these facilities is considerable. Further, the integrity alternative would require ongoing remedial work to be completed close to built-up areas as would the hybrid alternative, albeit to a potentially lesser degree.

229. The Commission accepts that implementation of the integrity and hybrid alternatives would require ATCO Pipelines to notify the public and residents in the area of its work plans. It

[213] Exhibit 30.07, Table 18 page 45Appendix – 3 (A) Consequence evaluation of urban pipeline projects.
[214] Exhibit 193.01, ATCO Pipelines argument paragraph 84.

also finds that such work would likely disrupt service during testing, especially to single sourced locations or where bypasses could not be provided. The Commission considers that public safety could be a concern during testing and may require temporary evacuation during some procedures. Further, the Commission agrees that any failure of tests in congested areas would delay the project timing for the integrity and hybrid alternatives due to the need to locate the problem and replace the failed section.

230. The primary advantage of the UPR proposal from the perspective of potential disruption is that it would install new pipeline primarily in sections of the TUC specifically designated for pipeline placement. Construction and development activities within the TUCs are restricted and, in the Commission's view, the construction, operation and ongoing maintenance under the UPR proposal will cause far less disruption to the public than either the integrity or hybrid alternatives.[215]

231. In addition to the disruption challenges associated with the integrity and hybrid alternatives, there are technical feasibility challenges. Because the existing Edmonton and Calgary systems are in densely populated areas, less work space is available for the installation of new facilities for ILI and hydrostatic pressure testing, which may require the use of new, specialized equipment. Any ILI runs, hydrostatic pressure testing and, if necessary, any locating and repair of failures will likely be more complicated in congested areas than they would be in the TUCs.

232. Even when fully implemented, the integrity and hybrid alternatives will result in a patchwork of vintage and new pipeline, where replacements have been required. As a result, the Edmonton and Calgary systems under the integrity alternative and, potentially to a lesser degree the hybrid alternative, would require more ILI runs on an ongoing basis and potentially more hydrostatic pressure testing than the UPR proposal. The effect of this would be the potential for more service disruptions and related concerns with respect to reliability and security of supply.

233. Dr. Murray discussed new ILI technologies that are now available that could facilitate the ILI alternative. The Commission recognizes that these new technologies for ILI continue to evolve and may provide more information regarding the condition of the Edmonton and Calgary systems. However, the evidence before the Commission was that some of the ILI technology referenced by Dr. Murray had not been widely used in an urban setting in pipeline systems with diameters similar to that employed in the Edmonton and Calgary systems. Further, the evidence before the Commission was that this new technology was considerably more expensive than what is currently proposed for the integrity alternative. Accordingly, while new technology may be available to enhance the feasibility of the integrity and hybrid alternatives, the Commission is not persuaded that the use of this technology will materially improve the feasibility of these alternatives.

234. On the issue of siting, the integrity and hybrid alternatives would both require the installation of 72 pig launching and receiving sites to permit ILI. ATCO Pipelines presented several issues with respect to access to sufficient land to install these new facilities, including temporary work-space. Dr. Murray suggested that innovative solutions such as angled launching and receiving sites could help to alleviate this issue. However, it is not clear to the Commission whether the issues with respect to access to land could be adequately addressed. In any event the

[215] Exhibit 205.01, ATCO Pipelines reply argument, paragraph 137.

Commission finds that the UPR proposal presents no similar siting issues given its location in the TUC and the need for only 22 launching and receiving sites.

235. The most significant siting concern regarding the UPR proposal relates to the routing of the Southwest Calgary Connector on or near Reserve Lands belonging to the Tsuu T'ina Nation. The Commission recognizes that the routing and siting of the Southwest Calgary Connector project may be more challenging than other UPR segments because there is currently no TUC in the area adjacent to the Reserve Lands. The recent announcement of the Tsuu T'ina Nation's acceptance of the Province of Alberta's proposed TUC extension through the Reserve Lands is encouraging. However, because the need for expansion of the pipeline capacity in the Southwest Calgary Connector is forecast for some years into the future, the Commission expects that ATCO Pipelines will continue negotiations with the affected parties in southwest Calgary, as required in AUC Rule 20, prior to filing a facility application that indicates the location and specific facilities proposed to be installed. The Commission notes ATCO Pipelines' commitment to continue discussions with the Tsuu T'ina Nation and Calgary regarding the location and timing of the installation of the Southwest Calgary Connector.

236. The Commission concludes that implementation of the UPR proposal will result in materially less public disruption than either the integrity or hybrid alternatives. Likewise, the Commission finds the UPR proposal to be superior to the integrity and hybrid alternatives from the perspectives of technical feasibility and siting.

5.4.3 Cost

237. ATCO Pipelines provided economic analyses of the UPR, integrity and replacement in place alternatives over both a five and 10-year study period. In section 5.4, the Commission eliminated the replacement in place alternative from further consideration. There was no economic analysis of the hybrid alternative provided on the record of the proceeding. However, the Commission agrees with ATCO Pipelines that the hybrid alternative, which contemplates adopting the integrity alternative in conjunction with the UPR proposal, may well lead to some duplication of cost.[216] Under these circumstances, it is uncertain whether the hybrid alternative could represent the least cost alternative.

238. With respect to the economic analyses of the UPR proposal and the integrity alternative, the Commission finds that ATCO Pipelines' CPVCOS calculations include assumptions and inputs that are consistent with the directions in Decision 2012-233. The +/- 30 per cent cost accuracy and CPVCOS analyses directed by the Commission were intended to provide a cost comparison using an order of magnitude estimate for comparing the alternatives.

239. Key inputs into the CPVCOS, including inflation,[217] depreciation,[218] and debt rates, are consistent with the inputs used by ATCO Pipelines in its 2013-2014 GRA. ATCO Pipelines also applied a discount rate using ATCO Pipelines approved weighted average cost of capital for ATCO Gas and ATCO Pipelines. The cumulative present value calculation was based on the

[216] Exhibit 205.01, ATCO Pipelines Final Argument, paragraph 126.
[217] ATCO Pipelines' applied inflation rates in its CPVCOS are consistent with the labour and supplies inflation rates filed in its 2013-2014 GRA.
[218] Exhibit 83.01, AUC-AP-33(c).

approved equity capital structure of 38 per cent for ATCO Pipelines, 39 per cent for ATCO Gas and a return on equity of 8.75 per cent for both utilities.[219]

240. The Commission finds that ATCO Pipelines' explanation of its underlying supply and demand forecasts used in its hydraulic models is reasonable and accounts for the specific characteristics of each alternative. On this basis, the Commission finds that ATCO Pipelines' economic assumptions and cost input in its CPVCOS analyses are reasonable.

241. Interveners suggested that certain costs (integrity costs, ATCO Gas costs, and supply costs) included in the 10-year scenario may be overstated. The Commission considers that the best evidence on the record supports ATCO Pipelines' costs included in its CPVCOS analyses. ATCO Pipelines provided details that supported the estimated costs incorporated into the analyses. Also, interveners did not present any alternative costing information. The Commission is satisfied that ATCO Pipelines' economic analyses of the UPR proposal and the integrity alternative properly included all relevant costs, including the cost components related to growth.

242. ATCO Pipelines' CPVCOS analyses resulted in the integrity alternative being the lowest cost option. However, the Commission finds that there is substantial cost risk associated with the integrity alternative because it does not include any pipeline replacement or remediation costs that may be necessary following ILI and hydrostatic pressure testing. As a result, the Commission cannot conclude that the integrity alternative is indeed the least cost alternative to address integrity concerns on ATCO Pipelines' Edmonton and Calgary systems. The difference in CPVCOS between the integrity alternative and the UPR proposal is some $150 million over both the five- and 10-year study periods. The Commission considers that there is a reasonable possibility that remedial repairs and upgrades to the Edmonton and Calgary systems, following ILI and hydrostatic pressure testing, could exceed a CPVCOS of $150 million, over both the five- and 10- year study periods. Accordingly, the Commission finds that the forecast incremental difference in the CPVCOS between the integrity alternative and the UPR proposal is not sufficient to offset the advantages of the UPR proposal with respect to risk management, system integrity, security of supply, associated disruption and public inconvenience, technical feasibility and siting.

5.4.4 Finding on which alternative best meets the need to upgrade or replace the systems

243. The Commission has considered the extent to which the UPR proposal and the integrity and hybrid alternatives ensures the safe, economic, orderly and efficient operation of the Edmonton and Calgary systems and facilitates on-going integrity management, taking into account the risk management, system integrity, security of supply, associated disruption and public inconvenience, technical feasibility and siting issues related to each alternative.

244. Based on the evidence and its analysis of each of these alternatives, the Commission concludes that the UPR proposal best addresses the need to upgrade or relocate the Edmonton and Calgary high-pressure natural gas pipeline transmission systems. In the Commission's view, approval of the UPR proposal ensures the safe, economic, orderly and efficient development and operation of the Edmonton and Calgary systems.

[219] Decision 2011-474: 2011 Generic Cost of Capital, Application No. 1606549, Proceeding ID No. 833, December 8, 2011.

6 Other matters

6.1 Timing

245. ATCO Pipelines proposed a five-year project timeline for the completion of the remaining 11 components of the UPR project.[220] It advised that additional time would be required after the five-year construction period to discontinue operation of the existing Edmonton and Calgary systems.

246. Calgary proposed that the Commission direct ATCO Pipelines to implement the UPR proposal as soon as reasonably practicable.[221]

247. The CCA, UCA and CAPP all made comments or supported a 10-year implementation plan for the UPR proposal. Their comments and positions were discussed earlier.

248. The Commission finds that there is no clear economic or system integrity advantage to directing ATCO Pipelines to implement the UPR proposal over a longer timeframe. Implementation over a longer timeframe would have negative implications on probability of failure and consequence of failure because the advantages of the UPR proposal with respect to probability of failure and consequence of failure will be delayed. With respect to the cost of implementation, the economic analyses provided by ATCO Pipelines demonstrate that the 10-year implementation alternative results in a CPVCOS that is $2 million greater that under the five-year implementation alternative. Accordingly, the Commission approves ATCO Pipelines' UPR proposal with the proposed five-year implementation timeline.

249. Should there be any material changes in the timing or any other aspect of the implementation of the UPR project, the Commission directs ATCO Pipelines to advise the Commission of such changes at the time of any related facilities application or at the time of its next GRA, whichever comes first.

6.2 Edmonton Ethane Extraction Plant

6.2.1 ATCO Pipelines' views

250. The South Edmonton Connector project was described as follows:

> Construct approximately 7.5 km of 406 mm pipeline (MOP 6130 kPa) from 41 Avenue (NE-11-51-25-W4M) to the South West Edmonton Connector/Homeglen Control station (NE 30-51-24-W4M). Two cross ties to the Homeglen Transmission will be required. The pipeline will be installed in the existing Homeglen Transmission ROW. In order to complete this work, the two pipelines to be removed from high pressure service (Devon and Bonnie Glen) will need to be physically removed to create the separation required for the new pipeline.[222]

251. In addition, ATCO Gas would be required to install two gate stations and approximately 2.5 km of feeder main.[223]

[220] Exhibit 30.04, Application Table 2, page 71.
[221] Exhibit 192.01, Calgary argument, paragraph 68.
[222] Exhibit 30.04, Application, pages 74-75 of 140, paragraph 195.
[223] Exhibit 30.04, Application, page 75 of 140, paragraph 196.

252. EEEP was constructed in 1978. AltaGas Ltd. (AltaGas) is the operator and minority owner and ATCO Energy Solutions is the majority owner. EEEP is licensed to process 11,000,000 m^3/day (390 MMcf/day) of natural gas and currently produces 8,000 to12,000 Bbls/d of ethane. The ethane produced at EEEP is sold into the Alberta market and subsequently consumed as feedstock at Alberta petrochemical facilities. The natural gas liquids (NGLs) are used as petrochemical feedstock, fuel or diluent.[224]

253. ATCO Pipelines noted that the tie-in for the South Edmonton Connector is complex and the proposed connections to EEEP may take an extended period for a response from EEEP. It is for this reason that the South Edmonton Connector project was scheduled last in the sequence of projects.[225]

254. ATCO Pipelines identified the inlet and outlet pipelines connected to EEEP that would be decommissioned in conjunction with the construction of the South Edmonton Connector:[226] The inlets to EEEP are Pembina (41 Avenue to EEEP), Devon (41 Avenue to EEEP), Bonnie Glen (41 Avenue to EEEP), and Swan Hills (Southwest Connector Tie-in to EEEP). The outlets from EEEP are Pembina (EEEP to Gate #1), Devon (EEEP to Gate #1), Bonnie Glen (EEEP to Gate #1).

255. ATCO Pipelines submitted that "[t]he Homeglen pipeline from Anthony Henday Drive to EEEP is able to transport 100 per cent of EEEP's processing capacity to EEEP whereas none of the smaller Devon, Bonnie Glen and Pembina pipelines can". In addition, the Homeglen pipeline is capable of accepting ILI tools. ATCO Pipelines determined that the Pembina pipeline from 41st Avenue to EEEP must be removed from high-pressure service owing to the significant risk associated with its continued operation and that its capacity must be replaced between 41st Avenue and EEEP in order to maintain service to customers in the Edmonton region.

256. ATCO Pipelines submitted there would be "no impact to EEEP's ethane extraction operations, provided that EEEP returns gas to the Alberta System at the prevailing system pressure, which could be accomplished by installing additional pressure support facilities."[227] ATCO Pipelines added that implementing the UPR proposal would not affect NGTL's ability to fulfill its obligations under the service agreement it has with AltaGas.[228]

257. ATCO Pipelines suggested that one option to deal with the reconfiguration would involve additional compression at EEEP for which ATCO Pipelines stated "EEEP would be responsible for installation of approximately 4000 incremental horsepower." As an alternate, a pipeline solution provided to AltaGas with a rough estimate of the capital cost of this pipeline of approximately $35 million, which EEEP would be required to pay.[229]

258. ATCO Pipelines' president, Mr. Dolan, stated that it was ATCO Pipelines' intention to work with AltaGas to mitigate the impact of the UPR project on EEEP and would continue to do so.[230]

[224] Exhibit 116.02, AltaGas evidence, page 1, paragraphs 1-3.
[225] Exhibit 89.01, CAPP-AP-1(a).
[226] Exhibit 30.04, Application, Table 3, page 72 of 140.
[227] Exhibit 205.01, ATCO reply, page 4, paragraphs 9-10.
[228] Exhibit 205.01, ATCO reply, page 5, paragraph 13.
[229] Exhibit 86.01, AltaGas-AP-1(o).
[230] Exhibit 205.01, ATCO reply, page 12, paragraph 34.

