



# ALYESKA MONTHLY

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## TAPS VALVES

### Ongoing program of improvement

Alyeska discovered in 1997 that it had a valve problem. The maintenance service levels on the Trans Alaska Pipeline System's (TAPS) 176 mainline valves were not standardized and the valves were starting to show their age. More important, the mechanisms that control these and other facility valves were wearing out and requiring more and more maintenance while replacement parts were getting harder to find.

Alyeska came up with a two-part solution. First they launched an intensive program that concluded in 2001 to bring all of TAPS high priority valves up to a known service level. They then developed the TAPS Valve Maintenance Management Plan to standardize the system's valves and establish routine maintenance procedures that will ensure the valves continue to function properly well into the future.

"The valve maintenance management plan is the control document that tells us how to maintain TAPS valves and it directs us to do it," said Bill Aus, Alyeska's valve

and contingency repair engineer. "The plan defines the standard to which TAPS must hold itself in order to meet or exceed legal and regulatory standards."



**TAPS workers replace a 48-inch gate valve north of Coldfoot in 2002.**

Under the plan, TAPS valves that do not meet Alyeska's performance standards either have been or are scheduled to be replaced with standardized, modern valves. To untrained eyes, the upgraded valves look substantially the same. However, they are both safer and more durable than the old valves.

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## IN THE FIELD

### Alyeska Operations Control Center move planned

Alyeska Pipeline Service Company plans to relocate its Operations Control Center (OCC) to Anchorage from Valdez.

"This move is part of Alyeska's long-range strategy to upgrade control systems and consolidate the OCC at a single TAPS (Trans Alaska Pipeline System) location," said Dan Hisey, Alyeska's chief operating officer.

Careful study of pipeline operations showed that new communications systems and technologies allow Alyeska to best meet its business needs by moving the OCC to Anchorage.

"The original system location was based on a lack of commercial infrastructures such as telecommunications," said Mike Joynor, Alyeska's oil movements manager, noting the challenges of constructing TAPS in the mid-1970s. "New control and telecommunications systems have overcome geographical boundaries and allow the integration of technologies that provide improved access and sharing of data from a centralized location."

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# PRESIDENT'S MESSAGE

## Great performance for TAPS in 2003

**David Wight,**  
**President and CEO**



Looking back on 2003, it's worth noting the strong performance our company delivered in the areas of safety and operational integrity.

In the January edition of Alyeska Monthly, we told you about our improved safety record during the past year. With only eight U.S. Occupational Safety and Health Administration (OSHA) reportable incidents and two lost time accidents in 2003, it was the safest year on TAPS since we started tracking this data.

While Alyeska should be applauded for this milestone, we realize there is still work to be done. The safety performance of our contractors remains an area of focus. When you combine the contractor totals with Alyeska's, there is a substantial increase to 25 OSHA reportable incidents and 14 lost time accidents. Ultimately, our goal is to have nobody get hurt and to send everybody home safely each day.

As much as safety is a fundamental piece of our operating philosophy, we are ultimately in the business to move oil from Alaska's North Slope to Valdez. It's a relatively simple equation – yet it offers many challenges.

There are many factors that can impact reliability. Some we can predict, such as maintenance schedules. Others – like weather patterns and earthquakes – are out of our control. Through careful planning we can minimize these factors and maintain a high rate of reliability. Which leads me to our next major accomplishment in

“Alyeska Pipeline is delivering on its promise of safely and efficiently transporting oil.”

2003. For the first time in the history of TAPS we achieved 100 percent reliability for an entire year. This is a remarkable accomplishment. This means that we were able to manage all of the oil we received from the North Slope producers without impact on their production schedules. Alaskans should have confidence in our ability to meet the responsibility of delivering this valuable energy resource in an environmentally conscious manner.

Our workers take great pride in their work and they should be extremely proud of their efforts. This sends a clear message that Alyeska Pipeline is delivering on its promise of safely and efficiently transporting oil.

# VALVE PROGRAM

(continued from page 1)

The upgraded valves have higher machine tolerances and some use metal-to-metal seating so that materials will not break loose that could injure workers. Some valve parts are tungsten carbide coated to reduce wear and certain valves have additional automatic lubrication injection ports that simplify and improve maintenance.

