



The Deputy Secretary of Transportation

U.S. DEPARTMENT OF TRANSPORTATION
400 Seventh Street, S.W., Room 10200
WASHINGTON, D.C. 20590

June 05, 2006

The Honorable John D. Dingell
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Dingell:

Thank you for your letter of April 25 to Secretary Norman Mineta regarding questions and issues about the management of key pipelines in Prudhoe Bay by BP Exploration (Alaska), Inc., (BP). Secretary Mineta has asked me to respond on his behalf. Your letter raises serious questions regarding the March 2 leak of approximately 200,000 gallons of crude oil on the North Slope, as well as BP's capabilities to maintain the integrity of its pipelines in the Prudhoe Bay operating area.

I share your concerns regarding the safety of the Prudhoe Bay crude oil transit lines. The U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) is working hard to ensure BP adequately addresses the safety and integrity of all of the company's pipelines. The DOT is committed to ensuring that all operators operate their lines safely.

The Pipeline and Hazardous Materials Safety Administration issued a Corrective Action Order to BP on March 15, requiring that BP take action on several measures to ensure the protection of the public, property, and environment during this critical time. The PHMSA staff has met with BP management in Denver, Washington, DC, and Alaska and has held numerous telephone conferences with BP to resolve issues such as the sludge build-up concerns you mention in your letter.

The Department's responses to your questions are provided in the enclosure to this letter. I have also provided a copy of my response and enclosure to the parties listed in your letter.

I hope this information is helpful to you. If I can provide further information or assistance, please feel free to call me.

Sincerely yours,

A handwritten signature in black ink, appearing to read 'Maria Cino', is written over the typed name. The signature is fluid and cursive.

Maria Cino

Enclosure

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The Honorable John D. Dingell

**cc: The Honorable Joe Barton, Chairman
Committee on Energy and Commerce**

**The Honorable Kathleen Clarke, Director
Bureau of Land Management
U.S. Department of Interior**

**Mr. Jerry Brossia, Authorized Officer
The Joint Pipeline Office
Federal Bureau of Land Management – Alaska State Office**

**Mr. Kevin Hostler, President and Chief Executive Officer
Alyeska Pipeline Service Company**

**Responses to Questions in Congressman John D. Dingell's
April 25, 2006, Letter to the Secretary**

- 1) (a) Does the U.S. Department of Transportation share the view that sludge may be a contributing factor to corrosion (and thus, pipeline integrity) and if so, how specifically?

Answer:

Yes, the material may be a contributing factor; sludge has been known to cause corrosion due to sulfate reducing bacteria forming underneath the sludge. The bacteria can lead to the formation of localized corrosion pits. Sludge also may have a sheltering effect, preventing chemical inhibitors from reaching the corrosion source and pipe steel to be protected. As a result of these potential concerns, DOT has ordered BP Exploration (Alaska) Inc. (BP), to conduct laboratory analyses on the sludge found in the pipeline to determine its corrosive properties and integrate those findings into an internal corrosion management plan. Additionally, DOT believes periodic cleaning operations of the Prudhoe Bay West Operating Area (PBWOA), Prudhoe Bay East Operating Area (PBEOA), and Lisburne pipelines will greatly reduce the risk of internal corrosion by sweeping away water and sediment that may reduce the effectiveness of the BP-applied corrosion inhibitors. The Corrective Action Order requires BP to commence running maintenance pigs on these three pipelines and to develop and get DOT approval of a long term plan for routine cleaning of the above-mentioned pipelines.

- (b) What impact would the buildup of sludge or other material have on the effectiveness of corrosion-detection coupons?

Answer:

Corrosion-detection coupons are a widely used means for monitoring corrosion rates. Materials such as scale and sludge in the BP transit oil lines should not have affected the ability of coupons to monitor general corrosion properties in the environment. The location of the coupons will, however, impact their ability to representatively measure corrosive activity. The coupons exposed to the product stream only measure the mils-per-year corrosion rate for the areas in which they are installed. The placement of the coupons used by BP was in the higher, above-ground sections of the pipeline, which are less susceptible to internal corrosion than the lower areas of the pipeline where water and sediment that are more conducive to corrosion can accumulate. Therefore, based upon current information, the location of the coupons became a factor in BP's failure to detect an excessive corrosion rate before a leak occurred.

- 2) Alyeska officials informed staff that the entire 800-mile Trans Alaska Pipeline System (TAPS) is regularly cleaned with scraper pig once every 14 days.

- (a) Is this DOT's understanding? And if so, what benefit does such scraping have on the integrity of this line or pipelines in general?

Answer:

Yes. Alyeska conducts cleaning pig operations on the TAPS on a 2-week cycle. The scraping removes water and other impurities that may cause corrosion, waxes (paraffin) and other materials that increase friction and thereby reduce flow rates. Regular removal of paraffin build-up improves operational efficiency and also is conducive to obtaining better in-line inspection survey results.

- (b) What is DOT's understanding of the frequency of smart pigging on TAPS?

Answer:

Currently Alyeska is on a 3-year cycle for smart pigs. The next pig run is scheduled for 2007, although we have recently learned that Alyeska is planning a supplemental smart pig run in 2006 to collect additional pipe corrosion data.