6.2.2 Interveners' views

259. AltaGas expressed concern that if the Commission approved the UPR proposal, there would be significant negative impacts on the operational flexibility (quantity, quality and choice of gas streams) required by EEEP to satisfy natural gas consumers and petrochemical industry demands. AltaGas submitted that the reconfiguration (abandon or transfer pipelines) of ATCO Pipelines' Edmonton and Calgary systems by the UPR proposal would have a negative impact on EEEP and on industrial consumers downstream of EEEP.[231]

260. In response to an information request, AltaGas ranked ethane/NGL content and volume inlets on an annualized basis, greatest to least as: (1) Homeglen/Rimbey, (2) Pembina/Bonnie Glen loop, (3) Swanhills and (4) Devon.[232]

261. AltaGas was concerned that if the UPR proposal were approved, EEEP's operational flexibility would be reduced from the current five pipelines to only one inlet, the comingled Homeglen pipeline.[233] AltaGas submitted that further investigation was required to determine whether the South Edmonton connector is the best alternative in satisfying the public interest considerations, or whether some variation of a combination of the South Edmonton Connector with an integrity alternative would be better.[234]

262. AltaGas submitted that it could not make definitive impact assessments of the EEEP alternatives proposed by ATCO Pipelines because, to date, ATCO Pipelines had not provided it with sufficient information about those alternatives. It was AltaGas' belief that it would be unreasonable, unfair and premature of ATCO Pipelines to require EEEP to bear the costs to mitigate the impact on EEEP caused by the UPR project. However, AltaGas stated that it might be prepared to proceed with the modification of the UPR Southeast Edmonton Connector project as suggested by ATCO Pipelines if it does not need to bear the costs of the required EEEP changes.[235] ATCO Pipelines estimated the costs to be approximately $35 million.[236]

263. AltaGas submitted that there may be viable alternatives other than those put forward by ATCO Pipelines and that since the South Edmonton Connector is not scheduled to begin construction until 2017 there is time for further information to be developed and exchanged. AltaGas commented that it is premature for the AUC to determine the burden of UPR project costs and the need to preserve ethane and NGL recovery at EEEP because those costs are not known with sufficient accuracy at this time. AltaGas noted however that its general position remains that any such costs should be included in the UPR project costs because those costs would reflect the public interest in maximizing ethane and NGL recovery in the Edmonton area as well as providing stable heat content to regional consumers.[237]

264. AltaGas requested the Commission to defer approval of the South Edmonton Connector section of the UPR project and related actions, and order ATCO Pipelines to consult with AltaGas to develop a full assessment of the need for and alternatives to the section of UPR

[231] Exhibit 116.02, AltaGas evidence, page 1, paragraphs 4 to 5.
[232] Exhibit 127.02, AUC-AL-2(b).
[233] Exhibit 196.01, AltaGas argument, page 3, line 24.
[234] Exhibit 196.01, AltaGas argument, page 10, lines 1-4.
[235] Exhibit 116.02, AltaGas evidence, pages 1 to 2, paragraphs 5 to 6 and page 4, paragraph 19.
[236] Exhibit 86.01, AltaGas-AP-1(o).
[237] Exhibit 116.02, AltaGas evidence, pages 4 to 5, paragraphs 19 to 20.

project that affects the ability to recover ethane and NGL at EEEP. The order should also require ATCO Pipelines to provide full engineering information and to diligently consult with AltaGas and other ethane and NGL stakeholders on the proposed changes to ATCO Pipelines' system and South Edmonton Connector as it relates to the recovery of ethane and NGL at EEEP.[238]

265. AltaGas also submitted that the EUB confirmed the public interest of straddle plants during the NGL Inquiry when the EUB wrote that the "Board has an interest in seeing that the viability of the existing NGL extraction infrastructure is maintained."[239] AltaGas noted ATCO Pipelines' acknowledgement that EEEP is an important customer on the gas transmission system."[240]

266. The UCA submitted that the cost of any redesign of the South Edmonton Connector to accommodate EEEP should not be borne by ratepayers and did not consider that the Commission had enough evidence to make such a determination. It also argued that AltaGas had not identified any service obligation of ATCO Pipelines to design its system to accommodate individual customers generally, or EEEP specifically. Further, it contended that AltaGas provided no economic analysis to assess the claim of public interest and insufficient market dynamics.[241]

267. The UCA noted that the previous agreement between ATCO Pipelines and AltaGas did not specify any obligation of ATCO Pipelines to warranty any level of rich gas.[242] Further, the UCA did not consider that the record showed that "AltaGas needs or deserves customers' help to fund alternative facilities." The UCA also stated:

> … The changes to the system that AP proposes will still allow NGTL to meet its service obligations to the EEEP owners. AltaGas and ATCO Energy Solutions can and should, at their cost, collaborate with AP to optimize the design relative to EEEP.[243]

268. The UCA indicated it supported ATCO Pipelines and AltaGas "exploring better configurations, and recognized that in the past the AUC has considered the potential streaming of rich gas as a legitimate system design consideration."[244] However, it recommended that any application amendment related to EEEP supply must include the full costs in business cases for each potential alternative configuration, including the current UPR configuration.[245]

269. The CCA submitted that ATCO Pipelines should continue to negotiate with AltaGas, but that all incremental costs caused to accommodate EEEP must be recovered through a contract with EEEP.[246]

6.2.3 Commission findings

270. The Commission is not prepared to defer the South Edmonton Connector as requested by AltaGas. However, this project is scheduled as the last of the Edmonton UPR projects. The Commission is confident that there is sufficient time for ATCO Pipelines and AltaGas to reach a

[238] Exhibit 116.02, AltaGas evidence, page 5, paragraph 21.
[239] NGL Inquiry, page 106.
[240] Exhibit 196.01, AltaGas argument, page 3, lines 6 to 8.
[241] Exhibit 194.02, UCA argument paragraphs 107-108.
[242] Exhibit 194.02, UCA argument paragraph 111.
[243] Exhibit 194.02, UCA argument paragraph 113.
[244] Exhibit 194.02, UCA argument paragraph 112.
[245] Exhibit 194.02, UCA argument, paragraph 126.
[246] Exhibit 191.01, CCA argument, paragraph 30.

mutually satisfactory solution. The Commission considers it is in the interest of all parties to continue to negotiate and notes ATCO Pipelines' commitment to continue working with AltaGas on this issue.[247]

271. It is premature to discuss how the costs of the projects will be dealt with or which party should bear responsibility. The focus of this hearing is on the need to upgrade or replace the Edmonton and Calgary systems.

6.3 UCA shareholder proposal

6.3.1 Interveners' views

272. The UCA submitted that if ratepayers have to pay twice, for example for hydrostatic pressure testing, because of ATCO Pipelines' imprudent historical management of the integrity of its system, the resulting incremental costs should be paid by ATCO Pipelines' shareholders.[248] The UCA submitted that the key issue facing the Commission is whether customers should take the cost risk of the integrity alternative on the basis of potential cost savings relative to the UPR proposal, recognizing that the UPR proposal also offers additional benefits, such as improved public safety.

273. The UCA observed that the Commission's decision is difficult to make because a lot of the relevant information is missing because of how ATCO Pipelines has chosen to manage its pipeline system records in the past. The UCA submitted that if ATCO Pipelines had developed more ILI capability for the Edmonton and Calgary systems, the choice before the Commission could be made on a more informed basis. The UCA submitted that ATCO Pipelines' shareholders, rather than customers, should be responsible for duplicative costs that may arise because of ATCO Pipelines' failure to properly assess the condition of its system.[249]

274. CAPP supported the UCA's position that any cost duplication arising from these activities should be to the account of ATCO Pipelines' shareholders.[250]

275. Calgary also saw merit in the UCA's proposition that the shareholders of ATCO Pipelines should exclusively bear the responsibility for costs of integrity management activities under the UPR proposal that should have been conducted earlier in response to the prior in-force CSA Z662 integrity management requirements. Calgary saw this as particularly compelling if the off-ramp investigations show that the integrity alternative would have been the lower cost alternative.[251]

6.3.2 ATCO Pipelines' views

276. In response to the UCA's prudence review and shareholder cost responsibility recommendation, ATCO Pipelines stated that the present proceeding is not a rates proceeding and is not the appropriate forum for deciding the reasonableness of any costs to be included in ATCO Pipelines' revenue requirement.[252] ATCO Pipelines observed that no parties, including the UCA, filed evidence on prudence. It stated that there is no record before the Commission on

[247] Transcript, Volume 3, page 545, lines 11-13.
[248] Exhibit 194.02, UCA argument, paragraph 98.
[249] Exhibit 194.02, UCA argument, paragraph11.
[250] Exhibit 199.01, CAPP reply argument, paragraph 4.
[251] Exhibit 203.01, Calgary reply argument, paragraph 26.
[252] Exhibit 205.01, ATCO reply argument paragraph 121.

which it could properly make any findings on prudence and asserted that doing so would violate the rules of natural justice and procedural fairness. ATCO Pipelines stated that it will defend the prudence of its actual UPR project costs in the appropriate rate proceedings.[253]

6.3.3 Commission findings

277. It is the Commission's view that a prudence review of ATCO Pipelines historical management of the integrity of its system would have to follow a process where all parties were allowed to give evidence and make argument on the matter. The Commission agrees with ATCO Pipelines that, because the UCA did not raise the issue of cost responsibility until argument, the record is incomplete in respect of evidence on this matter and any ruling by the Commission would be inconsistent with the rules of natural justice and procedural fairness. In the Commission's view, these matters may be effectively addressed in future Commission proceedings, as further discussed in section 7.2.

6.4 Natural gas vehicles

278. Graves was concerned with the impacts that may occur to future natural gas fuelling stations if the Edmonton and Calgary systems were to operate under distribution pressure conditions. Graves indicated that a higher pressure starting point is useful when supplying natural gas to a natural gas fuelling station because the natural gas needs to be compressed to a high pressure for use in natural gas vehicles. Graves indicated that the current high-pressure pipeline networks should be preserved, developed and enhanced.[254]

279. ATCO Pipelines expressed general support for the natural gas vehicle industry. Specifically, Mr. Feltham, on behalf of ATCO Gas, indicated that ATCO Gas owns a fleet of natural gas vehicles and operates natural gas vehicle fuelling stations in the city of Edmonton, including one which is located east of the Royal Alexandra Hospital.[255] ATCO Pipelines was of the view that, although it is preferable to receive natural gas for natural gas vehicles from a high-pressure pipeline, a lower pressure distribution line would still be workable. Mr. Johnson explained:

> …whether or not gas comes off a distribution system or it comes off a higher pressure system, it's still going to need compression to get it up to the storage level, the storage pressure that it would be stored on board vehicles. So that's roughly 3,000 pounds per square inch, my understanding. And whether it comes off of a 700 kPa pipeline or a 2,000 kPa pipeline, it's still going to need compression and maybe just one extra stage of compression.[256]

280. In the Commission's view, the evidence tendered on this topic demonstrates that the UPR project will have a minimal impact on the construction and operation of natural gas fuelling stations in the cities of Edmonton and Calgary, because the necessary pressure to fuel natural gas vehicles can be achieved by an additional stage of compression.

[253] Exhibit 205.01, ATCO reply argument, paragraphs 94.
[254] Exhibit 188.01, Graves Engineering Corporation, argument, paragraphs 8-9.
[255] Transcript, Volume 2, page 419, lines 20-25 and page 420, lines 1-14.
[256] Transcript, Volume 2, page 416, lines 23-25 and page 417, lines 1-6.

7 Next steps

7.1 Facility applications

281. As directed by the Commission in Decision 2012-233, this decision addresses the issue of whether there is a need to upgrade or replace the existing Edmonton and Calgary systems. Facility applications will be required for any UPR pipeline segment that ATCO Pipelines intends to construct and operate. In addition to addressing such issues as the exact location of the proposed facilities, the optimal sizing of those facilities and construction timing, the onus will be on ATCO Pipelines to demonstrate that approval of each individual project is in the public interest having regard to its social, economic and environmental effects. In making a determination on such applications, the Commission will take into account its findings in this proceeding regarding the need to replace the existing Edmonton and Calgary systems and its finding that the UPR proposal best meets the needs of Albertans.[257]

7.2 Rates, timing and forum for Commission review of UPR project-related costs

7.2.1 Parties' views

282. ATCO Pipelines submitted that the impact on customers' bills will be phased in over the five-year UPR project implementation period resulting in an impact to the average residential customer of less than $2 per month at the end of the five years.[258]

283. In response to a Commission information request, ATCO Pipelines provided high level calculations, including the resulting impact to residential customers by the end of the five-year period of $1.80 per customer per month resulting from both ATCO Pipelines' and ATCO Gas's costs. ATCO Pipelines proposed to include approved UPR project-related costs as they would be incurred in its 2015-2016 and 2017-2018 GRAs. ATCO Pipelines also stated that the customer impact would be a function of the NGTL rate design in place at that time.[259]

284. ATCO Pipelines agreed with Calgary that approval of final costs for the UPR proposal components are subject to review in subsequent proceedings but disagreed with Calgary's suggestion to review the costs of UPR project segments in special proceedings. ATCO Pipelines submitted that it is most efficient to conduct such reviews as part of ATCO Pipelines' GRAs. It stated that the review of UPR project costs as part of GRA proceedings would not impede the GRA process as such proceedings are subject to being heard approximately every two years. Further, ATCO Pipelines submitted, having UPR project costs reviewed every two years will not be any less "piecemeal" an approach than reviewing them in GRA proceedings.[260]

285. The UCA asked ATCO Pipelines for the rate impact on customers' bills if the UPR project was implemented over 10 years instead of five years. As discussed above, ATCO Pipelines declined to answer this question and the UCA subsequently filed its motion requesting further and better responses, which motion the Commission upheld. The response included similar high level calculations to those provided for the five-year UPR project implementation

[257] The Northwest Edmonton segment of the UPR proposal is excluded from further process as it has previously received a facility license from the Commission and is currently in-service.
[258] Exhibit 30.14, Application, Appendix 8, pages 16, 26, 36 and 45 of 51.
[259] Exhibit 83.01, AUC-AP-35(a).
[260] Exhibit 205.01, ATCO reply argument, paragraph 77.

and resulted in an impact on residential customers of $1.87 per customer per month by the end of the 10-year period.[261]

286. Calgary submitted that expenditures arising from the implementation of ATCO Pipelines' UPR proposal or any alternative approved by the Commission should be carefully and thoroughly tested for prudence in specific proceedings, as opposed to having the project segments approved for rates on a piecemeal basis in individual GRA applications. These UPR project-specific rate proceedings could be established at reasonable intervals, for example every two years.[262] CAPP supported Calgary's recommendation.[263]

7.2.2 Commission findings

287. The effect that the approval of the UPR proposal may have on rates is outside of the scope of this proceeding. The Commission concurs with ATCO Pipelines that costs are most effectively reviewed as they are incurred as part of its GRAs, which generally occur every two years. ATCO Pipelines' most recent GRA covered the test years 2013-2014 and included UPR project segments on a placeholder basis. In a GRA proceeding, forecast costs are subject to reasonableness tests and actual costs are subject to prudence review. Accordingly, the Commission concludes that prudence reviews of ATCO Pipelines' actual costs for the UPR project will be undertaken in accordance with normal Commission practice in future rates proceedings.

7.3 Ongoing integrity management

288. The Commission initiated an external review of the adequacy of ATCO Pipelines' integrity management program and emergency response plans in place for those natural gas utilities under the Commission's jurisdiction.[264] Sections 7 and 8 of the Pipeline Rules,[265] CSA Z662-11: Oil and Gas Pipeline Systems including Annex N, CSA Z731 Emergency Preparedness and Response, and CSA Z1600 Emergency Management and Business Continuity contains provision for the AUC to request procedures for emergency response and pipeline integrity management. In August 2012, the AUC requested these from ATCO Pipelines and AltaGas Utilities Inc. Subsequently the AUC engaged BHTSerge to complete an independent review of the procedures to assess if the procedures are in compliance with sections 7 and 8 of the Pipeline Rules, The results of that review are currently being assessed by the Commission. ATCO Pipelines' integrity management program and reports have been posted on the AUC website. If necessary, the Commission will deal with any issues related to ATCO Pipelines' integrity management program within the investigation initiated by the Commission for that purpose.

289. The Commission understands that ATCO Pipelines will continue with its current integrity management program and will be making any necessary and prudent adjustments and improvements to that program as circumstances require. The results of the ongoing, separate investigation of AUC-regulated high-pressure natural gas transmission systems will be provided to parties in due course.

[261] Exhibit 136.07, UCA-AP-24(d).
[262] Exhibit 192.01, Calgary argument, paragraphs 42-44.
[263] Exhibit 199.01, CAPP reply argument, paragraph 3.
[264] Pipeline integrity management and emergency response review.
[265] Alberta Pipeline Act, Pipeline Rules, Alberta Regulation 91/2005.

290. The Commission is satisfied that the combination of ATCO Pipelines' ongoing integrity management program, expenditures for integrity programs approved in ATCO Pipelines' 2013-2014 GRA, implementation of any recommendations or directions that may result from the independent review, along with implementation of the UPR proposal responds to the concerns about the unknown condition and existing risk associated with the Edmonton and Calgary systems.

7.4 Transfer of transmission pipelines to ATCO Gas

7.4.1 Parties' views

291. As part of the UPR proposal, decommissioned high-pressure pipelines will either be abandoned in place or transferred to ATCO Gas to be utilized for the provision of low pressure distribution service.

