Operations Plan
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2.4 OPERATIONS PLAN

This Section 2.4 describes the O&M component as planned by TransCanada for the physical operation of the Pipeline System. Beginning with Section 2.4.1 "Expansion" responses are also provided to the requirements of the RFA with respect to the commercial operations of the system.

1) TransCanada as Operator

TransCanada has developed and implemented best practices in operations, based on over 50 years of O&M experience on its gas transmission system, which now totals over 36,500 miles and spans the North American continent. TransCanada also brings to the Alaska Pipeline Project a superior industry record for safety, reliability and operational excellence.

A reliable and low-risk pipeline operation begins with the earliest stages of project planning. To achieve a high level of confidence in its operations, TransCanada has implemented thorough and appropriate processes and procedures through all aspects of engineering, procurement and construction – as well as operations – all supported by prudent materials and work specifications, audit systems, training programs and documentation practices. TransCanada's system of quality management satisfies, and in many cases exceeds, federal, state and provincial regulatory requirements in the United States and Canada.

As part of its operational excellence strategy, TransCanada has engaged a third party market research company, Ipsos Reid, to conduct an annual survey of its pipeline customers. The objective of this survey is to obtain feedback on performance in core business processes as well as industry issues and initiatives. This feedback is used to direct objectives for the commercial areas in the subsequent year. The results of this survey have demonstrated successful continuous improvement in performance over the past several years. Areas within which TransCanada excels include transactional systems, customer service, and customer relationships.

The following sections highlight TransCanada's main processes and systems that are in place for central operations and field maintenance of its pipelines. These would be implemented on the APP.

2) Regulatory Compliance

During the Pipeline Operations Phase of the Project, TransCanada would comply with all applicable federal, provincial, and State acts, regulations, codes and statutes including:

- Alaska Administrative Codes
- Alaska Statutes
- U.S. Department of Transportation *Code of Federal Regulations* 49 C.F.R. § 192
- Federal OSHA
- State Approved OSHA Plan managed by the Alaska Department of Labor and Workforce Development
- U.S. Environmental Protection Agency CFR Title 40: Protection of Environment
- NEB *Onshore Pipeline Regulations*

- ASME B31.8S

3) Asset Management System

TransCanada's Asset Management System governs how the company manages its pipelines over the full life cycle. The management system consists of an integrated asset management plan and scalable risk based processes, techniques and tools to manage the assets' cost, availability, efficiency, quality, regulatory, safety and environmental expectations.

4) Risk Management Approach

TransCanada utilizes a risk-based management approach in the life cycle management of its facilities. Risk assessment practices, tools, and structured decision-making processes enable a comprehensive, quantitative evaluation of proposed risk mitigation activities, integrity programs and projects. TransCanada's methodology involves quantitatively estimating and integrating failure frequencies and consequences on a joint by joint basis.

5) Emergency Response

TransCanada's Emergency Management System is designed to provide effective and comprehensive response to emergency events. TransCanada's overall objective is to reduce the frequency and impact of emergencies by focusing on two key objectives: preparedness and response. TransCanada's Emergency Management System processes are tested via table-top and field exercises on a regular basis.

TransCanada works with external emergency response agencies in the areas in which it operates to ensure appropriate communication; understanding, cooperation, and alignment of plans.

6) Incident Management

TransCanada's Incident Management System is a vital component of loss control management. Improvement in loss control management translates to improvement in operational performance, increased work efficiencies and a greater return on the investment of resources. TransCanada's Incident and Issue Tracking process and system responds to, reports, investigates, tracks, documents and otherwise manages incidents and issues.

7) Health, Safety and Environment

TransCanada's HSE Management System is modeled after ISO 14001. All activities, including safety, health and environmental performance, meet applicable laws, regulations and corporate standards. Operational policies, practices and activities demonstrate utmost care for people's safety and stewardship of the natural environment.

