

Verloop, Marja D

From: Paul Elliott [paul_elliott@transcanada.com]
Sent: May 26, 2011 3:54 PM
To: Paul Elliott
Subject: Keystone XL Aboriginal and Tribal Engagment
Attachments: Keystone XL Tribal Outreach May 2011.pdf

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Currently there is a briefing being conduct on Capitol Hill that provides one view of the Keystone XL pipeline and its impact on certain of Canada's Aboriginal communities.

Below is an overview of TransCanada's engagement in Canada with Aboriginal communities directly impacted by the Keystone XL pipeline.

Attached is a briefing that presents TransCanada engagement of Tribal communities in the U.S. and in association with the Keystone Pipeline.

Update on Aboriginal Engagement Activities

Keystone has continued ongoing Aboriginal engagement activities with the following communities (the core communities):

- in Saskatchewan, the Nekaneet group:
 - Siksika Nation;
 - Nekaneet First Nation, and
 - Métis Nation - Saskatchewan Western Region III.
- in Alberta, the Siksika Nation and the following Maskwacis communities:
 - Ermineskin First Nation;
 - Louis Bull Tribe;
 - Montana Cree First Nation, and
 - Samson Cree Nation.

In addition, Keystone has provided Carry the Kettle First Nation, Saddle Lake First Nation (Saddle Lake), Alexander Cree First Nation (Alexander) and Red Pheasant First Nation (Red Pheasant) with updated information on the Project, proposed construction schedules and employment and contracting opportunities.

The Moosomin First Nation (Moosomin) and Sweetgrass First Nation (Sweetgrass) have also been provided with updated information on the Project, including the proposed construction schedule. To date, no feedback has been received from either community.

Focus of Engagement Activities

Since July 2010, Keystone's Aboriginal engagement activities for the Project have focused on the following areas:

- mitigation plans for identified traditional knowledge (TK) sites;
- archaeological site delineation and field testing;
- conducting cultural ceremonies as mitigation for TK and archaeological sites;
- potential employment and contracting opportunities during construction; and
- monitoring plans during construction.

Mitigation of Traditional Knowledge Sites

Since July 2010, Keystone continued to work with the core communities to identify TK and archaeological sites based on findings obtained through the Project's TK field assessments. Concerns have been identified and mitigation measures were recommended. These recommendations were considered in light of environmental, engineering and constructability assessments of the proposed pipeline alignment. These assessments included field visits with Elders of select sites that could be directly impacted by construction. The results were shared with the communities and their feedback incorporated where feasible and practical.

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The primary TK activities undertaken by Keystone included:

- reviewing the mitigation measures that were recommended by the core communities;
- identifying and documenting the TK sites that could be effectively mitigated by avoidance through measures like flagging, fencing, realigning the ditch line and reducing the amount of workspace for construction activities;
- identifying and documenting the TK sites that could not be effectively mitigated because of factors such as:
 - topography;
 - local grading restrictions;
 - environmental effects (e.g., locations of wetlands with listed plant or wildlife habitat);
 - existing facilities (e.g., crossings of foreign pipelines, roads or railways);
 - grading and ditch spoil storage requirements; and
 - safety considerations such as the distance between the Keystone XL Pipeline and the adjacent parallel pipelines.
- meeting with the communities, at their request to discuss Keystone's environmental, engineering and constructability assessments.

Archaeological Site Delineation and Testing

Keystone invited the core communities to participate in an archaeological testing program (ATP) that began in the spring of 2010 and continued until November 2010. All core communities agreed to participate in the fieldwork associated with this ATP. For Alberta, a rotational system was used to ensure one cultural representative was in the field at all times. In Saskatchewan, all three cultural groups were present during the ATP field work.

The ATP is required under the *Heritage Resource Act* of Alberta administered by Alberta Culture and Community Spirit (ACCS), and under the *Heritage Property Act* of Saskatchewan, administered by the Heritage Resources Branch, Ministry of Tourism, Parks, Culture and Sport (TPCS). The ATP involves shovel testing to delineate previously identified archaeological and paleontological sites within the Keystone right-of-way (ROW). Shovel tests were done on 142 sites in Alberta and 93 in Saskatchewan in 2010. All sites were mapped, photographed and documented in compliance with provincial requirements.

