

**STATE OF NEW HAMPSHIRE
BEFORE THE ENERGY FACILITY SITE EVALUATION COMMITTEE**

**Energy Facility Site Evaluation
Committee (“Committee” and/or “EFSEC”)**

Docket No. SEC 2008-_____

Application of Tennessee Gas Pipeline Company for a Certificate of Site and Facility

1. EXECUTIVE SUMMARY – Concord Lateral Expansion Project (“Project”)

1.1 Introduction –

To meet growing demand in New England, Energy North Natural Gas, Inc., d/b/a/ KeySpan Energy Delivery New England (“Energy North”), a New Hampshire corporation and Tennessee Gas Pipeline Company (“Tennessee”) have entered into an agreement that will allow Tennessee to provide incremental capacity to the region. To accomplish this objective, Tennessee plans to construct and operate a new 6,130 horsepower compressor station on its Line 200 system, the Concord Lateral system (“Lateral”) in Pelham, New Hampshire, that will allow Tennessee to provide an incremental 30,000 Dth/day of capacity to Energy North. Tennessee will also upgrade its existing Laconia Meter Station in Concord, New Hampshire, with piping modifications to accommodate the additional capacity. The anticipated in-service date is November 1, 2009.

Tennessee has operated facilities in New Hampshire through its Lateral system since the early 1950s transporting natural gas from Dracut, Massachusetts, into southern New Hampshire. Tennessee provides transportation service for Energy North Natural Gas, Inc., a local distribution company to delivery points in New Hampshire. This system was originally constructed in 1951 and upgraded in the 1980s, the early 1990s, and in 2001.

1.2 Summary Description of Facilities

On January 29, 2008, Tennessee filed an application with the Federal Energy Regulatory Commission (“FERC”) pursuant to Section 7(c) of the Natural Gas Act, 15 U.S.C. § 717f(c) and the Commission’s regulations, 18 CFR Sections 157.5 et seq., for a certificate of public convenience and necessity to construct, own, and operate the new facilities associated with the Project. FERC assigned Docket Number CP08-65 to Tennessee’s application.

Tennessee plans to construct a new compressor station, designated as Station 270B1, in Pelham, Hillsborough County, New Hampshire, on Tennessee’s Line 270B-100. A 6,130 horsepower turbine driven centrifugal compressor unit, fueled by natural gas, will be installed inside a new compressor building. Associated facilities include a filter separator, discharge gas cooler, blowdown silencer, control building, and an auxiliary building.

To accommodate the increased capacity created by the Project, Tennessee also plans to modify station piping at its existing Laconia Meter Station (“Meter Station”) located in Concord, Merrimack County, New Hampshire. The existing Meter Station is comprised of two measuring facilities, the Concord measuring facility and the Laconia measuring facility. Tennessee proposes to replace a total of approximately sixty feet of existing four-inch and six-inch pipe from Line 273C-100 to the Laconia measuring facility with twelve inch pipe. Additionally, the existing six-inch piping within the Meter Station will be reconfigured and reconnected between Lines 273C-100 and 270B-100 to serve as a tie-over line to ensure continued service in the event of outages on the primary line.

1.4 Regulatory Overview –

The Energy Facility Site Evaluation Committee (“EFSEC”) has the statutory responsibility to oversee construction and operation of energy facilities in New Hampshire, pursuant to RSA 162-H. The purpose of RSA 162-H is to provide a mechanism for a single, integrated review of applications to construct and operate energy facilities, such as this Project. In certain circumstances, such as this Project, energy facilities also come under the jurisdiction of the Federal Energy Regulatory Commission (“FERC”). Although FERC is the primary regulator and ultimate authority for most aspects of the Project, and without waiving any rights under federal law, Tennessee seeks a Certificate of Site and Facility (“Certificate”), under the provisions of RSA 162-H (including all necessary state and local agency permits) to construct, operate, and maintain the Project.

1.5 Compliance with RSA 162-H

Prior to issuing a Certificate, EFSEC must make those findings prescribed by RSA 162-H. The Project’s compliance with these requirements is summarized below.

1.5.1 The Applicant Has Adequate Technical, Managerial, and Financial Capability to Assure Construction and Operation of the Facility in Continuing Compliance With the Terms of the Certificate.

Tennessee operates approximately 14,700 miles of pipelines and approximately 1.4 million horsepower of compression within the United States and has developed substantial experience and expertise in designing, constructing, operating, and maintaining natural gas transmission facilities. Tennessee has the technical, managerial, and financial capability to assure that the construction and operation of the Project meets all applicable laws and other standards, including those that may be contained in the RSA 162-H Certificate to be issued by EFSEC. Tennessee personnel will provide overall project management for the engineering and construction design of the Project. Construction of the facilities will be performed by independent contractors who will be selected through a bidding process, and Tennessee (and/or its contractors) will supervise construction to ensure it is conducted in accordance with all applicable laws, rules, certificates, and standards.

Tennessee has constructed and operated natural gas facilities successfully in New Hampshire for over fifty years with the construction of its Concord Lateral in 1951 and the three aforementioned upgrades.

Tennessee's financial capability is described more fully in Section 2.7 and the financial materials referred to therein.