8) Integrity Management Processes

a) General Pipeline Maintenance

TransCanada's comprehensive Integrity Management Process for Pipelines ("IMPP") is used to monitor and ensure the integrity of all its pipeline related facilities. This process utilizes advanced inspection and mitigation technologies applied within a comprehensive risk-based methodology. Risk assessment is used to identify potential integrity threats

and initiate inspection and mitigation activities, while results from advanced inspections for known or suspected integrity threats are used to develop specific integrity maintenance activities. During operations, the implementation of the IMPP reduces environmental impacts; protects the installed pipelines and facilities; and maintains reliability.

Annually, all TransCanada pipeline facilities are subject to an annual system-wide risk assessment, per the IMPP. Results of the assessment are used to develop the annual Pipeline Maintenance Program and prioritize the maintenance and mitigation activities that are required to maintain adequate safety and reliability.

b) General Plant Maintenance

The Plant Integrity Management Program specifically addresses facilities integrity related operation and maintenance activities. Through the continuous review, feedback and performance measure monitoring inherent in the program, it is also used to influence the design, construction and retirement of these facilities.

The scope of the program covers: compressor units and auxiliary systems; electrical and control systems and instrumentation; measurement systems; civil structures; HVAC systems; environmental protection systems; noise; and gas quality. The program addresses specifications, repair processes, work scopes, inspection and monitoring techniques, and maintenance management philosophies that balance risk, cost, and performance requirements of the facilities.

Failure modes, hazards and risks to facilities are reviewed regularly, using various sources of data and information. Integrity is maintained through a comprehensive risk-based approach to ensure facilities meet expected requirements with regard to safety of the public and TransCanada employees, potential impact on receipt and delivery reliability; potential impact on the environment; public and regulatory perception; protection of the installed asset base; and lowest life-cycle cost.

The program objectives are achieved by proactive processes that ensure mitigation activities address the areas of unacceptable risk on the system. Management of risk based integrity is described within the Integrity Management System.

c) Extreme Geotechnical Loadings

In the harsh northern areas of North America, it is recognized that frost heave, thaw settlement and creeping slope movement are loading mechanisms that accumulate over the operating life of a pipeline. Therefore, an integrated approach that considers the entire pipeline life-cycle is required.

TransCanada's base design for pipelines is intended to be safe for all design conditions that can be reasonably expected. However, due to the natural variability in soil and thermal conditions and the variability in pipe material and other factors, TransCanada's IMPP must be relied upon to ensure pipeline integrity under extreme loading conditions. The slow and cumulative nature of frost heave, thaw settlement and creeping slope movement processes are threats that can be controlled to a high confidence level by effective implementation of the IMPP. Critical locations and areas where a level of uncertainty may have existed at the design stage of the APP would be monitored during

operations as part of the IMPP, and remedial action would be taken where required to ensure that design strain demands are not exceeded.

For pipelines subject to seismic hazards, TransCanada carries out its design such that pipeline integrity and continued transportation services are provided for all seismic events that can be reasonably expected during the operating life. For seismic events of even greater magnitude, the pipeline is designed to maintain integrity without the loss of containment. After each major seismic event, inspection, assessment and repairs, as necessary, are completed to provide confidence in safety and reliability.

9) Operating and Maintenance Procedures

TransCanada has demonstrated an exceptional record of system reliability and safety on its existing assets. Maintenance programs have evolved by applying principles of preventive, predictive and reliability centred maintenance. As a result, TransCanada has developed a comprehensive set of TransCanada Operating Procedures ("TOPs") and associated systems. Additional TOPs would be developed, and others modified, to address any unique requirements of the APP. Facilities would be monitored utilizing an advanced predictive monitoring system to ensure that integrity and availability are appropriately maintained.

TransCanada carries out all its facilities work in accordance with the TOPs which, in turn, are managed in accordance with the TOPs Management System. The TOPs document provides detailed instructions and procedures for operations, maintenance, and repair of the pipeline and associated facilities. TOPs are managed and accessed by employees through an electronic document management system.

TOPs are prepared in accordance with applicable Canadian and U.S. codes and regulations, as well as recognized industry standards including those of the American Petroleum Institute, American National Standards Institute, American Society of Mechanical Engineers, Institute of Electrical and Electronics Engineers, National Electrical Manufacturers Association and International Electrotechnical Commission, as well as TransCanada's internal Engineering Standards. Each TOP is developed to incorporate critical elements of TransCanada's HS&E management process. Each TOP is designed to prevent incidents.

