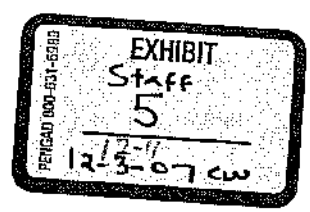
BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION

DOCKET NO. HP07-001

IN THE MATTER OF THE APPLICATION OF TRANSCANADA KEYSTONE PIPELINE, LP FOR A PERMIT UNDER THE SOUTH DAKOTA ENERGY CONVERSION AND TRANSMISSION FACILITY ACT TO CONSTRUCT THE KEYSTONE PIPELINE PROJECT

Direct Testimony of John Muehlhausen on Behalf of the
Staff of the South Dakota Public Utilities Commission
October 31, 2007



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DIRECT TESTIMONY OF JOHN MUEHLHAUSEN

Q: Please state your name and business address.

A: John Muehlhausen of Merjent, Inc. of 615 First Avenue Northeast, Suite 425, Minneapolis, Minnesota 55413.

Q: Please briefly describe your post-high school education and work experience.

A: I have bachelor of arts degree in anthropology from the University of Wisconsin-Madison. I am a senior analyst at Merjent, Inc. I am also a founding partner and the chief financial officer of Merjent, Inc. I have 16 years of experience preparing various types of assessments of pipeline expansion and maintenance projects throughout the United States.

Q: Please describe the work of Merjent, Inc.

A: Merjent is a professional consulting company specializing in the pipeline and electric transmission line market segments. Merjent offers its clients project planning, permitting, evaluation, community relations, and environmental inspection services. Merjent staff have experience on thousands of miles of pipeline projects throughout the United States. Merjent represents both industry clients and regulatory agency clients.

Q: What is the purpose of your testimony?

A: Merjent was retained by the staff of the South Dakota Public Utilities Commission to prepare a quantitative assessment of the socioeconomic effects of the construction and operation of the Keystone Pipeline Project. I was the principal author of the socioeconomic assessment. I have personal experience preparing and/or technically editing socioeconomic analyses for several pipeline projects over the past dozen years,

including, most recently, an assessment of a 160-mile-long pipeline in Colorado published by the Federal Energy Regulatory Commission in its Environmental Impact Statement in August 2007.

Q: What methodologies did you use to determine socioeconomic impacts?

A: Two methods were used to gather socioeconomic information for this assessment. The first method involved research and documentation of existing literature regarding socioeconomic conditions of the counties that would be impacted by the project. The second method involved interviews with county commissioners to help identify important economic activities in the project area and to identify socioeconomic concerns of the counties. In some cases, commissioners have not yet responded to our interview requests despite our repeated attempts to contact them.

To estimate overall impacts on economic output, earnings, and employment, I conducted a simple regional input-output analysis using RIMS II multipliers purchased for the project area from the United States Department of Commerce, Bureau of Economic Analysis. The regional input-output analysis was based on estimated final-demand changes for goods and services to be purchased locally. A change-in-bill-of-goods analysis was not conducted because of a lack of data regarding the specific goods and services. Nonetheless, the final-demand analysis provides a reasonable supposition of economic impacts that could be expected from the proposed project.

In addition to analyzing overall economic impacts, the assessment considered some of the socioeconomic issues raised by stakeholders in the public hearing held by the Commission at the end of June. Focusing on some of these concerns allow us to better target mitigation toward the impacts with which the public is most concerned. The

assessment did not evaluate TransCanada's justification for the project or evaluate project alternatives, such as different routes or alternative energy sources.

Q: **Please summarize the findings of your assessment, which is titled "Socioeconomic Assessment of the Keystone Pipeline", is dated October 29, 2007, and is attached to this direct testimony.**

A: The proposed project would have both beneficial and adverse impacts on the socioeconomic conditions of the counties crossed by the pipeline as well as South Dakota in general. Most of the impacts would be insignificant. Those adverse impacts that have potential to be significant could be mitigated by following the recommendations identified in the assessment.

