

bp



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July 6, 2007

The Honorable John D. Dingell
U.S. House of Representatives
Chairman, Committee on Energy and Commerce
Washington, DC 20515-6115

Dear Chairman Dingell:

Thank you for the opportunity to address several of the issues that were raised during the May 16, 2007 hearing of the Subcommittee on Oversight and Investigations on the 2006 Prudhoe Bay shutdown. As discussed with your staff by telephone yesterday, BP is today submitting responses to questions 1 through 14 raised by Congressman Stupak in your June 20, 2007 letter. Your staff agreed that we may provide responses to Mr. Stupak's questions 15 and 16 no later than July 13, 2007.

Please feel free to call me if I may be of further assistance.

Sincerely,

A handwritten signature in black ink, appearing to read "R.A. Malone", written over a horizontal line.

Robert A. Malone

Attachments

Responses to June 20, 2007 Questions from Congressman Stupak

- 1. Mr. Malone, what other companies own the Prudhoe Bay field? What control, if any, do these working interest owners have over BP's budget for operating the field?**

Four companies have an interest in the field leases at the Prudhoe Bay Unit ("PBU"): ExxonMobil (36.4%), ConocoPhillips (36.1%), BP (26.4%), and ChevronTexaco (1.1%).^{1/} As described in the Prudhoe Bay Unit Operating Agreement ("UOA"), each of these companies is a Working Interest Owner ("WIO").

Because the budgeting and planning process for the PBU requires authorization by the WIOs, there is not a "BP budget" for operating the field. There is a PBU field expense budget that covers operations and maintenance for the field and that represents the collective budget for all the WIOs. As provided in the UOA, BP, as the field operator, prepares a proposed field expense budget and submits it to the other WIOs for consideration. As a practical matter, the operator's proposed field expense budget has rarely, if ever, been accepted without amendment by the WIOs; however, the process has generally resulted in an understanding of the potential range of expenditure against which BP, as operator, has worked. In addition to the budget approval process, expenditures for all rig workovers and expenditures related to major repairs or studies that exceed the operator's expenditure authority limit (currently \$1.35 million per project) need case-by-case approval from the WIOs. The WIOs approve projects above the operator's expenditure authority limit via an Authorization for Expenditure ("AFE") for the project in question.

- 2. Do working interest owners have veto power with respect to the budget for maintenance and related capital spending? Have they ever exercised that authority?**

Maintenance and capital expenditures are covered in two separate budgets: maintenance is a part of the field expense budget, while capital expenditures are funded through a separate capital budget. Similar to the approval process for the field expense budget, BP, as field operator, proposes an annual capital budget for WIO consideration. As with the expense budget, the capital budget is rarely approved as submitted, and negotiations to a final capital budget follow. In addition, for any capital projects that exceed the operator's expenditure authority limit, which today is \$1.35 million per project, the operator must obtain case-by-case approval from the WIOs. Project approval above the operator's expenditure authority is requested of the WIOs, on an individual project basis, by means of an AFE.

While the Prudhoe Bay UOA does not explicitly provide for "veto" power, the majority owner WIOs, ExxonMobil and ConocoPhillips, have the ability to approve or reject the field expense and/or capital budgets (as noted above), as well as individual AFEs above the operator's expenditure authority, and they have done so.

^{1/} For ease of discussion, "BP" is used as shorthand throughout this letter to refer to corporate actions that may have been taken by any of a number of legal entities affiliated with BP, including BP Exploration (Alaska) Inc. and BP Products North America, Inc. The use of "BP" in this context should not be understood as a reference to BP p.l.c. or as an equation of separate legal entities with any parent and/or other affiliate.

- 3. According to Booz Allen's interview with Bill Hedges, the head of BP's corrosion group in Alaska, the backlog of corrosion related items at the end of 2005 was 2000 items. He said that by 2006, the backlog had grown even further to 3000 items that require visual inspection and follow up. Is this statement correct? What is the backlog on corrosion inspections at Prudhoe Bay today?**

In his interview with Booz Allen Hamilton ("Booz Allen"), Mr. Hedges discussed locations for which corrosion-under-insulation ("CUI") mitigation was planned. At year-end 2005, there were 2,114 such locations. Although BP does not wish to allow CUI issues to linger over time, a standard element of effective maintenance scheduling is the planning of maintenance through what is colloquially termed a "backlog." The term "backlog" in this context is a misnomer—it simply refers to the deliberate accumulation of non-safety critical work orders so that work can be planned, prioritized, and scheduled efficiently. The "backlog" allows the consolidation of routine work and maximizes the use of maintenance crews to attend to those matters. Industry experts consider developing a work schedule to address routine maintenance items over time to be a best practice in order to plan work safely and maximize efficiency.

At year-end 2006, there were 3,609 locations for which CUI mitigation was planned, even though, during calendar year 2006, BP actually mitigated 1,215 locations with CUI issues. The increase in the overall number can mostly be explained by enhanced and aggressive detection efforts that BP employed as part of the mitigation process. As of June 2007, that overall number had decreased to 3,086 locations.

BP has been devoting significant resources both to increasing its detection efforts and to mitigating these CUI issues. BP has already spent \$14.2 million year-to-date on CUI mitigation efforts and projects that it will need \$40.9 million by year-end 2007 to reach its goal of having zero outstanding CUI issues.

- 4. Is it BP's position that cost cutting pressure and its impact on the decision making environment had no impact whatsoever on BP failing to smart pig the oil "transit" lines that leaked?**

As Mr. Malone said in his testimony, BP recognizes that budget decisions can affect a company's operations and its workforce in many ways. Over the past two years, BP has learned a great deal—both through direct feedback from employees and through formal studies of operations—about what those effects can be. BP has learned, for example, that budget decisions can impact employee morale, influence the openness of communications between management and the workforce, and affect the degree to which formal processes are followed. Those effects are relevant from a management perspective: risk assessments must inform all budget decisions, and the best information must be elicited from workers by fostering an environment in which everyone is willing to discuss issues and raise concerns.