10) Work Management for Field Operations

TransCanada's Work Management Process ensures that work is completed effectively and efficiently. This includes ensuring that regulatory, safety, commercial, and system operation requirements are met. The process specifies the identification, planning, scheduling, assigning, and execution of field asset work. It also outlines the follow up and performance analysis required for work completion and for continuous process improvement. The process is managed through a computerized maintenance management system.

11) Leak Detection and Repair Program

TransCanada's Leak Detection and Repair program reduces fugitive natural gas leaks and emissions. The leak detection process consists of performing regularly-scheduled leak detection on all components. When a leak is identified, it is entered into a tracking database which is linked to the maintenance management database. If the leak is easily repaired, the

work is completed immediately. Leaks that require outages are coordinated with future major outages unless they involve imminent threat to health and safety or the environment.

12) Public Awareness

TransCanada's Integrated Public Awareness program informs key members of the public of the locations and activities associated with TransCanada facilities. The ultimate objective of this program is to protect the public from injury; prevent or minimize environmental issues; protect the facilities from damage by the public; and provide an opportunity for enhancing ongoing public awareness. The program ensures that emergency services agencies fully understand TransCanada's emergency response procedures and how to effectively work together during an emergency. The program also informs contractors of work requirements at or near TransCanada facilities.

13) Land Management

TransCanada's activities related to land management are governed by the company's Land Management System. An efficient land management process is a major factor in ensuring that TransCanada is successful in managing future and ongoing assets. Key land management components include:

- identifying land requirements and potential issues on capital projects, acquisitions or development programs;
- leading facilitation in unique, localized regional land issues, claims and negotiations, and recognizing precedent-setting impacts;
- supporting and implementing the annual Integrated Public Awareness program; and
- actively participating in special interest groups.

14) Community Investment and Relations

TransCanada's Community Investment Program seeks to identify and forge meaningful partnerships with not-for-profit organizations in communities where the company conducts its business. These partnerships enhance the value of community-based initiatives and emphasize education and lifelong learning opportunities within the education, health and human services, environment, and civic investment support categories.

15) Operations Control Center

Existing facilities within TransCanada's Control Center would be utilized to accommodate the monitoring, operation and control of the APP. The Operations Control Centre ("OCC") is staffed by control center operators on a 24-hour per day, 7-day per week basis and utilizes a technically advanced, comprehensive SCADA system for remote monitoring and control. Each TransCanada pipeline is displayed in real time on a monitoring console. All major pipeline valves are equipped with automatic shutdown controls designed to activate in the unlikely event of a pipeline break.

A redundant, fully functional Backup Control Centre ("BCC") is in place and may be utilized in the event that the OCC is interrupted for any reason. The BCC, along with all associated systems are tested and exercised regularly to ensure availability for service at all times.

16) Staffing Approach

On the APP, general and commercial operations would be integrated into TransCanada's existing business. Field Operations would be staffed to complete preventive and corrective maintenance; 24/7 call out response; emergency response; One-Call response, environmental, safety and community management; and associated support activities. Wherever possible, field staff would be hired locally.

17) Training

TransCanada's formal training and development is managed through a Performance and Development System. Each employee has a training plan that includes policies, procedures and safety compliance training, as well as personal development. Each manager is accountable to ensure that staff members are trained and competent in performing required duties through a verification and qualification process.

2.4.1 Expansion

Through the commitments stated in the following Sections 2.4.1.1 through 2.4.1.4, TransCanada supports the State's objectives with respect to facilitating the commercialization of ANS gas resources and promoting exploration and development of those resources.

2.4.1.1 Market Assessment

After the first binding Open Season, and as per AS 43.90.130(5), TransCanada would assess the market demand for additional pipeline capacity at least every two years through public nonbinding solicitations or similar means. Notice of the nonbinding solicitations would be released to the public a minimum of 30 days prior. These notices would be served through various channels, including internet websites, press releases, direct mail notifications and newspaper advertisements, in an effort to ensure that all parties have timely and equal access to transportation service.