1.5.2 *The Project Will Not Unduly Interfere With the Orderly Development of the Region With Due Consideration Having Been Given to the Views of Municipal and Regional Planning Commissions and Municipal Governing Bodies.*

The Project involves the construction of a new 6,130 horsepower compressor station, which will be constructed within an existing industrial area in Pelham on an eleven acre parcel that is owned by Tennessee. The new compressor station will increase the capacity of natural gas to the region by 30,000 Dth/d. The additional capacity will increase the availability of natural gas, which is widely recognized as a desirable replacement for coal and fuel oil because of its cleaner burning characteristics. The additional gas supply will result in direct benefits to the region in future growth developments and at the least cost to New Hampshire consumers. Construction of the Project will accomplish these goals with minimal impact to the environment and without imposing any significant burden upon municipal support services. Planning and construction of the Project is also consistent with local and regional zoning and development planning.

Tennessee is committed to providing opportunities for both municipalities and affected landowners to communicate concerns and issues regarding the Project. As part of the design and planning phases of the Project, Tennessee met with town officials from Pelham on December 18, 2007, Windham on January 22, 2008, and Concord on January 31, 2008. The primary purpose of each of these meetings was to present an overview of the Project to municipal officials, answer questions, and solicit comments. Details of these meetings are outlined in Section 8 of this application. Tennessee also provided public notice in local newspapers, which included the *Salem Observer*, the *Windham Independent*, the *Union Leader*, the *Nashua Telegraph*, the *Manchester Union Leader*, and the *Concord Monitor*. A copy of the newspaper notice is provided in Appendix I.

Tennessee has reviewed all the relevant municipal zoning ordinances for Concord and Pelham, not only to ensure that construction of the facilities will be consistent with orderly regional development. Tennessee will continue to consult with municipal officials and make all reasonable efforts consistent with RSA 162-H.

1.5.3 The Project Will Not Have an Unreasonable Adverse Effect on Aesthetics, Historic Sites, Air and Water Quality, the Natural Environment, and Public Health and Safety.

Appendix F contains a detailed analysis of the potential environmental impacts associated with the construction and operation of the Project facilities and how these impacts will be reduced, eliminated, or mitigated. There will be minimal adverse effects to various natural resources and public health and safety. The facilities will be designed, constructed, tested, operated, and maintained to conform with all applicable federal, state, and local regulations including 49 C.F.R. Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards", 18 C.F.R. §380.15, "Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities." In addition, Tennessee will comply with the FERC's Upland Erosion Control, Revegetation and Maintenance Plan ("FERC's Plan"), FERC's Wetland and Waterbody Construction and Mitigation Procedures ("FERC's Procedures"), Tennessee's Spill Prevention Control and Countermeasure ("SPCC") Plan, an Unanticipated Discovery Plan for cultural resources, and a Waste Management Plan. Collectively these documents represent construction best management practices and are contained in Appendix G. During construction, an environmental inspector will monitor activities to ensure compliance with the specifications of the Plans; all applicable federal, regional, state, and local environmental permit conditions; site specific construction and restoration plans; and other mitigation measures. If an environmental non-compliance event occurs during execution of duties on behalf of Tennessee, Tennessee will demand immediate correction of the problem from the construction contractor, issue a stop work order if necessary, resolve any discipline issues, and make applicable agency notifications.

1.5.4 The Project Is Consistent With the State Energy Policy Established in RSA 378:37.

The Project is consistent with and advances the New Hampshire energy policy. It meets the energy needs of the citizens and businesses of the state at the least cost while providing reliable and diverse energy resources. The Project will supply Energy North with natural gas that will increase the reliability of the state's energy supply. It will also provide Energy North with additional gas resources to expand its service, thus bringing a choice of energy sources to more New Hampshire citizens and businesses. Increased reliance on natural gas instead of other fossil fuels will help contribute to the overall improvement of the air quality, therefore, contributing to the protection of the safety and health of New Hampshire citizens.

1.6 Certificate of Service and Compliance with RSA 162-H7, V(f)

Attached as Appendix A is a Certificate of Service confirming that written notification of the Project, including appropriate copies of the application, have been given to the appropriate governing body of each community in which the facilities are located.

2. Information About Tennessee Gas Pipeline Company

2.1 Applicant Information

Tennessee is a corporation organized and existing under the laws of Delaware with its principal place of business located at 1001 Louisiana, Houston, Texas 77002. Tennessee is a natural gas transmission company engaged in the business of storing and transporting natural gas in interstate commerce, under authorizations granted by and subject to the jurisdiction of the Federal Energy Regulatory Commission. Tennessee is authorized to conduct business as a foreign corporation in the states of Texas, Louisiana, Arkansas, Mississippi, Alabama, Tennessee, Kentucky, West Virginia, Ohio, Pennsylvania, New York, New Jersey, Massachusetts, New Hampshire, Rhode Island, and Connecticut.

2.2 Tennessee's address:

Tennessee Gas Pipeline Company
P. O. Box 2511
Houston, Texas 77251
713-420-6175
Attn: Michael A. Stokdyk

2.3 State of incorporation is Delaware, and principal place of business is Houston, Texas.

2.4 The names and addresses of the Directors and Officers are attached as Appendix B.

2.5 The locations where Tennessee conducts business are:

Field Office:

Tennessee Gas Pipeline Company
54 Wilson St.
Hopkinton, MA 01748
508-435-6812
Attn: Stephen Rogers

Construction Office:

Tennessee Gas Pipeline Company
59 Stiles Road
Salem, New Hampshire
603-898-6656
Attn: Chris Wilber

Division Office:

Tennessee Gas Pipeline Company
8 Anngina Drive
Enfield, CT 06082
860-763-6028
Attn: James B. Sinclair

2.6 Tennessee will own, operate, and maintain the facilities constructed in this Project.

2.7 Attached as Appendix C is the audit report for Tennessee's consolidated balance sheets and the related consolidated statements of income, stockholder's equity, cash flow, and financial statements for the years 2006 and 2007.

