OFFICE OF INSPECTOR GENERAL

U.S. Department of Energy

INSPECTION REPORT

DOE-OIG-18-05

October 2017

ALLEGATIONS OF HEALTH AND SAFETY CONCERNS AT THE STRATEGIC PETROLEUM RESERVE

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Department of Energy
Washington, DC 20585

October 26, 2017

MEMORANDUM FOR THE SECRETARY

FROM: April G. Stephenson
Acting Inspector General

SUBJECT: INFORMATION: Inspection Report on "Allegations of Health and Safety Concerns at the Strategic Petroleum Reserve"

BACKGROUND

The mission of the Department of Energy's Office of Petroleum Reserves (OPR) is to protect the United States from severe petroleum supply interruptions through the acquisition, storage, distribution, and management of emergency petroleum stocks and to fulfill the United States obligations under the International Energy Program. In support of this mission, OPR manages the Strategic Petroleum Reserve (SPR), which consists of 695 million barrels of crude oil stored in large underground caverns. The four SPR storage sites are Bryan Mound and Big Hill in Texas, and Bayou Choctaw and West Hackberry in Louisiana. The Assistant Secretary for the Department's Office of Fossil Energy has overall program responsibility for achieving the goals and objectives of SPR. This responsibility is delegated to the Deputy Assistant Secretary for Petroleum Reserves and is exercised through the Office of Fossil Energy in Washington, DC and the SPR Project Management Office in New Orleans, Louisiana. DynMcDermott Petroleum Operations Company was the Department's management and operating contractor at SPR from 1993 to March 2014. Since April 1, 2014, Fluor Federal Petroleum Operations LLC has been the Department's contractor operating and maintaining SPR.

On May 9, 2016, the United States Office of Special Counsel referred a whistleblower disclosure to the Secretary of Energy (OSC File No. DI-16-2328). The Secretary of Energy referred the issue to the Office of Inspector General for evaluation. In the disclosure, the complainant alleged health and safety concerns related to two accidents that had occurred at Bryan Mound in 2015 and 2006, and a 2013 accident at West Hackberry. The complainant made allegations associated with internal floating roof failures, failure to implement safety measures, and improper monetary awards. In addition, the complainant made allegations concerning an employee-owned warehouse, improper relationships between Federal and contractor employees, and non-competitive subcontracts awarded at SPR.

Regarding the roof failures, the complainant alleged that Department Orders requiring Accident Investigation Boards were not followed after two Bryan Mound accidents occurred which,

according to the complainant, could have resulted in catastrophic explosions. It was also alleged that the severity of these two accidents was minimized when accident reports were filed that omitted important details about oil tank filling rates. In addition, the Department's Occurrence Reporting and Processing System for the 2015 accident had improperly indicated that no further evaluation of the accident was required.

The complainant alleged that OPR had not implemented required safety measures after multiple workplace fatalities occurred at Bryan Mound and an injury caused by a scissor lift that occurred at West Hackberry. Related to this allegation, the complainant stated that the OPR *SPR Oversight Report*, that evaluated corrective actions taken in response to three Accident Investigation Boards, was altered for the purpose of improving the appearance and extent of completed actions before providing the report to senior management.

The complainant alleged that OPR improperly gave monetary awards to SPR management and operating contractors in violation of Occupational Safety and Health Administration and Department programs and regulations. The complainant further expressed concerns regarding injury reporting related to improper monetary awards. The concerns were that an injury to a work crew member at Bayou Choctaw in 2013 was improperly reported, and DynMcDermott Petroleum Operations Company employees were told to go to Work Care[1] if they had an injury so it could be treated in a way that did not trigger reporting.

During our inspection, the complainant expressed additional concerns that: a SPR Federal and contractor employee-owned warehouse was improperly leased to the SPR; improper relationships between SPR Federal and contractor employees existed; and the SPR non-competitively awarded emergency pipeline repair subcontracts to the same contractor for the last 20 years. Allegations concerning the leased warehouse and improper relationships were referred to and accepted by the Office of Inspector General, Office of Investigations. We initiated this inspection to review the facts and circumstances regarding the following 16 allegations.

RESULTS OF INSPECTION

Our review substantiated 3 of the 16 allegations regarding SPR. Specifically:

- We did not substantiate the allegation that the Department Order requiring an Accident Investigation Board was not followed regarding the 2015 accident that occurred at Bryan Mound that could have resulted in a catastrophic explosion. We found that the accident investigation decision making process outlined in the Department Order was followed after the accident occurred. (Allegation #1)

- We substantiated the allegation that the accident investigation decision making process outlined in the Department Order was not followed after the 2006 accident at Bryan

[1] According to a former DynMcDermott Petroleum Operations Company and current Fluor Federal Petroleum Operations LLC official, Work Care is a managed care contractor similar to Ask-a-Nurse that SPR employees call for all non-life threatening injuries.

Mound. A Type B Investigation[2] was not conducted as outlined in the Department Order.
However, the SPR Project Management Office conducted a similar internal failure analysis that was supplemented with external reviews conducted by subject matter experts. (Allegation #2)

- We confirmed that tank filling rates prior to the 2015 and 2006 accidents were omitted from the accident reports. However, we found that the filling rates prior to the 2015 and 2006 accidents were within the normal operating range per the Bryan Mound tank filling procedure. Accordingly, no impact from the omissions was identified. (Allegations #3 – #4)

- We confirmed that a section of the Department's Occurrence Reporting and Processing System report for the 2015 Bryan Mound accident stated no further evaluation was required. However, another section of the same report stated that a complete failure analysis would be performed. We determined that an interim failure analysis was performed and the final analysis was still ongoing at the time of our inspection. (Allegation #5)

- Nothing came to our attention to substantiate the allegation regarding OPR's failure to implement required safety measures. Our review focused on the Department's accident investigation process. As such, we did not perform an evaluation of the 45 allegedly incomplete actions mentioned in the complaint because the Department's subject matter experts reviewed these items. We determined that the appropriate process was followed from the appointment of an Accident Investigation Board through closure of the accident investigations for the two fatalities at Bryan Mound and the injury at West Hackberry. (Allegation #6)

- We did not substantiate that the OPR *SPR Oversight Report* was altered for the purpose of improving the appearance and extent of completed actions. We found that although there were changes made to the report between the original draft and the final report, the corrective actions addressed in the August 2015 draft report were completed and the Appointing Official for each accident investigation agreed to the closure of the actions. Therefore, nothing came to our attention to indicate the changes to the report equated to the lack of implementation of the required corrective actions. (Allegation #7)

- We did not substantiate the allegation regarding improper monetary awards. While the Department paid monetary awards to SPR management and operating contractors related to safety, we found the awards were made in accordance with the Occupational Safety and Health Administration Voluntary Protection Program and Department requirements. (Allegations #8 – #11)

[2] According to the Department Order requiring Accident Investigation Boards, the type of investigation (Type A or Type B), depends on the severity of the accident.