The ATP is expected to be complete by mid-July 2011. Ten sites in Alberta will be mapped and two to three sites in Saskatchewan will be revisited at the request of the TPCS. It is possible that TPCS will require revisits to additional sites. The work will commence as soon as weather and ground conditions permit. Each of the core communities will again be invited to participate in this work.

Once the ATP is completed, the information garnered through the program will be submitted to the appropriate provincial authorities and shared with the core communities.

Cultural Mitigation for TK and Archaeological Sites

Keystone's discussions with the core communities suggest that they do not distinguish between different components of the Project (e.g., environmental mitigation, pipeline or pump station construction, Hardisty tank terminal installation, or horizontal directional drilling crossings). As a result, these communities have taken a holistic view of cultural mitigation for the Keystone XL Pipeline.

Out of respect for this holistic approach, Keystone has supported, and will continue to support, a series of ceremonies for activities associated with the Keystone XL Pipeline. These ceremonies began in June 2010 and are expected to continue through construction.

At the direction of Elders, two main types of ceremonies, village and field, have been designated. The village ceremonies follow ceremonial protocols involving a Pipe and Sweat Lodge ceremony accompanied by a feast and distribution of gifts. The field ceremonies have been, and will continue to be, held at specific locations within the ROW. The field ceremonies are considered small but nevertheless follow ceremonial protocols. In addition, community Elders have requested that any field activity be accompanied by start-up and wrap-up ceremonies. Keystone has to date held ceremonies in accordance with these requests and will continue to do so, whenever possible. The communities determine and guide Keystone as to the ceremonial type, timing, and location. They also identify the Pipe Holders/Carriers who are invited, as well as other key participants. Elders have formally requested Keystone's participation in the ceremonies. In response, Keystone has been represented by senior staff and management at all of the ceremonies held to date.

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The Siksika Nation has advised Keystone that it will perform a Big Smoke ceremony as a cultural mitigation measure for the identified sites that cannot be otherwise mitigated. This ceremony has yet to be performed. The Maskwacis communities advised that they plan to provide Keystone with a written response and confer with Elders on the type of ceremonies that they will recommend for cultural mitigation.

Employment and Contracting Opportunities During Construction

Since July 2010, all but two of the Aboriginal communities — Moosomin and Sweetgrass — have expressed continued interest in employment and contract opportunities during construction. Keystone has informed the various communities that employment and contracting opportunities during construction will be focused on the core communities.

Further, Keystone has made presentations to all of the core communities, as well as to Red Pheasant, Alexander and Saddle Lake First Nations, on the procurement process for the Keystone XL Pipeline. These presentations have addressed such topics as:

- steps involved in the procurement process;
- registration of Aboriginal businesses;
- types of sub-contracts that the prime contractor may allocate; and
- types of services required for pipeline construction.

Additionally, to identify and confirm the capacity and resources that might be available to the Project through the core and other communities, Keystone has met with the economic development, human resource and/or consultation officers of the communities listed above.

At meetings with the core communities, Keystone advised that pre-construction fieldwork employment opportunities have been provided to 134 Aboriginal people. Keystone has also provided the core communities with a list of services and expected construction positions that will be required for pipeline construction. This list was provided in the interests of job readiness.

Concerns and Resolution

Project-specific Concerns

During engagement since July 2010, the core communities have raised Project-specific concerns arising from their participation in field programs for the Project. As discussed under the heading Mitigation of Traditional Knowledge Sites, Keystone has documented these concerns and the appropriate mitigation measures. Keystone has also provided a rationale as to why no further measures can be implemented.