3. Location Information

3.1 The address for the new compressor station will be assigned by the Town of Pelham once a building is constructed on the property. The tax map/parcel/lot is 1-5-11. The Laconia Meter Station is located at 17 Broken Bridge Road, Concord, New Hampshire 03301. Maps of the sites are attached as Appendix D.

3.2 Tennessee purchased 11.6 acres of which 4.2 acres will be fenced to contain the compressor building and required auxiliary buildings. The Laconia Meter Station is an existing meter station and located within a fenced area in Concord and occupies 0.50 acres.

3.3 Attached as Appendix D is a site map depicting the location of adjacent residences, industrial buildings, and other structures and improvements in relation to the site of Tennessee's new compressor station and the Laconia Meter Station. The map also includes the location of existing utilities, facilities, and rights-of-way.

3.4 Attached as Appendix D is a site specific map denoting the location of wetlands and surface waters of New Hampshire in relation to Tennessee's compressor station and meter station.

3.5 Tennessee's research and environmental surveys of the area included a determination of biological, water, land, soils, socioeconomics, cultural, geological, and mineral resources in the area. No unique natural or other resources were identified in relation to the property.

4. Component Permits

Tennessee includes, as Appendix E, copies of completed application forms for the following agencies:

- Title V Federal Air Regulations (Clean Air Act) – Air permit application for new emissions source.
- Department of Environmental Services – Site-Specific Alteration of Terrain Permit necessary because construction includes the disturbance of over 100,000 s.f. of terrain.
- Water Supply & Pollution Control Commission – Subsurface permit for septic system.

5. Facility Information

5.1 Tennessee plans to construct a 6,130 horsepower natural gas compressor station. The new compressor station will encompass approximately eleven acres, of which approximately 4.1 acres of the parcel will be fenced. The station will consist of a new compressor building; an auxiliary building to house an emergency electrical power generator; air compressors; water heater skid; a domestic fuel gas skid; a control building; a radio communication tower; gas discharge cooler; filter separator; lube oil cooler; station valves; and other appurtenant facilities (e.g., exhaust silencers, motor control center, and a gas blowdown silencer). The Laconia Meter Station is an existing meter station located in Concord. It includes two measuring facilities, one of which will be modified by replacing six-inch pipe with twelve-inch pipe in order to accommodate the increased capacity that will be generated by the Project. Additionally, at the meter station, Tennessee will reconnect station piping that will tie over Tennessee's line 270B-100 with Tennessee's adjacent line 273C-100 to ensure continued service in the event of an outage on either one of the lines. Tennessee does not currently anticipate any expansion of either facility beyond the scope of the Project and is not including features for future expansions in its design of the compressor station or the meter station.

5.2 During construction, Tennessee will bring in building materials necessary to construct the new compressor station. These materials include, but are not limited to, pipe, valves, concrete for foundations, structural steel, and steel sheeting for the buildings. Upon completion of construction, Tennessee will not store any type of raw material on-site necessary to support the operation and maintenance of the compressor station, other than small quantities of lube oil. This is also true for the meter station.

5.3 The compressor station is classified as a Small Quantity Generator of hazardous waste, specifically NH01 – Used Oil, and operates in accordance with federal rule 40 CFR 265, and New Hampshire Code of Administrative Rules at Chapter Ecn-Wm 500, "Requirements for Hazardous Waste Generators." Disposal will be coordinated through a licensed vendor. Management of this material will be in compliance with ENV-Wm 500.

The compressor station is also classified as a Small Quantity Handler of Universal Wastes, specifically universal lamps, glycol, and batteries, and operates in accordance with federal rule 40 CFR 262 and New Hampshire Code of Administrative Rules at Chapter Env-Wm 1100 Requirements for Universal Waste Management. These items will be managed in compliance with the Universal Waste Regulations ENV-Wm 1100 and disposed of by a licensed vendor.

Small quantities of office refuse will be generated. Disposal will be through a licensed contractor. Small quantities of non-hazardous process water will be generated and disposal will be coordinated through Clean Harbors. Domestic sewage will be generated and treated on site through a septic system. Periodic maintenance of the septic system will be performed through a licensed contractor.

5.4 The potential environmental effects and mitigation plans are discussed in greater detail in Section 1.5.2 and in Appendix F to this application.

5.5 Construction of the new compressor station will likely create some temporary and long term economic benefits. Although, short term impacts may include the potential increase in use

of public services, such as police for traffic control, this temporary increase in public services will be offset by the benefits derived from increased short term revenue streams. During construction, there will be temporary increases in the local population and demand for temporary housing. Construction will also yield an increase in expenditures within the local economy for goods and private services.

Because the new compressor station will incorporate its own fire prevention and control features, the potential for increased demands on local emergency and fire personnel services will be minimal.

Long term benefits associated with the continued operation of the compressor station include payment of local property taxes; purchases of services, materials, and supplies from local businesses; and periodic temporary employment for various construction, operation, and maintenance activities.

5.6 As described in Section 1.2, Tennessee's natural gas pipeline system extends from the Gulf of Mexico into southern New Hampshire where Tennessee provides transportation service to Energy North to a delivery point at the Laconia meter station in Concord, New Hampshire. The additional compressor station will increase the amount of capacity that Tennessee will be able to deliver to Energy North to meet the growing demands of the region.