- We did not substantiate the allegation that an injury to a work crew member at Bayou Choctaw in 2013 was improperly reported. The injury was correctly reported as a first aid incident and therefore was not recordable per Occupational Safety and Health Administration and Department requirements. (Allegation #12)

- Nothing came to our attention to substantiate the allegation that DynMcDermott Petroleum Operations Company employees were told to go to Work Care if they had an injury so it could be treated in a way that did not trigger reporting, as opposed to seeing their personal physicians. Nothing in our review of the injury and illness descriptions and actions taken in DynMcDermott Petroleum Operations Company's 2013 Weekly First Aids and Recordables reports appeared to be unreasonable or gave the impression that employees were coerced or that they did not have input into their course of treatment. (Allegation #13)

- The allegations regarding the leased warehouse, improper SPR Federal and contractor relationships, and emergency pipeline repair subcontracts were not substantiated. We found that the National Aeronautics and Space Administration currently owns the warehouse and is leasing it to the Department. We also found that there were controls in place when awarding contracts that would not allow for improper relationships. (Allegations #14 – #16)

The complainant told us and we ascertained that the complainant did not have access to all pertinent information related to some of the allegations.

While we confirmed some specific details included in the allegations, no impact to worker health and safety was identified. Accordingly, we are not making any formal recommendations. In addition, the Office of Inspector General plans to review infrastructure improvements at the SPR in fiscal year 2018.

Due to the nature of the disclosure, this report did not follow our customary process for inspections regarding obtaining Department comments and holding an exit conference. Also, the Office of Inspector General will not be publicly releasing the report until advised by the Office of Special Counsel. The Office of Inspector General is available to discuss the need for any additional information with the Office of Special Counsel.

Attachments

cc: Deputy Secretary
Chief of Staff
Acting General Counsel

ALLEGATIONS OF HEALTH AND SAFETY CONCERNS AT THE STRATEGIC PETROLEUM RESERVE

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ALLEGATIONS OF HEALTH AND SAFETY CONCERNS AT THE STRATEGIC PETROLEUM RESERVE

BACKGROUND

On May 9, 2016, the United States Office of Special Counsel referred a whistleblower disclosure to the Secretary of Energy. The Secretary of Energy referred the issue to the Office of Inspector General for evaluation. The complainant alleged that Department of Energy Orders requiring Accident Investigation Boards were not followed after two accidents occurred in 2015[1] and 2006 at the Strategic Petroleum Reserve (SPR) Bryan Mound site that could have caused catastrophic explosions. Related to this concern, the disclosure stated that the alleged severity of these two accidents was minimized by filing accident reports that omitted important details. In addition, the Department's Occurrence Reporting and Processing System for the 2015 accident had improperly indicated that no further evaluation of the accident was required.

The complainant also alleged that the Office of Petroleum Reserves (OPR) had not implemented required safety measures after multiple workplace fatalities occurred at Bryan Mound and an injury caused by a scissor lift that occurred at West Hackberry. Related to this allegation, the complainant stated that the OPR *SPR Oversight Report* (Oversight Report), that evaluated corrective actions taken in response to three Accident Investigation Boards, was altered for the purpose of improving the appearance and extent of completed actions before providing the report to senior management. Moreover, the complainant alleged that OPR improperly gave monetary awards to SPR management and operating contractors in violation of Occupational Safety and Health Administration (OSHA) and Department programs and regulations. The complainant further expressed concerns regarding injury reporting related to improper monetary awards. The concerns were that an injury to a work crew member at Bayou Choctaw in 2013 was improperly reported and DynMcDermott Petroleum Operations Company (DynMcDermott) employees were told to go to Work Care[2] if they had an injury so it could be treated in a way that did not trigger reporting.

During our inspection, the complainant expressed additional concerns that: a SPR Federal and contractor employee-owned warehouse was improperly leased to SPR; improper relationships between SPR Federal and contractor employees existed; and emergency pipeline repair subcontracts at SPR were non-competitively awarded to the same contractor for the last 20 years.

[1] Throughout the report, if the timeframe is not denoted by fiscal year (FY), the period is based on a calendar year.
[2] According to a former DynMcDermott and current Fluor Federal Petroleum Operations LLC official, Work Care is a managed care contractor similar to Ask-a-Nurse that SPR employees call for all non-life threatening injuries.

DETAILS OF FINDING

Our review substantiated 3 of the 16 allegations regarding SPR. The table on the next page lists each allegation, our conclusion, and the page number where detailed information regarding each allegation is located:

	Allegation	Substantiated	Page
Internal Floating Roof Failures			
1	The Department Order requiring an Accident Investigation Board was not followed after a 2015 accident at Bryan Mound.	No	5
2	The Department Order requiring an Accident Investigation Board was not followed after a 2006 accident at Bryan Mound.	Yes	7
3	The tank filling rates were omitted from the 2015 and 2006 Bryan Mound accident reports.	Yes	9
4	Tank filling rates were above those allowed prior to the 2015 and 2006 Bryan Mound accidents.	No	9
5	The report generated in the Department's Occurrence Reporting and Processing System for the 2015 accident stated no further evaluation of the accident was required.	Yes	9
Failure to Implement Safety Measures			
6	OPR had not implemented required safety measures after multiple workplace fatalities occurred at Bryan Mound and an injury caused by a scissor lift that occurred at West Hackberry.	No	12
7	An Oversight Report that evaluated corrective actions taken after three Accident Investigation Boards was altered for the purpose of improving the appearance and extent of completed actions before providing the report to senior management.	No	18
Improper Monetary Awards			
8	OPR improperly gave monetary awards to SPR management and operating contractors in violation of OSHA and Department programs and regulations. For example, in FY 2013, the Department awarded SPR contractor DynMcDermott approximately $600,000 for having below average days away, restricted, or transferred and total case incident rates, which violated OSHA and Department programs and regulations.	No	21
9	DynMcDermott received an approximately $1 million Performance Evaluation and Measurement Plan (Performance Plan) award for implementing 50 percent of the Accident Investigation Board recommendations from past accidents when it had not implemented the recommendations.	No	21
10	The Department implemented monetary incentives for low days away, restricted, or transferred rates and total case incident rates for SPR contractor Fluor Federal Petroleum Operations LLC (Fluor), hired in 2013 to replace DynMcDermott.	No	21
11	In FY 2015, the Department awarded Fluor up to a $1 million Performance Plan award even though Fluor had not complied with the performance elements related to the West Hackberry scissor lift Accident Investigation Board corrective action plan.	No	21
12	At Bayou Choctaw, an injury to a work crew member in 2013 was improperly reported.	No	30
13	DynMcDermott employees were told to go to Work Care if they had an injury so it could be treated in a way that did not trigger reporting, as opposed to seeing their personal physicians.	No	31
Additional Concerns			
14	A SPR Federal and contractor employee-owned warehouse was improperly leased to the SPR.	No	32
15	Improper relationships between SPR Federal and contractor employees existed.	No	32
16	Emergency pipeline repair subcontracts at SPR were non-competitively awarded to the same contractor for the last 20 years.	No	32

