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Janet P. Kennedy
Vice President, Regulatory Affairs & Gas Supply

Via Web Upload and Courier

July 6, 2018

B.C. Utilities Commission
Suite 410 - 900 Howe Street
Vancouver, BC V6Z 2N3

File No.: 4.2.7 (2018)

Attention: Patrick Wruck
Commission Secretary and Manager, Regulatory Support

Dear Mr. Wruck:

Re: Pacific Northern Gas (N.E.) Ltd.
Fort St. John/Dawson Creek and Tumbler Ridge Divisions
2018-2019 Revenue Requirements Application
PNG(NE) Response to Commission Panel IR No. 1

Accompanying, please find responses to the above noted Information Requests uploaded to the Commission's website earlier today.

Printed copies of the responses will be distributed by courier, including 10 copies to the Commission's office and a single copy to each of the parties noted below who registered as interveners into this Application.

Please direct any questions regarding these applications to my attention.

Yours truly,

J.P. Kennedy

cc. Leigha Worth (BCPIAC) – BCOAPO
James Wightman (BCPIAC) – BCOAPO

Pacific Northern Gas (N.E.) Ltd.
2018–2019 Revenue Requirements Application

PANEL INFORMATION REQUEST NO. 1 TO PNG(NE)

1.0 Reference: RATE BASE
PNG 2018-2019 RRA, Exhibit B-3, BCUC IR 46.1; PNG(NE) 2018-2019 RRA, Exhibit B-9, BCUC IR 83.0
Geographic Information System and Related Projects

The 2018-2019 Revenue Requirements Application includes capital and operating expenditures related to the Geographic Information System (GIS), capital expenditures related to the Asset Record Modernization projects and operating expenditures related to the Digital Data Mapping project and a new Computerized Maintenance Management System (CMMS).

In response to BCUC IR 46.1 PNG appended a copy of its business case for the GIS Implementation Project, which states that on page 8 that the GIS Project supports the Asset Record Modernization initiative. Further, in response to BCUC IR 83.2.3 in the PNG(NE) RRA proceeding (Exhibit B-9), PNG(NE) states that the, "digital data mapping project supports the transition to PNG's enterprise geographic information system."

1.1 Please provide a detailed discussion of how the GIS project, Asset Record Modernization project, Digital Data Mapping project and CMMS are related to each other and if there are any interdependencies between the projects.

Response:

PNG(NE) has identified four projects – the GIS implementation, Asset Record Modernization, Digital Data Mapping and CMMS implementation projects – that collectively address the growing gap at PNG(NE) between the state of utility asset information, and the management thereof, and that of its peer utilities.

The GIS implementation project includes the identification, verification and migration of data from existing hardcopy and electronic maps and schematics, and augments these records with field work to accurately capture spatial coordinates of key assets. The GIS implementation project, by itself, will deliver a record of PNG(NE)'s pipeline assets that is spatially accurate, complete and current. This deliverable, considered in isolation of the other three projects, will realize the project benefits identified on page 8 of the business case for the GIS Implementation Project.

However, further opportunities to leverage the investment in the GIS have been identified. The completion of a rigorous risk assessment for PNG's pipeline cannot be properly completed without the identification of geotechnical and hydrological hazards, and high consequence areas (HCA's)

located in proximity to the pipeline. As described in the response to BCUC IR 2.83.2, the Digital Data Mapping project will identify geo- and hydrological hazards, capture depth of cover measurements, and update class location information encountered along PNG and PNG(NE)'s rights of way.

While this information is useful on its own, incorporating it into PNG(NE)'s GIS facilitates a more efficient, transparent and reproducible approach to risk assessment. It is for this reason that PNG(NE) stated in its response to BCUC 2.83.2.3 that "the [D]igital [D]ata [M]apping project supports the transition to PNG(NE)'s enterprise geographic information system". While the timing of the Digital Data Mapping and GIS Implementation projects need not be coordinated for either project to be successful, the actualization of the full benefits of the Digital Data Mapping project cannot occur until both it and the GIS project are completed.

To summarize, the GIS and Digital Data Mapping projects together provide a complete record of PNG(NE)'s in-ground assets that includes: (i) the location on Earth; (ii) characteristics such as pipe diameter, wall thickness, material and maximum operating pressure; and (iii) situation information such as topology, hydrology, geotechnical, population and buildings (class location), and transportation and municipal infrastructure.