6.0 Construction

6.1 Construction Procedures

The Project will be designed, constructed, tested, operated, and maintained to conform with federal, state, and local requirements including 49 C.F.R. Part 192, "Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards", 18 C.F.R. §380.15, "Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities." In addition, Tennessee will comply with the FERC's Plan, a SPCC Plan, an Unanticipated Discovery Plan for cultural resources, and a Waste Management Plan. These documents, which constitute construction best management practices, are contained in Appendix G.

6.1.2 Supervision and Inspection

Tennessee will employ an inspection team consisting of the following:

- Chief Inspector – On-site project leader having overall authority regarding construction. The Chief Inspector possesses a wide range of skills and expertise relating to construction of natural gas facilities. The Chief Inspector will also perform the role of the Environmental Inspector.
- Certified Welding Inspector – AWS Certified Welding Inspector (Discipline Expert) with significant work history within the natural gas industry.
- Utility Inspector – Possesses a broad base set of skills and expertise relating to construction of natural gas facilities. Typically responsible for all phased (clearing through final clean-up) of construction with the exception of welding.
- Electrical Inspector – Discipline expert. Knowledgeable in National Electric Code and electrical, instrumentation, and controls equipment frequently used within the natural gas industry.

Tennessee maintains inspector competency through in-house training and thorough review of work history and credentials. General practices include cross-functionality between disciplines and expertise. For example, each member of the inspection team will possess and be accountable for a basic understanding of project environmental and safety requirements. Each inspector is given authority to accept/reject and/or stop specific work tasks that do not meet Tennessee's standards and specifications as outlined within the engineering drawings, construction specifications, and environmental plans. Only the Chief Inspector has the overall project "stop work" authority for a project.

6.1.3 Environmental Inspector Responsibilities

The EI will review all Project documents (right-of-way descriptions, permits, plot plans, site drawings, and relevant plans) prior to construction. During construction, the EI will be responsible for the following tasks:

- Coordinating and/or performing updated environmental training as new contracted personnel begin working on construction;
- Identifying areas that require stabilization;

- Ensuring erosion and sedimentation control devices are installed and maintained properly;
- Monitoring temporary restoration and revegetation of temporary construction work areas, if applicable;
- Ensuring that construction activities occur within authorized work areas;
- Monitoring waste collection and disposal;
- Inspecting activities daily to verify and document that contractors are complying with the FERC certificate environmental conditions and mitigation measures, the EFSEC certificate, and applicable federal and state permit requirements;
- Photo-documenting sensitive areas and workspaces before, during, and after construction;
- Documenting activities with daily logs, weekly reports, and other required documentation;
- Identifying potential problems and initiating appropriate actions prior to occurrence;
- Ensuring that the soil profile is restored, if required;
- Educating other inspectors on Project specific environmental concerns;
- Ensuring the repair of ineffective erosion control measures within twenty-four hours of identification;
- Ensuring appropriate marking of surface and subsurface drainage and irrigation system locations identified;
- Providing notification of construction activities to facilitate timely reports to agencies as required in permits;
- Monitoring hydrostatic test fill and spill activities and conducting sampling of test water;
- Locating dewatering structures and slope breakers to ensure they will not direct water into known cultural resources sites or locations of sensitive areas;
- Advising the Chief Inspector when conditions (such as wet weather) make it advisable to restrict construction activities;
- Verifying the existence and review of contractors' pre-job inventory of lubricants, fuels, and other materials that could be discharged;
- Consulting with Applicant to determine reportable spill quantities for materials on the inventory;
- Classifying each material on the pre-job inventory as hazardous or non-hazardous waste;
- Identifying, in conjunction with appropriate authorities, the approved waste transporters and disposal sites for both hazardous and non-hazardous wastes;
- Approving the contractor's list of equipment and spill procedures and impact minimization measures;
- Defining the duties and coordinate the responses of all persons involved in the clean-up of a spill;
- Maintaining, with support from Applicant, an up-to-date list of names, addresses, and phone numbers of all persons to be contacted in the event of a spill; and
- Ensuring the contractor conducts training for spill prevention and impact minimization.

6.2 Standard Construction Methods

Construction of a new natural gas compressor station consists of distinct phases: clearing, grading, foundation work, and infrastructure facilities.

6.2.1 Clearing and Grading

The areas encompassing the site of the compressor station and associated temporary construction workspace will be cleared of vegetation and graded as necessary to create level surfaces for the movement of construction vehicles and to prepare the area for the building foundations. Tennessee will leave all the trees that do not interfere with the safe construction and operation of the compressor facility. Clearing of the mature trees will include a ten-foot buffer zone around the fence line and access road for maintenance and security reasons. Tennessee will install silt fence and/or hay bales around disturbed areas, as appropriate, to minimize the potential for erosion and to prevent indirect impact to the wetlands and watercourse located outside of the construction workspace. Erosion and sediment controls will conform to FERC's requirements and Tennessee's stormwater pollution prevention plans. The site of the compressor station is situated on very deep, well-drained soils. As a result, Tennessee does not anticipate that blasting will be necessary to prepare a level construction site. Any required blasting will be conducted in accordance with appropriate regulations.

6.2.2 Foundations

Building foundations are likely to be constructed of poured reinforced concrete. Topsoil, if present, would be stripped from the area underlying the building foundations and preserved. This soil may be used on-site for landscaping or to provide soil cover for the septic system leach field, if suitable. Additional soil or subsurface materials may be imported from approved sources, as necessary, to achieve the desired site/foundation grade.