The Maskwacis communities and Siksika Nation identified the following Project-specific concerns:

- repatriation and ownership of archaeological artifacts;
- participation in monitoring culturally significant sites during construction;
- construction impacts on medicinal plants;
- support for traditional ceremonies;
- culturally significant stone features, including tipi rings and cairns;
- participation in archaeological site investigations;
- potential effects on waterways and water quality; and
- potential effects of oil spills during operation.

The Project-specific concerns of the Métis Nation - Saskatchewan Western Region III, the Nekaneet First Nation, and Siksika Nation centred on physical and cultural mitigation for identified sites.

Keystone continues to discuss with the core communities the use of Aboriginal ceremonies as cultural mitigation for those sites that may be potentially impacted by construction activities.

Keystone also continues to respond to community requests for meetings on matters related to the Keystone XL Pipeline.

Broad Concerns

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In addition to the Project-specific concerns arising through engagement and the field programs, broader concerns have been voiced by the core communities in the context of future TransCanada projects. These broader concerns include:

- Aboriginal communication and engagement protocols;
- community participation in environmental field surveys; and
- employment and contracting practices for Aboriginal businesses.

In reply, Keystone has advised the communities that it follows TransCanada's *Aboriginal Relations Policy* for engaging with Aboriginal communities on its projects.

With respect to the environmental field surveys, Keystone have advised that fieldwork planning and implementation for the Keystone XL Pipeline is nearly complete and that Aboriginal participation in future TransCanada projects will be considered on a project-by-project basis.

As described above under the heading Employment and Contracting Opportunities During Construction, Keystone will direct its prime contractor to meet with the core communities to identify employment and contracting opportunities. For the Keystone XL Pipeline and future TransCanada projects, Keystone has advised the communities to follow TransCanada's contracting guidelines that are available on the TransCanada website and to register with the third-party responsible for administering the intake of possible contractors to TransCanada. Contact information for this third party was provided to the interested communities.

Monitoring Procedures for Heritage and Traditional Resources

Keystone has prepared and documented mitigation plans for identified heritage and TK sites in the TK Resource Specific Mitigation Table included in the *Environmental Protection Plan (EPP)*. The EPP will be provided to the various contractors that will be performing construction activities on the Project. The contractors' conformance to the EPP will be monitored by Keystone's field construction management team and tracked using an environmental commitment tracking log.

In addition, Keystone plans to employ a total of four Aboriginal Resource Technicians (ART or Aboriginal construction monitors), two per pipeline construction spread, whose specific duties will be to monitor mitigation activities for heritage and TK sites during construction.

The core communities helped develop job descriptions for these monitors and are directly involved in the ART candidate selection process. The monitors are expected to be hired in early summer and will be trained in Keystone's documentation requirements and notification process prior to construction. They are scheduled to start on or about September 1, 2011 and will be employed throughout construction. The ARTs will report to the construction manager on each spread or his/her designee.

Should any significant and unexpected artifact be unearthed during construction, a group of community-selected Elders, six for Alberta and six for Saskatchewan, will provide guidance on mitigation options to the field construction management team. The Elders will be available on an as-needed basis.

Paul Elliott
Government Relations
TransCanada Corporation
Telephone: (646) 823-7026
Cell: (917) 828-3983

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Keystone XL Tribal Outreach

TransCanada's approach to tribal outreach on the Keystone XL project was developed from over 30 years of experience in working with indigenous communities throughout North America. TransCanada applied the practice of building and maintaining positive relationships with the tribes, who reside near our pipeline rights-of-way, as part of their overall tribal engagement initiative.

TransCanada adopted a set of principles that we have operated under for this project:

1. TransCanada respects the diversity of Native American cultures, recognizes the importance of the land and cultivates relationships based on trust and respect;
2. TransCanada works together with native communities to identify impacts of company activities on the community's values and needs in order to find mutually acceptable solutions and benefits;
3. TransCanada strives to create short and long-term employment and business opportunities for Native American people impacted by our activities;
4. TransCanada supports learning opportunities for Native American people to provide a well-trained source of native employees and to build capacity within Tribal communities;
5. TransCanada respects the legal and *Constitutional sovereign rights* of Native American peoples and recognizes that relationships with Native American peoples are separate and different from that of the Federal Government;
6. TransCanada supports the Section 106 government-to-government process and assists the regulatory agencies in achieving goals set forth in Section 106.