292. In cross-examination by the CCA, ATCO Pipelines confirmed that, of the 276 km of vintage pipelines identified in the application, 190 km will be used for distribution service in Edmonton (80 km) and Calgary (110 km).[266]

293. In response to a Commission information request, ATCO Pipelines provided detailed maps showing ATCO Pipelines' facilities proposed to be abandoned and those facilities that are proposed to be transferred to ATCO Gas to be used for distribution service, ATCO Pipelines also provided a detailed breakdown of existing urban pipelines being transferred to ATCO Gas and the estimated net book value of the transfers.[267]

294. ATCO Gas explained that transferring high-pressure pipelines to lower pressure distribution service reduces concerns with respect to safety and integrity. The significantly lower pressures at which the distribution systems operate do not subject the pipe to the stress levels in high-pressure service, like those of ATCO Pipelines, and consequently have a lower risk of failure.[268] ATCO Gas confirmed that it has not turned its mind to how to reconcile any problems that might arise from the transfer of pipelines with integrity issues from ATCO Pipelines.[269]

295. The UCA requested that the Commission direct ATCO Gas to specifically highlight and report on the integrity condition of transferred assets at the time of its next two GRA applications subsequent to the expiry of the performance-based regulation (PBR) initiative that ATCO Gas is currently subject to, or as part of any associated Z factor application that may be filed during the current PBR regime. The UCA also asked ATCO Gas whether its customers might inherit a liability that should have been paid for by ATCO Pipelines' customers through the NGTL cost allocation and rate design process.[270]

296. It was not clear to the UCA what redress might be available for ATCO Gas's customers from ATCO Pipelines' customers if any integrity-related costs occurred. The UCA therefore recommended that the Commission direct ATCO Gas to specifically highlight and report on the integrity condition of transferred assets at the time of the next two GRA applications subsequent

[266] Transcript, Volume 2, page 275, lines 8-12.
[267] Exhibit 83.01, AUC-AP-36(b), attachment 6 and Exhibit 135.01, updated response to AUC-AP-36(b), attachment 6.
[268] Transcript, Volume 2, page 248, line 5 to page 249, line 17.
[269] Transcript, Volume 1, page 118, lines 1-3.
[270] Transcript, Volume 1, page 116, lines 11-13.

to the expiry of the PBR term, or as part of any associated Z factor application that may be filed during the current PBR regime.[271]

297. The UCA also recommended that ATCO Gas be directed to provide a detailed explanation of any capital costs associated with ATCO Pipelines' UPR proposal that are included in ATCO Gas's customer rates in accordance with the terms of its performance based rates or a future GRA. The UCA also proposed to include in the Y or Z factor prudence test, any future costs that might arise from ATCO Pipelines' pursuit of all or part of the integrity alternative, should subsequent investigations of ATCO Pipelines' Edmonton and Calgary systems indicate that any of these pipelines could remain in service.[272]

7.4.2 Commission findings

298. The Commission finds that approval of the transfer of ATCO Pipelines' high-pressure pipelines to ATCO Gas and any impact that transfer may have on ATCO Gas' rates is outside of the scope of this proceeding.

299. Regarding the UCA proposal for an ATCO Gas prudence review, the Commission considers that this proposal has merit. However, this review and a determination of whether any costs will be dealt with by way of a K, Y or Z factor is a matter for future PBR annual filings.

[271] Exhibit 194.02, UCA argument, paragraphs 104-105.
[272] Exhibit 204.01, UCA reply argument, paragraph 58.

8 Decision

300. The Commission finds that ATCO Pipelines has demonstrated a need to relocate the Edmonton and Calgary systems and is satisfied that approval of the UPR proposal is the best alternative to address that need. In the Commission's view, the UPR proposal is superior to the other alternatives considered in this proceeding, having regard to risk management, system integrity, reliability of supply, public disruption, technical feasibility and siting. While the UPR proposal is not the lowest cost alternative, the Commission is satisfied that the forecast incremental difference between the integrity alternative and the UPR proposal is insufficient to offset the advantages of the UPR proposal. Having regard to the foregoing, the Commission finds that approval of the UPR application is in the public interest because it will result in Edmonton and Calgary systems that are safe, economic, orderly and efficient. The Commission therefore approves ATCO Pipelines' application subject to the following condition:

- ATCO Pipelines must advise the Commission of any material changes to the timing or any other aspect of the implementation of the UPR proposal at the time of any related facilities application or at the time of its next GRA, whichever comes first.

Dated on January 17, 2014.

The Alberta Utilities Commission

(original signed by)

Anne Michaud
Panel Chair

(original signed by)

Mark Kolesar
Vice-Chair

(original signed by)

Neil Jamieson
Commission Member

Appendix 1 – Proceeding participants

(return to text)
In response to the July 5, 2012, notice of proceeding, the Commission received statements of intent to participate (SIPs) from the following parties:

- ATCO Gas
- ATCO Pipelines
- BP Canada Energy Group
- Canadian Association of Petroleum Producers (CAPP)
- The City of Calgary
- Consumers' Coalition of Alberta (CCA)
- EnCana Corporation
- Nexen Marketing
- NOVA Gas Transmission Ltd. (NGTL)
- Office of the Utilities Consumer Advocate (UCA)
- Brenda Blake

Appearances at the process meeting were made by:

- ATCO Pipelines
- EnCana Corporation
- Office of the Utilities Consumer Advocate (UCA)
- The City of Calgary
- NOVA Gas Transmission Ltd. (NGTL)
- Consumers' Coalition of Alberta (CCA)
- Canadian Association of Petroleum Producers (CAPP)

In response to the notice of application the Commission received SIPs from:

- University of Alberta
- Dr. Alan Murray
- Mr. William Kennedy
- Bernice Legge
- T.C.
- Cathrine Wilson
- Capital Steel
- Leon Nellissen
- Jan Sproule
- Gerald Blair
- Nevin Burne, Western Air and Power Ltd.
- Neil and Jean Wilkinson
- David and Sandra Stadnek
- Jim Graves, Graves Engineering Corporation
- AltaGas
- Grant Fullmer, Hebna Canada Inc.
- Mary Whale
- Tssu T'ina Nation

Confirmation of continued participation in the proceeding was received from:

- Office of the Utilities Consumer Advocate (UCA)
- Canadian Association of Petroleum Producers (CAPP)
- BP Canada Energy Group
- NOVA Gas Transmission Ltd. (NGTL)
- ATCO Gas
- The City of Calgary

In response to the notice of hearing, the Commission received a SIP from Matt and Mary Erickson. Parties already registered were not required to submit another SIP.

The oral hearing was held at the AUC's hearing room in its Calgary office. The hearing commenced on the morning of September 16, 2013, and concluded on the morning of September 20, 2013. Appearances were made by:

- ATCO Pipelines/ATCO Gas
- Dr. Alan Murray
- Office of the Utilities Consumer Advocate (UCA)
- AltaGas Ltd.
- The City of Calgary
- Consumers' Coalition of Alberta (CCA)
- The Blake Group
- Graves Engineering Corporation
- Bernice Legge
- Papaschase First Nation

The four witness panels that appeared before the Commission during the oral proceeding were as follows:

- ATCO Pipelines (included an ATCO Gas representative and three expert witnesses)
- AltaGas Ltd.
- Dr. Alan Murray
- The Blake Group[273]

Edmonton did not participate in the UPR proposal need proceeding. Edmonton issued a letter dated February 14, 2013 to Mr. Brendan Dolan, President of ATCO Pipelines and copied the Commission. The letter thanked Mr. Dolan for meeting with members of the City of Edmonton's corporate leadership team to provide information about the UPR project. Edmonton expressed support for the objectives of increased public safety, service reliability and reduced neighbourhood disruption that moving the high-pressure transmission of gas to the TUC would address.

[273] Ms. Brenda Blake and Ms. Joan Blake.

Appendix 2 – Oral hearing – registered appearances

Name of organization counsel or representative	Witnesses
ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd. N. Gretener M. Synnott	B. Chalmers B. Dolan G. Feltham M. Felts B. Johnston S. Mah J. Mihell M. Rosenfeld J. Sharpe
AltaGas Ltd. B. Ho	B. Mattson D. Zoobkoff
Blake Group M. Niven N. Ramessar	B. Blake
City of Calgary D. Evanchuk	
Consumers' Coalition of Alberta J. Wachowich	
Graves Engineering Corporation J. Graves	
Bernice Legge	
Dr. Alan Murray B. Kennedy	A. Murray
Office of the Utilities Consumer Advocate M. Keen	
Papaschase First Nation Chief Bruneau	

The Alberta Utilities Commission Commission Panel Anne Michaud, Panel Chair Mark Kolesar, Vice-Chair Neil Jamieson, Commission Member Commission Staff JP Mousseau (Commission counsel) S. Sinclair (Commission counsel) P. Howard D. Popowich, P.Eng. R. Armstrong, P.Eng.

Appendix 3 – Abbreviations

Abbreviation	Name in full
AG	ATCO Gas
AltaGas	AltaGas Ltd.
AUC or the Commission	Alberta Utilities Commission
BHTSerge	BHTSerge Consulting Ltd
Calgary	City of Calgary
CAPP	Canadian Association of Petroleum Producers
CCA	Consumers' Coalition of Alberta
CPVCOS	cumulative present value cost of service
CSA	Canadian Standards Association
DRAS	Dynamic Risk Assessment Systems Inc.
Edmonton	City of Edmonton
EEEP	Edmonton Ethane Extraction Plant
EMAT	electromagnetic acoustic technology
EUB	Alberta Energy and Utilities Board
GRA	general rate application
HP	high pressure
ILI	in-line inspection
Kiefner	Kiefner and Associates
km	kilometre
NGL	natural gas liquids
NGTL	NOVA Gas Transmission Ltd
NRCB	Natural Resources Conservation Board
PBR	performance-based regulation
TUC	transportation and utility corridor
UCA	Office of the Utilities Consumer Advocate
UPR	urban pipeline replacement

Appendix 4 – AUC Decision 2012-233: ATCO Pipelines – Urban Pipeline Initiative – Application Scope, Requirements and Process

(return to text)

Appendix 4 - AUC Decision 2012-233.pc

(consists of 22 pages)

Appendix 5 – Summary of installation date, specifications, and current known condition of each pipeline segment in ATCO Pipelines' Edmonton and Calgary systems[274,275]

(return to text)

The existing Edmonton and Calgary systems

Most of ATCO Pipelines' urban transmission pipelines were constructed prior to 1970 in rural areas on the outskirts of each city.[276] Since the original installation, urban development has surrounded the previously rural network of transmission pipelines which are now located in high consequence areas.

Edmonton high-pressure pipelines

1. Swan Hills Pipeline

The 324 mm Swan Hills pipeline was built in 1964. The primary joining method was electric arc welding. A pressure test was completed on the Swan Hills transmission pipeline during the original installation. The Swan Hills Transmission Pipeline is externally coated with an enamel coating. In-line inspections were conducted along the Swan Hills Transmission Pipeline in 2010 and 2011. Fifty-four metal loss anomalies were recorded along with 43 deformation dents. The most severe metal loss feature and dent was reported at 36 per cent and 4.7 per cent, respectively. No features required immediate repair.

2. Bittern Lake and Ardrossan Pipelines

The 10.4 km, 273 mm Bittern Lake pipeline was built in 1952. The 6.7 km, 406 mm and 508 mm Ardrossan pipeline was built in sections between 1954 and 1989.

The primary joining method for the Bittern Lake pipeline was electric arc welding however, mechanical coupling has also been identified. The original pressure test parameters are not documented. The Bittern Lake Transmission Pipeline is externally coated with a wax coating. This pipeline is not configured to allow the passage of in-line inspection tools. There have been no leaks or repairs documented for this pipeline.

The primary joining method for the Ardrossan pipeline was electric arc welding. Records of a pressure test completed at the time of installation exist for the 508 mm and 406 mm pipeline. The hydrostatic pressure test records are confirmed. The system is externally coated with either enamel or yellow jacket. The system was not configured to allow the passage of in-line inspection tools and would require significant improvements to allow inspection. Documented line hits and leaks since 1984, include three corrosion leaks and one hit line repair.

3. Devon Pipeline

The 219 mm Devon pipeline was built in 1950. The primary joining method for the Devon pipeline was electric arc welding. The use of mechanical coupling has also been identified. The original pressure test parameters for the pipeline are not known. However, pressure test records

[274] Exhibit 30.12, Application, Appendix 6 Pipeline integrity records.
[275] Exhibit 135.01, ATCO Pipelines updates submission, August 29, 2013.
[276] Exhibit 30.04, Application, paragraph 34.

are available for tests completed on sections of relocated or replaced pipeline. The Devon Transmission pipeline is externally coated with both enamel and coal-tar coatings. Three in-line inspections have been completed on the Devon Transmission Pipeline in 1985, 1993 and 2005. Extensive dig and repair programs were conducted as a result of the in-line inspections. Repairs documented for the Devon transmission pipeline resulted from weld pinholes, corrosion anomalies, line hits and mechanical fittings.

4. Pembina Pipeline

The 406 mm Pembina pipeline was built in 1958. The primary joining method for the Pembina pipeline was electric arc welding. The original pressure test parameters for the Pembina pipeline are not known. The Pembina pipeline is externally coated with an enamel coating. This pipeline has not been configured to allow the passage of in-line inspection tools. Five repairs have been documented on the urban portion of the Pembina pipeline. The four repairs were associated with localized corrosion, mechanical fittings and damage due to a lightning strike.

5. Bonnie Glen Pipeline

The 323 mm Bonnie Glen pipeline was built in 1954 and 1958. The primary joining method for the Bonnie Glen pipeline was electric arc welding; however, mechanical couplings have also been identified. The original pressure test parameters for the Bonnie Glen pipeline are not known. However, pressure test records exist for sections of relocated pipeline within the Bonnie Glen system. The Bonnie Glen pipeline is externally coated with an enamel coating. The pipeline has had ILI in 1986, 1992 and 2007. Several digs and repairs have been conducted as a result of these inspections. Many leaks and deleterious features have been identified on the Bonnie Glen pipeline. The repairs included corrosion features, poor quality welds, mechanical fittings and remediation of vintage pipeline repairs.

Calgary high-pressure pipelines

1. Mainline North, Mainline Loop, and the Conmac and Fish Creek Branches

The 406 mm and 610 mm Mainline North was built mostly in 1912 with all of the pipeline replaced through a series of projects in later years starting in 1954. The 406 mm Mainline Branch was built mostly in 1912 and replaced in 1965. The 406 mm and 273 mm Loop Line were built between 1948 and 1979. The 114 mm and 89 mm Conmac and Fish Creek Branches were built between 1950 and 1980.

The primary joining methods for the Main Line was mechanical couplings and electric arc welding. The original pressure test of the Mainline North Pipeline at the time of installation was a hydrostatic pressure test performed at a pressure of 5130 kPa. The duration of this test is not known. The Fish Creek Branch was hydrostatic pressure tested at 8274 kPa for 24 hours. Pressure test records for the Mainline Branch are not confirmed. The majority of the Mainline North Pipeline is externally coated with enamel and yellow jacket coating. Six repairs have been completed on urban portions of the Mainline North Transmission system. Four repairs were associated with localized corrosion and two repairs were due to leaking valves. The Mainline North Transmission Pipeline has not been configured to allow the passage of in-line inspection tools. Extensive improvements would be required to allow in-line inspections.

The primary joining method for the Loop Line was mechanical couplings for the original pipeline and electric arc welding for the replacements. There is no record of an original pressure test at the time of installation on the Mainline North (Loop Line). The segments of the Mainline North (Loop Line) that were replaced in 1977 were hydrostatic pressure tested at 3,275 kPa for 24 hours. The part that was replaced in 1978 was hydrostatic pressure tested at a pressure of 3,758 kPa. Finally, the part that was replaced in 1979 was hydrostatic pressure tested at 3,255 kPa for 24 hours. The original pressure test performed at the time of installation on the Mainline Loop (273 mm) Pipeline indicates that a hydrostatic pressure test was performed at a pressure of 6,000 kPa; however, the test duration is unknown.

2. Petrogas-Airdrie pipeline and Petrogas-Meadowfield pipeline

The 324 mm Petrogas-Airdrie pipeline and the 406 mm Petrogas-Meadowfield pipeline were both built in 1966.

The primary joining method for the Petrogas-Airdrie was electric arc welding. The Petrogas-Airdrie pipeline is externally coated with coal-tar and tape coatings. The original hydrostatic pressure test performed at the time of installation was a 24-hour test at a pressure of 1.25 times MOP; however, the test medium is not confirmed. The Petrogas-Airdrie pipeline system has not been configured to allow the passage of in-line inspection tools.

The primary joining method for the Petrogas-Meadowfield was electric arc welding. The pipeline is externally coated with a coal-tar coating. The original pipeline received a pressure test in two sections at the time of installation. Both sections of pipeline received a 24-hour test; however, one of the tests was at 1.25 times MOP with an unconfirmed medium, and the other section was tested at 1.4 times MOP with water as the test medium. The Petrogas-Meadowfield pipeline system has not been configured to allow the passage of in-line inspection tools. External Corrosion Direct Assessment (ECDA) survey results have identified that this pipeline is susceptible to disbonded coating.

3. Carbon Pipeline

The 406 mm Carbon pipeline was built in 1958. The primary pipe joining method for the Carbon pipeline was electric arc welding. The Carbon pipeline is externally coated with an enamel coating. The original pressure test parameters for the pipeline are not known. The Carbon pipeline system is not configured to allow the passage of in-line inspection tools. Numerous taps and relocations have been completed on this pipeline. There have been one pipeline hit and two leaks documented on this pipeline which have been repaired. Indications of stress corrosion cracking have been discovered on this pipeline.

4. Jumping Pound Pipeline

The 324 mm Jumping Pound pipeline was built in 1950. The primary joining method for the Jumping Pound pipeline was electric arc welding. A pressure test was completed following the original installation. The pipeline was tested at 7240 kPa although the test medium and duration are not confirmed. This pipeline is externally coated with an enamel coating. An ILI was conducted along the pipeline in 2012. In total, 337 metal loss features and 10 pipeline anomalies were identified. The most severe metal loss feature and dent were reported at 41 per cent and 3.7 per cent, respectively. No leaks are recorded for the Jumping Pound pipeline.