While we confirmed some specific details included in the allegations, no impact to worker health and safety was identified. Accordingly, we are not making any formal recommendations. Details concerning each allegation are included below.

2015 and 2006 Internal Floating Roof Failures at Bryan Mound (Allegation #1, Allegation #2, Allegation #3, Allegation #4, and Allegation #5)

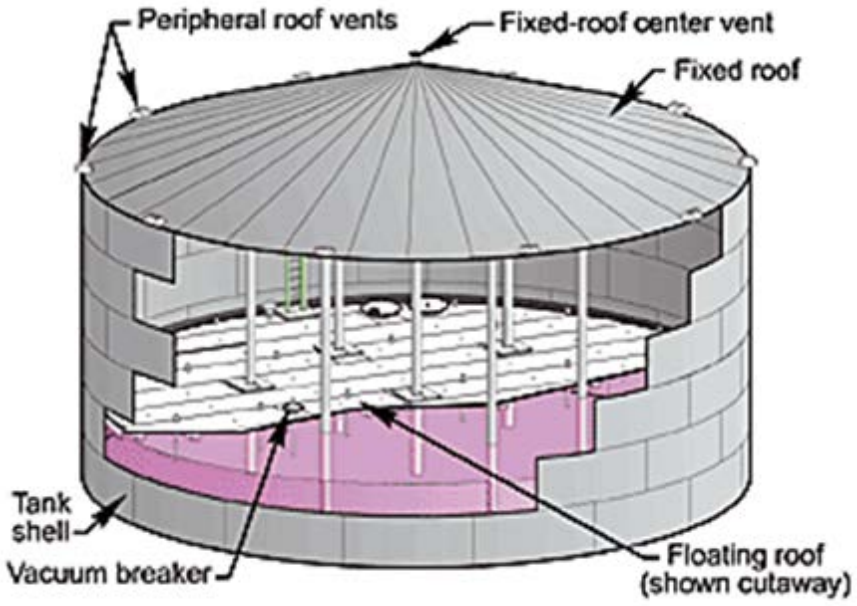
The complainant alleged that Department Orders requiring Accident Investigation Boards were not followed after two accidents (internal floating roof failures) occurred in 2015 and 2006 at Bryan Mound. The complainant also stated that the alleged severity of the two accidents was minimized by filing accident reports that omitted important details. It was specifically alleged that tank filling rates were above those allowed prior to the 2015 and 2006 accidents and the report generated in the Department's Occurrence Reporting and Processing System for the 2015 accident stated no further evaluation of the accident was required.

Bryan Mound is one of four SPR storage sites and is located in Brazoria County, Texas. Bryan Mound was completed in 1986 and contains three crude oil storage tanks referred to as Bryan Mound Tanks BMT-2, BMT-3, and BMT-4. Crude oil storage tanks are utilized only at Bryan Mound. The storage tanks are used as intermediate storage for crude oil received during filling or delivered during drawdown from/to the SPR-contracted marine terminals, as well as for providing temporary storage during an intra-site transfer. The tanks were designed in 1977 and fabricated in 1978 through 1979. When the tanks were fabricated, they contained an internal floating roof with an external fixed roof for weather protection. A picture of Bryan Mound is shown below.

Each tank (three white round structures pictured above) is 222 feet and 7 inches in diameter by 32 feet high. The total shell capacity is 220,000 barrels, with a usable capacity of 200,000 barrels. Each floating roof is equipped with a double rim seal, and is centered in the tank by 49 fixed roof support columns, which pass through it. A Department official stated that BMT-2 has been out of service since 2010. We were also told that it is being demolished and will be replaced with a new external floating roof tank. The estimated completion date is August 2018. In 2010, BMT-3 was converted from an internal floating roof to an external floating roof tank. BMT-3 is still 222 feet and 7 inches in diameter and 32 feet high. However, the total shell capacity is now 219,630 barrels with a usable capacity of 193,063 barrels. A picture of BMT-4 and an illustration of the internal floating roof design is shown on the next page.

Bryan Mound Tank BMT-4

Above is a photograph of the Bryan Mound Tank BMT-4 exterior where one of the floating roof failures occurred.



Internal Floating Roof Design

Above is a diagram that depicts how the storage tanks were designed when the floating roof failures occurred at Bryan Mound.

2015 BMT-4 Internal Floating Roof Failure (Allegation #1)

Accident Background

According to documentation, in April 2015, SPR purchased 4.2 million barrels of crude oil that were scheduled to be received periodically through the end of July 2015. During a delivery on May 20, 2015, SPR began filling BMT-4 at 6:56 a.m. and completed filling operations at 1:28 p.m. On May 21, 2015, at 10:26 a.m., oil from BMT-4 began to be transferred into the storage caverns at Bryan Mound using an injection process. During this process on May 21, 2015, at 2:46 p.m. a control room operator received an alarm that indicated the internal floating roof position was at a "low level" per the interim failure analysis report. Following a discussion with the operations manager, the control room operator silenced the alarm and a field operator was instructed to inspect the tank. Due to other ongoing operations, as well as severe weather conditions in the area, the field operator was not able to inspect the tank until 3:45 p.m. At that time, visual inspection indicated that the internal floating roof was submerged below the surface of the oil.