Tribal outreach to date:

TransCanada initiated a comprehensive strategy that provided an aggressive and innovative outreach approach. TransCanada has continually maintained contact with all interested tribes and have been actively working with tribes in exploring employment and business opportunities for both the construction and operations phases of the project.

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In Early 2008

A series of community visits were made by TransCanada personnel. TransCanada introduced the company and our intentions for the up coming project. TransCanada developed a better understanding of the tribes and also exchanged contact information.

In Late 2008

TransCanada hosted three meetings in Pierre, South Dakota, with approximately 17 tribes attending. We introduced TransCanada and our tribal engagement approach. We also planned tribal involvement in the cultural survey process. To date, we have had 25 tribal members, representing 12 tribes, who have participated in cultural surveys.

From Early 2009 to present

In January 2009, TransCanada established a position of Tribal Liaison in its Omaha, NE, office, in order to sustain the development of long term relationships with tribes. Our Tribal Liaison has worked actively with the dozen of tribes located in proximity to the Keystone XL project on various initiatives of mutual interests, such as facilitating enhanced awareness of the pipeline business via Pipeline 101 sessions, facilitating employment and business opportunities, community investment as well as involving the tribes in TransCanada's Integrated Public Awareness Program. He continues to maintain regular contact with the tribes and will do so over the construction and operation of the proposed pipeline.

Establishing and Maintaining Communications - TransCanada established improved communication channels with Tribal officials and other organizations to increase knowledge and understanding of the Keystone XL project. TransCanada, in turn, learned from Tribal governments and organizations of the needs and concerns of their members.

Establishing and Maintaining Ongoing Outreach Mechanisms - As TransCanada enhanced its communication channels with the Tribes, outreach occurred promptly and effectively. TransCanada shared information with the Tribes and sought their input into the project. Any proposed project changes were communicated to the Tribes as early in the process as was practicable and appropriate. Inherent in the ongoing outreach process was the need for providing technical assistance to Tribes in order for them to realize the full potential of the project. By doing this they recognized the impacts and came to understand that TransCanada will make every effort to minimize those impacts. In addition, TransCanada strove to resolve problems and issues in a focused manner which is, as always, mindful of the Government-to-Government relationship as well as legal, fiscal and political constraints.

Tribal Meetings - On many occasions, TransCanada hosted meetings with the Tribes, which provided a means to share information about the project, potential opportunities for the Tribes to voice their views. These gatherings were separate

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from Section 106 consultation meetings and provided a forum for airing more general concerns, a means for recharging the relationship, and an opportunity to meet new company personnel. The meetings also allowed TransCanada to develop an understanding of the tribe's decision-making process and to get to know its decision makers. The meeting agendas were set by consulting with tribal representatives, so that they may learn what the Tribes expect the process and substance to be. Tribes have their own ways of conducting meetings and TransCanada gave plenty of notice beforehand so tribal representatives had adequate time to prepare. The Tribes were also allowed to send as many representatives as they wished.

Community Investment - The main purpose of the community investment efforts was to support local tribal communities aligned with Keystone XL business priorities. TransCanada created awareness internally by connecting with Regional Community Outreach Specialists and leveraging Tribal community partnerships and communication initiatives throughout the US. The following are some examples of community investment efforts.