5. Jumping Pound West Pipeline

The 406 mm Jumping Pound West pipeline built between 1966 and 1990. The Jumping Pound West pipeline has experienced numerous relocation and replacement projects. The primary joining method used was electric arc welding. The original pipeline received a hydrostatic pressure test at the time of installation and replaced pipe sections were also tested. The pipeline is externally coated with polyethylene tape and yellow jacket. Three in-line inspections have been conducted on the pipeline in 2003, 2008 and 2012. The 2012 ILI included the urban portion of the pipeline. This inspection identified 56 metal loss features and 19 pipeline anomalies. The current status of the pipeline includes 1,406 metal loss features and 23 pipeline anomalies along the length of the pipeline. The pipeline has undergone numerous relocations and pipeline lowering projects. Indications of stress corrosion cracking have been identified on the pipeline.

6. Simons Valley Pipeline

The 273 mm Simons Valley pipeline was built in 1967. The primary joining method for the Simons Valley pipeline was electric arc welding. The original pressure test parameters for this pipeline are not known. The pipeline consists of two parts, one with bare and another with yellow jacket coating. The pipeline system has not been configured to allow the passage of in-line inspection tools. There have been no leaks documented along this pipeline; however, two pipeline hits have been documented.

7. Turner Valley No. 2 Pipeline

The 273 mm and 324 mm Turner Valley No. 2 pipeline was built between 1925 and 2004. The primary joining method for the original Turner Valley No. 2 pipeline was mechanically coupled joints. This entire transmission pipeline has been replaced or relocated; however, sections of the original pipeline remain in service. have been reconditioned and returned to service. Segments 7 to 11 on the Turner Valley No. 2 pipeline underwent a replacement program between 1954 and 1978, with multiple short segments. The data listed for segments 7 to 11 reflect the majority of the pipeline segments, but there are short sections within those segments which may vary. The pipeline is constructed of steel pipe of varying wall thickness and grade with majority of replaced sections having ERW longitudinal weld seams. All Turner Valley No. 2 pipeline relocates and replacements have been electric arc welded. There are no original records of a pressure test being performed on the Turner Valley No. 2 pipeline. However, the sections of pipeline that have been replaced after 1968 received pressure tests at the time of installation. The Turner Valley No. 2 has not been configured to allow the passage of in-line inspection tools. One leak has been documented on the Turner Valley No. 2 Pipeline.

8. Cedarbrae Branch, Canyon Meadows Branch, Woodlands Branch, and Hull Boys Estate Laterals

The Cedarbrae, Canyon Meadows, Woodlands, and Hull Boys estate laterals were built in 1961, 1968, 1976 and 1977, respectively. Pressure tests were completed at the time of installation. The Cedarbrae Branch, Canyon Meadows Branch, Woodlands Branch and Hull Boys Estate Laterals have not been configured to allow the passage of in-line inspection tools.

Appendix 6 – Key assumptions underlying ATCO Pipelines CPVCOS

(return to text)

ATCO Pipelines used a common set of financial assumptions for the economic model underlying the UPR proposal and each of the UPR project alternatives.[277] ATCO Pipelines confirmed that the depreciation rate it used in its economic models was consistent with the rates used in its 2013-2014 GRA.[278]

Key assumptions used in ATCO Pipelines' CPVCOS analysis for all alternatives are:[279]

- New pipelines are capitalized with depreciation set at 2.31 per cent (Edmonton) and 2.30 per cent (Calgary); distribution mains depreciated at 2.78 per cent.
- Asset transfers to AG added to AG rate base and depreciated at 2.78 per cent.
- New measurement facilities are capitalized with depreciation set at 4.72 per cent (Edmonton) and 4.55 per cent (Calgary); AG measurement structures depreciated at 2.74 per cent, ATCO Gas (AG) measurement equipment depreciated at 3.82 per cent.
- Pipeline facilities required to facilitate ILI and hydrostatic pressure testing are capitalized with depreciation set at 2.31 per cent (Edmonton) and 2.30 per cent (Calgary).
- ILI, hydrostatic pressure testing, and integrity digs capitalized and depreciated at 10 per cent.
- Asset transfers to ATCO Gas added to ATCO Gas rate base and depreciated at 2.78 per cent.
- Applied a discount rate based on an equity of 38 per cent for ATCO Pipelines and 39 per cent for ATCO Gas and return on equity set at 8.75 per cent.
- Inflation set at three per cent per year.
- For the 2012 through 2017 period, ATCO Pipelines used ATCO Gas's five-year demand forecast which estimates point specific peak demand for existing delivery points. Beyond the 2017 forecast year, ATCO Pipelines consulted with ATCO Gas and NOVA Gas Transmission Ltd. to develop its demand growth forecast for developed areas. of 0.6 per cent to 1.5 per cent for developed areas, depending on location for the final 15 years of the forecast.
- Long-term industrial demand growth underpinned by contract, with zero industrial demand growth beyond 2015.
- Long-term receipt supply forecast in aggregate to decline by 2.3 per cent annually in Edmonton and 2.0 per cent annually in Calgary.
- ATCO Pipelines' supply and demand forecasts were used to construct hydraulic models for the Edmonton and Calgary regions. New facilities required to maintain natural gas supply and/or establish new supply are added more slowly in the latter portions of the forecast period for the UPR project than the integrity alternative because the UPR project is closer to developing areas than ATCO Pipelines' existing high-pressure pipeline infrastructure.

[277] Exhibit 30.04, Application, pages 117-118 of 140.
[278] Exhibit 83.01, ATCO response to AUC-AP-33(c).
[279] Exhibit 30.04, Application, pages 117-118.

Appendix 7 – Summary of results of ATCO Pipelines CPVCOS analyses

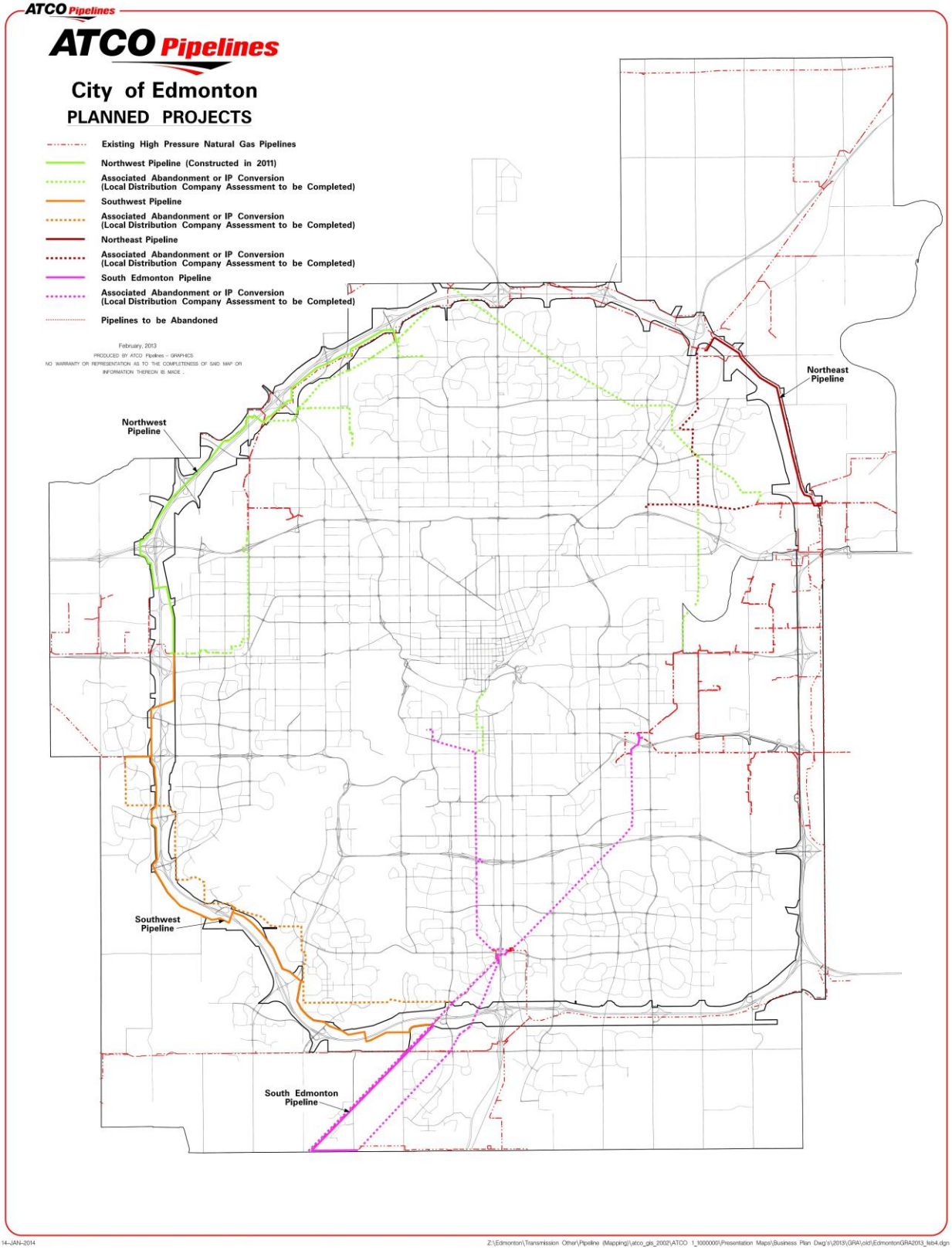
(return to text)

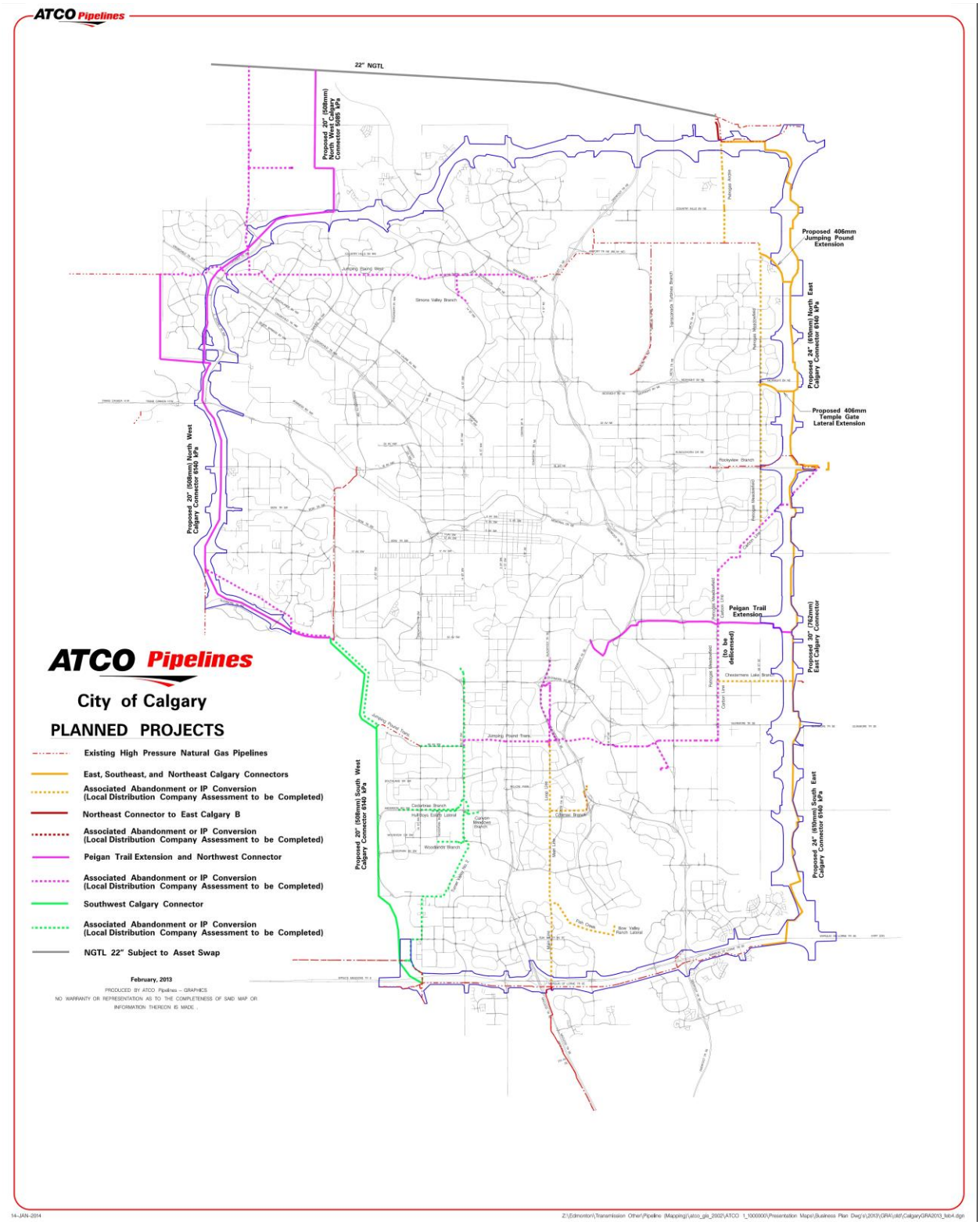
UPR proposal cost assessment	**5-year**	**10-year**
ATCO Gas North CPVCOS	$60,272,000[280]	$62,579,000[281]
ATCO Gas South CPVCOS	$116,902,000[282]	$115,810,000[283]
ATCO Pipelines North CPVCOS	$109,550,000[284]	$119,677,000[285]
ATCO Pipelines South CPVCOS	$311,887,000[286]	$302,532,000[287]
Total UPR proposal CPVCOS	**$598,611,000**	**$600,598,000**
Integrity alternative	**5-year**	**10-year**
ATCO Pipelines and ATCO Gas CPVCOS[288]	$453,361,000	$450,000,000[289]
ATCO Pipelines North CPVCOS	$151,941,000[290]	
ATCO Pipelines South CPVCOS	$301,420,000[291]	
Replacement in place alternative	**5-year**	**10-year**[292]
ATCO Pipelines and ATCO Gas CPVCOS	$640,000,000	$640,989,000
ATCO Pipelines North CPVCOS	$218,417,000[293]	$220,000,000
ATCO Pipelines South CPVCOS	$422,572,000[294]	$420,000,000

280 Exhibit 93.01 UCA-ATCO-28(a)-attachment 3, page 3, pdf page 95.
281 Exhibit 136.10 – Schedule 1.
282 UCA-ATCO-28(a), Attachment 4 – page3, PDF page 119 - Exhibit135.01 –August 2013 update.
283 Exhibit 136.11 – Schedule 1.
284 Exhibit 93.01 (UCA-ATCO-28(a), Atachment 5, page 3, PDF page 137.
285 Exhibit 136.12– Schedule 1.
286 Exhibit 135.01 UCA-ATCO-28(a), Attachment 6, page 3- August 2013 update.
287 Exhibit 136.13 – Schedule 1.
288 AG costs assumed to be zero under Integrity Option.
289 Exhibit 136.06, UCA-ATCO-24 (a), approximate.
290 UCA-ATCO-29(a).
291 Exhibit 93.01, UCA-ATCO-29(a).
292 Exhibit 136.06, UCA-AP-24(a).
293 Exhibit 93.01, UCA-AP-30(a).
294 Exhibit 93.01, UCA-AP-30(a).