In contrast, the CMMS implementation project will deliver an asset maintenance management system that contains transactional information – more specifically preventative and corrective maintenance – performed on the pipeline system, valves, and individual equipment located at regulator and compressor stations. This transactional information will cover maintenance and inspection activities, line hits, leak surveys, cathodic protection surveys, and related service orders.

The CMMS will replace PNG(NE)'s current system of asset management that is implemented through multiple spreadsheets, independent legacy tools, and paper-based systems. The CMMS will enforce a centralized, consistent, and standardized work flow. Technicians will receive auto-generated work orders automatically scheduled by the CMMS, based on the maintenance history of the asset. A history of completed work orders will be maintained in a centralized repository that allows for detailed analyses and reporting to support the optimization of risk, cost and performance.

As described in PNG(NE)'s responses in the two rounds of information requests, the benefits of its CMMS implementation include streamlined regulatory compliance, improved management of risks related to safety and reliability, effective use of resources, and increased customer satisfaction.

The CMMS is a standalone system and its implementation is being completed independently of the GIS implementation. However, an integration of the CMMS and GIS systems is contemplated in the future in order to facilitate more complex queries and analyses that merge the spatial information in GIS with the transactional information in CMMS. Again, this integration is not a critical success factor for either the CMMS or GIS implementation projects, but the integration would realize additional value from both systems.

Finally, the Asset Record Modernization project is a completely autonomous initiative that will digitize pipeline and associated facility design and construction records. This includes improvements to drawings and documentation to ensure detailed engineering and asset drawings are formalized for compliance and safety purposes. This suite of records include: Piping & Instrumentation Drawings (P&IDs); Line Lists; Instrumentation Lists; Equipment Lists; Piping Models; Plot Plans; and Piping

specifications. Data on the in-ground pipeline assets maintained in the GIS will augment the records that are digitized, maintained and managed by the Asset Record Modernization project. While the successful completion of the GIS implementation is not critical to the success of the Asset Record Modernization project, the GIS will enhance the effectiveness of PNG's management of its asset records.

To summarize, PNG(NE) needs to improve its ability to make decisions related to the management of its assets. Improved decision making contributes to the optimization of asset maintenance, improves worker and public safety, enhances the reliability of the service PNG(NE) provides to its customers, creates opportunities for efficiency, and allows PNG(NE) to comply with existing and future regulatory requirements.

To improve its decision-making ability, PNG(NE) must take a systematic approach to managing its gas system assets. Taking a systematic approach requires that PNG(NE) move from its traditional paper-based methods to an integrated information systems approach to data and information collection, management, and analysis. Taking an integrated information systems approach to data information collection, management, and analysis, in turn requires PNG(NE) to implement a formal asset management system that includes geospatial information and hazard assessment and risk management.

PNG(NE) has identified four projects that, each on its own, address an important aspect of PNG(NE)'s efforts to modernize the management of its assets. The integration and alignment of each of these projects in the manner described provides additional benefits in the form of effective and efficient asset management.

1.1.1 Specifically, please provide a detailed discussion as to whether any of the projects would be able to continue in the absence of the others and why.

Response:

Please see the response to Question 1.1.

In response to BCUC IR 83.1.1, PNG(NE) states that there are no operating costs for the Asset Record Modernization project and provides the following table of the consolidated capital costs for the project:

Asset Records Modernization Project Capital Costs	2018	2019	2020	2021	2022	Total
PNG West	271,000	292,000	198,787	149,090	149,090	1,059,967
PNG(NE) FSJ/DC	15,200	-	84,484	126,727	126,727	353,137
PNG(NE) TR	-	-	14,909	22,364	22,364	59,636
	286,200	292,000	298,180	298,180	298,180	1,472,740

1.2 Please clarify why there are no operating expenses associated with the Asset Record Modernization Project.

Response:

It is understood by PNG(NE) that the records associated with a given asset contribute to that assets value. Undertaking a comprehensive and system-wide program to modernize asset records via digitization, field verification, and data precision and accuracy improvement provides significant added value to the associated asset and, hence, provides reasoning for the capitalization of such work. Furthermore, the associated work will be a focused effort by external third-party resources specializing in as-built records related work, 3D modelling, and engineering documentation improvement, will be entirely exclusive of on-going routine operation and maintenance activities. Following completion of the records modernization for a given asset, future work associated with those records (maintaining of the records data set) may be considered O&M but this would not be captured within this specific initiative. Such operating expenses would then be captured by the associated coding for the specific asset, as opposed to the centralized cost capture with the BCUC Account 810 budget centre for this project initiative.