TRIBE	PROJECT
Cheyenne River Sioux	Emergency Shelter/FEMA
Blackfeet	Para-Professional Training
Ponca	Playground
Rosebud Sioux	Union Dues
Ft Peck	Warrior Society
Gila River	Warrior Society
Warshied Development	Tribal Governance Program
Omaha Tribe	THPO Office Support

Cultural Resources - TransCanada contacted both the tribal governmental leaders and the Traditional Historic Preservation Officer prior to the formal initiation of Section 106 consultation in order to determine the appropriate point(s) of contact. Consistent with the Programmatic Agreement and its associated coordination and treatment plans, Keystone XL completed the cultural resources surveys, with the assistance of numerous tribes, so that appropriate avoidance, minimization, and treatment measures were implemented and completed prior to construction. TransCanada ensured that the process provided the Tribes a reasonable opportunity to identify its concerns about historic properties; advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance to them; articulate its views on the undertaking's effects on such properties; and participate in the resolution of adverse effects. Tribal outreach commenced early in the planning process, in order to identify and discuss relevant preservation issues and plans how to address concerns about confidentiality of information obtained during the cultural studies. TransCanada made a reasonable and good-faith effort to identify Tribes that may attach religious and cultural significance to historic properties

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that may be affected by the undertaking, even if those tribes are located a great distance away from the project.

Traditional Cultural Properties - The effort to identify and evaluate historic properties has also been aided by the completion of Traditional Cultural Property (TCP) reports which TransCanada coordinated. The early planning for Keystone XL identified interested tribes and TransCanada worked closely with those tribes to complete the studies. The following chart identifies the tribes involved with the studies;

TRIBE	STATE
Alabama-Coushatta	Texas
Northern Arapaho	Wyoming
Blackfeet	Montana
Cheyenne Arapaho	Oklahoma
Spirit Lake Nation	North Dakota
Turtle Mountain Chippewa	North Dakota
Pawnee Nation	Oklahoma
Yankton Sioux Tribe	South Dakota
Santee Sioux	Nebraska
Caddo Nation	Oklahoma
Lower Sioux Tribe	Minnesota

Integrated Public Awareness Program - Tribal public officials associated with the IPA Program were identified and updated in the TransCanada IPA database. The focus was on the fact that the IPA efforts needed to be effective and all the authorities responsible for emergency response are known and appropriately involved. As part of the IPA Program an Emergency Scenario on the Ft. Peck Reservation with TransCanada personnel, the local municipalities and Tribal Emergency entities to establish protocol for TransCanada's Emergency Management process was completed.

TransCanada's proactive approach to tribal outreach is based on three key elements: communication, engagement and commitment. TransCanada believes that it's important to continually communicate with tribal communities, effectively engage with them about the project activities, and follow through on all commitments.

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Verloop, Marja D

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From: Paul Elliott [paul_elliott@transcanada.com]
 Sent: June 05, 2011 8:12 PM
 To: Paul Elliott
 Subject: Briefing: Fitting Failures at Keystone Pipeline Pump Stations
 Attachments: Briefing Fitting Failures at Keystone Pipeline Pump Stations June 2011.pdf

Briefing: Fitting Failures at Keystone Pipeline Pump Stations
 Sunday, June 05, 2011
 Washington, DC
 (ATTACHMENT)

- o Ludden Pump Station North Dakota on Saturday, May 7, 2011
- o Severance Pump Station, Kansas on Saturday, May 28, 2011

INTRODUCTION

TransCanada operates the 2,151 mile long Keystone oil pipeline system which originates from Hardisty, Alberta and transports crude oil to U.S. Midwest markets. Phase 1 of the Keystone Pipeline went into service in June 2010 with deliveries to Wood River and Patoka, Illinois. Phase 2 went into service in February 2011 extending delivery capability to Cushing, Oklahoma. The U.S. portion of the pipeline includes 1,382 miles of 30" and 36" pipeline and a total of 27 pump stations.

INCIDENT DESCRIPTION, INITIAL RESPONSE & NOTIFICATION

At approximately 6:05 a.m. CST on Saturday, May 7, 2011 a failure occurred on a thermal relief valve piping fitting at the Ludden Pump Station in Sargent County, North Dakota, resulting in the release of approximately 400 barrels of crude oil. TransCanada's Oil Control Center operator detected a change in flow rates immediately and was performing checks to verify a suspected leak condition when a call was received from a landowner reporting a visible oil release at the Ludden station. The station was immediately isolated and the pipeline shutdown by 6:35 a.m. CST. Field personnel arrived on site at approximately 9:00 a.m. CST, secured the site and began mobilizing clean up crews.