A bigger improvement will be the new actuator and operator mechanisms that control the valves. Their electronic upgrades will enhance future valve operations and allow for automated and/or remote control and self-diagnostics.

“Standardizing valve-related equipment will increase efficiency and safety on TAPS by reducing training and inventory expenses, decreasing the variety of potential problems and increasing maintenance and operations worker familiarity with all of TAPS valves,” said Aus. “It all dovetails perfectly with strategic reconfiguration planners’ efforts to modernize TAPS.”

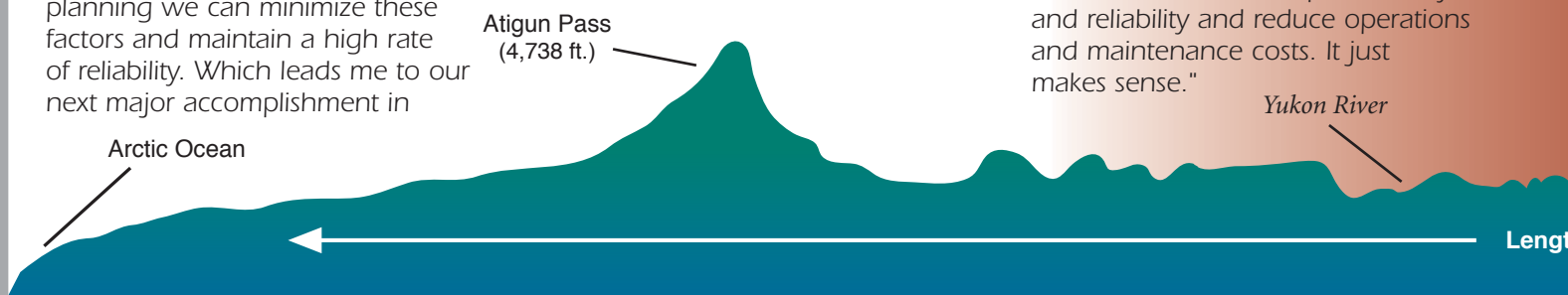
A big step toward implementing the valve maintenance and management plan was accomplished last year when Aus finished the pipeline valve maintenance manual. This document details virtually everything there is to know about TAPS pipeline valves and how workers maintain them.

“The valve program has significantly improved external confidence in Alyeska’s valve integrity,” said Aus. “Having one document control valve-related decisions leads to TAPS-wide standards that improve safety and reliability and reduce operations and maintenance costs. It just makes sense.”

Atigun Pass  
(4,738 ft.)

Yukon River

Arctic Ocean



Length

# FACE TO FACE

## Elizabeth "Betsy" Haines

### Measurement and Scheduling Manager

Betsy Haines grew up in Anchorage and competed as a Nordic skier in the 1980 Winter Olympics in Lake Placid. She is a mechanical engineer who worked as an Alyeska intern when in college. She joined Alyeska full time in 1980 as a project group engineer working on major piping projects. Haines later supervised pump stations 2 and 3 and worked as an assistant to Alyeska president Bob Malone during the 1997 reorganization. She became measurement and scheduling manager in 1998.



### Q: What does the Measurement and Scheduling Department do?

**A:** The Trans Alaska Pipeline System (TAPS) is a common carrier that is owned by five "producer" companies that are business competitors. They depend on Measurement and Scheduling to determine when they can transport oil and then track exactly how much they move.

This process is complicated because every barrel of crude is unique and oil volume shrinks as it travels through the 800-mile-long pipeline. We follow American Petroleum Institute measuring standards and constantly maintain and validate our systems.

I came to this position thinking that measurement and scheduling was a straightforward job. In fact, everything varies and we must constantly adjust our systems to maintain consistency.

Measurement and Scheduling is the heart of Alyeska because it is impacted by virtually everything that happens around the pipeline, from North Slope production changes, to pipeline maintenance operations and Prince William Sound weather.

### Q: Is technology changing your job?

**A:** Absolutely. We are in the process of selecting and installing a new enterprise data management system that will give TAPS-wide access to measurements and scheduling information. This change will significantly improve Alyeska's operations and business efficiency by giving everybody virtually instant access to the information they need when they need it.

### Q: What's next?

**A:** Alyeska is a great place to work. I really appreciate the trust that co-workers have shown in my ability and the opportunities the company has given to me. Now I'm working to ensure that other women are afforded the same kinds of opportunities that I've had.