Analysis Results

We did not substantiate the allegation that the Department Order requiring an Accident Investigation Board was not followed regarding the BMT-4 internal floating roof failure that occurred at Bryan Mound in 2015 that allegedly could have caused a catastrophic explosion. We determined that the accident investigation process outlined in Department Order 225.1B, *Accident Investigations* (Order 225.1B), was followed after the BMT-4 accident. Order 225.1B states that the Head of the Headquarters Element must consider the criteria identified in the Order's Appendix A, the value of knowledge to be gained by conducting the investigation, and other relevant factors, to determine whether an Accident Investigation Board must be appointed. The Head of the Headquarters Element must document the determination and immediately notify the Office of Health, Safety, and Security.[3]

Order 225.1B, Appendix A, evaluation criteria categories include: human effects; loss of control of radioactive material; environmental release; and property effects. Human effects refer to an injury, chemical exposure, or biological exposure that resulted in, or was likely to result in the fatality of an employee or member of the public. Human effects also refer to an accident that resulted in hospitalization and/or lost work days. Loss of control of radioactive material refers to a single accident involving radioactive material that has certain consequences such as exceeding external dose and intake limits. Environmental release refers to accidents that resulted in the release of a hazardous material from a Department facility in an amount greater than five times the reportable quantities specified in 40 Code of Federal Regulations (CFR) Part 302, *Designation, Reportable Quantities, and Notification.* Environmental release also refers to an accident that resulted in, or could reasonably have resulted in, a catastrophic release of a highly hazardous chemical in the workplace – this criteria relates to facilities where 29 CFR Part 1910.119, *Process Safety Management of Highly Hazardous Chemical*, is applicable. Property

[3] In May 2014, the Office of Health, Safety, and Security was divided into two separate organizations: the Office of Enterprise Assessments and the Office of Environment, Health, Safety, and Security.

effects include instances where the estimated loss of or damage to Department property is equal to or greater than $2.5 million or requires estimated costs equal to or greater than $2.5 million for cleaning, decontaminating, renovating, replacing, or rehabilitating property.

We found that SPR Project Management Office personnel prepared a written recommendation to not appoint an Accident Investigation Board based upon its evaluation of the criteria in Order 225.1B and the potential lessons learned for the Department. The recommendation stated that none of the criteria contained in Appendix A was applicable to the BMT-4 internal floating roof accident. Specifically, the accident did not result in any injuries, no radioactive materials were involved, and environmental emissions did not exceed reportable quantities. Also, although the total estimated costs associated with changing BMT-4 to an external floating roof design were approximately $9 million, this work was already planned prior to the accident. The only additional costs attributable to the accident were $1 million, which was below the $2.5 million threshold. SPR Project Management Office personnel further stated that there were no other tanks at the SPR with an internal floating roof to apply any lessons learned gleaned from the incident. The Office of Fossil Energy (Fossil Energy) concurred with the SPR Project Management Office's determination and provided its decision and rationale to the Office of Environment, Health, Safety, and Security. Office of Environment, Health, Safety, and Security officials agreed with Fossil Energy's rationale for not appointing an Accident Investigation Board. This accident was also reported in the Department's Occurrence Reporting and Processing System as required.

Although an "Accident Investigation Board" was not appointed, the Department completed an analysis of the accident under a different type of review. At the time of our fieldwork, the SPR Project Management Office had completed an interim failure analysis. The interim failure analysis report stated it was known that BMT-4's internal floating roof had corrosion issues based on previous inspections. According to the report, although no oil was observed on the internal floating roof when it was inspected on May 20, 2015, it was possible that corrosion penetrated the roof, allowing enough oil onto the internal floating roof to sink it. The report also stated that, based on the rapid descent of the internal floating roof between 2:00 p.m. and 2:46 p.m., the initial opinion was that the failure likely originated with a "hang up" of the roof on the support posts guiding it, causing twisting, consequent flooding, and sinking.

The interim failure analysis report further stated that an attempt would be made to ascertain the method of failure during the BMT-4 tank cleaning operation. However, based on the similar failure of BMT-3 and the inability of the subsequent investigation to determine a definitive cause, it might not be possible to determine a definitive cause in this case. In addition, the report stated that the importance of a root cause determination was somewhat diminished because the internal floating roof of BMT-4 was the last one at SPR and would be replaced with a modern, functionally equivalent, external floating roof when repaired.

During our visit to the SPR Project Management Office, the Project Manager said that BMT-4 had been partially cleaned and that the roof was still crumpled. He also stated that the failure analysis was still ongoing because it was not safe to get inside the tank due to issues with the collapsed roof. Therefore, SPR had not been able to make a final root cause determination.

2006 BMT-3 Internal Floating Roof Failure (Allegation #2)

Accident Background

The SPR Project Management Office's Drawdown Readiness Program requires SPR to begin delivering oil within 13 days of being notified. One of the primary means of ensuring readiness is through the conduct of periodic Systems Test Exercises. The SPR Project Management Office's Recovery Program provides assurance that SPR can recover from a defined range of deliberate acts and natural events. According to the SPR Project Management Office's Recovery Program, site-specific recovery capabilities shall be demonstrated by equipment and subsystem testing and tabletop Recovery Plan Exercises conducted every 4 years. On March 22, 2006, at 6:53 p.m. site operations began filling BMT-3 with oil returning from Texas City and Jones Creek after successful completion of a Recovery Plan Systems Test Exercise. Filling of BMT-3 was completed on March 23, 2006, at 3:40 a.m.

According to documents, on March 26, 2006, the site control room received an alarm that indicated the internal floating roof position was at a low level. The control room operator on duty stated that the roof level alarm had been malfunctioning. Due to this and because SPR was not moving oil into or out of the tanks, the control room operator thought it was a false alarm. The control room operator treated it as such and did not have anyone respond to the alarm. On March 28, 2006, at 8:30 a.m., a field operator observed via a side-mounted gauge a low internal floating roof position that varied from the day before. The control room operator on duty was notified of the variation and noticed the low level indicator alarm was activated. At 12:00 p.m., the shift foreman and a field operator confirmed that the internal floating roof was submerged below the surface of the oil. We noted that the circumstances of the BMT-3 floating roof failure differed from the BMT-4 failure in that the BMT-3 failure occurred when the tank was static, while the BMT-4 failure occurred when oil was being injected from the tank into the caverns.

Analysis Results

We substantiated the allegation that the accident investigation decision-making process outlined in the Department Order was not followed after the 2006 BMT-3 accident. At the time of the accident, Department Order 225.1A, *Accident Investigations* (Order 225.1A), provided the criteria for determining whether to conduct a Type A or Type B Investigation and the responsibilities of the individuals involved in the process. Order 225.1A stated that Department field elements shall categorize the type of investigation in accordance with the algorithm in Attachment 2 of the Order. The algorithm contained categories for human effects, environmental effects, and property effects.