Appendix 8 – Maps of the Edmonton and Calgary UPR pipeline segments and TUCs

(return to text)




ATCO Pipelines
22" NGTL
Proposed 20" (508mm) North West Calgary Connector 6985 kPa
Proposed 406mm Jumping Pound Extension
Proposed 24" (610mm) North East Calgary Connector 6140 kPa
Proposed 406mm Temple Gate Lateral Extension
Proposed 20" (508mm) North West Calgary Connector 6140 kPa
Peigan Trail Extension (to be delicensed)
Proposed 30" (762mm) East Calgary Connector
Proposed 20" (508mm) South West Calgary Connector 6140 kPa
Proposed 24" (610mm) South East Calgary Connector 6140 kPa
ATCO Pipelines
City of Calgary
PLANNED PROJECTS
Existing High Pressure Natural Gas Pipelines
East, Southeast, and Northeast Calgary Connectors
Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
Northeast Connector to East Calgary B
Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
Peigan Trail Extension and Northwest Connector
Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
Southwest Calgary Connector
Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
NGTL 22" Subject to Asset Swap
February, 2013
PRODUCED BY ATCO Pipelines – GRAPHICS
NO WARRANTY OR REPRESENTATION AS TO THE COMPLETENESS OF SAID MAP OR INFORMATION THEREON IS MADE .
14-JAN-2014

Appendix 9 – Ruling on UCA motion for further and better responses to information requests

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Appendix 9 - Ruling on UCA motion for fu

(consists of 3 pages)

Appendix 10 – Ruling on request to file late evidence by Mr. Jim Graves and Mr. Calvin Bruneau

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Appendix 10 - Ruling on Request to file late

(consists of 3 pages)

Appendix 11 – Ruling on a review and variance application by Mr. Jim Graves

(return to text)

Appendix 11 - Ruling on a R&V application

(consists of 3 pages)

Appendix 12 – Ruling on a review and variance application by the Papaschase First Nation

(return to text)

Appendix 12 - Ruling on a R&V application

(consists of 3 pages)

Decision **2012-233**

AUC
Alberta Utilities Commission

ATCO Pipelines

Urban Pipeline Initiative - Application Scope, Requirements and Process

September 4, 2012

The Alberta Utilities Commission
Decision 2012-233: ATCO Pipelines
Urban Pipeline Initiative – Application Scope, Requirements and Process
Application No. 1608617
Proceeding ID No. 1995

September 4, 2012

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The Alberta Utilities Commission
Calgary, Alberta

ATCO Pipelines **Decision 2012-233**
Urban Pipeline Initiative – Application Scope, Requirements and Process **Application No. 1608617**
Proceeding ID No. 1995

1 Introduction

1. The Alberta Utilities Commission (AUC or the Commission) initiated this proceeding to address the multi-year and multi-phase urban pipeline initiative (UPI) proposed by ATCO Pipelines, a division of ATCO Gas and Pipelines Ltd. The UPI would reconfigure the existing high-pressure natural gas pipeline systems within the cities of Edmonton and Calgary by constructing new, high-pressure natural gas pipeline networks in the Edmonton and Calgary transportation and utilities corridors (TUCs).

2. The Commission issued notice of proceeding (Notice) on July 5, 2012. The Notice provided background on the UPI, the reasons for the Commission initiating the proceeding and the purpose of the proceeding. The Notice also directed ATCO Pipelines to file an application for its UPI at a date to be determined following a pre-application process meeting. A preliminary list of application requirements was attached to the Notice. The process meeting was scheduled for August 15, 2012 in the Commission's Calgary hearing room.

3. Any party who wished to intervene in this proceeding was required to file a statement of intent to participate (SIP) with the AUC by July 30, 2012.

4. The Commission received SIPs from the following parties:

- ATCO Gas
- ATCO Pipelines
- BP Canada Energy Group ULC (BP Canada)
- Canadian Association of Petroleum Producers (CAPP)
- The City of Calgary (Calgary)
- Consumers' Coalition of Alberta (CCA)
- EnCana Corporation (EnCana)
- Nexen Marketing (Nexen)
- Nova Gas Transmission Ltd. (NGTL)
- Office of the Utilities Consumer Advocate (UCA)
- Ms. Brenda Blake

5. By letter dated July 13, 2012, ATCO Pipelines expressed concern about the Commission's decision to assess the need for those projects for which the business cases[1] had previously been approved in AUC Decision 2011-494.[2] ATCO Pipelines also specifically

[1] Northwest Edmonton Connector, the Southeast Calgary Connector and the East Calgary Connector projects.
[2] Decision 2011-494: ATCO Pipelines 2011 Final Revenue Requirements, Final Rates Filing and Deferral Account, Application No. 1607451 Proceeding ID No. 1314, December 20, 2011.

expressed concern about the Commission's decision to suspend its consideration of ATCO Pipelines' application to construct and operate the proposed Southeast Calgary Connector pipeline, pending consideration of the overall need for the UPI in Proceeding ID No. 1995. ATCO Pipelines asked the Commission to lift its suspension and proceed with its consideration of that application.

6. In a letter dated August 3, 2012, the Commission asked interested parties to address the following at the process meeting: (1) the process schedules proposed by ATCO Pipelines and the UCA; (2) the preliminary application requirements; (3) the need for a technical meeting; and (4) ATCO Pipelines' request for a decision from the Commission regarding the scope of the UPI proceeding.

7. Eight parties registered at the process meeting held on August 15, 2012 - ATCO Pipelines, EnCana, the UCA, Calgary, NGTL, the CCA, BP Canada, and CAPP. Oral submissions were made by ATCO Pipelines, EnCana, the UCA, Calgary, NGTL, the CCA, and CAPP. The following is the Commission's decision on the items addressed by the parties during the process meeting.

2 Background

8. In the context of five applications[3] filed with the Commission, ATCO Pipelines introduced its intention to pursue what has since been labeled the Urban Pipeline Initiative. The existing high-pressure systems that ATCO Pipelines proposes to replace with the 12 projects that make up the UPI will either be transferred to ATCO Gas for conversion to distribution use, or abandoned. ATCO Pipelines has stated that the need for the UPI is driven by safety, reliability and future growth.

9. The Commission understands the UPI to consist of the following 12 projects:

Edmonton:

- The Northwest Edmonton Connector
- The Southwest Edmonton Connector
- The Northeast Edmonton Connector
- The Southeast Edmonton Connector

Calgary:

- The Southeast Calgary Connector
- The East Calgary Connector
- The Northeast Calgary Connector
- Peigan Trail Lateral Phase 1
- Peigan Trail Lateral Phase 2
- Northwest Calgary Connector
- West Calgary Connector

[3] ATCO Pipelines 2011 Interim Revenue Requirement, Application No. 1606838, Proceeding ID. 985; ATCO Pipelines 2011 Final Revenue Requirement, Application No. 1607451, Proceeding ID No. 1314; ATCO Pipelines Northwest Edmonton Connector Licence, Application No. 1607680, Proceeding ID No. 1452; ATCO Pipelines Southeast Calgary Connector Licence, Application No. 1608219, Proceeding ID No. 1755; ATCO Pipelines 2012 Interim Revenue Requirement, Application No. 1608058, Proceeding ID No. 1666.

- Southwest Calgary Connector

10. Attached as Appendix 2 to this decision are two maps prepared by ATCO Pipelines showing the Edmonton and Calgary TUCs and the location of the UPI projects that ATCO Pipelines has identified to date.

11. In AUC Decision 2012-170,[4] issued on June 20, 2012, the Commission found that it was necessary to evaluate the full scope of the UPI rather than individually assess the merits of each of the 12 projects. In order to ensure that the continued development of the high-pressure pipeline networks in Edmonton and Calgary occurs in a manner that is safe, economic, orderly, and efficient, the Commission determined that the evaluation of the UPI would include a review of the need and justification for the initiative; the various alternatives considered by ATCO Pipelines; and the long-term project costs.

12. Given the multi-year, multi-phase nature of the UPI, the Commission considers it necessary for ATCO Pipelines to demonstrate that there is a need for the UPI as a whole and that the initiative will result in a safe, economic, orderly and efficient means of providing gas transmission service to utility customers in Edmonton and Calgary. The Commission considers that a single proceeding with a common record will provide the most efficient and effective means of assessing the UPI and the concerns of interested parties. The Commission is of the view that making a determination on the need for the UPI will streamline the regulatory process for the future segments of the UPI both in terms of forecast revenue requirements for UPI projects and for specific facility approvals.

3 Discussion of issues

13. At the August 15, 2012 process meeting, interested parties were requested to supplement their prior submissions on three main topics: proceeding scope; ATCO Pipelines application requirements; and process and schedule.

3.1 Scope of the UPI Proceeding

3.1.1 Views of the parties

14. ATCO Pipelines submitted that the UPI proceeding should focus on alternatives and not the need to upgrade or relocate the existing system of high pressure urban pipelines. It argued that none of the interveners supported a "do-nothing" approach with respect to these pipelines. ATCO Pipelines argued that the contention between it and interveners was not "if" the pipeline issues should be dealt with but "how" they should be dealt with.

15. ATCO Pipelines submitted that three of the UPI projects, the Northwest Edmonton Connector, the Southeast Calgary Connector and the East Calgary Connector projects should be excluded from the scope of the UPI proceeding because they were all approved in Decision 2011-494.[5] ATCO Pipelines indicated that the Northwest Edmonton Connector has already been

[4] Decision 2012-170: ATCO Pipelines, 2012 Interim Revenue Requirement, Application No. 1608058, Proceeding ID No. 1666, June 20, 2012.
[5] Decision 2011-494: ATCO Pipelines 2011 Final Revenue Requirements, Final Rates Filing and Deferral Account, Application No. 1607451, Proceeding ID No. 1314, December 20, 2011.

constructed and is currently in service. As a result, it would be illogical to include this project in the UPI proceeding.

16. ATCO Pipelines argued that further consideration of these three projects in the UPI proceeding would amount to retroactive decision-making, be contrary to principles of regulatory certainty, and result in regulatory lag. ATCO Pipelines also asked the Commission to reverse its decision to suspend its consideration of ATCO Pipelines' application under the *Pipeline Act*, RSA 2000, c. P-15 to construct and operate the Southeast Calgary Connector project.

17. The UCA asserted that a proper review of the UPI requires that all of its parts be examined together. The UCA observed that the Commission stated in the Notice that the UPI proceeding was not intended to be a review of Decisions 2011-409[6] and 2011-494. It submitted that this statement directly addresses ATCO Pipelines' concerns with respect to the Northwest Edmonton Connector as that project has been built and is operating. The UCA asserted that it was absurd to suggest that the Commission cannot investigate and consider new facts regarding the need for the Southeast and East Calgary Connector projects prior to their final approval under the *Pipeline Act*. The UCA concluded that consideration of these two projects should be suspended until there is a proper review of the UPI as a whole.

18. NGTL stated that it was interested in understanding, in broad terms, the need and justification for the UPI. NGTL also stated that it was seeking more transparency with respect to ATCO Pipelines' decision-making policy in determining the need for the UPI.

19. The CCA submitted that all of the projects that make up the UPI should be considered in this proceeding. It stated that the proceeding should examine the state of the current system and explore whether it must be replaced and, if so, whether there are lower cost alternatives to the proposed UPI.

20. CAPP disagreed with ATCO Pipelines' assertion that the UPI proceeding should focus on the alternatives to the UPI. It submitted that the UPI proceeding must include an examination of the justification for the UPI and observed that this was clearly stated by the Commission in Decision 2012-170. CAPP stated that a better understanding of the condition of the existing pipelines is necessary to allow the Commission to make a reasonable assessment of the need for replacement, the timing of that replacement or the best alternatives for that replacement.

21. CAPP also observed that the UPI is a series of related or integrated projects that have a common justification and purpose. CAPP submitted that a full and complete review of the need for the UPI requires a review of each of its constituent projects, including the Northwest Edmonton Connector project and the Southeast and East Calgary Connector projects. It suggested that the question of what to do with those projects should not be considered until after the Commission determines if there is a need for the other nine projects that make up the initiative.

[6] Decision 2011-409: ATCO Gas and Pipelines Ltd. (South), New Construction and Hydrostatic Test with Water-Methanol Mix, Edmonton Transportation Utility Corridor, Application No. 1607680, Proceeding ID No. 1452, October 14, 2011.

3.1.2 Commission findings

3.1.2.1 The UPI proceeding will consider the need for the UPI and alternatives to the UPI

22. ATCO Pipelines has proposed that the UPI proceeding focus on alternatives to the UPI rather than the need to update or relocate the system. The interveners either disagreed with that proposal or did not address it in their submissions. No intervener supported this approach.

23. In the Commission's view, it is necessary to consider both the need to upgrade or relocate the Edmonton and Calgary transmission pipelines and the alternatives to address that need to determine whether the UPI is in the public interest. The Commission provided its rationale for this approach in paragraph 41 of Decision 2012-170:

> 41. The Commission considers that a large, multi-year, multi-project initiative of this nature and magnitude should be evaluated as a whole and not on a project-by-project basis in an individual test year, as filed previously in AP's 2011 and 2012 forecast capital expenditures. Although the Commission has already approved certain capital expenditures for 2011 that have since been identified in Proceeding ID No. 1666 as UPI projects, the Commission is of the view that approval of a forecast capital program for revenue requirement purposes is not the equivalent of an assessment of the technical solution and justification of the specific facilities that may be applied for, particularly in a larger context. An evaluation of the full scope of AP's UPI from an overall perspective is required to ensure a greater understanding of the reasonableness and justification for the multi-year pipeline initiative before additional capital expenses in connection with the UPI projects are incurred. The Commission concludes that a full scope evaluation of the need for the UPI projects and AP's selection of those projects as the best technical solution to address that need will help to ensure that the continued development of the high pressure pipeline networks in Edmonton and Calgary occur in a manner that is safe, economic, orderly and efficient.

24. The Commission confirmed this approach in the Notice where it stated that the purpose of the proceeding was to make the following determinations about the need for the UPI:

> 1. Is there a need to upgrade or relocate the high-pressure gas transmission systems in Edmonton and Calgary to address safety, reliability and growth?
>
> 2. Is the UPI proposed by ATCO Pipelines the best alternative to address the need identified?
>
> 3. If it is necessary to upgrade the Edmonton and Calgary high-pressure transmission systems and if the UPI is the best alternative to meet that need, when and how should it be implemented?

25. The Commission confirms that it intends to consider the above three matters in the UPI proceeding.

3.1.2.2 The Commission will consider all of the UPI projects in Proceeding ID No. 1995

26. The Commission finds that it would not be in the public interest to exclude the Northwest Edmonton Connector project and the Southeast and East Calgary Connector projects from its consideration in the UPI proceeding. The Commission also finds that it would not be in the public interest to make a decision on ATCO Pipelines' *Pipeline Act* application for the Southeast

Calgary Connector project until it has made a decision on the overall need for the UPI in this proceeding. The Commission's reasons for these two determinations are as follows.

27. As noted above, the purpose of the UPI proceeding is not merely to consider whether there is a need to upgrade the existing high pressure transmission systems in Edmonton and Calgary; it is also aimed at determining whether the UPI is the best technical solution to meet that need. Should the Commission decide that such a need exists and that the UPI is the best technical solution, a further purpose of the proceeding will be to decide when and how the UPI should be implemented.

28. One important element of the UPI is its integrated nature. While ATCO Pipelines asserted that the constituent projects of the UPI may all be justified as individual or "stand-alone" projects, it is ATCO Pipelines' clear intention to interconnect these projects to the extent possible. In that respect, one of ATCO Pipelines' rationales for the UPI is that it will establish an integrated supply ring surrounding the two service centers.

29. Another important element of the UPI is that ATCO Pipelines' justification for each of the constituent projects is primarily the same, that is, the existing infrastructure should be replaced because it is aged and located in densely populated areas.

30. Given the intended integrated nature of the UPI and the common rationale for each of its constituent projects, the Commission finds that any evaluation of the need for and suitability of the initiative must be comprehensive and include each of its constituent projects. As noted in Decision 2012-170, such an evaluation "will help to ensure that the continued development of the high pressure pipeline networks in Edmonton and Calgary occur in a manner that is safe, economic, orderly and efficient."

31. The Commission, like ATCO Pipelines and the UCA, recognizes that the Northwest Edmonton Connector project has been constructed and is currently operating on a standalone basis. The Commission has no intention of reviewing the need for this project or the license issued for this project in this proceeding. However, what the Commission intends to achieve in this proceeding is a better understanding of how the Northwest Edmonton Connector will integrate with the other constituent UPI projects proposed in the Edmonton TUC if those projects are ultimately approved. Further, to the extent that the Northwest Edmonton Connector pipeline was intended to connect to other projects in the Edmonton transportation and utilities corridor, the Commission also intends to get a broader understanding of the ramifications to the Northwest Edmonton Connector pipeline and the existing Edmonton system if the remaining UPI projects proposed for Edmonton do not proceed.

32. The Commission finds that the Southeast and East Calgary Connector projects are materially different from the Northwest Edmonton Connector project. The addition of the Northwest Edmonton Connector would not result in an abandonment or transfer of an existing high pressure pipeline segment. In addition, the Commission has yet to determine if approval of the Southeast and East Calgary Connector projects is in the public interest having regard to their social, economic and environmental effects, as required by Section 17 of the *Alberta Utilities Commission Act*, SA 2007, c. A-37.2.

33. ATCO Pipelines proposed that the Commission proceed with its consideration of the Southeast Calgary Connector *Pipeline Act* application prior to making its determination on the need for the remaining nine projects that constitute the UPI. In the Commission's view, this

approach would not promote the economic, orderly and efficient regulation of new gas utility pipelines in Alberta, because if the Commission were to decide that ATCO Pipelines has not provided adequate justification for the remaining nine projects that make up the UPI, or that the UPI is not the best technical solution, the continued suitability of the Southeast Calgary Connector project would be in question. In the Commission's view, its public interest mandate under Section 17 of the *Alberta Utilities Commission Act* requires it to make that determination before the project is built.