Construction of the proposed pipeline would result in up to 1,020 non-local workers and 255 family members temporarily moving into the communities around the project area during the peak of construction. Relative to the current population, the proposed influx of non-local workers and family members would not be significant, and would amount to only about one-third the population loss of the counties due to rural flight since 2000. After construction, Keystone would hire three employees locally to support operation of its pipeline, and there would be no long-term impacts on population.

During construction, the proposed pipeline would result in additional economic output, earnings, and jobs. For every $1.00 spent in South Dakota by TransCanada in the project area, an additional $0.70 of indirect and induced output would be expected in South Dakota. TransCanada is planning on spending about $93.2 million locally for construction of the pipeline. Therefore, an additional $65.2 million of indirect and induced output would be expected in other industries. The largest outputs would be felt

by the construction, retail trade, and health care industries, as well as the accommodations and food services industries.

During operation of the pipeline, for every $1.00 spent in South Dakota by TransCanada in the project area, an additional $0.33 of indirect and induced output would be expected in South Dakota. TransCanada is planning on spending about $11.0 million annually during operation. Therefore, an additional $3.6 million of indirect and induced output would be expected. The largest outputs would be felt by the utilities, construction, and transportation and warehousing industries.

In general, additional economic output is considered a beneficial impact because it results in additional jobs and wages. During construction, the proposed project could result in up to an additional 825 jobs, either directly or indirectly, and wages at least 10% higher than the ten-county median. During operation, 61 direct and indirect jobs could be created. However, as demand for labor rises, so can labor costs. For economic output to be considered beneficial, increases in revenues must exceed increases in costs. The labor supply and number of unemployed in the counties crossed by the project are greater than the number of additional jobs created by the project, and labor costs in the industries most affected by the project are less than one-third revenues, suggesting that the net economic impact of the project would be beneficial.

The proposed pipeline would affect approximately 2,169 acres of cropland. Short-term impacts associated with construction would include loss of standing crops within the construction work area valued at about $550,000. On an individual basis, TransCanada indicated it would compensate farmers for crop loss the year of construction, and provide a reduced compensation for two years following construction

with the understanding that crop yields may be diminished in subsequent years. Compared to the 2.7 million acres of cropland in the counties crossed by the pipeline, the acreage of cropland taken out of production would be insignificant. After construction, agricultural areas, including the permanent right-of-way, would be allowed to revert to former agricultural use.

One potential shortcoming of TransCanada's crop-loss compensation package would be the potential for farmers to have yield losses greater than the compensation amounts provided by TransCanada for the years following construction. TransCanada did indicate that they would conduct yield monitoring upon landowner request. However, we believe that landowners may not be aware that they can request yield monitoring, especially two or more years after construction. Therefore, we recommended that:

- **TransCanada monitor the yield of agricultural lands and hay fields impacted by construction, except where monitoring is waived by the landowner in writing. Monitoring shall be conducted until the area is successfully restored to yields which are similar to adjacent portions of the same field that were not disturbed by construction. TransCanada shall compensate the landowner for reduced yields at market rate until the area is successfully restored.**

During construction, non-local workers would demand many of the same goods and services as tourists. For example, construction workers would utilize hotels, motels, restaurants, and drinking establishments that are also commonly used by tourists. The increase in demand for accommodations and food services would normally be considered

a positive economic impact, but also could be considered a negative impact if demand creates upward pressure on the cost of labor or the price of rooms, or if non-local construction workers crowd out and displace traditional users. Such impacts are not expected to be significant or widespread and would be temporary in nature if they do occur.

Perhaps the most important tourist activity in the counties crossed by the proposed pipeline is hunting. Eastern South Dakota is especially known for pheasant hunting. Each year thousands of hunters visit the counties crossed by the pipeline for pheasant hunting from late October to early January. Construction would be winding down as the hunting season is starting and only minimal impacts on hunting would be expected.

The only designated recreational area directly affected by the proposed pipeline would be the Missouri River, which has been designated a National Recreational River. TransCanada is proposing to install the pipe under the river using horizontal drilling technology such that the bed, banks, or water quality of the river or areas within the National Recreational River administrative boundary would not be affected. Therefore, the project would not result in adverse impacts on the river or associated recreation.