BP does not believe that "cost cutting pressure" caused the leaks in the oil transit lines in 2006 or impacted the Corrosion, Inspection & Chemicals ("CIC") group's decisionmaking process with respect to whether and when to run in-line ("smart pig") inspections of the oil transit lines. The question as posed appears to imply that the CIC group identified a need to smart pig the oil

transit lines in the Western Operating Area (“WOA”) and Eastern Operating Area (“EOA”) but that smart pigs were then not run. That is not the case.

From the time of the 1998 smart pig run on the WOA oil transit line until 2005, the CIC group did not perceive a need for BP to smart pig either the WOA or EOA oil transit lines. The CIC group believed the corrosion risks on the oil transit lines were being managed by the existing monitoring, inspection, and mitigation programs and that the oil transit lines had a low probability of failure, based on the results of the 1998 pigging, subsequent inspection and monitoring data, and the fact that the lines carry sales-quality crude oil, which is considered to have a low corrosion risk.

The CIC group’s decisions regarding the need for pigging the oil transit lines from 1998 through 2005 did not hinge on the availability of funding but rather on the group’s internal analysis of these data, which was based on many years of inspection and successful experience managing corrosion on the WOA oil transit line. As Mr. Malone has testified, in hindsight BP now knows that the corrosion prevention program was inadequate.

5. Is it BP’s position that even if the Alaska Corrosion, Inspections, and Chemical Group (CIC) had a larger budget, they would not have smart pigged the oil transit lines that were later found to be so corroded that they leaked?

Yes. This question is addressed in the independent report by Booz Allen. The CIC group believed that the corrosion risks on the oil transit lines were being managed by then-existing monitoring, inspection, and mitigation programs. Thus, the CIC group’s decisions between 1998 and 2005 not to smart pig the oil transit lines were not tied to the availability of funding. Indeed, Booz Allen found that, if the CIC group had had more funds during this period, it would have applied them elsewhere because smart pigging the oil transit lines was not deemed to be a high priority.

Booz Allen found that the CIC group did not prioritize smart pigging of the oil transit line for two reasons:

1. They believed that, because the oil transit lines carried sales-quality crude oil, they were inherently at low risk for corrosion; and
2. They interpreted their historical inspection data of 29 years, including the 1998 smart pig run in the WOA,^{2/} as confirming that there was little corrosion risk in the oil transit lines.

In 2005, when inspection and monitoring results indicated greater incidence of corrosion, the CIC group took corrective actions by recommending and scheduling both smart and maintenance pigging. Unfortunately, a spill occurred before the corrective measures were performed.

BP now understands the need for, and has adopted, a more comprehensive and systematic approach to corrosion risk assessment. That approach incorporates greater sensitivity to changes

^{2/} The 1998 pigging of the WOA oil transit lines produced very few solids. The OT-21 segment showed moderate corrosion but was within BP’s fit-for-service criteria.

in operating and environmental conditions when assessing risk and encourages improved upward and cross-functional communication so that any concerns relating to safety are raised within the organization.

6. **A February 5, 2003 e-mail discusses the approval of a \$1 million study for portable pig launching and receiving facilities in the Eastern Operating Area on cross country and oil transit lines to “detect both internal and external corrosion.” Attached to that e-mail is a list entitled “pigging facility priority listing.” That document was also placed into the record for this hearing. Why did BP’s CIC Group commission this study? What was the cost of this study? Given an environment where discussions were taking place about reducing corrosion inhibitor, why did the CIC group expend scarce resources on the VECO report?**

BP commissioned the study—an “Appraisal-Level Cost Report”^{3/}—from VECO Alaska, Inc. (“VECO”) in 2003. The study was intended to provide BP with rough, order-of-magnitude cost estimates for AFE development associated with a potential future decision to add or upgrade pigging facilities on 71 lines in the EOA. This report followed two proposals that the Anchorage CIC group had developed between mid-2002 and early 2003:

- In June 2002, the CIC group submitted AFE #4N0492 seeking authorization from the other WIOs to install permanent pig launcher and receiver facilities on 25 lines in the EOA at a projected cost of \$2.5 million. This was not a request by the CIC group to pig the lines. The objective of this request was to provide some infrastructure to make pigging easier if it were later determined to be necessary. The AFE was ultimately rejected by one WIO and not approved by the other WIO pending additional engineering detail. Around the same time, the BP business unit planning department asked the CIC group for a technical package and detailed cost analysis, including an engineering estimate for the project.
- In response to that request, CIC prepared Master ID #2996 in January 2003 to “develop scope and perform preliminary engineering for temporary or portable pig launching and receiving facilities.” Since this project fell within a \$1 million threshold, it could be approved within the operator’s expenditure authority as it existed at that time. This also was not a request to pig the lines.

Following the preparation of Master ID #2996, the CIC group’s project team (which had not been involved in either proposal to date) evaluated the proposals. The project team quickly observed that both proposals—the initial \$2.5 million proposal to install pig launcher and receiver equipment and the second proposal to perform an engineering assessment for such a project for less than \$1.0 million—likely underestimated (by many orders of magnitude) what the project team expected to be a major capital project.

^{3/} “Appraisal-level” refers to the first step in the “Capital Value Process,” a generic “stage-gate” approach to approving and managing major projects that BP and many other corporations employ. The “Appraise” stage may be thought of as the very first “brainstorming” step that must be taken before any major capital project is begun, and it includes numerous activities, only one of which in this instance was the VECO study. The steps following Appraise are Select (where a decision is actually taken to make a capital expenditure), Define, Execute, and Operate.