# IN THE FIELD

(continued from page 1)

For reasons ranging from construction costs to the proximity of work groups, it makes sense to relocate the OCC to Anchorage. The move will allow OCC personnel to work more closely with oil movements and scheduling teams that are already based in Anchorage. Approximately 20 employees will have to relocate because of the move.

Alyeska officials are still working out specific plans for the project, but the move will probably take place in 2005 or 2006, depending upon project schedules. The OCC's exact location in Anchorage has not been determined.

# PIPELINE RELIABILITY

**January Reliability:** 99.87%  
**2004 Reliability:** 99.87%

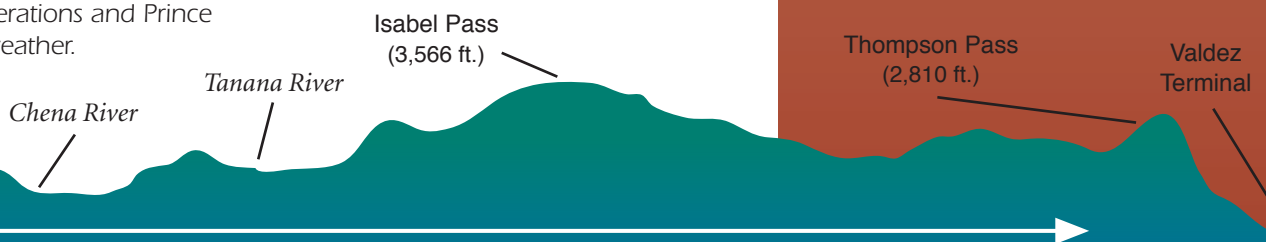
There was one proration in January that impacted reliability. On Jan. 24 there was an unplanned pipeline shutdown due to invalid indication on valve 972, resulting in 40,176 barrels deferred.

**January Throughput:**  
31,129,844 BBLs

**January Daily Average:**  
1,004,189 BPD

**2004 Throughput:**  
31,129,844 BBLs

**2004 Daily Average:**  
1,004,189 BPD

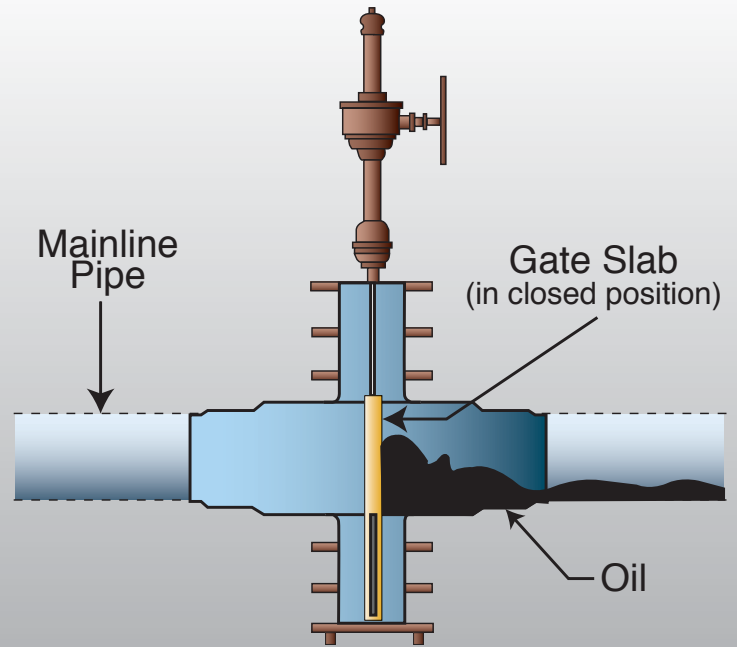


# VALVES

The 800 mile-long Trans Alaska Pipeline System (TAPS) has 176 valves that control oil flow through its 48-inch mainline pipe. Most of these valves are environmental safeguards that ensure safe operation and limit the potential size of spills, especially at stream crossings and other environmentally sensitive areas. There are 81 check valves that allow one-way oil flow and prevent the reverse of flow. And pipeline operators can open and close 95 gate valves to block the flow of oil in either direction.

# Pipeline 101

## Remote Gate Valve



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