On Saturday, May 28, 2011 a failure occurred on a pressure transmitter fitting at the Severance pump station in Doliphan County, Kansas resulting in the release of approximately 10 barrels of crude oil. TransCanada's Oil Control Center operator detected a drop in pressure at the transmitter location at approximately 11:20 p.m. CST, isolated the station and shut the pipeline and flow of oil down by 11:30 p.m. CST. Field personnel arrived at 1:30 a.m. May 29, 2011, secured the site and began mobilizing clean up crews.

In both incidents all leak detection and pipeline isolation equipment functioned as designed.

The National Response Center was notified within the required 2 hour reporting period for each incident. The North Dakota Department of Health and the Kansas Department of Health and Environment were notified accordingly.

CLEAN UP

Clean up crews began arriving on site at the Ludden Pump Station in the afternoon of Saturday, May 7, 2011. Containment and clean up of a small amount of oil that was released offsite and recovering

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pooled surface oil within the site boundaries began immediately. On and off site clean up was completed and crews demobilized on Monday, May 16, 2011. The total amount of oil recovered from the site was 393 barrels of free standing oil and 300 cubic yards of oil affected gravel and soil. It is estimated that approximately 5 barrels of oil migrated offsite and was cleaned up in accordance with North Dakota Department of Health requirements.

Clean up crews arrived on site at the Severance Pump Station at approximately 7:00 a.m. CST the morning of Sunday, May 29, 2011. They immediately began clean up operations. On and offsite clean up was completed and crews demobilized on Saturday, June 3, 2011. The total amount of oil released into the station gravel and soil is estimated at less than 10 barrels. An estimated 8 gallons of oil was released offsite, misting a small area of grass.

FAILURE INVESTIGATION

TransCanada's internal review of oil control system operating records determined that the incidents did not cause, nor were they a result of, any pipeline overpressure events. In both cases the components that failed were small diameter fittings. The integrity of the main transmission piping is not in question.

The source of the leak at the Ludden Pump Station was a 1 - inch X $\frac{3}{4}$ inch threaded swaged nipple connection on small diameter thermal relief valve piping. This piping was located on the 30" downstream pump station discharge piping in the proximity of the station pressure control valve. Metallurgical analysis of the nipple identified the presence of cracks at the root of the threads believed to be the result of over torquing of the fitting during installation. High cycle fatigue due to operational vibrations propagated the cracks to failure.

The source of the leak at the Severance Pump Station was a $\frac{1}{2}$ inch diameter threaded nipple at an oil pressure transmitter manifold located on the 30" downstream pump station discharge piping in the proximity of the station pressure control valve. Metallurgical testing has indicated the cause of the failure to be high cycle fatigue due to operational vibrations. No signs of over torquing were observed on the Severance nipple.

Improper or defective materials were ruled out as contributing factors of either incident.

CORRECTIVE ACTIONS

To ensure the safe and reliable restart of the pipeline and to prevent recurrence of similar incidents occurring on the Keystone system in the future, TransCanada has made improvements. These include replacements and modifications to the affected components at the Ludden and Severance Pump Stations and all other applicable stations along the entire length of the pipeline prior to the line being restarted after each event.

In response to the Ludden incident, all thermal relief valve piping sections were braced and supported at each of Keystone's 47 stations, and every thermal relief valve fitting similar to the one that failed was replaced with a thicker fitting with a higher safety design factor. These modifications and replacements were part of TransCanada's own Corrective Action and Restart Plan and were completed between May 10, 2011 and May 12, 2011. The pipeline was restarted on May 13, 2011.

In response to the Severance failure, 63 pressure transmitters at 21 pump station sites were remounted on stand alone supports isolating them from piping vibrations, and nearly 300 pressure transmitter fittings were replaced with new ones. These modifications and replacements were completed between May 31, 2011, and June 4, 2011. The pipeline was restarted on June 5, 2011.