County commissioners were contacted to determine if there were any special events in the project area that could be affected by construction. The county commissioners did not identify any special events that would require special coordination as of the date of the assessment. However, we noted that Beadle County hosts the state fair in early September each year, and while the influx of non-local workers could result in increased fair attendance and revenue, it could also increase competition for limited fair resources, such as campsites. Because the future of the fair is still somewhat

uncertain and the influx of workers has potential to both positively and negatively impact the fair, we recommend that:

- **TransCanada coordinate project activities with fair administrators so as to best make use of fair resources for traditional users as well as construction workers.**

The proposed project does not cross commercially or industrially developed land in South Dakota, although it also passes within about 2,000 feet one quartzite quarry in McCook County. It also crosses a few farmsteads and approaches a few areas of suburban residential development. Impacts of construction on residences could be significant on a site-specific basis, and might include noise and dust generated by construction equipment, limited access to property, increased traffic and congestion on nearby roads, and loss of valuable trees and landscaping. Communicating information about project schedules, employing appropriate safety procedures, and restoring affected areas can mitigate these impacts. Therefore, we recommended that:

- **TransCanada prepare and submit to the South Dakota Public Utilities Commission for review and approval a residential mitigation plan to:**
  - **a. coordinate construction work schedules with affected residential landowners prior to the start of construction;**
  - **b. maintain access to all residences, except for brief periods essential to pipe-laying as coordinated with affected residential landowners;**
  - **c. installing temporary safety fencing to control access and minimize hazards associated with an open trench in residential areas;**

d. **notifying affected residents in advance of any scheduled disruption of utilities and limit the duration of any interruption to the smallest time possible;**

e. **repairing any damages to property that result from construction activities; and**

f. **restoring all areas disturbed by construction to preconstruction conditions or better.**

After construction, certain structures and uses would be prohibited on the permanent pipeline right-of-way, including construction of aboveground structures, construction of septic systems, planting or cultivation of trees, or quarry and mining activities. These restrictions would not necessarily restrict future development of a particular parcel of land, but could affect the physical layout of how the particular parcel is developed or the methods by which it is developed.

TransCanada has indicated that it would compensate landowners for a permanent easement based on the full market value of the land affected by the pipeline just as if it were purchasing the land in fee, and would compensate at half market value for areas that would be temporarily disturbed during construction but are not retained on a permanent basis. If an easement cannot be negotiated with a landowner, TransCanada may be able to obtain an easement by the use of eminent domain. In this case, the landowner would still be compensated by TransCanada, but the amount of compensation would be determined by the courts.

Frequently, property owners affected by pipeline projects are concerned about property devaluation caused by a permanent pipeline easement. A 2001 study of four

communities around the United States funded by the Interstate Natural Gas Association of America suggested that the presence of a pipeline had no significant impact on the sale price or demand for properties located along pipeline rights-of-way.

The project area has sufficient temporary housing to accommodate the expected influx of workers and family members. Most temporary housing is already serviced by existing utilities, such as gas, electric, water, sewer, solid waste disposal, and telephone. Construction of new utility lines or infrastructure to serve the temporary population influx (other than the electric transmission lines to serve the four new pump stations) would not be required.

Impacts on the existing school system are expected to be minimal. Due to the transitory nature of construction, most workers do not travel with school-age children. Because the peak of construction occurs during the summer months when school is not in session, the educational system would need to accommodate at most 6 children in each grade level during the beginning of the school year. The existing educational system should be able to accommodate this small influx of students. Further, this estimate is probably high because, more likely than not, school age children would return to their permanent residence outside of South Dakota at the start of the school year.

Most law enforcement in the project area is provided on a local level by city police departments or county sheriff departments. In 2006, the ten counties crossed by the proposed pipeline employed 130 full-time law enforcement officers in local sheriff and police departments. This equates to a ratio of 1 local law enforcement officer per 587 people. During the peak of construction, the ratio would be reduced slightly to about 1 local law enforcement officer per 597 people. To maintain the ratio of law enforcement

officers per person, 2 additional officers would be required during the peak of construction.