6.2.3. Building Design and Construction

The compressor building is expected to be approximately forty feet wide by sixty-five feet long with a roof peak to grade height of approximately forty-five feet. The compressor building will house the 6,130 horsepower natural gas fueled turbine compressor package.

The turbine exhaust stacks were designed with a stack height of fifty-five feet. Tennessee has performed air quality impact modeling to support its applications to the New Hampshire Department of Environmental Services ("NHDES") for air permits to construct and operate the turbine compressor. Air quality modeling reports were submitted to the NHDES as part of Tennessee's air permit applications. The modeling reports document that the stack heights and other design parameters achieve acceptable dispersion of turbine exhaust emissions to comply with ambient air quality regulations and standards.

Typically, the steel frames would be erected first, followed by the installation of the roofs, interior skin, insulation, and exterior skin. Cutouts for protrusions through the siding (e.g., inlet and exhaust vents) would be flashed to ensure that the buildings would be weather-tight.

6.2.4 High Pressure Piping

Tennessee will design and construct the high pressure piping to meet the requirements of the U.S. Department of Transportation ("DOT") 49 CFR Part 192 requirements. Tennessee proposes to design the high pressure gas piping in the station yards for a MAOP of 1000 psig. Tennessee proposes to coat the station piping for protection against corrosion.

6.2.5 Pressure Testing

Prior to placing the station in-service, Tennessee will conduct pressure testing of the piping system. Tennessee will conduct this test in accordance with applicable codes.

6.2.6 Infrastructure Facilities

The installation of the infrastructure facilities includes the various compressor and auxiliary equipment, piping, and other electrical and mechanical systems. Tennessee anticipates that new electric, telephone, and domestic water utility lines will be installed at the site.

6.2.7 Control Checkout and Engine Startup

Before the new compressor unit is put into service, Tennessee will develop and implement a station commissioning plan. Tennessee anticipates that the plan would include the checking and testing of controls and safety features including the emergency shutdown system, relief valves, gas and fire detection facilities, over-speed, vibration, and other on- and off-engine protection and safety devices.

6.2.8 Mitigation/Restoration

During the construction at the site, Tennessee will require its contractors to install and maintain appropriate erosion controls (e.g., silt fence and/or hay bales) to minimize the potential for erosion from construction of the facilities. The implementation of erosion control and restoration procedures will follow the FERC's Plan. No exceptions or variances to the FERC's Plan are proposed.

6.2.9 Final Grading and Landscaping

Prior to construction, Tennessee will develop a plan for the final grading and landscaping of the site. This final grading and landscaping plan will be consistent with FERC's Plan for the restoration of uplands.

After the completion of construction and the start-up and testing of the new compressor unit, or as soon thereafter as weather and other conditions permit, Tennessee intends to conduct the final grading and landscaping of the compressor station site in accordance with the above-mentioned plan.

6.3 Safety

- Temporary safety fences will be erected where necessary;
- Soil tracked onto roads by construction equipment will be minimized and will be cleaned in a manner consistent with all applicable permits;
- Tennessee may use flagmen for traffic control, temporary traffic detours, and/or offsite parking facilities and buses for work crews; and
- Erosion control devices will be installed where necessary.

6.4 Specialized Construction Methods

Tennessee uses specialized construction techniques in certain areas. The method most suitable for a given location is dependent upon site conditions at the time of construction. The Chief Inspector and other Tennessee inspectors will identify or approve the appropriate method for each location based on site conditions at the time of construction.

6.5 Spill Prevention and Control Planning

The spill prevention and control methods listed herein are based on approved spill control plans that Tennessee has used successfully in the past. Tennessee's plan is conservative in that it addresses actions used to prevent spills in addition to specifying actions that will take place if any spills occur, including emergency notification procedures. The Project's on-site EI is responsible for ensuring that contractors implement and maintain spill control measures.

The contractor will instruct personnel on the operation and maintenance of equipment to prevent the accidental discharge or spill of fuel, oil, and lubricants. Personnel will also be made aware of the pollution control laws, rules, and regulations applicable to their work.

Spill prevention briefings with the construction crew will be scheduled and conducted by the EI to ensure adequate understanding of spill prevention measures. A copy of Tennessee's SPCC Plan is attached as Appendix G.

The contractor will inspect and maintain equipment that must be refueled and/or lubricated according to a strict schedule. The contractor will submit to Tennessee for approval written documentation of methods used and work performed. All containers, valves, pipelines, and hoses will be examined regularly to assess their general condition. All leaks will be promptly corrected and/or repaired.

6.6 General Conditions

Tennessee will follow the spill prevention measures described in its SPCC Plan (Appendix G). Hazardous materials, chemicals, fuels, or lubricating oils will not be stored within fifty feet of a wetland or water boundary. Containment is the immediate priority in case of a spill. A spill will be contained on Tennessee's property, if possible. Clean-up procedures will begin immediately after a spill is contained. In no case will containment equipment be used to store contaminated material.

Prior to construction, the right-of-way inspector will identify and prepare a written inventory of water wells that are within 150 feet of the construction site.

6.7 Construction for the new compressor station in Pelham and upgrades to the existing Laconia Meter Station are scheduled to commence in the spring of 2009 with a proposed in-service date of November 1, 2009.