According to the algorithm for human effects, a Type A or B Investigation was required when an injury, chemical exposure, or biological exposure resulted in, or was likely to result in the fatality of an employee or member of the public, or an accident resulted in hospitalization and/or lost work days. Per the algorithm for environmental effects, a Type A Investigation was required when a release of a hazardous substance, material, waste, or radionuclide from a Department facility, in an amount greater than five times the reportable quantities specified in 40 CFR Part 302, *Designation, Reportable Quantities, and Notification*, resulted in serious environmental damage. A Type B Investigation was required if there was a release equal to or greater than two

times but less than five times the reportable quantities specified in 40 CFR Part 302, *Designation, Reportable Quantities, and Notification*, that resulted in serious environmental damage. According to the algorithm for property effects, a Type A Investigation was required when there was an estimated loss of or damage to Department or other property equal to or greater than $2.5 million or required estimated costs of equal to or greater than $2.5 million for cleaning, decontaminating, renovating, replacing, or rehabilitating structures, equipment, or property. A Type B Investigation was required when those same costs were less than $2.5 million but more than $1 million. However, Order 225.1A also stated that the Head of a Field Element may request a waiver for conducting a Type A or Type B Investigation when it was determined that there would be no substantial lessons learned from conducting the investigation. The Assistant Secretary for Environment, Safety, and Health[4] was responsible for making the final determination for a waiver.

We found that the algorithm for human effects was not applicable to the 2006 accident because there were no injuries. Additionally, we found that the algorithm for environmental effects was not applicable. Although there were volatile organic compound emissions associated with the internal floating roof failure, we verified that the emissions did not exceed reportable quantities.

As for property effects, we found that soon after the 2006 accident occurred, the known costs to clean, inspect, and repair the damaged tank were approximately $1.6 million. According to Order 225.1A, a Type B Investigation would have been required. However, a Type B Investigation was not conducted because the SPR Project Management Office Project Manager stated that, at the time, he did not believe the accident met the accident investigation criteria. Furthermore, no evidence of a waiver from conducting a Type B Investigation was identified during our review. Although a Type B Investigation was not conducted, the SPR Project Management Office conducted a similar review. Specifically, an internal failure analysis was performed that was supplemented with external reviews conducted by subject matter experts. The failure analysis concluded that corrosion was the leading cause for the internal floating roof collapse. The failure analysis recommended that SPR change the internal floating roof design because large diameter internal floating roofs were inherently unstable. SPR took corrective action by changing the tank design to an external floating roof design that was more stable and inherently unsinkable.

In addition to not following the decision-making process outlined in Order 225.1A, we also determined that the 2006 accident was not reported, as required in the Department's Occurrence Reporting and Processing System. Furthermore, no evidence was provided to show the Office of Environment, Safety, and Health was notified about the accident when it occurred. However, the accident was included in SPR's 2006, 2007, and 2008 Annual Reports to Congress. The Annual Reports to Congress provided the accident details and disclosed the decision to retrofit BMT-3 with an external floating roof.

[4] In August 2006, the Office of Environment, Safety, and Health and the Office of Security and Safety Performance Assurance were merged to create the Office of Health, Safety, and Security.

Related Concerns (Allegation #3, Allegation #4, and Allegation #5)

In addition to the alleged failure of SPR to follow the Department's Orders requiring accident investigations, the complainant also expressed concern that the severity of the 2015 and 2006 Bryan Mound accidents was minimized by filing accident reports that omitted important details. Specifically, the complainant alleged that tank filling rates were above those allowed prior to the 2015 and 2006 accidents and that this information was not included in the accident reports. The complainant also stated that the report generated in the Department's Occurrence Reporting and Processing System for the 2015 accident stated that no further evaluation of the accident was required.

Analysis Results

We confirmed that tank filling rates were not included in the accident reports for the 2015 and 2006 accidents. However, the filling rates in 2015 and 2006 were within allowable ranges according to the Bryan Mound tank filling procedure. Accordingly, we did not identify any impact from the filling rates being omitted from the accident reports. We also confirmed that a section of the Department's Occurrence Reporting and Processing System report for the 2015 Bryan Mound accident stated no further evaluation was required. However, another section of the same report stated that a complete failure analysis would be performed. We determined that an interim failure analysis was performed and the final analysis was still ongoing at the time of our inspection.

Filling Rates (Allegation #3 and Allegation #4)

BM-OP-930-001, *Normal Operating Procedure Bryan Mound Site*, prescribes the normal operating range (flow rate) for tank filling operations and the cavern injection process for Crude Oil Storage Tanks BMT-2, BMT-3, and BMT-4. According to this procedure, the flow rate is based upon the crude oil level and internal floating roof height. The procedure states for low oil levels, a flow rate of 3,000 barrels per hour should not be exceeded. At oil levels below six feet, a space between the oil and floating roof exists. Within this space, explosive vapors can collect creating a dangerous situation. Flow rates above 3,000 barrels per hour into this open space can produce high static electricity charges. According to the procedure, the crude oil level normal operating range is a low of 8 feet and high of 25 feet for BMT-2 and BMT-4, and low of 8 feet and high of 26 feet for BMT-3. The flow rate within this normal operating range is a low of 3,000 barrels per hour and a high of 25,000 barrels per hour.

According to documents, filling of BMT-4 began on May 20, 2015, at 6:56 a.m. Prior to filling, a measurement was taken on May 19, 2015, at approximately 8:06 p.m. to obtain the crude oil level and internal floating roof height. At that time, the crude oil level and internal floating roof height was approximately 8 feet, which was within the normal operating range prescribed in the filling procedure. We reviewed records prepared at the time of the 2015 accident, which we were told the complainant did not have access to. These records included an accounting of the flow rates from the filling of BMT-4 on May 20, 2015. Flow rates of 17,707, 17,470, and 17,967 barrels per hour were recorded during the filling of BMT-4. Furthermore, oil was injected into the storage caverns from BMT-4 on May 21, 2015. The flow rates from BMT-4 into the storage caverns were recorded as well. The recorded flow rates were 6,975, 7,888, and 8,270 barrels per hour. Because the crude oil level and internal floating roof height was approximately 8 feet prior to filling, the flow rates used to fill BMT-4 were within the allowable range in the filling procedure. Additionally, the flow rates from BMT-4 into the storage caverns were within the normal operating range as well.

Filling of BMT-3 began on March 22, 2006, at 6:53 p.m. Prior to filling, a measurement was taken on March 22, 2006, at 3:00 p.m. to obtain the crude oil level and internal floating roof height. At that time, the crude oil level and internal floating roof height was approximately 12 feet. This crude oil level and internal floating roof height was within the normal operating range that is prescribed in Bryan Mound's filling procedure.