BP thereafter retained VECO to provide a better assessment of the likely cost of such a project. The CIC group, wishing to have as comprehensive an estimate as possible, expanded the list of lines for VECO to consider from the original 25 in AFE #4N0492 to 71 lines, *i.e.*, all the large-diameter lines (of various sizes and design pressures) on the EOA that it wanted to consider for facilities to launch and receive smart pigs. This list included the segments constituting the EOA oil transit lines and the oil transit line for Lisburne so that upgrades to pigging capability could be considered.

The resulting appraisal-level cost report prepared by VECO represented a high-level evaluation of costs. It confirmed that adding or upgrading pigging facilities on those 71 lines would be a major capital project far in excess of the \$2.5 million estimated for the 25 lines in the June 2002 AFE. The VECO report's three options for completing the full project estimated expenditures at \$643 million (for permanently installed, indoor pig launcher/receiver facilities); \$180 million (for "portable," modularized launcher/receiver equipment); or \$164 million (for "temporary," component-assembled launcher/receiver facilities). The preliminary engineering costs would similarly have been many times higher than the less-than-\$1 million contemplated by Master ID #2996. As a rule of thumb, engineering costs on a project typically run about 10% of the total budget, with preliminary engineering roughly 30% to 40% of the total engineering costs. Under the \$643 million option, therefore, the preliminary engineering costs would likely have run between \$19 and \$26 million; even under the \$164 million approach, the preliminary costs would still likely have been between about \$5 and \$6.5 million.

The cost of the VECO study was roughly \$28,000. BP commissioned the report because it wanted to understand the potential scope of such a project. The study was designed to deliver an estimate for the lowest reasonable cost of such a project. That the report did not ultimately lead to a field-wide project estimated to cost \$160 million at a minimum does not mean that the project wasted BP's resources.

7. **On March 12, 2003, VECO Alaska, a contractor to BP, submitted to BP a reconnaissance level estimate report for installing pig launching and receiving facilities at 71 locations identified in the "pigging facility priority listing" mentioned in question #6. That pigging facility priority list included 3 segments of the Eastern Operating Area line—which had not been pigged for 16 years. One of the three lines listed in the "pigging facility priority listing" was an oil transit line, which was severely corroded and found to be leaking in August 2006. Was the VECO report commissioned to identify the cost of installing pig launchers and receivers, which would accommodate the larger "smart pigs"?**

Yes. The 71 locations, representing lines of various sizes and design pressures, were under consideration for installation of launcher and receiver facilities for smart pigging, and VECO was retained to provide a rough, order-of-magnitude cost estimate for such a project. Although certain lines, such as the oil transit lines, already had launcher and receiver facilities installed, their dimensions probably could not have accommodated the longer smart pigs in use as of 2003. Indeed, the CIC group needed to modify the cone of the smart pig used in the 1998 smart pig run for just this reason.

- 8. The VECO report provided a range of estimates from \$164 million to \$643 million to install the 71 pig launchers and receivers. What actions did BP take after receiving this report? Were any budget requests made to install any new pig launchers or receivers mentioned in the VECO report? In what year(s) were budget requests made? Were these budget requests approved? Were any of the pig launchers and receivers actually installed?**

The VECO appraisal-level cost report was undertaken to provide a better assessment of the potential costs associated with the installation of pig launcher and receiver facilities. The report was intended to help BP make appraisal-level and programming decisions about how to develop and budget for such a project.

Upon receipt of the report, BP decided not to pursue additional pig launcher and receiver facilities on a field-wide basis and did not submit a capital proposal for WIO approval at that time. The CIC also did not request funds for pig launcher and receiver facilities in its budget. These determinations were primarily based on the fact that BP believed it had adequate processes in place to address potential corrosion issues on the lines that presented the highest risks of corrosion, such that a capital project of this scale was not necessary. Nevertheless, BP had the capability to smart pig many of the lines deemed to have the highest risk of corrosion by installing temporary launchers and receivers when the inspection and/or monitoring data indicated a need to do so. Indeed, in the latter part of 2003, the CIC group requested funds for a smart pig inspection of a line in the EOA because of potential corrosion; it was provided those funds, and the inspection occurred.

When the "pigging facility priority listing" spreadsheet was prepared in 2003, many of the lines listed on it were deemed not to be at high risk for corrosion. Included on the list was the FS2/FS1OIL line, which is the line on which a leak occurred in August 2006. As review of the list demonstrates, the data available in 2003 indicated that this segment of the EOA transit line was not a top priority line among the 71 lines considered as part of the VECO assessment: in 2003, that line was estimated to have only a 1% loss in wall thickness [*see* column marked "~% Wall T"] and was listed as a "Priority 2" line on that chart. Indeed, the line would have been ranked Priority 3 as a matter of pure risk but was ranked as Priority 2 for a business reason, *i.e.*, because the line carried sales-quality crude.

- 9. BP has told the Committee that the VECO report had assessed the cost of installing pig launchers and receivers in locations where BP already had pig launchers and receivers. Did the CIC Group commission VECO to prepare cost estimates for potential work that did not need to be done? Was the CIC Group so unaware of the assets under its stewardship that it prepared a "pigging facility priority listing" which contained locations which already had fully functional pig launchers and receivers?**

At the time the VECO study was commissioned, BP was aware, based on records obtained prior to its assumption of sole operatorship in 2000, that 19 lines in the EOA, including the EOA oil transit lines, had been smart-pigged in the past. BP had not, however, evaluated whether the pig launcher and receiver facilities used on those lines were temporary, permanent, or in need of major modifications; whether they could accommodate the newer, longer smart pigs that had

been developed; or whether they needed repairs for maintenance pigging. Indeed, BP believed that some degree of work would have been required on all lines. VECO thus did not factor any existing facilities into its assessment, which was a rough, order-of-magnitude estimate. Since understanding the potential cost of such work was important, the decision was made to assume full launcher and receiver cost for all lines in this high-level assessment, rather than to examine and/or quantify the precise amount of work that would have to be done on each.