Historical data suggests that the influx of non-local workers on pipeline projects does not affect local crime rates. Department of Justice crime data for sheriff offices in fourteen counties crossed by a 380-mile pipeline project in Kansas and Colorado with a similar non-local workforce showed no discernable crime bump in 2004 attributable to construction. In fact, aggregate property crime reported by the sheriffs' offices was at its lowest rate compared to the four years preceding and one year following construction and violent crime was slightly lower than average.

As with local law enforcement, demand for firefighting or other emergency services would not be expected to increase dramatically during construction. The community infrastructure just a few years ago accommodated a larger population than the increase expected from the influx of workers. With crude oil pipelines, however, there is always a concern that a leak or incident during operation of the pipeline could require emergency response. TransCanada has developed a draft emergency response plan that is being reviewed for adequacy by the Public Utilities Commission.

In addition to an emergency response plan, federal regulations also require pipeline operators to establish public awareness programs to enable customers, the public, government officials, emergency responders, and those engaged in excavation activities to recognize a pipeline emergency and respond appropriately. According to TransCanada, it would implement a comprehensive integrated public awareness program consistent with that employed by TransCanada on all its pipelines in the United States. As part of its integrated public awareness program, TransCanada would educate

emergency response officials on the company's emergency response procedures and how the company would work with emergency responders during an emergency, and would involve local emergency responders in its training exercises.

The economic impact of a pipeline incident is impossible to predict and would depend on many factors, such as the volume of the spill, the particular type of crude oil spilled, the location of the spill, and the resources affected by the spill. Some incidents may be small or occur in safe locations with little impact, while others may be large or occur in unusually sensitive areas. Regardless of size or location of an incident, almost all incidents would result in additional economic output. However, economic output should not be confused with economic progress because, although cleaning up the leak may generate work, earnings, and spending, it would mainly benefit the clean-up company and would be at the expense of TransCanada, the affected landowner, and the environment. In any case, TransCanada indicated that it would be responsible for losses that arise from a leak on the Keystone Pipeline, including the clean-up expenses and property damages caused by the leak. If the leak were caused by a third party, it seems plausible that TransCanada might seek damages from the third party.

Although health care is readily available in the counties crossed by the proposed pipeline, there is potential for increased demand for emergency medical services to treat injuries from construction-related accidents. Based on accident rates for the construction industry and workforce estimates from TransCanada, about 8 construction-related accidents might be expected in 2008 and 14 construction-related accidents might be expected in 2009. Not all accidents would necessarily require medical attention. The counties and cities in the vicinity of the project appear have adequate health care services

to meet the emergency as well as routine health care needs of the community during construction.

South Dakota's road system serves as the backbone of the state's transportation system and carries the bulk of the state's commercial goods as well as personal travel. The movement of construction equipment, materials, and crew members to the project area would result in additional traffic on the roads in the counties crossed by the pipeline and in adjacent counties. According to county commissioners polled as of the date of the assessment, the existing road infrastructure would be sufficient to accommodate construction traffic, although heavier traffic and slower moving vehicles could be encountered by road users at various times. No new permanent roads would be constructed in South Dakota as part of the proposed project.

On a site-specific basis, impacts associated with installing the pipeline under roads would be temporary and minor and would not be expected to significantly disrupt traffic. Only eight gravel roads and no paved roads of the more than 175 road crossings would be closed and detoured for up to 48 hours each during the two years of construction. TransCanada would be required to obtain all state and local permits necessary to cross roads with the pipeline. It would be the responsibility of the state or local permitting authority to ensure that traffic flow would not be significantly impacted by road closures and that affected roads are restored to preconstruction conditions or better after construction. However, in the interest of public safety, we recommend that:

- **TransCanada coordinate road closures with state and local emergency responders (law enforcement, fire, and medical) and provide sufficient advance notice of road closures to appropriate response agencies.**