We also reviewed records that were prepared at the time of the 2006 accident. These records included an accounting of the flow rates from the filling of BMT-3 on March 22, 2006, and March 23, 2006. Flow rates of 11,000, 2,300, and 15,316 barrels per hour were recorded during the filling of BMT-3. Because the crude oil level and internal floating roof height was approximately 12 feet prior to filling, the flow rates used to fill BMT-3 were within the normal operating range during the filling procedure.

Occurrence Report (Allegation #5)

We reviewed the report filed in the Department's Occurrence Reporting and Processing System for the 2015 accident and confirmed the allegation that the report stated no further evaluation of the accident was required; however, another section of the report stated that a failure analysis would be performed. The report contained standard line items that had to be completed at the time the report was filed. One of the line items was a question as to whether or not further evaluation was required. For this line item, the report stated that no further evaluation was required. However, the facility manager/designee's evaluation stated that a complete failure analysis would be performed to determine the cause of the roof failure and to determine a course of action to possibly return the tank to operational status.

At the time of our fieldwork, the SPR Project Management Office had completed an interim failure analysis. The interim failure analysis report stated it was known that BMT-4's internal floating roof had corrosion issues based on previous inspections. According to the report, although no oil was observed on the internal floating roof when it was inspected on May 20, 2015, it was possible that corrosion penetrated the roof, allowing enough oil onto the internal floating roof to sink it. The report also stated that, based on the rapid descent of the internal floating roof between 2:00 p.m. and 2:46 p.m., the initial opinion was that the failure likely originated with a "hang up" of the roof on the support posts guiding it, causing twisting, consequent flooding, and sinking.

The interim failure analysis report further stated that an attempt would be made to ascertain the method of failure during the BMT-4 tank cleaning operation. However, based on the similar failure of BMT-3 and the inability of the subsequent investigation to determine a definitive cause, it might not be possible to determine a definitive cause in this case. In addition, the report stated that the importance of a root cause determination was somewhat diminished because the internal floating roof of BMT-4 was the last one at SPR and would be replaced with a modern, functionally equivalent, external floating roof when repaired.

During our visit to the SPR Project Management Office, the Project Manager said that BMT-4 had been partially cleaned and that the roof was still crumpled. He also stated that the failure analysis was still ongoing because it was not safe to get inside the tank due to issues with the collapsed roof. Therefore, SPR had not been able to make a final root cause determination.

Failure to Implement Safety Measures (Allegation #6)

The allegation stated that OPR had not implemented required safety measures after multiple workplace fatalities occurred at Bryan Mound and an injury caused by a scissor lift that occurred at West Hackberry. Two fatalities occurred at Bryan Mound, one in 2010 during a tank cleaning operation and another in 2011 involving a lawn mower. An injury also occurred in 2013 involving a scissor lift at West Hackberry. These three accidents underwent accident investigations, which resulted in numerous proposed corrective actions. The complainant alleged that an Oversight Report found that 45 of 68 proposed actions resulting from these three accident investigations were not completed, which constituted a significant risk to employee safety. Our review focused on the Department's accident investigation process. The complainant also alleged that the Oversight Report content was altered from the original draft report to the final report.

Accident Investigation Process

The three accidents addressed in the Oversight Report occurred between 2010 and 2013. During this timeframe, the Department Orders that defined the process for conducting accident investigations were Order 225.1A and Order 225.1B (superseded Order 225.1A in March 2011). According to Orders 225.1A and 225.1B, the Head of the Field Element or the Head of the Headquarters Element, respectively, considers the circumstances and severity of an accident and recommends to the Appointing Official whether to appoint an Accident Investigation Board. In Order 225.1A, the Assistant Secretary for Environment, Safety, and Health serves as the Appointing Official for Type A investigations, unless this responsibility is delegated to the Head of the Field Element. However, Order 225.1B designates the Head of Headquarters Element as the Appointing Official unless the Head of Headquarters Element relinquishes Appointing Official authority to the Office of Health, Safety, and Security. The Appointing Official is responsible for appointing Department employees to the Accident Investigation Board and ensuring that each member is briefed on his/her roles and responsibilities.

Once appointed, the Accident Investigation Board investigates to determine the factors that caused the accident to occur. The results are organized and presented in a report, including, if appropriate, recommendations which could be categorized as either Judgments of Need or Opportunities for Improvement. Judgments of Need are recommendations that require management to submit a corrective action plan. Opportunities for Improvement are recommendations for management's consideration and do not require a corrective action plan. After reviewing and approving, the Appointing Official finalizes and publishes the report. The Head of the Field Element ensures a corrective action plan is developed and the Appointing Official closes the accident investigation once satisfied with the corrective actions.

Analysis Results

Nothing came to our attention to substantiate the allegation regarding OPR's failure to implement required safety measures. Our review focused on the Department's accident investigation process. As such, we did not perform an evaluation of the 45 allegedly incomplete actions mentioned in the complaint because the Department's subject matter experts reviewed these items. We determined that the appropriate process was followed from the appointment of

an Accident Investigation Board through closure of the accident investigations for the two fatalities at Bryan Mound and the injury at West Hackberry. The table below provides the dates each required step in the accident investigation process was completed for the three accidents.

Accident Investigation Steps	Tank Cleaning Fatality	Lawnmower Fatality	Scissor Lift Accident
Date of Accident	July 8, 2010	September 13, 2011	February 7, 2013
Accident Investigation Board appointed by Appointing Official	July 20, 2010	September 19, 2011	February 15, 2013
Accident investigation is conducted and report published	September 27, 2010	November 1, 2011	June 21, 2013
Corrective action plan is submitted to the Appointing Official	November 17, 2010	December 13, 2011	August 14, 2013
Appointing Official closes accident investigation	May 20, 2011	December 14, 2011	February 9, 2017

We also determined that SPR and Fossil Energy hired subject matter experts and conducted additional reviews to evaluate operations and safety at the SPR sites. These reviews increased our confidence that actions were taken to address safety concerns. The additional reviews not specifically related to the three accident investigations are included in Appendix 2, Related Reports, under Assessments and External Reviews.

Tank Cleaning Fatality

Accident Background

On July 8, 2010, a fatality occurred at Bryan Mound during a crude oil tank cleaning operation being performed by a subcontractor at SPR. According to the *Independent Review of the Fatality at the Strategic Petroleum Reserve Bryan Mound Site*, two tank cleaning technicians entered the tank and began work. One technician saw the other technician pull on his air line and then heard a pop, indicating that the line had been disconnected. Shortly thereafter, one of the technicians fell in the tank and was subsequently taken to the hospital where he was pronounced dead. We determined this accident was reported, as required, in the Department's Occurrence Reporting and Processing System.