1.3 Please clarify why there are minimal capital expenditures related to the Asset Record Modernization project for PNG(NE) until 2020.

Response:

This is purely a function of prioritization from the perspective of existing records condition, associated risk, and typical frequency upon which the associated records are relied, as well as resource availability (both PNG(NE) internal for project management and delivery and external resources).

2.0 Reference: RATE BASE
Exhibit B-1-1, Tumbler Ridge, p. 57; Exhibit B-8, BCUC IR 45
Tumbler Ridge - Processing Plant Improvements

Table 28 of the Amended Application includes $178,807 for capital expenditures related to Processing Plant Improvements.

In its response to BCUC IR 45.2 PNG(NE) states that:

> For the Processing Plant Improvements ($178,800) identified in Table 28 of Exhibit B-1-1, the forecast cost includes the replacement of an amine cooler bundle that has experienced minor leaks and is at the end of life. Unfortunately, in early 2018, PNG(NE) realized the full risk associated with this situation and had to expedite the project from the planned activity for 2019 with a full replacement of the cooler bundle due to a major failure. The final cost of the amine bundle cooler replacement is expected to be $149,000.
>
> PNG(NE) also notes that it completed an external assessment of the processing facility in September 2017, whereby a team of professional engineers and experienced gas plant professionals investigated the current state of the gas processing plant facility, with a view of characterizing the potential risks and identifying costs necessary to extend the life of the plant. Projects identified include water system upgrades, electrical upgrades (parts replacements for MCC, power cables/transformer insulation, grounding), sour gas blowdown to flare replacements, installation of the flare sweep system, control and system upgrades. The cost of the higher priority work requires further analysis and prioritizing, but could be as much as $150,000. Following PNG's 2018 annual risk meeting, PNG(NE) will commence early stage activities in 2019 of planning, engineering, material supply on higher priority and compliance projects and has set aside approximately $30,000 for these projects in Test Year 2019. PNG(NE) anticipates seeking further budget approvals for subsequent expenditures to be incurred in future revenue requirements applications.

2.1 The Amended Application includes forecast capital expenditures for processing plant improvements of $178,800; however, in its response to BCUC IR 45.2, PNG(NE) states that it, "had to expedite the project from the planned activity for 2019 with a full replacement of the cooler bundle due to a major failure. The final cost of the amine bundle cooler replacement is expected to be $149,000." Please clarify if PNG(NE) is seeking approval of processing plant improvements for Test Year 2018 and/or Test Year 2019, the amount of the expenditures for each test year and the activities that the expenditures in each test year relate to.

Response:

In the Amended Application, PNG(NE) was seeking approval of processing plant improvements for Test Year 2019 of $178,800. As noted in the question, PNG(NE) had to expedite the project from the planned activity for 2019 with a full replacement of the cooler bundle in 2018 due to a major failure, with the final cost of the replacement being $149,000.

Consequently, PNG(NE) is seeking approval of processing plant improvements for Test Year 2018 in the amount of $149,000 to cover the amine bundle cooler replacement.

For 2019, PNG(NE) is seeking approval for $30,000 in capital expenditures related to the two highest priority projects from the engineering review described in the preamble, including:

1) Early stage study work for the Motor Control Center (MCC) Upgrade ($25,000) that will focus on ensuring code requirements and determining cost of new panels. An operational review and decommissioning of some of the old components will be done at the same time as some switches are no longer used but are still energized at the panel; these will be removed as part of the project. The full upgrade would be undertaken in 2020 and budgeted as part of the next RRA. At this time, PNG(NE) estimates the cost of this upgrade to be approximately $100,000.

2) PNG(NE) will also move forward with study work on a Water Treatment Plant Upgrade ($5,000) for providing acceptable water for the operation. The system PNG(NE) presently uses is acceptable, however it needs to be relocated out of the MCC area due to electrical and water proximity. This will involve some contractor cost for piping and labor to relocate. The full cost of this upgrade has yet to be determined and would be budgeted for 2020 as part of the next RRA. At this time, PNG(NE) estimates the cost of this upgrade to be approximately $10,000.

If approved by the Commission, PNG(NE) will amend its final regulatory schedules to reflect this change in timing of these capital expenditures.