- 3) Staff was informed that several of the key lines serving the PBEOA (specifically the main transmission lines from Flow Stations 1, 2, and 3 that ultimately connect to Skid 50) and the Lisburne line have not been cleaned with a scraper pig, nor have they been examined with a smart pig, since as long ago as 1992. Moreover, staff was informed that these lines may now collectively contain considerable sludge and other buildup. In fact, company officials interviewed by staff said that there is potential for approximately 1,000 to 2,000 cubic yards of sludge to be removed from the pipelines that flow from Skid 50 to Flow Stations 1, 2, and 3.

- (a) What is DOT's understanding of the frequency in which the key lines that service the PBEOA, from Flow Stations 1, 2, and 3 to Skid 50 have been scraped with maintenance pigs. What is DOT's understanding of the frequency of smart pigging of these lines? Please also address the frequency of smart pigging and cleaning pigging for the Lisburne line.

Answer:

The BP has advised DOT that it has not conducted a maintenance cleaning pig run on the PBEOA pipeline since 1990. The BP informed us that cleaning was started in 1990, but it was not completed because BP found a significant amount of sludge and other buildup was pushed into TAPS and negatively affected Alyeska operations. The last smart pig conducted on the PBEOA line was in 1990; however, debris in the line adversely affected the quality of the data.

The BP advised DOT that it has not conducted a maintenance cleaning pig on the Lisburne pipeline since 1994. It is the DOT's understanding that the Lisburne line has never been smart pigged.

- (b) At present, what is DOT's general understanding of the condition of all lines referenced in question 3(a)? Also, is it correct that at this point many of the lines in the PBEOA are deemed "indeterminate" by DOT?

Answer:

The DOT cannot confirm the condition of the lines referenced in question 3(a) until it has reviewed the results of testing required by the March 15 Corrective Action Order, which brought the referenced lines under its regulation. The Corrective Action Order requires BP to perform an internal inspection using a calibrated smart pig on the PBEOA and Lisburn pipelines. Further information should be available to DOT once the initial cleaning pig runs are complete and subsequent smart pig investigations have been conducted. The DOT will continue to monitor the situation and will carefully evaluate the data once it becomes available to ensure BP takes appropriate action to completely address all anomalies discovered in accordance with the standards for anomaly repair in 49 C.F.R. Part 195. Furthermore, DOT will be reviewing and approving BP's internal inspection plans prior to implementation.

- (c) Does DOT have an estimation of the amount of sludge buildup that may exist in these lines by volume measure? What is the process for removing large amounts of sludge and buildup should it exist?

Answer:

The DOT does not have an estimate of the amount of sludge that may exist in these pipelines. The BP is currently conducting gamma ray testing to try to determine the amount of solids that may be in the pipeline. The process is to conduct iterative pigging with progressively aggressive cleaning pigs to remove the sludge and other buildup.

- (d) Why does the entire 800-mile TAPS get scraper-pigged once every 14 days, yet many of the key lines that comprise the PBEOA have not been scraper pigged for perhaps as long as 14 years? Are there reasonable explanations for not scraper pigging these lines and does this length of time represent sound maintenance practices?

Answer:

The TAPS line is scraper-pigged every 14 days to remove water and other impurities, enhance operational efficiency by reducing pipeline friction, and remove paraffin that may compromise smart pig surveys. The DOT has not received a reasonable explanation why BP has not scraper-pigged these lines over an approximate 14-year period. In our opinion, based on current information, this length of time does not represent sound management practices for internal corrosion control.

4) Staff was told by one official that previous attempts were made to operate the scraper pigs on the major lines of the PBEOA (from Flow Stations 1, 2, and 3 to Skid 50) and the Lisburne line, yet some of these efforts were abandoned due to the volume of sludge being produced.

(a) Has DOT determined if earlier attempts were made to clean any or all of these key lines and were significant amounts of sludge found?

Answer:

During an April 2006 information gathering meeting, BP informed DOT that a 1990 cleaning pig attempt of the PBEOA line was terminated due to high volumes of debris present in the pipeline.

(b) Has DOT asked for all documentation to show the maintenance history of those lines and any discussion regarding potential earlier difficulties in cleaning them due to high sludge or buildup volume?

Answer:

Yes.

(c) Does DOT even know the key results of these earlier pigging efforts?

Answer:

Yes. The DOT received documentation of pig history and key results from pig data available for the smart pig run in 1998 on PBWOA.

5) Both Alyeska and BP officials told staff that if the sludge in these lines is considerable, the possibility exists that any maintenance pig sent through these lines might become stuck, which in a worst case scenario could result in the shutdown of one or more flow stations.

(a) What is DOT's estimate of a pig "sticking" possibility?

Answer:

There is always a risk that a pig may get stuck in a pipeline. Although we have not attempted to quantify the degree of risk in this case, we consider it significant enough to warrant special precautions. The BP has reported it plans to use soft low density foam pigs initially because these type of pigs can more easily traverse a reduced (partially occluded) diameter pipeline. Upon successful completion of foam pig runs, BP will ramp up with larger diameter and more aggressive (i.e., brush pigs) cleaning pigs with each subsequent cleaning operation until the line is clear of debris, scale, and sludge.