Analysis Results

We did not substantiate the allegation that OPR had not implemented required safety measures after the Bryan Mound tank cleaning fatality. We determined that the appropriate accident investigation process was followed for the Bryan Mound tank cleaning fatality. The Chief Health, Safety, and Security Officer signed a memorandum initiating the accident investigation on July 20, 2010. Simultaneously, OSHA investigated the accident and the SPR Project Management Office conducted a safety review. For this accident, the Office of Health, Safety, and Security appointed an Independent Review Board (modified Type A review). Specifically, unlike a typical Type A accident-specific causal analysis, the Independent Review Board was tasked with: reviewing the OSHA and SPR Project Management Office review results to confirm conclusions; evaluating the extent of condition; and identifying opportunities for improvement. On September 27, 2010, the Chief Health, Safety, and Security Officer, as the

Appointing Official, issued the Independent Review Board's final report titled, *Independent Review of the Fatality at the Strategic Petroleum Reserve Bryan Mound Site*, which contained seven Opportunities for Improvement.

Although not required, the SPR Project Management Office developed and submitted a corrective action plan to the Acting Assistant Secretary for Fossil Energy in November 2010 concerning the six Opportunities for Improvement assigned to the SPR Project Management Office. The plan was subsequently sent to the Office of Health, Safety, and Security. In March 2011, the Office of Health, Safety, and Security provided feedback and emphasized specific ideas for SPR to consider when implementing the corrective actions. The Chief Health, Safety, and Security Officer signed a memorandum on May 20, 2011, approving closure of the accident investigation. [5]

Additional Actions

Additional actions outside of the steps for the accident investigation process were taken to ensure the health and safety of SPR employees. Immediately following the tank cleaning fatality, Bryan Mound suspended all cleaning activities. In December 2010, the SPR Project Management Office established an Operational Readiness Review Board. The Operational Readiness Review Board was tasked with recommending when tank operations could resume once satisfied that the accident investigation's corrective actions were addressed. The SPR Project Management Office approved the Quality Assurance Validation Plan that the Operational Readiness Review Board used to evaluate the actions taken. In February 2012, the Operational Readiness Review Board recommended to the SPR Project Management Office that the tank cleaning operation could commence.

In March 2012, Fossil Energy conducted a review to determine whether the SPR Project Management Office implemented the corrective actions to address the Independent Review Board Opportunities for Improvement. Fossil Energy provided the Office of Health, Safety, and Security the verification report in July 2012. A memorandum with the verification report stated that the corrective actions were closed in the Department's Action Tracking System and that Fossil Energy was in the process of hiring a senior safety professional to assist with safety oversight.

The SPR Project Management Office also conducted reviews to identify the root cause leading to the fatality and other potential weaknesses and safety measures that could prevent similar events in the future. Specifically, the SPR Project Management Office issued two reports, a root cause report titled, *TapRoot® Analysis of the Strategic Petroleum Reserve BMT-2 Incident Analysis Review Report Recommendations*, in October 2010, and an extent of condition review titled, *Bryan Mound Tank 2 Incident Extent of Condition Report*, in September 2011:

[5] Due to the passage of time, change in policy and staffing, and Department reorganization, we were unable to determine the extent of review the Office of Health, Safety, and Security conducted prior to closing the accident investigation.

- The TapRoot® analysis team included Federal and contractor staff, and resulted in four recommendations regarding updating contracts, improving compliance with safety and health requirements, improving oversight, and communicating contract requirements.

- DynMcDermott, the SPR management and operating contractor at the time of the accident, conducted an extent of condition review using a computer-based approach to determine if there were additional actions that could be implemented to further prevent similar accidents in the future. The review resulted in recommendations that SPR: ensure job safety requirements are communicated to subcontractors; ensure procedures and manuals include a "buddy system" requirement; ensure subcontracts include a requirement to report equipment failures; and evaluate Safe Work Permits to determine whether improvement opportunities exist regarding notifications to Emergency Response Teams, Confined Space Rescue, Security, and local agencies.

Lawn Mower Fatality

Accident Background

On September 13, 2011, a fatality occurred when a newly-hired and untrained subcontractor at SPR drove a riding lawn mower without permission and struck three elevated pipes. Another grass cutter discovered and reported the accident, and emergency personnel responded. Subsequently, the medical examiners pronounced that the subcontractor's fatality was due to blunt force trauma. This accident was reported as required in the Department's Occurrence Reporting and Processing System.

Analysis Results

We did not substantiate the allegation that OPR had not implemented required safety measures after the Bryan Mound lawnmower fatality. We determined that the appropriate accident investigation process was followed for the Bryan Mound lawnmower fatality. On September 15, 2011, Fossil Energy submitted a request for the Office of Health, Safety, and Security to lead and conduct an accident investigation for this fatality. On September 19, 2011, the Office of Health, Safety, and Security appointed an Accident Investigation Board. The report was submitted to the Office of Health, Safety, and Security Chief Officer for approval in October 2011, and issued in November 2011. The report, titled *Fatality at the Strategic Petroleum Reserve Bryan Mound Site, September 13, 2011*, contained 31 Judgments of Need.

The Acting Assistant Secretary for Fossil Energy received the corrective action plan, which was subsequently sent to the Office of Health, Safety, and Security. The Office of Health, Safety, and Security closed the accident investigation in its tracking system in December 2011. [6] Although closed, the Office of Health, Safety, and Security provided comments regarding the corrective action plan in January 2012. The Office of Health, Safety, and Security was provided the final corrective action plan in April 2012.

[6] Due to the passage of time, change in policy and staffing, and Department reorganization, we were unable to determine the extent of review the Office of Health, Safety, and Security conducted prior to closing the accident investigation.

Additional Actions

Additional actions outside of the steps for the accident investigation process were taken to ensure the health and safety of SPR employees. In August 2012, DynMcDermott provided the SPR Project Management Office a memorandum summarizing the process used to validate and verify that the corrective actions were implemented. The SPR Project Management Office notified Fossil Energy that it verified and confirmed that the corrective actions had been implemented. In September 2012, Fossil Energy provided the Office of Health, Safety, and Security its verification report. The report stated that both Fossil Energy and the SPR Project Management Office confirmed that the corrective actions were completed. The verification review team included Federal and contractor safety management experts and consisted of site visits, observations, and document reviews.