This high-level approach was consistent with the project's scope as a short-duration, "table-top" review conducted in Anchorage. No project-specific estimates of engineering effort were prepared for individual lines; there was no on-site review of the hundreds of miles of pipelines; and there was no attempt to review the "as-built" drawings for the lines or to evaluate the type or quality of individual pigging facilities that already existed on some lines. Approximate cost was instead estimated using factors like pipeline diameter, pipeline operating pressure, and historical data on similar projects. The project resulted in a ballpark estimate that provided a better perspective of the potential costs than the significantly underestimated numbers that the CIC group had proposed in AFE #4N0492 and Master ID #2996 such that decisions about how or whether to approach the project could be properly formulated.

10. What specifically does BP disagree with in the Chemical Safety Board's (CSB's) findings on Texas City? Please explain specifically where BP believes the CSB is in error?

In its review of the U.S. Chemical Safety and Hazard Investigation Board's ("CSB") report on the Texas City Refinery explosion ("Report"), BP found many factual errors, the use of information that was taken out of context and omissions of relevant and important information. BP has not prepared a comprehensive list of the errors of fact and analysis contained in the Report and does not believe that it is beneficial or productive to catalog each point of disagreement. BP has highlighted some areas of disagreement, including the following:

- The Report contains inaccurate assertions that BP did not follow certain of its own procedures, including, for example, policies governing pre-start up safety reviews and the use of blowdown stacks.
- The Report speculates that this tragic accident was foreseeable, a conclusion to which BP particularly objects. The management information that was available to BP decisionmakers prior to the tragedy is not the same information that is now available to BP and the CSB after two years of intensive investigation. Conclusions in the Report that are presented as obvious in hindsight must be evaluated in light of the information that was available to decisionmakers at the time that decisions were made. Moreover, the Report incorrectly implies that decisionmakers knew and appreciated the significance of warning signs. The facts show that, while BP had identified issues and concerns at the Texas City Refinery, those decisionmakers believed that appropriate corrective measures were being implemented. During the years prior to the incident, managers at the Texas City Refinery continually focused on the need to maintain process reliability, and, as a consequence, improve process safety. In 2001 and 2002, BP conducted various studies of the Texas City Refinery from which it determined that additional spending was necessary to improve the physical condition of the Refinery and, hence, its reliability. At the time,

BP management believed that the spending programs enacted in response to those studies would correct the issues that the studies had identified. In fact, problems with the physical condition of the plant did not cause the March 23, 2005 explosion.

- The Report mischaracterizes positive actions by BP and then criticizes BP on the basis of those mischaracterizations. For example, the Report states that programs such as the Piping Integrity Program and the South Houston Infrastructure for Tomorrow program did not address process unit vulnerability. Those programs were in fact developed to provide necessary equipment and process unit improvements.
- The Report incorrectly implies that cost cuts at the Texas City Refinery caused the explosion and fails to recognize the significant increase in expenditures at the Texas City Refinery in the years before the incident. Further, the Report does not reflect that BP's budget process included guidance that budget decisions should not have an adverse impact on safety.
- The Report states that BP engineers proposed connecting the isomerization unit's blowdown system to a flare but that BP chose a less expensive option. This statement is misleading because of the implication that the decision was one in which safety was compromised for financial reasons. BP identified in its own internal investigation report (the "Mogford Report") prior opportunities for the Texas City Refinery to have eliminated the F-20 blowdown stack. These opportunities were rejected because they were outside of the scope of the projects (for example, a number of projects were related to environmental issues such as manufacturing clean fuels or compliance with benzene standards), not because of concerns over cost as CSB asserts.

Notwithstanding BP's significant, substantive disagreement with certain of CSB's findings and conclusions, BP is giving full and careful consideration to the CSB report as part of the activities it already has underway to improve process safety management. BP and its employees are ready, willing and able to achieve the goal of becoming an industry leader in process safety management. BP has undertaken extensive work in numerous areas to improve process safety at Texas City since the March 23, 2005 explosion. These actions are based on BP's own assessments of the needs at the refinery; the recommendations of the BP US Refineries Independent Safety Review Panel ("Baker Panel"); and the recommendations from the CSB's Report among other sources.

BP deeply regrets the occurrence of the explosion and fire and the resulting loss of life and injuries and has worked diligently to compensate all who were affected by the tragedy. BP is fully committed to assuring such a tragedy never happens again. To that end, BP has shared with many internal and external audiences what it has learned from the many investigations conducted into the causes of the tragedy. BP continues to work with entities such as the American Petroleum Institute, the Center for Chemical Process Safety, and ORC Worldwide, Inc. (as well as individual companies in the energy industry and other industries) to share its views and to deepen its understanding as it continues the journey to becoming a leader in process safety.

11. What specifically does BP disagree with in CSB's recommendations regarding Texas City?

BP does not disagree with CSB Report's recommendations regarding the March 23, 2005, isomerization unit explosion and fire. BP has implemented actions in alignment with each of these recommendations. While BP has disagreements with the CSB's Report (described above), those differences do not affect BP's commitment to implement the CSB recommendations or take appropriate action based upon its own assessments and the recommendations of others, including the Baker Panel. Indeed, most of the CSB's recommendations are consistent with those of the Baker Panel and other investigations that have been conducted, both internally and externally, in the last two years, and they are well aligned with BP's existing improvement plans.