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In addition to these improvements, extensive non-destructive tests (i.e. magnetic particle inspections and dye penetrant inspections) were performed on station piping connections that were in proximity to the pressure control valve on every like kind pump station to ensure that these connections were not adversely affected by the same factors that contributed to the two nipple failures.

RESTART

TransCanada is using a staged approach to safely restart the Keystone pipeline system which will include manned coverage at certain identified stations. Ramping up the flows on the system in stages will allow for a gradual increase in the load on the pipeline system. This conservative approach will allow the system time to gradually warm up, as well as providing an opportunity to confirm the effectiveness of the repairs and assess operational performance levels prior to proceeding to each subsequent flow rate stage.

Restart of the pipeline subsequent to the Severance facility incident commenced at 8:49 a.m. on June 5, 2011

Once the pipeline has been returned to service additional modifications are planned to further reduce the probability of recurrent incidents. In addition, TransCanada has formed a team to conduct additional surveys and studies into the operating performance of the pipeline to determine if there are additional measures that are necessary to further improve its long term reliability.

REGULATORY ACTIONS AND APPROVALS

Based on the results of its failure investigations and in parallel with the execution of its corrective actions, TransCanada began discussions with the Central Region Office of the Pipeline & Hazardous Material Safety Administration (PHMSA) on May 31, 2011. These discussions culminated in the submission of a Corrective Action & Restart Plan by TransCanada to PHMSA for its review on June 2, 2011.

On June 3, 2011 PHMSA issued a Corrective Action Order specifying 14 actions that TransCanada is required to address. Three of the 14 actions were a condition precedent to restarting the pipeline.

On June 4, 2011 TransCanada filed a Restart Plan with PHMSA in direct response to the requirements in the Order, and PHMSA issued its approval of that plan later that day.

TransCanada restarted the Keystone pipeline at 8:49 a.m. CST on June 5, 2011.

Paul Elliott
Government Relations
TransCanada Corporation
Telephone: (646) 823-7026
Cell: (917) 828-3983

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Briefing: Fitting Failures at Keystone Pipeline Pump Stations
Sunday, June 05, 2011
Washington, DC

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- o Ludden Pump Station North Dakota on Saturday, May 7, 2011
- o Severance Pump Station, Kansas on Saturday, May 28, 2011

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On Saturday, May 28, 2011 a failure occurred on a pressure transmitter fitting at the Severance pump station in Doliphan County, Kansas resulting in the release of approximately 10 barrels of crude oil. TransCanada's Oil Control Center operator detected a drop in pressure at the transmitter location at approximately 11:20 p.m. CST, isolated the station and shut the pipeline and flow of oil down by 11:30 p.m. CST. Field personnel arrived at 1:30 a.m. May 29, 2011, secured the site and began mobilizing clean up crews.

In both incidents all leak detection and pipeline isolation equipment functioned as designed.

The National Response Center was notified within the required 2 hour reporting period for each incident. The North Dakota Department of Health and the Kansas Department of Health and Environment were notified accordingly.

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June 5, 2011

UNITED STATES DEPARTMENT OF STATE
REVIEW AUTHORITY: ALAN H FLANIGAN
DATE/CASE ID: 13 SEP 2011 201101495

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CLEAN UP

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Clean up crews arrived on site at the Severance Pump Station at approximately 7:00 a.m. CST the morning of Sunday, May 29, 2011. They immediately began clean up operations. On and offsite clean up was completed and crews demobilized on Saturday, June 3, 2011. The total amount of oil released into the station gravel and soil is estimated at less than 10 barrels. An estimated 8 gallons of oil was released offsite, misting a small area of grass.

FAILURE INVESTIGATION

TransCanada's internal review of oil control system operating records determined that the incidents did not cause, nor were they a result of, any pipeline overpressure events. In both cases the components that failed were small diameter fittings. The integrity of the main transmission piping is not in question.

