

STATE OF ALASKA

STATE PIPELINE COORDINATOR'S OFFICE

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Department of Environmental Conservation

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Department of Natural Resources

Department of Public Safety Fire Marshal's Office

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Section/Stipulation: 16(c), 22(a), 1.18.1

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DD.: N/A

Mr. Joseph Robertson
Director of Regulatory Affairs
Alyeska Pipeline Service Company
P.O. Box 196660, MS 502
Anchorage, AK 99519-6660

Re: State Pipeline Coordinator's Office (SPCO) Assessment of the Trans-Alaska Pipeline System (TAPS), Maintenance Prioritization

Dear Mr. Robertson:

Lease compliance staff from the SPCO conducted an assessment of TAPS maintenance programs and processes. The assessment contains two findings based on Section 16c, Section 22a, and Stipulation 1.18.1 of the TAPS ROW lease. Please find the assessment enclosed.

The SPCO requests that Alyeska Pipeline Service Company address the findings of the assessment as part of their incident investigation of the January 2011 pipe failure at Pump Station 01. The SPCO further requests that Alyeska present the results of the incident investigation as soon as it has been completed.

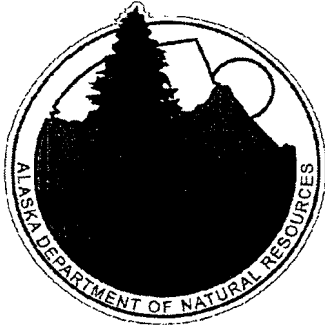
If you have any questions regarding this matter, please contact Jeff Bruno at (907) 269-6460.

Sincerely,


Frederick M. Thompson
State Pipeline Coordinator

Enclosure: Assessment Report 11-TAPS-A-001 with attachments (32 Pages)

cc: Judith McCormick, APSC (MS 502)
Anne Brown, SPCO
Ron Dunton, OPM, BLM
Justin Selvik, SPCO



State Pipeline Coordinator's Office

**Trans-Alaska Pipeline System
Right-of-Way Lease ADL 63574
Assessment Report: 11-SPCO-A-001
August 26, 2011**



An Assessment of Alyeska Pipeline Service Company's Maintenance Work Prioritization Process

**Analysis based on Alyeska Pipeline Service Company's
Compliance with the Trans-Alaska Pipeline System Right-of-Way Lease:**

*Section 16: Construction Plans and Quality Assurance
Section 22: Duty of Lessees to Prevent and Abate
Stipulation 1.18: Surveillance and Maintenance*

Justin Selvik

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The 2008 APSC assessment also stated that, “Alyeska assumes a high probability of significant, active corrosion associated with the belowground welds. This is a conservative assumption until more corrosion data is available to indicate otherwise. Given this assumption, the intact insulated concrete boxes offer some level of containment from hydrocarbon leaks in low pressure segments of the buried PS01 piping” (APSC Assessment: *Removing Concrete from PS01 buried Piping for Internal Corrosion Investigation Risk Assessment*, pg 1).

In October of 2008, ASPC staff created a PWR application for the replacement of the below ground piping at PS01. The PWR states that United States Department of Transportation (USDOT) regulations require inspections for integrity. Because inspection of below ground piping at PS01 is obstructed by the concrete encasements, APSC planned the W028 project to replace the piping.

The W028 PWR application states that action to replace or inspect the piping is required within three to five years to maintain compliance with federal regulation 49 CFR 195.12. Approved budget years listed in 2008 on the PWR worksheet were 2012, 2013, and 2014.

The W028 PWR worksheet scored the project with an overall priority ranking of 10. APSC placed the project in the “integrity” PWR category. APSC assigned the highest risk ranking of 10 based on interruptions to operations using the APSC risk management system, AMS-017.

The project review board supported the PWR priority score assigned to the project. On October 15, 2008, the project review board endorsed the Gate 1 review of project W028. The project review board subsequently endorsed the Gate 1B review of the project sometime between 2008 and 2011 (the date of this endorsement is not documented on the PWR application).

Analysis

Despite assigning an integrity risk level 10 to the project, the PWR provided a recommended implementation year based on regulatory compliance rather than pipeline integrity risks. APSC did not subsequently conduct a risk assessment of the integrity of the below-ground piping at PS01 to support the proposed implementation year. APSC did not implement interim controls to reduce risk of failure in the below-ground piping at PS 01. The piping failed in January of 2011, one year prior to the earliest implementation year recommended by the 2008 PWR.

In contrast, a project to replace 660 feet of below-ground piping that connects PS01 to the 501 Oil Transit pipeline was executed in 2010. The PWR for this project, P598, was created in November of 2008 and describes a situation similar to the W028 project; the below-ground piping was encased in concrete and could not be inspected.