BP is developing a comprehensive action plan that integrates these recommendations with existing plans to enable BP to achieve the goal of becoming an industry leader in process safety management. To harmonize recommendations from several disparate sources, BP has sought to implement the intent of some recommendations.

BP submitted letters responding to the CSB's Report on May 18, 2007 that provide more detailed information regarding BP's responses to the recommendations. Copies of those letters are attached.

12. Has BP implemented all of the Chemical Safety Board Recommendations regarding Texas City? If not, which have not been implemented and why?

BP is diligently working to implement actions in alignment with the recommendations of the CSB, the Baker Panel, and others and has completed initial implementation of some recommendations. Many of the CSB's recommendations will be implemented over time as they involve on-going processes of continuous improvement. The letters that BP submitted to the CSB on May 18, 2007 provide more detailed information regarding BP's responses to the CSB's recommendations and the anticipated timetable for implementation of the responses.

13. Did the Booz Allen report, the Baker Panel report, the Management Accountability Project, and the Chemical Safety Board find common weaknesses in BP's management? What are these common weaknesses?

Since 2005, BP has undergone a number of reviews, some commissioned by BP out of a desire better to understand and improve operations and some conducted by government agencies. BP has spent considerable time analyzing the findings of these studies and integrating their recommendations. In analyzing the findings, BP has identified several common themes, including the needs to

- Establish process safety as a core value;
- Ensure the use of comprehensive and systematic risk identification and assessment;
- Ensure that commitment to safety be reflected in budget decisions;
- Rigorously address identified safety concerns;
- Be sensitive to the effects of changing operating and environmental conditions;

- Enhance operational knowledge and capability;
- Improve communication of concerns both upward and across the organization; and
- Better understand organizational accountabilities.

BP is strongly committed to making improvements in each of these areas, and this commitment is evident in the company's new operating management system. That system is designed to provide clear guidance in the eight elements of BP's operations: risk, procedures, assets, optimization, organization, leadership, results, and privilege to operate. It will define and add clarity to the people, plant, process, and performance measures that facilities need to undertake to ensure safe, reliable operations. BP is confident that this management system will help BP achieve the goal of becoming an industry leader in process safety management.

14. Why is the Billy Garde report "Failure to Disclose COBC Documents to Congressional Subcommittee and Other Issues" still not final?

Ms. Garde expects the final COBC report to be completed by the end of July 2007. Since production of the interim version of the report on April 30, 2007, Ms. Garde and her team have been conducting additional interviews and reviewing additional documents that were produced to the Committee prior to the May 16, 2007 hearing.



Keith Casey

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May 18, 2007

Carolyn W. Merritt
Chairman/CEO
United States Chemical Safety and Hazard Investigation Board
2175 K Street NW, Suite 650
Washington DC, 20037-1809

Dear Chairman Merritt:

Your letter dated March 20, 2007, requested a response within 60 days on actions taken or contemplated in response to the recommendations made by the United States Chemical Safety and Hazard Investigation Board (CSB) to the BP Products North America, Inc. ("BP Products") Texas City Refinery based upon CSB's investigation into the incident that occurred at the Refinery on March 23, 2005.

We have undertaken extensive work in numerous areas to improve process safety at the Refinery since the incident in 2005. The actions are based on our own assessments of needs at the refinery as well as the recommendations from our internal investigation into the incident, from the High Reliability Organization Assessment (HRO) led by Jim Stanley, from Implementation of BP Group Standards such as the Integrity Management Standards, from Refining SPU minimum expectation improvement projects such as the Maintenance Accelerator, and now the recommendations from the CSB Final Investigation Report.

We have implemented actions in alignment with each of the seven recommendations that CSB made to Texas City, are implementing and contemplating further actions to be taken, and are committed to continuous improvement in each of these areas. Continuous improvement is one of BP's core values and was recommended by the BP US Refineries Independent Review Panel. BP Products' response to the Isom explosion is marked by continuous improvement rather than one time actions. BP Products' responses to several of CSB's recommendations identify actions contemplated by BP Products for continuous improvement in the areas identified by CSB's recommendations.

This letter provides a summary of actions that are underway or contemplated in alignment with CSB's recommendations to the Refinery.

CSB Recommendation 1: Evaluate your refinery process units to ensure that critical process equipment is safely designed.

At a minimum,

- a. **Ensure that distillation towers have effective instrumentation and control systems to prevent overfilling such as multiple level indicators and appropriate automatic controls.**
- b. **Configure control board displays to clearly indicate material balance for distillation towers.**

RESPONSE Recommendation 1:

(a) We are developing updated technical standards and specifications for Relief Systems that include instrumentation and control systems on distillation towers, which, we believe, are effective to prevent overfilling. We anticipate that the updated standards and specifications will be completed by the end of the third quarter of 2007. These standards and specifications will define instrumentation requirements, which will include multiple-level indicators on distillation towers, and will require hazard review via Layer of Protection Analysis (LOPA) to determine the need for any additional safety instrumented systems per ISA 84.01.

Even though these standards are not yet finalized, we have embarked on a program that is beginning to fulfill the requirements that will be incorporated within the standards. As part of this program, we have completed LOPA's on 60% of towers and installed minimum instrumentation on 20% of towers. As a result of the LOPA's, we have installed additional interlocks and safety instrumented systems on several towers to mitigate tower overflow. Additional systems will be added as part of our strategy of ongoing risk reduction.