34. Furthermore, if the Commission were to proceed with its consideration of the Southeast Calgary Connector project under the *Pipeline Act*, it would be obligated under Section 17 of the *Alberta Utilities Commission Act* to consider the rationale for that project and how it would function, either as a standalone project or as part of an integrated initiative. The result would be a process that is likely to be largely duplicative of that which is contemplated by the Commission in this proceeding, potentially involving the same interveners raising the same concerns about the rationale and suitability of subsequent segments of the UPI.

35. However, in order to address ATCO Pipelines' concerns about regulatory lag, the Commission is willing to consider the Southeast Calgary Connector facility application as part of this proceeding. Accordingly, ATCO Pipelines must advise the Commission, no later than September 18, whether it would like the Southeast Calgary Connector application considered in this proceeding.

36. The Commission must ensure that the development of new gas utility pipelines in Alberta occurs in a manner that is economic, orderly, efficient and in the public interest. Given the multi-phase, multi-year nature of the UPI, and having regard for its integrated nature, the Commission finds that a piecemeal approach to the assessment of the projects that make up the UPI would be contrary to its public interest mandate. The Commission concludes that a single proceeding in which all phases of the initiative are examined will ensure that the initiative has been justified and is suitable for its intended use.

3.2 Application requirements

37. The Commission attached the following preliminary application requirements to its Notice:

> ATCO Pipelines' UPI application must identify all pipelines and facilities that comprise or are affected by the UPI, and should demonstrate to the Commission that development of the UPI is consistent with the safe, economic, orderly and efficient development of the high-pressure pipeline systems in the Edmonton and Calgary regions. ATCO Pipelines' application must include, but is not limited to, the following:
>
> - Justification of the need to upgrade/relocate the existing system, including an overall integrity assessment of the existing system which includes but is not limited to a description of the age/remaining life, pipeline size/lengths, construction history, leak history and condition of cathodic protection.
> - An explanation of the underlying drivers for the UPI including safety, reliability, demand growth, and changes to supply locations.
> - A comparison of the UPI to the other alternatives considered by ATCO Pipelines using the following comparators: pipeline size/length and required capacity, timing, route options and economics (the economic assessment is to be based on a 20-year

period with a +/- 30 per cent cost tolerance and should take into account any associated costs for ATCO Gas' system and other affected utilities and public works).
- Identification of the pipelines that are anticipated to be abandoned or transferred to ATCO Gas and the associated costs of abandonment or transfer.
- A description of ATCO Pipelines' participant involvement program to date.

3.2.1 Views of the parties

38. The following additional application requirements were proposed by interested parties:

The UCA proposed:

- An update and comparison of the UPI to similar measures undertaken in other jurisdictions in North America.
- An addition to the 4th bullet of the Commission's preliminary requirements list. (underlined) – "Identification of the pipelines that are anticipated to be abandoned or transferred to ATCO Gas and the associated costs to ATCO Pipelines and ATCO Gas of abandonment or transfer."

The CCA proposed:

- A comprehensive examination of the current Calgary and Edmonton transmission systems.
- Risk assessment and risk mitigation strategies.
- A risk and cost assessment of the proposed UPI projects.
- An assessment of timing of the UPI.

CAPP proposed:

- Further delineation of the southwest portion of the Calgary UPI, currently shown as unconnected through the Tsuu T'ina Nation on ATCO Pipelines' UPI map.
- A current description of and documentation for the status of land access approvals from all affected parties, including the Tsuu T'ina Nation, the province of Alberta for the TUCs and the City of Calgary for the Peigan Trail lateral.
- A broader discussion of how other jurisdictions have recognized and dealt with issues related to old high pressure pipelines in built-up urban areas.
- Inclusion in the UPI proceeding of the Banff Loop Extension at Canmore project and any other foreseeable replacement projects that ATCO Pipelines would justify on the basis of age and/or built-up infrastructure.

39. NGTL submitted that it was interested in understanding the need and justification for the UPI, as well as the criteria and decision-making process used by ATCO Pipelines to determine the need for the UPI projects.

40. Calgary expressed in general terms its concern about land use, including issues about safety, environmental impacts, rights-of-way, and the impacts of these projects on the citizens of Calgary and on the ratepayers.

41. In its July 30, 2012 submission,[7] ATCO Pipelines took issue with one of the application requirements the Commission included in its preliminary list attached to the Notice. ATCO Pipelines submitted that its application should not address participant involvement programs because those programs are best dealt with in the specific facilities (license) applications.

42. At the process meeting, ATCO Pipelines responded to the CAPP and UCA SIP submissions requesting a comparison of the UPI to measures undertaken in other North American jurisdictions. ATCO Pipelines committed to include in the application an overview of what other jurisdictions in North America are doing with respect to the issue of aging high pressure transmission systems located in populated areas. ATCO Pipelines also stated that, in response to the UCA's request, its application would identify the pipelines anticipated to be abandoned or transferred to ATCO Gas and the associated costs to both ATCO Pipelines and ATCO Gas.

43. In response to CAPP's requested discussion of the implications for the full implementation of the UPI and the status of land access approvals from all parties, including the Tsuu T'ina Nation, the province of Alberta, and The City of Calgary, ATCO Pipelines stated it would discuss the implications for the full completion of the UPI in its application. ATCO Pipelines also stated that it was willing to address in its application the impacts of partial or segmented implementation versus full implementation of all segments of the UPI. ATCO Pipelines submitted that there was no need however to get into a discussion, in this proceeding, of where the actual land access and other consultations are at and suggested that these details should be properly and practically brought forward in the specific license applications.

44. ATCO Pipelines disagreed with CAPP's proposal that the UPI proceeding should also address other replacement projects such as the Banff loop extension. ATCO Pipelines stated that general replacement projects are not unusual and the fact that some of these projects may relate to circumstances similar to the UPI, such as aging infrastructure in urban environments would not be a reason to expand the UPI proceeding. ATCO Pipelines argued that doing so would effectively turn the UPI proceeding into a generic proceeding, adding cost and time to the review and it would require ATCO Pipelines to speculate on what other foreseeable replacement projects may be required. ATCO Pipelines submitted that, to the extent that there is a desire to apply anything learned in the UPI proceeding to future replacement projects, the opportunity will always exist.

3.2.2 Commission findings

45. The Commission shares the view with CAPP and ATCO Pipelines that the application should include an assessment of the impacts of partial or segmented implementation versus full implementation of all segments of the UPI. The southwest Calgary portion of the UPI that would appear to traverse through Tsuu T'ina Nation and any other segments that may currently be in question by ATCO Pipelines should be explicitly addressed as part of this assessment.

46. The Commission is not prepared to expand the scope of this proceeding to consider other replacement projects, such as the Banff Loop Extension, as proposed by CAPP. In the Commission's view, the scope, cost and integrated nature of the UPI set it apart from the other replacement projects identified by CAPP.

47. The Commission agrees with the UCA's proposal to add to the application requirements list the identification of the pipelines that are anticipated to be abandoned or transferred to ATCO Gas and the associated costs of abandonment or transfer to both ATCO Pipelines and ATCO Gas. In addition, ATCO Pipelines committed at the process meeting to provide the impacts of the UPI on ATCO Gas' system and revenue requirement.

48. The Commission accepts NGTL's request to require ATCO Pipelines to include in its application the criteria or policy considerations and decision-making process it used in determining the need for the UPI projects and has included this in the final application requirements list.

49. Because one of the alternatives to the UPI is the continued use of the pipelines currently in place, the Commission also considers relevant to this proceeding a review of ATCO Pipelines' current relevant emergency response plans for the Calgary and Edmonton pipelines that ATCO Pipelines is proposing to replace. ATCO Pipelines is therefore directed to include the relevant ERPs in its application.

50. In its preliminary application requirements list, the Commission included a description of all UPI-related participant involvement programs conducted to date. The Commission continues to consider information related to participant involvement to be important and relevant to this proceeding. In light of the integrated nature of the UPI, the Commission does not agree with ATCO Pipelines that stakeholder engagement on the UPI should be addressed in the subsequent facility applications. Having regard to the broad scope of the UPI and its potential to affect citizens of Edmonton, Calgary and the surrounding areas, the Commission finds it necessary to direct ATCO Pipelines to initiate a stakeholder engagement process for the UPI. As a part of that process, which would be similar to the process AP used in its "asset swap" application,[8] ATCO Pipelines must notify persons that may be directly and adversely affected by the projects that make up the UPI and provide those persons with a forum in which any questions those persons may have about the initiative can be answered in a meaningful way. ATCO Pipelines must also include in its application a summary of its UPI stakeholder engagement process and the results achieved.

51. The full final application requirements list is presented in Appendix 3.

3.3 Schedule and process

52. In the Notice, the Commission requested interested parties include in their SIPs proposals for process and schedule.

3.3.1 Views of the parties

53. Both ATCO Pipelines and the CCA proposed process schedules for the UPI proceeding in their pre-filed submissions. Those proposed schedules are summarized in the following table.

[8] ATCO Pipelines asset swap application, Application No. 1608166, Proceeding ID No. 1723.

Table 1. Proposed process schedules

Process step	ATCO Pipelines Option 1	ATCO Pipelines Option 2	UCA Option 1	UCA Option 2
ATCO Pipelines Application filing	1-Oct-12	1-Oct-12	1-Oct-12	1-Oct-12
Information requests (IRs) to ATCO Pipelines	15-Oct-12	15-Oct-12	22-Oct-12	15-Oct-12
ATCO Pipelines response to IRs	29-Oct-12	29-Oct-12	5-Nov-12	29-Oct-12
Intervener evidence	12-Nov-12	n/a	3-Dec-12	12-Nov-12
IRs to interveners	26-Nov-12	n/a	17-Dec-12	26-Nov-12
Intervener IR responses	10-Dec-12	n/a	7-Jan-13	10-Dec-12
ATCO Pipelines rebuttal evidence [9]	24-Dec-12	n/a	21-Jan-13	17-Dec-12
Oral hearing	14-Jan-13	12-Nov-12	28-Jan-13	14-Jan-13

54. Calgary recommended that, due to the scope of the application and its potential impacts, the Commission should hold oral hearings in Edmonton and Calgary with the focus for hearings in each city being related to the projects requested for that city together with matters common to all projects.

55. The CCA, Calgary and CAPP all supported the UCA's option one process and schedule. However, both CAPP and the CCA suggested that, depending upon the complexity and completeness of the UPI application there may be a need to revisit the schedule and process after the application is filed. In that respect, CAPP suggested that three weeks may be required for interveners to prepare their IRs to ATCO Pipelines and that ATCO Pipelines may require three weeks to respond to intervener IRS.

56. At the process meeting, ATCO Pipelines observed that its proposed option one is nearly identical to the UCA's option two. It stated that its option one remained its preferred process schedule.

57. NGTL, the UCA and the CCA all supported the inclusion of a technical meeting in the UCI proceeding. ATCO Pipelines submitted that, while a technical meeting was not its preference, it was not strongly opposed and noted that a technical meeting might in fact accelerate the overall process. ATCO Pipelines proposed waiting until the application was filed and then reviewing the need for a technical meeting in the schedule.

58. The CCA supported Calgary's proposal to hold UPI oral hearings in both Calgary and Edmonton. ATCO Pipelines, on the other hand, did not support this suggestion and submitted that a split hearing would only add costs and time to the proceeding.

59. Following the process meeting Ms. Brenda Blake filed a statement of intention to participate in which she voiced her objection to the UPI. Ms. Blake also expressed concern that the UPI proceeding would take place on weekdays, during office hours.

[9] ATCO Pipelines' original schedule did not include a date for its rebuttal evidence but it proposed a date at the process meeting.

3.3.2 Commission findings

60. The Commission has reviewed all submissions on proceeding schedule, including the need for a technical meeting. The Commission intends to issue a notice of application, once ATCO Pipelines' application is received. Based on the submissions received to date and the lack of opposition to a technical meeting, the Commission is of the view that a technical meeting after IR responses are received will likely be useful but will wait until ATCO Pipelines' application is filed and final comments on the schedule are received from all interested parties before making a decision on the inclusion of a technical meeting in the schedule.

61. All parties supported an October 1, 2012 application deadline. However, the Commission anticipates that ATCO Pipelines will require more time to prepare its application because of ATCO Pipelines' requirement to engage stakeholders. For this reason and other uncertainties, such as whether interveners will file evidence, the Commission has chosen not to set a process schedule at this time.

62. The Commission is of the view that a single hearing in Calgary will be the most efficient and effective manner in which to consider the oral portion of the UPI application. While Calgary has made it clear that it may have some location-specific concerns about those segments of the UPI located in the Calgary TUC, no party has raised similar concerns about the Edmonton UPI projects. However, the Commission is prepared to revisit this decision should issues similar to those raised by Calgary be raised with respect to the Edmonton UPI projects.

63. Regarding Ms. Blake's concerns about hearing hours, the Commission will ensure that she will have an opportunity to address the Commission and express her concerns about the UPI at a time that is convenient to her.

Dated on September 4, 2012.

The Alberta Utilities Commission

(original signed by)

Anne Michaud
Commission Member

Appendix 1 – Proceeding participants

Name of organization (abbreviation) counsel or representative
ATCO Pipelines (AP) N. Gretener S. Mah R. Mair A. Jukov B. Jones
ATCO Gas (AG) A. Green M. Bayley
BP Canada Energy Group ULc (BP Canada) C. G. Worthy K. Johnston
The City of Calgary (Calgary) D. Evanchuk M. Rowe H. Johnson
Canadian Association of Petroleum Producers (CAPP) R. Fairbairn
Consumers' Coalition of Alberta (CCA) J. A. Wachowich J. A. Jodoin
EnCana Corporation (EnCana) R. Powell D. Dunlop
Nexen Marketing (Nexen) D. White
NOVA Gas Transmission Ltd. (NGTL) T. Bews
Office of the Utilities Consumer Advocate (UCA) R. B. Wallace M. Keen B. Shymanski
Blake, Brenda

The Alberta Utilities Commission

Commission Panel
A. Michaud, Commission Member

Commission Staff
JP Mousseau (Commission counsel)
P. Howard
M. McJannet
D. Popowich
B. Yanchula

Appendix 2 – ATCO Pipelines UPI maps for Calgary and Edmonton

(return to text)

Appendix 2 - UPI maps for Calgary and

(consists of 2 pages)

Appendix 3 – Final application requirements list

The Commission recognizes that ATCO Pipelines has previously filed information that addresses the following information requirements in various previous proceedings. Accordingly, ATCO Pipelines may re-file any previously filed information that it considers to be responsive to the following requirements. Further, ATCO Pipelines may supplement or add to the previously filed information where it considers it necessary.

ATCO Pipelines' UPI application must identify all pipelines and facilities that comprise or are affected by the UPI, and should demonstrate to the Commission that development of the UPI is consistent with the safe, economic, orderly and efficient development of the high-pressure pipeline systems in the Edmonton and Calgary regions. ATCO Pipelines' application must include, but is not limited to, the following:

- Justification of the need to upgrade/relocate the existing system, including an overall integrity assessment of the existing system which includes but is not limited to a description of the age/remaining life, pipeline size/lengths, construction history, leak history and condition of cathodic protection.
- A description of the criteria or policy considerations and decision-making process ATCO Pipelines used in determining the need for the UPI projects, including an explanation of the underlying drivers for the UPI such as safety, reliability, demand growth, and changes to supply locations.
- A comparison of the UPI to the other alternatives considered by ATCO Pipelines using the following comparators: pipeline size/length and required capacity, timing, route options and economics (the economic assessment is to be based on a 20-year period with a +/- 30 per cent cost tolerance and should take into account any associated costs for ATCO Gas' system and other affected utilities and public works).
- An overview of what other jurisdictions in North America have done or are doing with respect to the issue of aging high pressure transmission systems located in populated areas.
- An assessment of the impacts of partial or segmented implementation versus full implementation of all segments of the UPI. The southwest Calgary portion of the UPI and any other segments that may currently be in question by ATCO Pipelines should be explicitly addressed as part of this assessment.
- Identification of the pipelines that are anticipated to be abandoned or transferred to ATCO Gas and the associated costs to both ATCO Pipelines and ATCO Gas of abandonment or transfer.
- A copy of ATCO Pipelines' current relevant emergency response plans for the Calgary and Edmonton pipelines that ATCO Pipelines is proposing to replace.
- A description and a summary of the current status of all of ATCO Pipelines' participant involvement programs for the UPI.
- A summary of ATCO Pipelines' UPI stakeholder engagement process and results obtained.