7.0 Statutory Findings

7.1 Alternatives analysis of site and facility selection and plans

The site for the compressor station has been selected based on an extensive alternative siting analysis. The primary objective of the alternatives analysis was to locate the compressor station in a manner that either avoids or minimizes potential adverse environmental effects to the greatest extent practicable. By siting the compressor station in an industrial setting, Tennessee also attempted to minimize the disruption to the nearby residential communities with respect to traffic and land use impacts. Overall, Tennessee evaluated site options based on a variety of criteria, including topography, potential environmental impacts, existing land use (including related parameters such as visual and noise impacts), property costs, and construction safety and feasibility considerations, as well as engineering and technological parameters. Tennessee considered alternatives in accordance with the objectives of FERC's routing guidelines as set forth in Title 18 CFR Part 380.15. The primary objective in evaluating alternatives was to avoid, minimize, and if necessary, mitigate adverse environmental effects while satisfying contractual obligations to Tennessee's customers. This discussion focuses on alternatives relating to the main component of the Project, which is the installation of the new Compressor Station 270B1 to facilitate expansion of service. Such discussion is not relevant to the secondary purpose, which involves modification of piping at the Laconia Meter Station.

7.1.2 No Action Alternative

Under the No-Action Alternative, Tennessee would not construct the new Compressor Station 270B1 or modify its existing Laconia Meter Station. Accordingly, the No-Action Alternative would avoid the environmental impacts associated with construction and operation of the Project. However, by not constructing the Project, Tennessee's ability to provide the necessary transportation capacity required to supply its increased customer base would be limited. Other natural gas transmission companies could be required to increase their capacity and construct new facilities to meet the demand for the additional capacity. Such actions would likely result in the transference of impacts from one location to another but would not eliminate or reduce impacts altogether.

If existing natural gas transmission systems are not enhanced or expanded, energy shortages in times of peak demand may ensue, or users may revert to the consumption of alternative fuels that may include oil and coal. Utilization of natural gas as the primary fuel offers the best alternative in terms of availability with the lowest environmental impact of available energy sources, particularly in regards to air quality impacts. Existing natural gas delivery systems are readily expanded to meet increased demand at minimal impact to the environment.

The No-Action Alternative was not found to be a feasible alternative because it did not satisfy the purpose and need for the Project.

7.1.3 System Alternatives

System alternatives are alternatives to the Project that would make use of other existing, modified, or proposed natural gas pipeline systems or existing compression to meet the stated purpose and need. System options involve the transportation of the equivalent amount of

incremental natural gas volumes by the expansion of existing pipeline systems or by the construction and operation of other new pipeline systems. A viable system alternative would make it unnecessary to construct all or part of the Project, although some modifications or additions to existing pipeline infrastructure or construction of entirely new pipeline system could be required to allow for the transportation of the additional natural gas.

The following evaluation criteria were used for selecting reasonable and potentially environmentally preferable system alternatives to the Project:

- Technical and economic feasibility and practicality;
- Significant environmental advantage over the Project;
- Ability to meet the Project objective to satisfy increased demand for natural gas, given that alternative energy sources or conservation are not able to satisfy this demand.

System alternatives that Tennessee considered in developing the Project are described in the following subsections:

7.1.3 Other Natural Gas Transportation Systems

In the early phases of the Project, significant interest was found in the northeastern United States for additional supplies of clean-burning natural gas to supply utility companies. Because Tennessee currently operates a transmission system in the northeast, it was determined that Tennessee could supply the increased demand for natural gas in this area using efficiencies afforded by its existing system. Accordingly, Tennessee did not consider any system alternatives involving the use of other (non-Tennessee) natural gas pipeline systems. However, Tennessee did consider system alternatives involving different configurations of pipeline and compression facilities within its own transmission system. These alternatives consisted of pipeline looping instead of compression, and combinations of pipeline looping and compression, as described in the following two sections.

7.1.4 Pipeline Looping

To increase the throughput capacity of a natural gas pipeline, a pipeline operator (such as Tennessee) can “loop” the existing pipeline, or add compression, or use a combination of compression and looping. As natural gas travels down the pipeline, pressure within the pipe declines with distance. Compressor stations are used to restore pressure and increase pipeline capacity beyond that of the pipe alone. The term “looping” refers to placing additional segments of pipeline, parallel and connected to the existing pipeline. These segments act to reduce the rate of pressure drop in the pipe due to friction, and thereby increase the throughput capacity of the pipeline. Compressor stations can also be added to restore pipeline pressures more frequently along the pipeline, again thereby increasing the throughput capacity of the pipeline. The choice of how much loop, versus how much compressor horsepower, to add is a complex determination impacted by such factors as: hydraulic requirements, pipeline reliability, constructability, environmental impact, and public impact.

Tennessee used computer modeling to analyze the hydraulic flow of natural gas under different pipeline loop scenarios on its existing pipeline system that would achieve the gas transmission capacity objectives of the Project. In evaluating the looping alternatives, Tennessee considered such factors as: spacing between compression, natural topographic features, and minimization of landowner impacts along Tennessee's existing system.

Tennessee determined that the most viable pipeline looping alternative that would meet the Project's purpose and need would require the installation of approximately twenty-four miles of new twenty inch pipeline to loop Tennessee's existing Line 270 from milepost ("MP") 273-101.2 in Middlesex County, Massachusetts, to a terminus at 273C-103A in Merrimack County, New Hampshire. As compared to the Project, construction of the pipeline loop alternative would involve a corresponding increase in land disturbance and impacts to a greater number of landowners. Further, the environmental disturbance associated with the construction of new pipeline loop would include long-term use or widening of existing rights-of-way, increased potential to affect more wetlands, waterbodies, wildlife, timber and other resources; increased right-of-way operation and maintenance efforts; and increased costs of land acquisition and construction.