The source of the leak at the Ludden Pump Station was a 1 - inch X $\frac{3}{4}$ inch threaded swaged nipple connection on small diameter thermal relief valve piping. This piping was located on the 30" downstream pump station discharge piping in the proximity of the station pressure control valve. Metallurgical analysis of the nipple identified the presence of cracks at the root of the threads believed to be the result of over torquing of the fitting during installation. High cycle fatigue due to operational vibrations propagated the cracks to failure.

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Improper or defective materials were ruled out as contributing factors of either incident.

CORRECTIVE ACTIONS

To ensure the safe and reliable restart of the pipeline and to prevent recurrence of similar incidents occurring on the Keystone system in the future, TransCanada has made improvements. These include replacements and modifications to the affected components at the Ludden and Severance Pump Stations and all other applicable stations along the entire length of the pipeline prior to the line being restarted after each event.

In response to the Ludden incident, all thermal relief valve piping sections were braced and supported at each of Keystone's 47 stations, and every thermal relief valve fitting similar to the one that failed was replaced with a thicker fitting with a higher safety design factor. These modifications and replacements were part of TransCanada's own Corrective Action and Restart Plan and were completed between May 10, 2011 and May 12, 2011. The pipeline was restarted on May 13, 2011.

In response to the Severance failure, 63 pressure transmitters at 21 pump station sites were remounted on stand alone supports isolating them from piping vibrations, and nearly 300 pressure transmitter fittings were replaced with new ones. These modifications and replacements were completed between May 31, 2011, and June 4, 2011. The pipeline was restarted on June 5, 2011.

In addition to these improvements, extensive non-destructive tests (i.e. magnetic particle inspections and dye penetrant inspections) were performed on station piping connections that were in proximity to the pressure control valve on every like kind pump station to ensure that these connections were not adversely affected by the same factors that contributed to the two nipple failures.

RESTART

TransCanada is using a staged approach to safely restart the Keystone pipeline system which will include manned coverage at certain identified stations. Ramping up the flows on the system in stages will allow for a gradual increase in the load on the pipeline system. This conservative approach will allow the system time to gradually warm up, as well as providing an opportunity to confirm the effectiveness of the repairs and assess operational performance levels prior to proceeding to each subsequent flow rate stage.

Restart of the pipeline subsequent to the Severance facility incident commenced at 8:49 a.m. on June 5, 2011

Once the pipeline has been returned to service additional modifications are planned to further reduce the probability of recurrent incidents. In addition, TransCanada has formed a team to conduct additional surveys and studies into

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the operating performance of the pipeline to determine if there are additional measures that are necessary to further improve its long term reliability.

REGULATORY ACTIONS AND APPROVALS

Based on the results of its failure investigations and in parallel with the execution of its corrective actions, TransCanada began discussions with the Central Region Office of the Pipeline & Hazardous Material Safety Administration (PHMSA) on May 31, 2011. These discussions culminated in the submission of a Corrective Action & Restart Plan by TransCanada to PHMSA for its review on June 2, 2011.

On June 3, 2011 PHMSA issued a Corrective Action Order specifying 14 actions that TransCanada is required to address. Three of the 14 actions were a condition precedent to restarting the pipeline.

On June 4, 2011 TransCanada filed a Restart Plan with PHMSA in direct response to the requirements in the Order, and PHMSA issued its approval of that plan later that day.

TransCanada restarted the Keystone pipeline at 8:49 a.m. CST on June 5, 2011.

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Verloop, Marja D

From: Verloop, Marja D
Sent: June 15, 2011 11:46 AM
To: Hodges, Eann; Wieser, Penny J.
Subject: Two more 4th invites.

RELEASED IN FULL

Eann/Penny –

My apologies for the oversight. Would it be possible to print out invites for:

Peter Kruselnicki and Paul Elliott. They are both with TransCanada. I will hand deliver as they are both outside Ottawa and flying in from Calgary and NY respectively. Thanks, Marja

Marja Verloop
Counselor for Energy and Environment
U.S. Embassy Ottawa
Tel: 613.688.5210
Fax: 613.688.3087
verloopmd@state.gov