(b) BP determined that PI-Process Book is the preferred tool for the purpose of indicating material balance on distillation towers. To assure that this information is available and used by operators and support staff, we have created material balance tools for all units that are currently operating and will assure the tool is operational for each unit before it is re-commissioned. The material balance tools are monitored by staff during the start up. We have also developed enhanced operations training and procedures to prevent overflowing distillation towers.

Continuous Improvement: BP Products has a multi-year project to upgrade process unit control systems, instrumentation, and safety instrumented systems to state of the art Emerson Delta V technology. The Delta V system has the capability to clearly indicate material balance information within the control system and we will consider appropriate configuration as part of the project execution.

CSB Recommendation 2: Ensure that instrumentation and process equipment necessary for safe operation is properly maintained and tested.

At a minimum,

- a. Establish an equipment database that captures the history of testing, inspections, repair and successful work order completion.
- b. Analyze repair trends and adjust maintenance and testing intervals to prevent breakdowns.
- c. Require repair of malfunctioning process equipment prior to unit startups.

RESPONSE Recommendation 2: (a) BP Products has, over the last two years, implemented what is called a Maintenance Accelerator. The Maintenance Accelerator is a work process designed to assure that proper prioritization, planning, testing, inspection, and repair activities are executed through a work order process. Under the Maintenance Accelerator program we are looking to integrate the databases used to capture maintenance and testing information.

(b) Reliability efforts to prevent breakdowns are executed by using management information from the Maintenance Accelerator work, learning from investigations and Root Cause Analysis, and trending and analysis of repair and inspection data. Consistent work processes are being driven by the Reliability Group for these analyses which are conducted by specialty groups under the direction of the Maintenance Manager.

(c) The Pre-Startup Safety Review (PSSR) procedure that has been implemented at the site assures that equipment necessary for safe operation is repaired and available prior to unit start ups. In addition, the stand taken "What you say matters" over the course of the last two years has enhanced the communications from unit personnel in addressing any concerns that may arise.

Continuous Improvement: BP Products is developing a Preventative Maintenance Policy and Procedure for the Texas City Refinery. We anticipate that the Policy will be completed and in place during the third quarter of 2007. The policy will holistically outline plans in this area and will be in alignment with CSB's recommendations.

CSB Recommendation 3: Work with the United Steelworkers Union and Local 13-1 to establish a joint program that promotes the reporting, investigation, and analysis of incidents, near-misses, process upsets, and major plant hazards without fear of retaliation. Ensure that the program tracks recommendations to completion and shares lessons learned with the workforce.

RESPONSE Recommendation 3: BP Products is working with the United Steelworkers and Local 13-1 (collectively "USW") to address this recommendation. As part of the USW/BP Joint HSE Initiative, we have agreed to implement USW's Triangle of Prevention program at the Refinery.

In addition, we are reviewing a letter agreement between the union and BP that has been in place since 1999 which states there will not be disciplinary action as a result of incident investigation findings.

CSB Recommendation 4: Improve the operator training program.

At a minimum, require

- a. Face-to-face training conducted by personnel with process-specific knowledge and experience who can assess trainee competency, and
- b. Training on recognizing and handling abnormal situations including the use of simulators or similar training tools.

RESPONSE Recommendation 4: (a) BP Products has expanded its face-to-face training programs. We also selected Unit Training Coordinators based on a combination of seasoned multi-year operations experience, expertise in their given operating area, and demonstrated proficiency in sharing their expertise in training and coaching peers and new operators. We currently have approximately thirty of these Unit Training Coordinators on site.

Face-to-face classroom training for operations began with distillation training, in January 2006. Subsequently, we have conducted face-to-face classroom training for operations personnel covering unit commissioning and board operator refresher training. We are currently offering a three-day furnace firing training program which includes use of a simulator, classroom and unit-specific aspects. Based on the course, competency is verified through testing and/or demonstration methods with a defined level for a passing grade, typically 85%.

Experts in adult education and learning agree that this is not a one size fits all answer for training. As such, all of our training and education programs are being evaluated for maximum effectiveness of delivery; face-to-face, computer-based, field demonstration, simulation, and testing. Based on this analysis, additional face-to-face training programs are anticipated in the future.

(b) At the beginning of 2006, we also implemented a monthly training program across the site, with an emphasis on abnormal (such as unit upsets) and emergency operations (such as emergency shutdown) training. Once each month each shift conducts face-to-face discussions covering abnormal operating situations and emergency drills. We plan to conduct at least one emergency drill per month for every shift across the refinery. In addition, we began site wide unit evacuation drills in 2005. Each unit and each shift must participate in at least one such drill annually.

We began to use generic simulators on distillation and furnace firings for operations training to practice start-ups, shutdowns and to manage abnormal situations. Since the beginning of 2006, approximately 600 incumbent employees and 150 new hires have received 8 to 10 hours each of this training.

Continuous Improvement: We plan to implement unit-specific custom simulators for many of the refinery units as part of the unit control system upgrade to the Emerson Delta V project discussed above. In addition, we plan to establish a permanent process simulator training room at the new Employee Services Building. We plan to use the simulator training room to provide board operators with refresher training and to train new operators, supervisors and engineers.

CSB Recommendation 5: Require additional board operator staffing during the startup of process units. Ensure that hazard reviews address staffing levels during abnormal conditions such as startups, shutdowns, and unit upsets.

RESPONSE: After March 23, 2005, we revised the Refinery Pre-Startup Safety Review ("PSSR") policy to require leadership sign-off prior to re-commissioning a unit and prior to post turnaround startups. The PSSR includes consideration and documentation of appropriate levels of staffing for the planned start-up. The site has also implemented an Exclusion Zone (EZ) policy that is put into affect when there is a unit start up or abnormal situation. As part of the EZ policy, non-essential personnel are evacuated from the unit and technical support for essential personnel is enhanced.