7.1.5 Pipeline Looping With Additional Compression

Tennessee's computer modeling and alternatives analysis suggested that, by constructing a new 3,000 hp compressor station at the compressor site in Pelham, Hillsborough County, New Hampshire, Tennessee could reduce the necessary length of additional pipeline loop proposed under the pipeline looping only alternative in Section 10.2.2. In addition to the new compression, this scenario would require replacing 14.5 miles of the existing six-inch pipeline with twenty-inch pipeline from the existing Laconia Meter Station south to meet the customer's needs. Construction of this alternative would result in significantly greater potential to impact wetlands, waterbodies, wildlife and landowners as compared to the Project.

Tennessee prefers the Project because it optimizes gas transmission capacities on its own system with minimal infrastructure development and environmental impacts; thereby meeting Tennessee's Project and planning objectives in the most cost-efficient manner.

7.1.6 Site Alternatives

Tennessee conducted a hydraulic analysis to determine the optimum horsepower and compression in order to provide the increased volumes necessary to meet subscriber demands. As a result, Tennessee identified the need for one new compressor station (Compressor Station 270B1) in order to meet the compression needs for the increased delivery volume. The following limiting factors dictated selection of a property for use as the new compressor station:

Engineering Design and Construction: The new compressor station must be sited near the midpoint of Tennessee's 270 Line in Hillsborough or Rockingham County, New Hampshire which is approximately the location of Tennessee's existing mainline valve ("MLV") 270B-104 near Windham, New Hampshire. Several engineering design and construction issues were evaluated for selection of a preferred site, including facility and workspace requirements, site elevation, road access, and length of interconnecting pipe between the new facility and Tennessee's existing pipeline:

- Pipeline design limitations – Tennessee used an approximate 3.5-mile south and five-mile north distance from MLV 270B-104 to identify a new compressor station property;
- Land / workspace requirements – Tennessee undertook a detailed analysis to select a ten to twenty acre property for a site to install the new Compressor Station 270B1;
- Site elevation – Tennessee sought out land parcels featuring topography that minimizes the extent of fill or excavation of soil required during construction of the new facility, including workspace needs;
- Road access – Tennessee sought to maximize proximity of the new compressor station to the nearest public road, thereby minimizing the need for a new access road as well as modifications or improvements to existing roads;
- Interconnecting pipe –To minimize the impact on the surrounding community, Tennessee favored siting the new compressor station site on a property that would not require a pipeline extension for the suction and discharge piping. This approach also minimizes the land requirements for the project, thereby minimizing the number of impacted property owners.
- Land Availability: Hillsborough County is a mix of urban and rural setting. The landowners within this area typically own lot-sized property or small tracts of land. Land availability was limited in this area based on the general lack of tracts of land that would be suitable for a compressor station installation.
- Environmental Impacts: Environmental parameters for the alternative sites were evaluated based on a combination of field reconnaissance and available desktop resources such as 7.5-minute United States Geological Survey (“USGS”) topographic maps, aerial photography, and available literature on environmental resources. Several environmental characteristics were evaluated using these resources, including:
 - Soils, including presence of prime farmland;
 - Federally and state-listed threatened and endangered species;
 - Cultural resource sites listed or eligible for listing on the National Register of Historic Places; and
 - Zoning: Land currently zoned as industrial was preferred as compared to commercial or residential.

Three locations were identified to meet the requirements for siting the new Compressor Station 270B1 - the preferred site and two alternative sites (See the Comparison Matrix in Appendix H).

7.1.7 Preferred Site – Pelham Property

The preferred site is located to the west of State Highway 128 and north of Industrial Park Road. The North Pelham site features the following characteristics:

- Tennessee’s existing pipeline system crosses the western portion of this site. MLV 270B-104 is located approximately one mile north of this site;
- The site will require grading prior to construction of the compressor. The civil work will be planned to balance the cut and fill requirements to minimize the impact associated with having excessive soil materials remaining from the grading operations. Approximately 4.2 acres of forested land will be impacted by construction activities for the Project;
- Surface waterbodies and wetlands were identified along the northern boundary of this site. Tennessee has sited the facility outside of these wetlands and will maintain all temporary workspace a minimum of fifty feet from the edge of the wetland boundary. In addition, the facility will be designed to ensure that these resources will not be impacted during operation of the facility;
- Cultural resource surveys have been completed at the site, and no cultural resources were identified within any areas to be affected during construction or operation of the compressor station. Please refer to Appendix F for additional information regarding the cultural resource survey.
- Noise-sensitive areas (“NSAs”) were identified within one mile of the site. The results of the noise survey conducted for this site are discussed in Appendix I.

7.1.8 Alternative Site 1 – Tennessee Gas Pipeline Property

Alternative Site 1, identified as the Tennessee Gas Pipeline Property, is approximately five acres in size and currently contains Tennessee’s existing MLV 270B1-104 as well as the existing pipelines. The parcel is located south of Route 128 in Windham, New Hampshire. The majority of the site is forested and is abutted to the east by an electric transmission corridor and to the northwest and south by residential developments. No wetlands or waterbodies are located within the site. Tennessee identified this property as a potential alternative site primarily because it was already under the company’s ownership. This location was rejected, however, because the property was too small to site the facility and was in significantly closer proximity to existing residential developments.

