Trans Alaska Pipeline System

AOGA Legislative Briefing
December 11, 2012
Presented by Betsy Haines, Oil Movements Director
Incorporated August 14, 1970 to design, build, operate and maintain the pipeline, pump stations and the Valdez Marine Terminal.

Currently owned by five oil pipeline companies. In transition.

Alyeska personnel and contractors continually monitor and operate TAPS so oil flows safely, efficiently and in an environmentally sound manner.
Background

• Approximately 11 percent of the nation's domestic oil production carried on TAPS.
• Nearly 17 billion barrels of crude oil transported.
• 20,000+ tankers loaded.
• 582,895 barrels throughput per day, 2011 average.
<table>
<thead>
<tr>
<th>Company</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>BP Pipelines (Alaska), Inc.</td>
<td>46.9263%</td>
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<tr>
<td>ConocoPhillips Transportation Alaska Inc.</td>
<td>28.2953%</td>
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<td>ExxonMobil Pipeline Company</td>
<td>20.3378%</td>
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<tr>
<td>Koch Alaska Pipeline Company, L.L.C.</td>
<td>3.0845%</td>
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<tr>
<td>Unocal Pipeline Company</td>
<td>1.3561%</td>
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“We didn’t know it couldn’t be done.”
TAPS Today

- Four active pump stations with forward flow: 1, 3, 4 & 9
- Pump Station 5: relief station
- Pump Station 7: recirculation
- Yukon Response Base, Delta Response Base, and Glennallen Response Base
- Valdez Marine Terminal (VMT) and Ship Escort/Response Vessel System (SERVS)
Ramp up & peak production

- Designed to move 1.5 million barrels per day
- Peak production, 1988 2.1 million barrels per day
Declining throughput

- **2014**: 32°F with 18 Day Transit from Prudhoe Bay to VMT
- **1988**: 100°F+ with 4 Day Transit from Prudhoe Bay to VMT

Actual Trend graph showing declining throughput from 1980 to 2028.
Declining flow

• TAPS was designed as a warm oil pipeline
• Circumstances have changed:
  – Throughputs and temperatures continue to decline
  – At 550k barrels/day, portions of the pipeline will be at 32°F during the winter months
Crude Oil Temperatures

Adjusted Pipeline Temperatures
24 Hour Average Adjusted Temperatures for Nov 25 and Dec 2, 2012

The adjusted temperatures have an offset applied to the values based on the temperature data gathered from FDL (Pipeline Data Logger) runs.
Low flow issues

• Water dropout
• Ice formation
• Wax deposition
• Frost heaves
• Snow accumulation
Low flow issues – water/ice

– Water separation and accumulation at low points during flowing conditions
– Ice formation in flowing conditions
Wax received with scraper pig
Valdez Snow Removal
Low flow scenario

- Poor weather
- Cold temperatures
- Boom challenges
- Inventory builds
- Producers prorate (scale back production)
- Potential shut-down
Declining Throughput

There is one simple way to avoid the water dropout, ice formation, wax deposition and geotechnical concerns that TAPS faces as flow declines. That solution is to increase and sustain throughput in the pipeline.

Regardless of the technological or political path to increasing throughput, greater flow rates would increase the health and viability of TAPS.
Determination, ingenuity, partnership
More information:
www.alyeska-pipeline.com
For daily throughput reports, follow us on Twitter @AlyeskaPipeline