Both PWRs address the fact that the below-ground piping at PS01 was more than 30 years old and not accessible to in-line inspection tools. Both the W028 and P598 PWR

applications claim regulatory compliance as a driver for the project. According to the P598 PWR, the action was required within two years in order to maintain regulatory compliance. The W028 PWR claims action to maintain regulatory compliance is required within three to five years. Both PWRs cite 49 CFR 195 as the regulation requiring action, but provide no detail as to the discrepancy in implementation timelines.

The PWR priority ranking for P598 was given a zero, therefore it cannot be considered in APSC's implementation of the P598 project before the W028 project.

7.0 Findings

The PS 01 belowground piping situation described above exemplifies inconsistent standards for prioritization in APSC's PWR process. As identified earlier in this assessment, most APSC maintenance work planning processes utilize risk and prioritization as major drivers in determining implementation timelines. For instance, i.e., the process of creating a work request for corrective maintenance in PassPort, APSC staff determines a priority level that has a timeline directly associated to it (e.g., priority level 03 is completed with 90 days). This assessment found that the PWR process does not directly associate priority level or risk with work implementation timelines.

Executing project work on TAPS is inherently more complex than executing maintenance work performed through the APSC work order systems. Long lead materials, engineering, financing, and other factors can contribute to delaying the implementation of project work. When planning project work, adhering to fixed implementation timelines based on priority may not align with resource availability or business strategy.

However, in situations where high priority projects require extended periods of time before implementation, the PWR process does have an embedded requirement for formally assessing risk, adding interim controls, or mitigations for managing risk.

This assessment found that the PWR process does not completely satisfy APSC's commitment to "demonstrate the ability to anticipate, detect and abate adverse conditions in order to maintain the integrity of its physical Assets" (QA-36 page 18). APSC's PWR process thereby falls short on meeting the intent of Section 16c of the ROW Lease; to "Provide practicable and appropriate means and procedures... for the prevention, detection and prompt abatement of any actual or potential condition that... could affect adversely... the operation, maintenance or termination of all or any part of the Pipeline".

This assessment found that APSC did not demonstrate compliance to Section 22a of the ROW lease which requires the prevention and abatement of a condition that could adversely affect pipeline operations. APSC failed to adequately assess the risk of keeping in service piping at PS 01 with "high probability of significant, active corrosion" and abate a condition that could adversely affect operations.

In addition, while conducting research in support of this assessment, the SPCO noted that many of the PWR worksheets APSC submitted to SPCO contained blank fields, leaving

incomplete records. Records are further complicated by the fact that, in the PWR system, any subsequent updates performed of a PWR worksheet overwrites existing information, leaving an incomplete historical record of the project planning process.

8.0 Conclusion

This assessment found that APSC's project work request process (PWR) does not adequately address prioritization. The APSC PWR system does not have a mechanism in it that requires an assessment of the risks associated with protracting the time it takes to implement project work. APSC does not have administrative protocols in place that assure project work is implemented in a manner that is optimal with regards to protecting human health and safety, the environment, and pipeline integrity.

9.0 Recommendations

The APSC Tk-190 Overfill Management Action Plan (MAP), dated July 22, 2010, was created in the wake of the overfilling of tank 190 at TAPS PS 09. One of the recommendations generated by the Tk-190 MAP establishes expectations for future incident investigations. APSC management's response to this recommendation included a commitment to "review and update business processes, procedures, and practices to ensure that clear direction is provided for the creation of these documents, appropriate storage locations, retention criteria, and methods of easy access for use in planning future work" (Tk-190 MAP, page 5).

This assessment echoes the Tk-190 MAP recommendation quoted above, and further recommends APSC includes an examination of how work is prioritized through the PWR process in its root cause analysis of the January 2011 incident at PS 01. The analysis should specifically address at which stage in the PWR planning process risk is assessed and interim controls or mitigations are required.

This assessment also recommends that APSC consider revising the PWR user interface so that updates to PWR worksheets do not overwrite existing entries. Likewise, APSC should encourage PWR users should to complete PWR worksheets entirely without leaving blank fields.

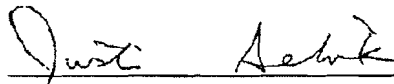
10.0 Appendix

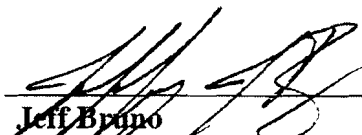
Endnotes:


¹ A maintenance strategy analyst is the functional title of a person performing an Informal Maintenance Strategy Analysis. The Analyst identifies the equipment or system functions, and failure consequences, and the requirements for maintaining the equipment or system. The Analyst develops cost-effective strategies to manage the identified failure modes. (AMS-026, page 18).


- APSC email to SPCO providing sample work orders and completed IMS, June 6, 2011.
- Meetings:
 - Meeting between APSC planner and SPCO. March, 2011
 - Meeting between APSC pipeline advisor and SPCO. April, 2011

12.0 Signatures

Assessment by:  8/29/2011
Justin Selvik
Natural Resource Specialist
State Pipeline Coordinator's Office
Department of Natural Resources
 Date

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