As described in Section 2.1.1 of this Application, TransCanada is proposing a design platform that would be capable of providing transportation capacity over a wide range of throughputs. Incremental expansion would be offered through the solicitation process as appropriate to meet potential market demand, consistent with the requirement of AS 43.90.130 (6)(B).

As part of the solicitation process, TransCanada would provide prospective Shippers with a good faith estimate of the timeline and the Recourse Rates that would apply to the next reasonable engineering increment of expansion capacity as well as a larger expansion utilizing Rolled-in Rates, consistent with the requirements of AS 43.90.130(7). TransCanada would pursue a binding Open Season for expansion capacity Promptly and Diligently, in a manner consistent with the requirements of 18 C.F.R. §§ 157.30 – 157.39, to the extent that the expressions of interest demonstrate a market demand on commercially reasonable terms by creditworthy Shippers that meet the requirements set out in Section 2.2.3.3(3), "Shippers Creditworthiness Requirements", that equals or exceeds the next reasonable engineering increment of capacity, as defined in AS 43.90.130(6)(B).

In a binding Open Season conducted after the nonbinding solicitation of interest, TransCanada would not require a prospective shipper to agree to any particular rate (other than the Recourse Rate), or require an existing shipper to pay any rate for a capacity expansion prior to the date that new expansion facilities go into service.

2.4.1.2 Expansion Terms

TransCanada would expand the proposed project in reasonable engineering increments and on commercially reasonable terms that encourage exploration and development of gas resources in Alaska. TransCanada would Promptly and Diligently pursue all regulatory approvals upon the receipt of acceptable binding commitments for expansion capacity, and would Promptly and Diligently proceed to expand the Project on a timely basis and at a reasonable engineering increment sufficient to satisfy all demand for expansion capacity, provided that:

- additional revenue, if any, from existing transportation contracts on the Project, plus the projected revenue from binding expansion capacity commitments, cover the costs of the expansion (including fuel costs and a reasonable return on capital as authorized by FERC, the NEB, or the RCA as applicable); and
- TransCanada's ability to recover the costs of existing facilities is not impaired.

2.4.1.3 Rolled-in Rates

TransCanada would propose and support the recovery of Pipeline System capacity expansion costs, including fuel costs, through Rolled-in Rates consistent with all of the provisions of AS 43.90.130(7). To ensure that as many expansion costs as possible are recovered through Rolled-in Rates, TransCanada would also propose and support the assignment of expansion costs to all firm billing determinants, including those related to negotiated rate contracts, and would propose and support rates that bear the same percentage change to all rates consistent with AS 43.90.130(7), including any term-differentiated rates.

2.4.1.4 General Expansion Provisions

1) For Commercially Viable Engineering Increments

TransCanada would file, as part of its tariff, its determination of the reasonable engineering increment of capacity based on the design of the Project prior to project Sanction and each time the design capacity of the Project changes due to modifications of the facilities or operation of the pipeline, other than normal day-to-day changes in pipeline operations.

For purposes of determining the reasonable engineering increment of capacity that can be added by addition of pipe (commonly referred to as "looping"), TransCanada would base its calculations on:

- the addition of a full valve section based on the original pipeline mainline valve locations; and
- pipe diameter that would be required were a full loop of the pipeline to be undertaken.

2) For Non-Commercially Viable Engineering Increments

If a Shipper requires capacity that cannot be accommodated through expansion in engineering increments under commercially viable terms and conditions, TransCanada would be prepared to expand the Pipeline System to meet the needs of the Shipper provided that the Shipper agrees to make an acceptable contribution in aid of construction ("CIAC") to pay for the expansion. An acceptable CIAC would include an acknowledgement to the following effect:

- that if the CIAC-related expansion is not an economic part of the next engineering increment and is therefore abandoned as a part of the next expansion of the pipeline, the shipper would remain obligated for any remaining cost of the CIAC expansion in addition to the rolled-in rate for the newly expanded pipeline upon its entry into commercial operation; and
- to the extent that a CIAC expansion is an economic part of the next engineering increment expansion, the shipper would be credited with the value to the new expansion of the CIAC facilities and would begin to pay the rolled-in rate for the new expanded pipeline upon its commencement of operation.