Unit staffing decisions for normal operations have been historically reviewed through the PSM process and are based on having a sufficient number of operators to operate the unit safely and, in the event of an upset, to bring the unit to a safe off condition.

Continuous Improvement: Many actions have taken place in this area and there is even more work under way, most notably the commitment to evaluate with USW the opportunity for "Chief" operators as part of the BP & USW ten point plan.

Recommendation 6: Require knowledgeable supervisors or technically trained personnel to be present during especially hazardous operations phases such as unit startup.

RESPONSE: The modified PSSR policy includes requirements for unit staffing by supervisors and appropriate personnel with technical training.

Continuous Improvement: There is significant overlap on these activities with Recommendation #5. We are approaching this in a holistic manner. Immediate steps have been taken to assure support and we are working with USW and other key stakeholders to develop the most comprehensive and robust system for our future.

Recommendation 7: Ensure that process startup procedures are updated to reflect actual process conditions.

RESPONSE: The modified PSSR policy includes requirements review of a situation specific startup procedure prior to startup. We also have existing processes for review of operating procedures.

We have learned a great deal, and accomplished a lot over the past two years. We continue to learn and find improved ways to safely operate the Refinery with an engaged and committed workforce. Simply stated, we are investing heavily in People, Processes, Plant, and Performance. As part of each investment, we assure that we have mechanisms in place to continuously improve. We have on-going actions and are evaluating actions that are aligned with CSB's recommendations.

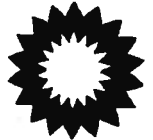
Sincerely,



Keith M. Casey



Robert A. Malone
Chairman & President



BP America Inc.
200 WestLake Park Blvd.
Houston, TX 77079
USA

May 18, 2007

Carolyn W. Merritt
Chairman/CEO
United States Chemical Safety and Hazard Investigation Board
2175 K Street NW, Suite 650
Washington DC 20037-1809

Dear Chairman Merritt:

Direct 281 366 3355
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robert.malone@bp.com

By letter dated March 20, 2007, to John Browne, CEO of BP p.l.c., you requested that BP respond regarding actions taken or contemplated in response to the recommendations made by the United States Chemical Safety and Hazard Investigation Board (CSB) to the BP p.l.c. Board of Directors (the Board) based upon CSB's investigation into the incident that occurred at the BP Products North America's Texas City Refinery on March 23, 2005. Since your investigation relates to BP's US refineries, the Board has asked that I respond to your letter.

BP is making a concerted and lasting effort to improve its process safety management and performance. I am leading that effort on behalf of BP America. The standard we seek must be one of excellence and we are committed to become an industry leader in this area. We know that it will be a long journey, but it is one we are determined to make.

Before turning to our actions in response to your recommendations, I would like to thank the CSB and its staff for the diligence and effort expended investigating the incident at Texas City. While we do not agree with all of the findings, we have gained insights through the investigation and appreciate the hard work of the investigation team.

Most of the CSB's recommendations are consistent with those of the BP US Refineries Independent Safety Review Panel (the Panel) and other investigations that have been conducted, both internally and externally in the last two years. Further, they are well aligned with our existing improvement plans. We are actively developing a comprehensive action plan that integrates all the recommendations made and improvements necessary to make BP the leader in process safety management that we aspire to be.

CSB Recommendation 1: Appoint an additional non-executive member of the Board of Directors with specific professional expertise and experience in refinery operations and process safety. Appoint this person to be a member of the Board Ethics and Environmental Assurance Committee.

Both the Panel and the CSB made recommendations aimed at adding to the Board's expertise in the area of refining and process safety. The Panel recommended this through an independent expert, and the CSB through the appointment of a non-executive director. The Board's consideration of these recommendations needs to be made in the light of its existing practices. As part of its normal processes the Board keeps under review the mix and balance of skills of Board members against the background of all BP's global operations, both upstream and downstream.

The Board has now appointed Duane Wilson to be its independent expert. Mr. Wilson is a former Panel member and will work directly with the Chairman of the Safety, Ethics and Environment Assurance Committee (SEEAC). He has refinery operations and process safety experience and will provide independent technical expertise to assist the SEEAC and the Board in monitoring improvements in BP's process safety performance. In the future, the CSB recommendation will be taken into account by the Board as part of its continuing development of skills as mentioned above, and in light of the Board's experience of working with the independent expert.

CSB Recommendation 2: Ensure and monitor that senior executives implement an incident reporting program throughout your refinery organization that

- a. encourages the reporting of incidents without fear of retaliation**
- b. requires prompt corrective actions based on incident reports and recommendations, and tracks closure of action items at the refinery where the incident occurred and other affected facilities; and**
- c. requires communication of key lessons learned to management and hourly employees as well as to the industry.**

BP has a system in place for incident reporting and that system is currently being revised, with implementation planned for later this year. The enhanced program is designed to bring clarity and reset expectations on reporting of all incidents, including process safety events. Our analysis indicates that a lack of understanding of reporting requirements is one of the reasons that incidents are not always reported.

To understand the perceived fear of retaliation associated with reporting, we surveyed our employees in 2006 to establish a baseline on their willingness to report safety incidents. We plan to conduct another survey in mid-2007 to understand if the actions we have underway are achieving the desired effect.

In the new incident reporting system, levels of severity, or potential severity, will be assigned to each incident; major incidents (MIA's) and high potential incidents (HIPO's) will be reported to applicable senior leaders and investigations will be completed. The new program will have the capability to track action item closure and the functionality to create reports on outstanding action items for management follow-up. We are implementing a system in our Refining organization including a process to share and embed appropriate lessons learned, which will form the basis of a group-wide practice to embed and track learning within the wider BP organization. We believe targeting the cultural aspects of reporting and investigation, consistent messages from senior leaders that reinforce actions being taken at the local level, and demonstrated closure of action items will encourage full reporting of incidents and facilitate learning from these events.