- (b) On what specific lines and in what location is this possibility greatest?

Answer:

The PBEOA pipeline may have the highest possibility for sticking a pig due to significant quantities of material (sludge) found in the line on previous cleaning pig attempts. The deposits and material in this line will be the greatest at low spots, including road and animal crossings.

- (c) Does DOT believe that cleaning these lines could result in a blockage that could result in the shutdown of one or more flow stations?

Answer:

Yes, a blockage or pig malfunction is a possibility; however, BP's planned approach of progressively using more aggressive pigs is a common methodology that is successfully used in the industry to prevent problems with fluid bypass around the pig or blockage of the pig's flow path.

- (d) Should the worst case scenario occur and flow stations are shut down, what are the implications for a "cold restart," given the time period DOT estimates such cleaning efforts will need to take place (e.g., potentially cold-weather months)?

Answer:

The shutdown of a pipeline segment due to a maintenance pig is a possibility. After the March 2 incident and subsequent repairs, BP was able to shut-in and successfully cold restart Gathering Center #2. Its feeder lines were operational 2 weeks after a bypass pipeline was installed. It should be noted that fluids were injected into the feeder lines to prevent their freezing during shutdown and cold restart.

- 6) If considerable amounts of sludge are discovered in these lines, how will that sludge be captured and disposed of? Some officials told staff that both the metering and strainers at TAPS's PS 1 may have to be bypassed due to anticipated volume. Staff was also told that one scenario would be to collect such sludge in the breakout tanks at PS 1. Another scenario would be to have BP collect the material at Skid 50 before the material makes its way to PS 1, yet currently there are no tanks available that could hold the possible volumes of this material. What is DOT's understanding of how this material will be handled, particularly if it is so voluminous? If the material is collected in the PS 1 breakout tanks, does that raise safety or integrity issues for Alyeska and TAPS?

Answer:

The BP and Alyeska are currently conducting risk assessments on how to handle the material collected during BP's cleaning operations. If this material is voluminous, temporary storage at either the Skid 50 site or at PS 1 may be needed to collect the material and provide for proper disposal.

Because DOT is concerned about the potential safety impact of BP's pigging activity on Alyeska's operations, we are extending the time to June 12 for BP to start cleaning pig

operations to ensure an approach is developed which protects downstream equipment, including Alyeska's filters, meters, pumps and other TAPS-related safety equipment.

- 1) It is fully understood that BP Exploration (Alaska), Inc., had scheduled to smart pig the line that failed (and perhaps other key lines in the PBEOA) in 2006.

Nonetheless, there are now considerable engineering issues being "worked" to deal with the sludge problem and the potential for complications associated with running cleaning and maintenance pigs through at least some of these lines. Much of this engineering effort appears to be in its early stages. Moreover, until only recently senior officials from Alyeska appeared to know very little about the potential for downstream complications resulting from the potential sludge. Given that the warmer (i.e., summer) months are approaching and this period of time is viewed as the most opportune time to run maintenance pigs through these lines, one would expect that key engineering questions about this effort would already be addressed.

- (a) What evidence does DOT have regarding any scheduled pigging efforts planned for any of the lines covered by the Corrective Order that were in place prior to the rupture discovered March 2, 2006?

Answer:

The BP presented documentation in April 2006 that a maintenance and smart pig was to be conducted during 2006 on the PBWOA Crude Oil Transit Line. The BP believed the amount of solids in the PBWOA Crude Oil Transit Line was considerably smaller and therefore much easier to manage in a routine way than that of both the PBEOA and the Lisburne Pipelines.

- (b) Has the DOT asked BP for such evidence?

Answer:

Yes, DOT requested this information and BP presented documentation in April 2006 showing that maintenance and smart pig runs are planned during 2006 on the PBWOA Crude Oil Transit Line.

- 8) Recently, it was reported in the press that another line -- this time a smaller 3-inch gas pipe -- also failed due to corrosion. According to press accounts, the volume of gas release in this line was too small to report to regulators. Nonetheless, we believe understanding the causes of this rupture may have some relevance to the current undertaking being pursued by DOT's Corrective Order.

- (a) When, if at all, was the DOT informed about the second rupture?

Answer:

My staff was informed of the rupture by BP on or about April 19, 2006.

- (b) Was this a potentially dangerous event to either the environment or workers? If so, how?

Answer:

Any time an abnormal operation exists, both the environment and the associated workers could be at risk. The BP informed DOT that the failure occurred outside, not in an enclosed environment, thus, there were no trapped gases that were potentially explosive. The DOT was also verbally informed by BP that the incident occurred where workers were not present.

- (c) Has DOT determined the causes of this failure? If so, please provide them.

Answer:

The BP informed DOT that the April 6 pipeline failure was due to external corrosion beneath exterior pipe insulation and provided documentation supporting this determination. Because the failure occurred on an unregulated production line, DOT has not otherwise investigated this event.