ATCO Pipelines

City of Edmonton

North West Edmonton (2011)

South West Edmonton (2013)

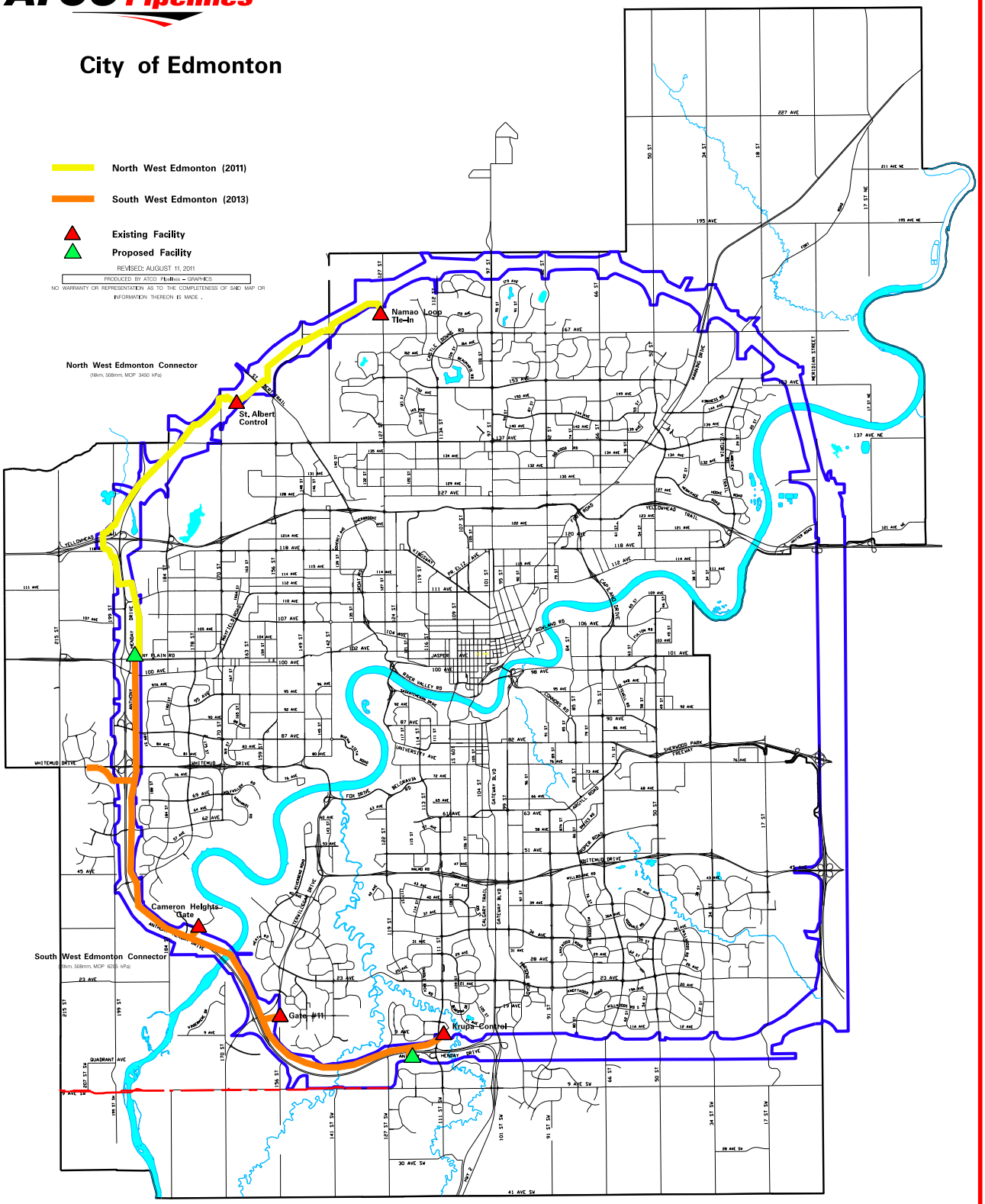
Existing Facility

Proposed Facility

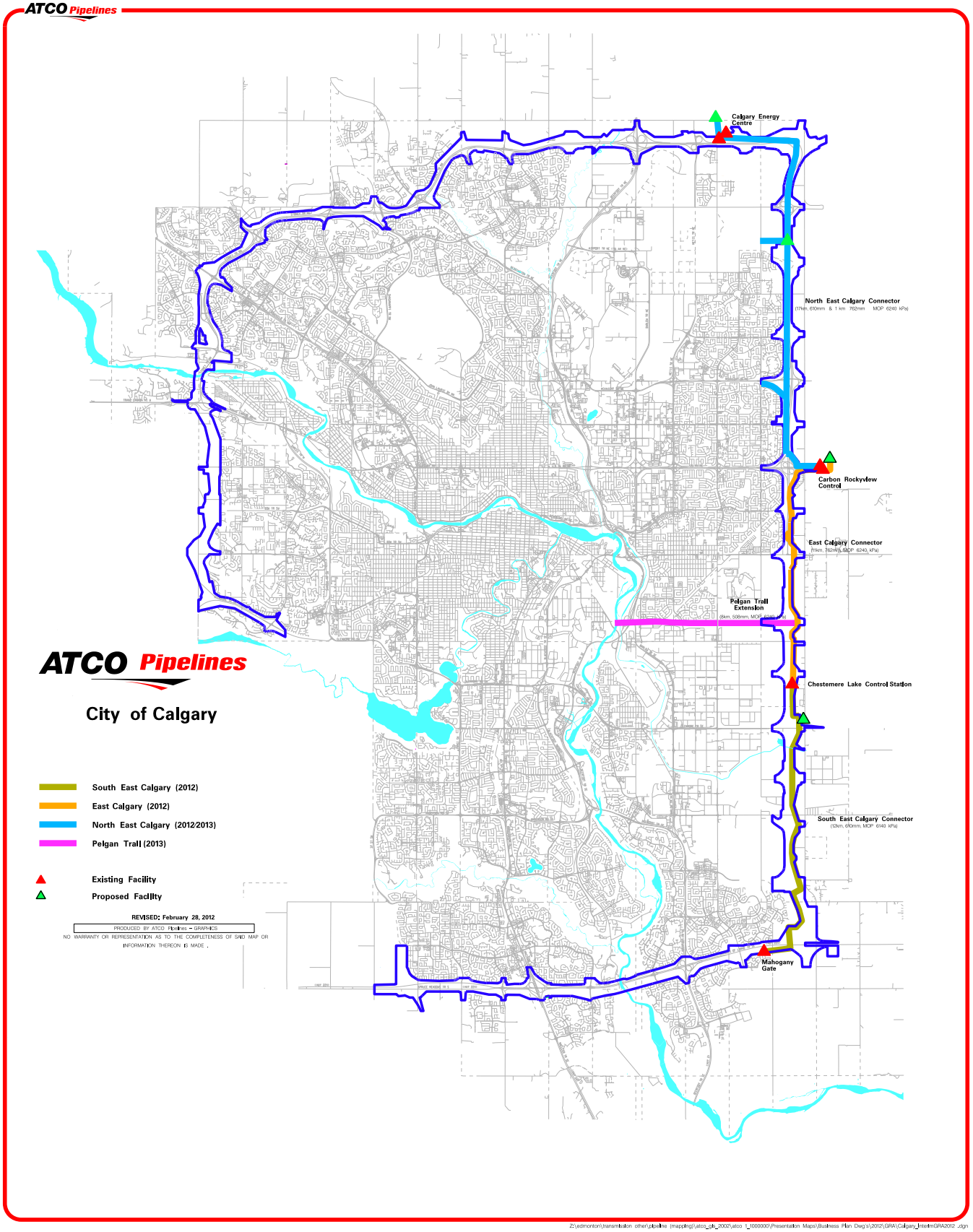
REVISED: AUGUST 11, 2011

PRODUCED BY ATCO Pipelines – GRAPHICS

NO WARRANTY OR REPRESENTATION AS TO THE COMPLETENESS OF SAID MAP OR INFORMATION THEREON IS MADE .



Z:\Edmonton\Transmission Other\Pipeline (Mapping)\atco_gis_2002\ATCO_1\1000000\Presentation Maps\Business Plan Dwg's\2012\GRA\Edmonton_InterimGRA2012.dgn


ATCO Pipelines
Calgary Energy Centre
North East Calgary Connector
Carbon Rockyview Control
East Calgary Connector
Pelgan Trail Extension
Chestemere Lake Control Station
South East Calgary Connector
Mahogany Gate
ATCO Pipelines
City of Calgary
South East Calgary (2012)
East Calgary (2012)
North East Calgary (2012/2013)
Pelgan Trail (2013)
Existing Facility
Proposed Facility
REVISED: February 28, 2012
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AUC
Alberta Utilities Commission

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www.auc.ab.ca

July 23, 2013

ATCO Pipelines
Urban Pipeline Replacement (UPR) Project
Application No. 1608617
Proceeding ID No. 1995

Ruling on UCA motion for further and better responses to information requests

1. In this ruling the Alberta Utilities Commission (Commission) must decide whether to grant a motion by the Office of the Utilities Consumer Advocate (UCA) for further and better responses to an information request it posed to ATCO Pipelines. ATCO Pipelines opposes the motion.

2. The Commission has ruled on this motion and instructed me to write to interested parties and provide its decision and reasons.

The UCA's motion

3. ATCO Pipelines filed its responses to the UCA's information requests on June 28, 2013. On July 10, 2013, the UCA filed its motion in which it requested further and better responses to UCA-AP-24 (a,d,e,g) which read as follows:

> (a) Please provide all economic analyses, assessments, assumptions and comparisons that AP provided in the Application for the three alternatives it considered if the UPR was implemented over a 10-year time span.
>
> (d) With regard to the alternative of implementing the UPR over 10 years, please provide the impact on customers' bills (and supporting calculations) after 5 years as well as after the end of the 10 years.
>
> (e) AUC-AP-35(a) asks, "What is the forecast impact to revenue requirement if the Commission approves AP's UPR project and the costs flow through to NGTL and, subsequently, to AG?" Please provide a response to this question assuming the approval of the 10 year implementation.
>
> (g) Please comment on incremental safety concerns over the 10 year period as compared to the 5 year period of the proposed UPR. Would a 10 year implementation period significantly increase safety issues as compared to a 5 year implementation period? Please explain.

4. The UCA argued that ATCO Pipelines failed to comply with Section 31 of Rule 001 because ATCO Pipelines' responses did not provide the information requested. The UCA submitted that the information sought in this information request was highly material to the

proceeding. It stated that the information sought was necessary to understand ATCO Pipelines' preferred project timing of five years and the ramifications from an economic and safety perspective if the implementation of the project was stretched to 10 years.

ATCO Pipelines' response

5. ATCO Pipelines observed that its original economic analysis for the UPR project is now based on a schedule that will result in implementation beyond the originally contemplated five years. It suggested that under the current schedule, the project would not be complete until 2018 and, because its original analysis was conducted in 2010, that analysis practically addresses an eight year implementation plan which is close to the ten years requested by the UCA.

6. ATCO Pipelines also noted that the economic analysis required to provide a response would be a complex and time consuming endeavor that would require input from ATCO Gas and ATCO Pipelines. It estimated that the analysis could take up to three months.

7. ATCO Pipelines concluded that the information sought would not be of assistance to the Commission and could not be provided with reasonable effort. It asked the Commission to deny the motion.

The UCA's reply

8. The UCA argued that the date of conception of the UPR project is irrelevant to the actual issue of the impact of project implementation on customer bills. It stated that the application contemplates a five year build period and it has requested economic analysis for a build period of 10 years.

9. The UCA questioned ATCO Pipelines' estimate of two to three months to conduct the requested economic analysis. The UCA submitted that if ATCO Pipelines' estimate was accurate, the UCA would be satisfied with more high level estimates based on reasonable simplifying assumptions so that the information could be provided more quickly. The UCA also noted ATCO Pipelines' concern that a change in project sequencing due to implementation delays could materially affect project design and costs. It noted that this was the very concern that its information request was designed to identify.

10. The UCA submitted that ATCO Pipelines' response did not address UCA-AP-24(g), which relates to the safety implications implementing the project over 10 years. It noted that this was an important issue and that ATCO Pipelines' initial response to this question was to quote the application and note that project drivers support faster timing because of the unresolved integrity risks and growing population. The UCA considered that the answer was not responsive and that ATCO Pipelines should be able to advise if the change in implementation will result in a significant change in risk.

Commission ruling

11. The Commission has decided to grant the UCA's motion. In the Commission's view, the information sought by the UCA in UCA-AP-24(a,d,e,g) is material and relevant to the issues raised in this proceeding. The Commission finds that ATCO Pipelines did not provide a full and adequate response to these questions and directs that such a response be prepared and filed in this proceeding.

12. The appropriate timing for the implementation of the UPR project was identified by the Commission as an important issue in the notice it issued for this proceeding. Further, in Decision 2012-233 the Commission stated that the purpose of this proceeding was to make three determinations about the need for the UPR project including the following:

> If it is necessary to upgrade the Edmonton and Calgary high-pressure transmission systems and if the UPI is the best alternative to meet that need, when and how should it be implemented? (emphasis added)

13. The Commission is not persuaded by ATCO Pipelines' suggestion that, because the project was conceived in 2010 and will not be complete under ATCO Pipelines' proposed schedule until 2018, the existing economic analysis is reflective of an eight year implementation period. In the Commission's view, the 10 year implementation period would see the project completed in 2023 and that is the time frame that the economic analysis contemplated in the UCA's information request.

14. While the Commission recognizes that the economic analysis requested by the UCA will require some effort from ATCO Pipelines and ATCO Gas to complete, the Commission is of the view that the two to three month timeframe proposed for the completion of this task is likely pessimistic given the work that ATCO Pipelines has already done with respect to its economic analysis. Accordingly, the Commission directs ATCO Pipelines to file the requested information as soon as possible and, by no later than September 2, 2013.

Sincerely yours,

JP Mousseau
Commission Counsel

AUC
Alberta Utilities Commission

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www.auc.ab.ca

September 20, 2013

Via email and DDS

jp.mousseau@auc.ab.ca
Writer's direct line
(403) 592-4452

Mr. Jim Graves
11461 University Avenue
Edmonton, AB T6B 1Y9

Mr. Calvin Bruneau, Chief, Papaschase First Nation
3359 – 145 Avenue
Edmonton, AB T5Y2E9

Dear Sirs:

Re: Proceeding ID. No. 1995, ATCO Pipelines application for the Urban Pipeline Replacement Project
Request to file late evidence by Mr. Jim Graves and Mr. Calvin Bruneau

On September 19, 2013, Mr. Graves sent an email to Commission Counsel seeking to file new evidence on his own behalf in Proceeding No. 1995 (the UPR proceeding). Commission counsel replied by email to Mr. Graves and instructed him to upload the document onto the Commission's EPS System. Commission counsel also informed Mr. Graves that the Commission would have to rule on his request to file that new evidence.

On September 20, 2013, Mr. Graves sent an email to Commission counsel seeking to file new evidence on behalf of Mr. Calvin Bruneau and the Papaschase First Nation.

The two emails from Mr. Graves were provided to ATCO Pipelines and, on September 20, 2013, during the course of the UPR proceeding, the Commission considered Mr. Grave's request to file this new evidence as well as submissions from ATCO on that request. The Commission ruled orally on the request as follows:

> *So with respect to those two pieces of evidence that Mr. Graves would like to file on this record, I will treat them in sequence.*
>
> *With respect to the evidence that Mr. Graves would like to tender on his own behalf, we've noted that Mr. Graves is a registered participant in this proceeding since May 10, 2013. He had full notice of the filing requirements. He failed to meet those requirements, and he is also not here to speak to the issue, so we will not allow this evidence in.*
>
> *With respect to Mr. Bruneau, it's a slightly different situation. Our understanding is that from what he said to us in his opening remarks, if we can call them that, he just found out about this proceeding last week and registered in fact on September 16th.*

His -- our understanding is that his proposed filing or the evidence he proposes to file contain two separate documents. One is a history of the Papaschase, and the second one is some sort of historical map showing the reserve boundaries.

(The) Commission also understands that the text of this document is consistent with what he had to say to us on the day that he appeared before us and also the evidence that came out through his cross-examination of the ATCO panel. Given the late date of the filing, the Commission is not prepared to enter this new written evidence into the proceeding. However, it will treat his opening statement and his cross-examination of the ATCO panel as evidence. And given that he has discussed this map in his evidence and it seems to support what he had to say in his evidence, we will add the map to be entered as evidence.

We -- in making this ruling, we also note that this is a needs proceeding, and if the UPR is approved, Mr. Bruneau will have an opportunity to participate in any related facilities proceedings down the road.

Please feel free to contact me if you have any questions with respect to the above.