CSB Recommendation 3: Ensure and monitor that senior executives use leading and lagging process safety indicators to measure and strengthen safety performance in your refineries.

We developed new metrics in 2006 that include both leading and lagging indicators, which we are now working to improve upon. We anticipate concluding the next phase of this work in the coming months. The revised indicators will be used within BP and will serve as input to the work we committed to undertake with CSB, the industry and other interested parties, as recommended by the Panel (in Recommendation #7.) Our commitment is to continue to improve upon our metrics and working with the CSB and others, attempt to develop a comprehensive set of metrics with industry consensus.

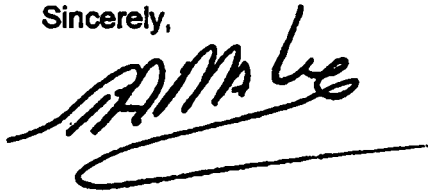
Our current suite of leading and lagging indicators (including MIA's and HIPO's) is monitored on a quarterly basis by the Group Operations Risk Committee (GORC). This committee was established several months ago; membership includes the most senior line executives in BP, the Senior Group Vice President of Safety and Operations, and the Chief Engineer. GORC is the forum to prioritize and monitor group-wide progress in process safety, the focal point for role-modeling leadership behaviors and the steward of the overall improvement program. The metrics that GORC reviews are also monitored by the SEEAC on a quarterly basis.

We believe the above demonstrates that we have actions underway to address each of the three CSB recommendations made to the Board and ask that you close the recommendations contained in your report. We are confident

that Duane Wilson, as independent expert, will be actively engaged with our operations and will provide the expertise and experience to the Board and SEEAC that is intended by your recommendation. Further, while we have programs in place and improvements underway that address the latter two recommendations on incident investigations and metrics, we believe that they will never be fully complete as we strive for continuous improvement.

For the past two years the accident at Texas City has been at the forefront of our thinking, planning and actions throughout BP. While we have learned a great deal and have made substantial progress, as we have stated before there is more to do, and we will do more. Thank you for your contributions to advancing our goal of becoming an industry leader in process safety.

Sincerely,

A handwritten signature in black ink, appearing to read "Duane Wilson", with a long horizontal flourish underneath.



Robert A. Malone

Chairman & President

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June 27, 2007

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BY HAND DELIVERY

The Honorable John D. Dingell
U.S. House of Representatives
Chairman, Committee on Energy and Commerce
Washington, DC 20515-6115

Dear Chairman Dingell:

Thank you again for the opportunity to address questions pertaining to the May 16, 2007 hearing of the Subcommittee on Oversight and Investigations on the 2006 Prudhoe Bay shutdown. On July 6, 2007, we provided responses to questions 1 through 14 raised by Congressman Stupak in your June 20, 2007 letter. Following please find responses to Mr. Stupak's questions 15 and 16, which your staff agreed could be provided today.

Please feel free to call me if I may be of further assistance.

Sincerely,

Robert A. Malone

Additional Responses to June 20, 2007 Questions from Congressman Stupak

15. What responsibilities did BP's new CEO, Tony Hayward, have with respect to BP Prudhoe Bay Alaska operations, maintenance, and budgeting between 1998 and 2006?

Dr. Hayward was not responsible for BP's Prudhoe Bay operations, maintenance, or budgeting between 1998 and 2006. Those responsibilities rested throughout that period with the business or performance unit leader accountable for BP's Prudhoe Bay operations. In 1998, Dr. Hayward was serving as Group Vice President for BP Exploration, a position in the chain of leadership for all of BP's producing operations, including those in Alaska.^{1/} During the course of that year, Dr. Hayward reviewed and approved overall business performance plans for those operations, including the plans for overall financial and operating performance for the Alaska businesses. His responsibilities, however, did not extend to reviewing or approving the details of expenditures at Prudhoe Bay. Plans at the field level would have been developed and approved by local business unit management. From January 1, 1999 to the present, Dr. Hayward has served in positions in which he was not responsible for reviewing or approving plans for the Alaska businesses.

16. Did Mr. Hayward have any role in approving budget for the BP Alaska CIC Group? Was Mr. Hayward aware of the implications of cost cutting on corrosion protection activities?

Dr. Hayward has had no role in approving the budget for the BP Exploration (Alaska) Inc. ("BPXA") Corrosion, Inspection & Chemicals ("CIC") group at any point in his career at BP. Dr. Hayward was one of a number of people who received an internal technical report on the BPXA corrosion management program ("BPXA Corrosion Management System Technical Review Final Report") from John Baxter, BP's Group Engineering Director, in or about April 2005. This report was produced to you on August 31, 2006 and may be found at Bates range BPXA-CEC00000301—BPXA-CEC00000311. Although the report concluded that the corrosion management program was technically sound, it made recommendations as to steps BPXA might consider to improve it over time. Among other things, it discussed BPXA's cost management strategy, which it found may have led to some "counterproductive" behaviors related to corrosion management, and encouraged BPXA leadership to consider the implications of the strategy in evaluating future plans and budgets related to corrosion management.

^{1/} Unless otherwise noted and for ease of discussion, "BP" is used as shorthand throughout this letter to refer to corporate actions that may have been taken by any of a number of legal entities affiliated with BP, including BP Exploration (Alaska) Inc. and BP Products North America, Inc. The use of "BP" in this context should not be understood as a reference to BP p.l.c. or as an equation of separate legal entities with any parent and/or other affiliate.