7.1.9 Alternative Site 2 – Nashua Road Property

Alternative Site 2, identified as the Nashua Road Property, is located off Nashua Road (Route 102) in Londonderry, New Hampshire. Tennessee’s existing 200 system pipelines cross the western side of site. This site is large enough in size to accommodate the compressor station and contains favorable topography. There are wetlands within the property; however, they would not be impacted by the siting of a facility within the property. While a potentially viable alternative, this location is zoned by the Town of Londonderry as commercial, and the acquisition cost of the property with the current zoning would result in an unacceptable rate for the customer’s pipeline service. Therefore, Tennessee rejected this alternative because it would render the Project financially unviable.

7.2 Description of applicant's financial, technical, and managerial capacity for construction and operation of the facility.

See Sections 1.5.1, 2.7, and Appendix C.

7.3 Facility will not unduly interfere with the orderly development of the region.

See Section 1.5.2.

7.4 Environmental Impacts

The Project will impose minimal impacts upon landowners and the environment because it involves only compression to be installed on approximately 11.6 acres that Tennessee owns. The environmental report for the Project is included as Appendix F and details the anticipated impacts associated with the siting and construction of this Project. Tennessee has consulted with the U.S. Fish & Wildlife Service, the New Hampshire Natural Heritage Program, the New Hampshire Department of Historical Resources, and other state and local agencies regarding existing environmental resources and potential impacts associated with the Project. As detailed in the environmental report, the Project incorporates proven construction practices and mitigation procedures, will not result in significant adverse effects on the human environment.

7.5 Facility operation is consistent with the state energy plan.

See Section 1.5.4.

7.6 Documentation of written notification of the project, including appropriate copies of the application to the appropriate governing body of each community in which the facility is to be located.

See Appendices I and K.

7.7 Identification of any requests for waivers from information or other requirements of any state agency or department whether represented on the Committee or not.

There are none.

8. Public Outreach

8.1 Introduction - To fulfill FERC requirements, Tennessee notified all abutting landowners of record based upon the most recent tax rolls by certified or first class mail within three business days after FERC issued its docket number for the Project. These letters were sent out on February 13, 2008, and included a description of the Project, contact information with a toll free telephone number, and the most recent edition of the FERC pamphlet "An Interstate Natural Gas Facility on My Land? What Do I Need to Know?" This pamphlet describes the FERC's certificate process and addresses the basic concerns landowners may have regarding the construction of natural gas facilities on or near their property. Copies of all public documents filed with FERC or issued by FERC are publicly available at the Nesmith Library in Windham, the Concord Public Library in Concord, and the Pelham Town Library in Pelham.

8.2 Development of Site Layout – Discussion of communications with the town(s) and steps taken with respect to the site plan design to minimize the intrusiveness of the Project.

As stated in Section 1.5.2, Tennessee met with officials from the Town of Pelham on December 18, 2007. The officials included State Senator Michael Downing, State Representative Jean-Guy Bergeron, Town Administrator Tom Gaydos, BOS Vice Chair Hal Lynde, and Selectman Bill McDevitt.

On January 22, 2008, Tennessee met with the Town Manager with the Town of Windham and provided an overview of the Project. Tennessee followed up with correspondence providing a set of questions and answers for the residents of Windham who had questions about the Project.

Subsequently, Tennessee met with Tom Aspell, City Manager, and Tim McGinley, the acting Fire Chief, with the City of Concord on January 31, 2008, advising them of the Project. Tennessee explained that it would be participating in the EFSEC process and would continue to keep them apprised of activities relating to the Project.

Copies of the referenced correspondence regarding public outreach efforts are included in Appendix I.

8.3 On April 2, 2008, FERC Staff, David Hanobic, met with Tennessee for a site visit. The site visit, which FERC publicly noticed, was attended by several abutting landowners. The discussion involved noise, emissions, and aesthetics of the compressor station because there are no resource impacts at the site. Regarding noise, Tennessee guaranteed that it would meet the fifty-five dBA required by FERC's regulations at the nearest noise receptors. Regarding emissions, Tennessee stated that it is voluntarily employing the best available control technology. Addressing the aesthetics issue, Tennessee advised that it will plant additional trees in the buffer zone to the north of the compressor station to minimize visual impacts. It will also consider the use of building colors that will blend with the existing landscape, in contrast to the adjacent industrial installations.

On April 10, Tennessee met with the New Hampshire Public Utility Commission (“PUC”) to provide a general overview of the Project. PUC attendees were Stephen Frink, Assistant Director, Gas and Water Division; Bob Wyatt, Utility Analyst III, Gas and Water Division; and Ed Damon, Counsel, Gas and Water Division. Tennessee discussed service and design parameters; regulatory status; outreach status; the facilities; and planned mitigation of noise, emissions, and aesthetic impacts.

Certification

I, Michael A. Stokdyk, being first duly sworn, hereby swears and affirms, to the best of my knowledge, information, and belief, that all materials and representations contained in this Application are true and accurate.

Michael A. Stokdyk

Michael A. Stokdyk
Manager, Business Development

Subscribed and sworn to before me this 17th day of April, 2008.

Debbie Kalish

Notary Public

My commission expires: 12/4/08

**Tennessee Gas Pipeline Company
Concord Lateral Expansion Project**

**Energy Facility Site Evaluation
Committee (“Committee” and/or “EFSEC”)**

Docket No. SEC 2008-_____

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