Yours truly,

<Original signed by JP Mousseau>

JP Mousseau
Commission Counsel

Yours truly,

JP Mousseau
Commission Counsel

Urban Pipeline Replacement Project

AUC
Alberta Utilities Commission

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www.auc.ab.ca

September 27, 2013

Via email and DDS

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Writer's direct line
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Mr. Jim Graves
11461 University Avenue
Edmonton, AB T6B 1Y9

Dear Mr. Graves:

Re: Proceeding ID. No. 1995, ATCO Pipelines application for the Urban Pipeline Replacement Project (UPR)
Ruling on a review and variance application by Mr. Jim Graves

1. On September 26, 2013, Mr. Jim Graves asked the Alberta Utilities Commission (the Commission) to review and vary a ruling it made on September 20, 2013, with respect to the admissibility of late filed evidence proffered by Mr. Graves in Proceeding ID. No. 1995. Mr. Graves submitted that the Commission committed errors of fact, law and jurisdiction when it disallowed the late filing of new evidence and he also submitted that there are "new facts, changes in circumstances and/or facts not previously placed in evidence for various issues" that could lead the Commission to vary or rescind this ruling.

2. The Commission has decided to deny Mr. Graves' request to review and vary its decision to disallow his late filed evidence. It asked me to write to interested parties and provide its reasons for this decision.

3. It is not the Commission's practice to review its rulings on interlocutory matters absent extraordinary circumstances. In the Commission's view, the serial reconsideration of interlocutory decisions can delay proceedings, erode regulatory certainty and result in an inefficient regulatory process.

4. The Commission finds that Mr. Graves has not established that extraordinary circumstances exist so as to justify a review of the Commission's decision to deny his request to file new evidence more than three months after the date for the filing of intervener evidence has passed. Mr. Graves registered as a participant in Proceeding ID No. 1995 on May 10, 2013, and the evidence he sought to file was consistent with the issues raised in his statement of intent to participate and his information requests. If Mr. Graves wanted the Commission to consider evidence on this issue, he ought to have done so in accordance with the process schedule. Mr. Graves chose not to file evidence at that time and provided no cogent explanation in his initial request to file new information or in his application for review and variance as to why he did not file the evidence at that time, or why it only became necessary to file his evidence during the course of the proceeding. The Commission notes in this respect that Mr. Graves has appeared before the Commission and its predecessors on numerous occasions and that he is familiar with the Commission's rules and practices and its electronic proceeding system.

5. The Commission is of the view that this is sufficient to dispose of Mr. Graves' request. However, given the nature of the concerns expressed by Mr. Graves, the Commission will briefly address his allegation that the Commission's process for considering his request to file new evidence was unfair and amounted to an error of law, fact or jurisdiction. To address this issue it is necessary to briefly review the history of the proceeding and Mr. Graves' request to file new evidence.

6. The Commission set the hearing schedule for the UPR proceeding in April 2013. Mr. Graves registered in the proceeding and filed a statement of intent to participate and filed information requests all in accordance with the schedule set by the Commission. Mr. Graves filed no evidence on the date specified in the process schedule and did not advise the Commission of his intention to file evidence at a later date should he find it necessary.

7. On September 13, 2013, the Commission sent a detailed schedule for the UPR proceeding to registered parties which indicated that the evidentiary portion of the hearing would close on September 20, 2013. Hard copies of that schedule were made available to participants at the hearing. Further, the Commission webcast the hearing, so it was available for Mr. Graves to follow the progress of the proceeding despite his return to Edmonton during the course of the hearing.

8. Mr. Graves forwarded his new evidence to Commission counsel by email at 12:04 AM on September 19, 2013. Commission counsel responded to Mr. Graves at 8:09 AM on September 19, 2013 and advised Mr. Graves to upload that evidence to the Commission's electronic proceeding system. Commission counsel also stated that the Commission would decide whether to accept this new evidence after it had been uploaded. Despite assertions by Mr. Graves to the contrary, his new evidence was never uploaded as requested.

9. The Commission is satisfied that Mr. Graves knew, or reasonably ought to have known that the evidentiary portion of the hearing would conclude on September 20, 2013. Furthermore, Mr. Graves was aware that he required the Commission's permission to file new evidence during the course of the hearing and that the Commission would not make that decision until Mr. Graves' new evidence was uploaded onto the electronic proceeding system. Mr. Graves chose not to upload his new evidence or to travel to Calgary to speak to that request prior to the close of the proceeding. Mr. Graves had ample opportunity to address this issue before the Commission but failed to do so in a reasonable way. The Commission concludes that Mr. Graves has not demonstrated that the Commission committed an error of law by considering his request to file new evidence in the manner that it did.

10. Mr. Graves also submitted that he was relying on the existence of new facts, changed circumstances or facts not previously placed in evidence in support of his review request. Mr. Graves did not specify the facts or circumstances he was relying upon in support of his request, but did provide a list of circumstances under the heading "Reasons for varying". The Commission finds that none of the circumstances cited by Mr. Graves are new facts, changed circumstances or facts not previously placed in evidence. Mr. Graves' review request fails upon this ground as well.

11. Having regard to the foregoing reasons, the Commission has denied Mr. Graves' request to review and vary its ruling disallowing the late filing of his new evidence in Proceeding ID No. 1995.

Yours truly,

JP Mousseau
Commission Counsel

Urban Pipeline Replacement Project

AUC
Alberta Utilities Commission

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October 4, 2013

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Chief Calvin Bruneau
Papaschase First Nation
3359 – 145 Avenue
Edmonton, Alberta T5Y 2E9

ATCO Pipelines Ltd.
Urban Pipeline Replacement Project (UPR)
Application No. 1608617
Proceeding ID No. 1995

Dear Chief Bruneau:

Ruling on a review and variance application by the Papaschase First Nation

1. On October 1, 2013, the Papaschase First Nation asked the Alberta Utilities Commission (AUC or the Commission) to review and vary a ruling it made on September 20, 2013, with respect to the admissibility of late filed evidence proffered by Chief Bruneau on behalf of the Papaschase First Nation, in Proceeding ID No. 1995. The Papaschase First Nation submitted that the Commission committed errors of fact, law and jurisdiction when it disallowed the late filing of new evidence and that there are "new facts, changes in circumstances and/or facts not previously placed in evidence for various issues" that could lead the Commission to vary or rescind its ruling.

2. The Commission has made a decision on the Papaschase First Nation's request to review and vary its prior decision to disallow the late filed evidence. The Commission has asked me to write to interested parties and provide the reasons for its decision.

3. It is not the Commission's practice to review its rulings on interlocutory matters absent extraordinary circumstances. In the Commission's view, the serial reconsideration of interlocutory decisions can delay proceedings, erode regulatory certainty and result in an inefficient regulatory process.

4. The Commission finds that the above review and variance request relies upon substantially the same grounds as Mr. Graves' September 25, 2013, review and variance request, which the Commission denied on September 27, 2013. Specifically, both Mr. Graves and the Papaschase First Nation alleged that the Commission's process for considering their respective requests to file new evidence was unfair and amounted to an error of law, fact or jurisdiction.

5. To address this issue it is necessary to briefly review the history of the proceeding and the Papaschase First Nation's request to file new evidence.

6. The Papaschase First Nation registered in Proceeding ID No. 1995 orally at the commencement of the hearing on September 16, 2013. The Commission requested that

Chief Bruneau speak with Commission counsel about the Papaschase First Nation's participation in the proceeding. Commission counsel advised Chief Bruneau that if the Papaschase First Nation intended on submitting evidence that it be uploaded to the Commission's electronic proceeding system.

7. Chief Bruneau submitted the Papaschase First Nation's statement of intent to participate to Commission staff via email on September 16, 2013. At 9:09 a.m. on September 20, 2013, after the hearing commenced, Commission counsel received an email from Mr. Graves indicating that he was submitting the evidence of the Papaschase First Nation. Commission Counsel had previously advised Mr. Graves that the Commission would not consider an application to file new evidence until that evidence was uploaded onto the AUC's electronic filing system.

8. The Commission is of the view that the Papaschase First Nation knew, or ought reasonably to have known that it required the Commission's permission to file new evidence during the course of the proceeding and that the evidentiary portion of the hearing would conclude on September 20, 2013. If the Papaschase First Nation wanted the Commission to consider its evidence, it ought to have filed the evidence on the AUC's electronic filing system and arranged for a representative to be present in the hearing room to speak to this issue. The Papaschase First Nation chose not to upload its evidence or to travel to Calgary to speak to that request prior to the close of the proceeding.

9. Process schedules were made available to those in the hearing room as well as posted on the AUC's electronic filing system. Also, the Commission webcast the hearing so it was available for Chief Bruneau to follow the progress of the proceeding despite his return to Edmonton during the course of the hearing. The Commission finds that the Papaschase First Nation did not make reasonable efforts to file evidence or speak to this matter. The Commission concludes that the Papaschase First Nation has not demonstrated that the Commission committed an error of law by considering its request to file new evidence in the manner that it did.

10. The Commission also finds that the Papaschase First Nation has failed to demonstrate that there are new facts, changed circumstances or facts not previously placed in evidence that could lead the Commission to vary or rescind its decision to disallow the late filing of evidence from the Papaschase First Nation. The Papaschase First Nation indicated that new facts, changed circumstances or facts not previously placed in evidence that it was relying upon in support of its request was that the information contained in the evidence was needed to develop and sustain a working relationship with ATCO Pipelines. The Commission finds that none of the facts or circumstances contained within the Papaschase First Nation's request are new facts, changed circumstances or facts not previously placed in evidence. The Papaschase First Nation's review request fails upon this ground as well.

11. In his request for review and variance Chief Bruneau stated:

> Atco confirms that [it] has only reviewed the first four pages of Mr. Bruneau's evidence and it finds nothing substantially different from what has come before the Commission through Mr. Bruneau's opening statement and his cross-examination of the Atco panel. The importance of the remainder of the evidence that Atco did not have the opportunity [to] review is the need to develop and sustain a working relationship with the PFN throughout all processes, right on through to facilities and construction.

12. The Commission's September 20, 2013, ruling to exclude the late filed evidence from the record in Proceeding ID No. 1995 does not preclude the communication of the information contained within the late filed evidence to ATCO Pipelines. If the Papaschase First Nation desires ATCO Pipelines to be aware of the information contained within the late filed evidence for consultation purposes, it may elect to explore other means to discuss the information with ATCO Pipelines. In this regard, Mr. Brendan Dolan, President of ATCO Pipelines, intimated such discussions to Chief Bruneau during cross-examination:

> Sir, now that we are aware of the issue, we will definitely be including you and you[r] Nation into discussions we have as we look to build new facilities in the transportation utility corridor in the TUC if that's the direction we go with this project.[1]

13. Having regard to the foregoing reasons, the Commission has denied the Papaschase First Nation's request to review and vary its ruling disallowing the late filing of new evidence in Proceeding ID No. 1995.

Yours truly,

(sent via email)

Shanelle Sinclair
Commission Counsel

[1] Transcript, Volume 2, page 436, lines 18-23.

Application No. 1608617, Proceeding ID No. 1995
CAL-AP-13(a) Attachment 1
Page 1 of 1

(return to text)

ATCO Pipelines

City of Edmonton

PLANNED PROJECTS

- Existing High Pressure Natural Gas Pipelines
- Northwest Pipeline (Constructed in 2011)
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- Southwest Pipeline
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- Northeast Pipeline
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- South Edmonton Pipeline
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- Pipelines to be Abandoned

REVISED: February, 2013

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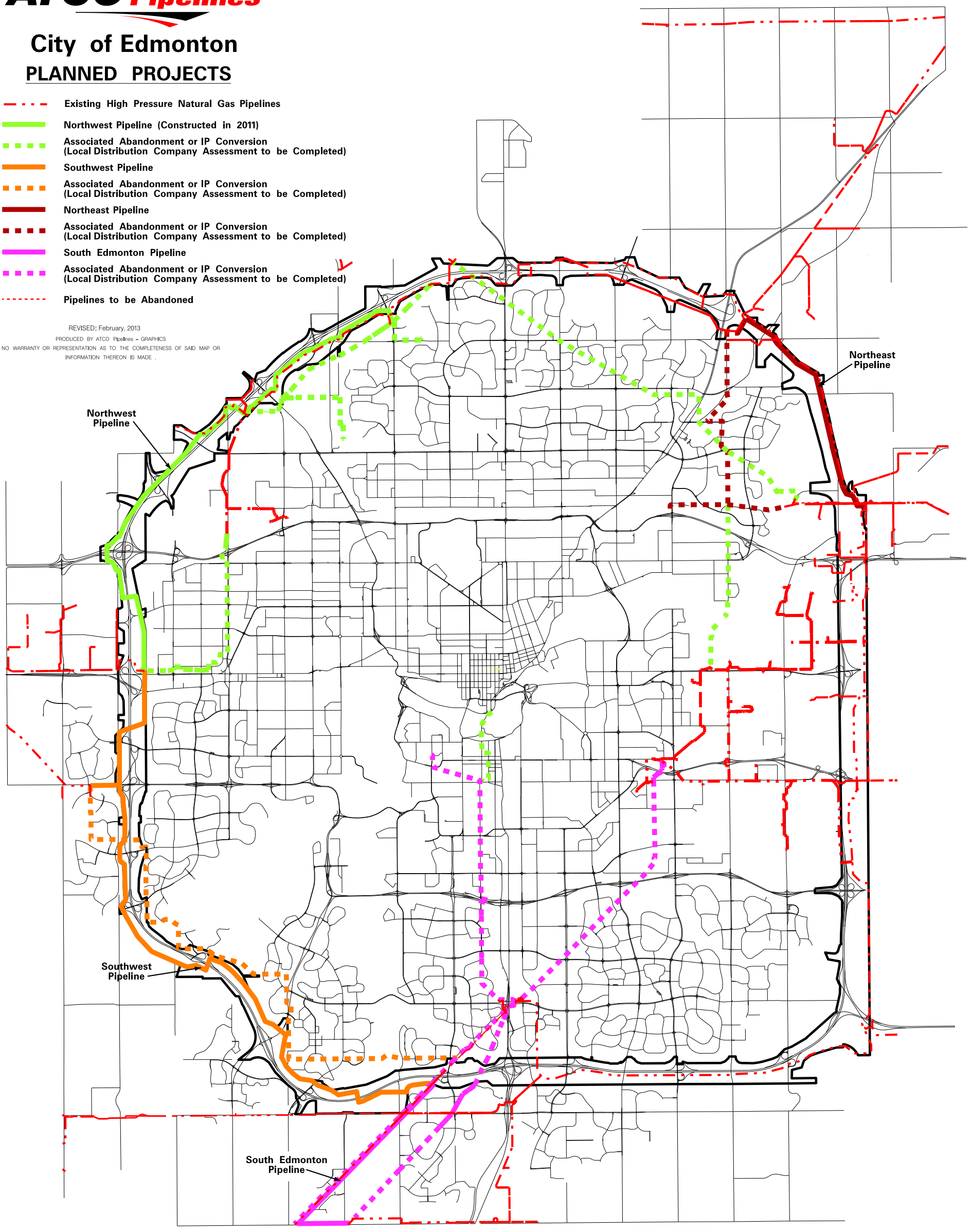

(return to text)

22" NGTL

Proposed 20" (508mm) North West Calgary Connector 5085 kPa

Proposed 406mm Jumping Pound Extension

Proposed 24" (610mm) North East Calgary Connector 6140 kPa

Proposed 406mm Temple Gate Lateral Extension

Proposed 20" (508mm) North West Calgary Connector 6140 kPa

Peigan Trail Extension

Proposed 30" (762mm) East Calgary Connector

(to be delicensed)

Proposed 20" (508mm) South West Calgary Connector 6140 kPa

Proposed 24" (610mm) South East Calgary Connector 6140 kPa

Jumping Pound West

Simons Valley Branch

Transcanada Turbines Branch

Petrogas Airdrie

Petrogas Meadowfield

Rockyview Branch

Chestermere Lake Branch

Carbon Line

Jumping Pound Trans

Cedarbrae Branch

Hull Boys Estate Lateral

Carbon Meadows Branch

Woodlands Branch

Loop Line

Main Line

Turner Valley No. 2

Fish Creek

Bow Valley Ranch Lateral

ATCO Pipelines

City of Calgary

PLANNED PROJECTS

- Existing High Pressure Natural Gas Pipelines
- East, Southeast, and Northeast Calgary Connectors
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- Northeast Connector to East Calgary B
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- Peigan Trail Extension and Northwest Connector
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- Southwest Calgary Connector
- Associated Abandonment or IP Conversion (Local Distribution Company Assessment to be Completed)
- NGTL 22" Subject to Asset Swap

REVISED: February, 2013

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