Hauling materials to and from the project site would very likely result in deteriorated roadbed conditions, particularly on gravel roads. We recommend that:

- **TransCanada implement a regular program of road maintenance and repair throughout active construction to keep paved and gravel roads in an acceptable condition for travel by the public. Following construction, TransCanada would be responsible for restoring deterioration caused by construction traffic such that the road is returned to its preconstruction condition or better. Repairs during and after construction would be consistent with federal, state, and local requirements.**

The project could also result in damage to roads from tracked vehicles crossing the roads as they move down the construction right-of-way or from heavy equipment tracking dirt and mud on roads, which may become a nuisance to local residents or cause slippery and dangerous road conditions. To minimize these potential problems, we recommend that:

- **TransCanada use rubber mats, tires, plywood sheets, steel plates or similar material to prevent damage to the road surface where tracked vehicles cross paved roads, and TransCanada install a combination of matting, culverts, and/or 50-foot-long crushed stone access pads at road crossings and other ingress and egress points to construction work areas to allow mud to fall off construction-related vehicles prior to leaving the work area. If excess soil or mud is tracked onto roadways, it should be shoveled or swept off immediately.**

South Dakota law requires and indemnity bond for projects such as this to insure that any damage beyond normal wear to public roads, highways, bridges, or other related facilities would be adequately compensated. We recommend that:

- **TransCanada obtain a bond in the amount of $3 million in 2008 and $12 million in 2009 to insure that any damage beyond normal wear to public roads, highways, bridges, or other related facilities would be adequately compensated. If project plans change such that a different bonding amount is warranted (*e.g.*, the construction schedule or spread lengths change), TransCanada would be required to inform the South Dakota Public Utilities Commission of such changes and propose a different bonding amount of Commission review and approval.**

The proposed project would be subject to 4% sales and use tax and 2% contractors' excise tax, for a total of 6% tax. Based on the taxable value of the project in South Dakota, the state would collect about $18 million from construction. Compared to statewide sales and use tax, the proposed project would result in only a small increase (about 2%) in state revenues. Spread over two years, the benefits would be less noticeable. Furthermore, the proposed pipeline may be eligible for a tax refund of up to 75%, thereby effectively dropping the tax rate to 1.5%, or $4.5 million.

During operation, crude oil shipped in the pipeline would not be retailed within the state; therefore, no sales or use tax would be generated by the product in the pipeline. However, the electricity and other goods and services purchased by TransCanada to operate its pipeline would be subject to a 4% sales and use tax. Electricity purchased

from local utilities would generate an about $404,000 of annual tax revenue; other goods and services could generate about $20,000.

Operation of the proposed pipeline also would be subject to *ad valorem* property taxes. The property tax rate charged in South Dakota varies by property type, by county, and by year. *Ad valorem* property taxes associated with the proposed project would increase countywide tax revenue between 2.6% and 13.7%, which is a significant benefit to the counties. The electric transmission lines associated with the proposed project also would be assessed *ad valorem* property tax. Electric transmission lines, however, only pay *ad valorem* property tax on real property (*i.e.*, land and buildings). Personal property is subject to a 2% gross receipts tax in lieu of property tax. It was assumed that no additional real property would be required for the electric transmission lines and all taxes would be gross receipts taxes. Gross receipts taxes were estimated at $282,000.

Indirect and induced spending associated with construction also would generate tax revenue for the state and local governments, primarily through sales and use tax. Additionally, other types of state taxation would be levied on certain types of spending, such as a 1% tourism tax on hotels and motels. Indirect and induced spending would generate about an additional $2.6 million in tax revenue during construction and $146,000 annually during operation.

In consideration of all the above facts, I have found that the proposed project, with incorporation of the recommended mitigation measures, would not, from a socioeconomic standpoint: 1) pose a threat of serious injury to the socioeconomic conditions in the project area; 2) substantially impair the health, safety, or welfare of the inhabitants in the project area; or 3) unduly interfere with the orderly development of the

region. I note that TransCanada would be required to comply with all applicable laws and rules during construction and operation of the pipeline.