Scissor Lift Injury

Accident Background

According to documents, on February 7, 2013, two trained subcontractor employees at SPR were performing an abrasive blasting operation on a tank using a scissor lift at West Hackberry. While conducting the blasting operation, one of the subcontractors performing the blasting operation fully extended the scissor lift to work on the top four feet of the tank. A third subcontractor who was monitoring the work activity, felt the blasting hose pulse and then saw the scissor lift fall towards the center of the tank, injuring the subcontractor inside the scissor lift. The subcontractor monitoring the work activity immediately sounded the emergency signal to alert others in the area that a problem had occurred. The accident was reported to the Control Room Operator and the Emergency Response Team was activated. The injured subcontractor was taken to a local hospital once the ambulance arrived. This accident was reported as required in the Department's Occurrence Reporting and Processing System.

Analysis Results

We did not substantiate the allegation that OPR had not implemented required safety measures after an injury caused by a scissor lift that occurred at West Hackberry. We determined that the appropriate accident investigation process was followed for the injury at West Hackberry. The Deputy Assistant Secretary for Petroleum Reserves and the Acting Principal Deputy Assistant Secretary for Fossil Energy decided to establish an Accident Investigation Board to review the circumstances leading to and causing the scissor lift injury to occur. The Acting Assistant Secretary for the Fossil Energy officially established the Accident Investigation Board on February 15, 2013, which was chaired by Fossil Energy's Director of Environment, Security, Safety, and Health. The report titled, *Scissor Lift Accident in the West Hackberry Brine Tank-14 Resulting in Injury on February 7, 2013*, containing 25 Judgments of Need was issued in June 2013.

In August 2013, DynMcDermott provided the SPR Project Management Office a corrective action plan consisting of short- and long-term actions to address the Judgments of Need. Subsequently, the SPR Project Management Office sent a corrective action plan to the Deputy Assistant Secretary for Petroleum Reserves. Considering that the three accidents resulting in

accident investigations were caused by subcontractors at SPR, the long-term corrective action was to redesign and implement a new subcontractor management process. In October 2013, OPR provided feedback to the corrective action plan, stating that the plan should include a subsequent review to determine the effectiveness of the implemented actions. The SPR Project Management Office added this action and resubmitted the plan in November 2013. The SPR Project Management Office also stated the short-term corrective actions had been implemented.

In January 2014, the Deputy Assistant Secretary for Petroleum Reserves issued a memorandum confirming that the short-term corrective actions were implemented. The Deputy Assistant Secretary also noted that the most significant change was to have the management and operating contractor perform all contract management, rather than have separate construction, and management and operating contracts. After re-competing the contract, the new management and operating contract was awarded to Fluor who was to assume responsibilities on December 1, 2013. However, DynMcDermott protested the award, which the Government Accountability Office denied, and Fluor assumed management and operating contractor responsibility in April 2014.

In August 2014, Fluor assessed the implementation of its subcontractor management process and determined that, although the process was redesigned and staff had been trained, the new process was not fully followed. In August 2015, Fluor reassessed the subcontract management process and determined that, similar to the results noted in its August 2014 report, there were still concerns that the process was not fully implemented. Subsequently, in September 2015, the SPR Project Management Office developed a plan to evaluate the effectiveness of the corrective actions taken to address the Judgments of Need. The SPR Project Management Office's Quality and Performance Assurance Division organized a team consisting of subject matter experts, including an industrial hygienist and safety engineer, to perform this evaluation. The report titled, *Technical Assessment of the Implementation of West Hackberry Scissor Lift Incident Corrective Actions*, issued in March 2016, determined that 14 of the 25 Judgments of Need either needed improvement or were significant weaknesses. Specifically, 11 Judgments of Need were rated as needing improvement because the actions were not implemented uniformly across all SPR sites, and 3 were rated as significant weaknesses because there was no significant progress made in implementing the actions at SPR sites.

To address the *Technical Assessment of the Implementation of West Hackberry Scissor Lift Incident Corrective Actions* findings, Fluor developed a corrective action plan to implement all of the accident investigation's Judgments of Need by the end of FY 2016. In September 2016, the SPR Project Management Office issued a followup report titled, *Joint Verification of the Implementation of WHT-14 Accident Investigation Board (AIB) Judgment of Needs (JONS).* This review determined that the Judgments of Need previously identified as needing improvement or significant weaknesses had been implemented. The report also noted that a subsequent effectiveness review of the implemented actions would be conducted in FY 2017.

Based on these reviews, the Deputy Assistant Secretary for Petroleum Reserves recommended that the Acting Assistant Secretary for Fossil Energy close the accident investigation. The Acting Assistant Secretary for Fossil Energy approved this recommendation and officially closed the accident investigation in February 2017.

Oversight Report Comparison (Allegation #7)

The complainant alleged that an Oversight Report, which found that 45 of 68 proposed actions resulting from the Bryan Mound and West Hackberry accident investigations were not completed, was altered from the original draft report to the final report. Specifically, it was alleged that a Fossil Energy official instructed personnel to alter the Oversight Report to improve the appearance and extent of the completed actions before providing the report to senior management. The Oversight Report, a document created for internal use, was in draft when the complainant left the Department in November 2015 and was still in draft when we met with the complainant in June 2016. In fact, the final report was not issued until February 2017, 15 months after the complainant left the Department.

Analysis Results

We did not substantiate that the Oversight Report was altered for the purpose of improving the appearance and extent of completed actions. We found that although there were changes made to the report between the original draft and the final report, the corrective actions addressed in the August 2015 draft report were completed and the Appointing Official for each accident investigation agreed to the closure of the actions. Therefore, nothing came to our attention to indicate the changes to the report equated to the lack of implementation of the required corrective actions.

To address this allegation, we reviewed pertinent documentation, including documentation provided by the complainant, and interviewed relevant Fossil Energy officials. Our analysis of the August 2015 original draft report and the final report issued in February 2017 showed there were differences between the two reports, including that some information in the draft report was not included in the final report. We found changes were made to the draft report for several reasons. First, the scope of the report was changed to focus on improving the subcontractor management process. We were told this changed because the three prior accidents all involved subcontractors. Second, compliance statistics were removed because Fossil Energy management stated the focus of the report was to address programmatic issues and not specific compliance statistics (discussions with the complainant confirmed there was confusion over the purpose of the report). Third, the final report incorporated the results of a Quality and Performance Assurance Division review that had not been conducted at the time the draft report was submitted. Fossil Energy did not provide a log or matrix-type document addressing the specific omissions from Appendix C of the February 2017 report. Consequently, Fossil Energy was not able to address each specific change made to the draft report. However, we determined that the explanations and documents provided, coupled with the approval of the closure of the required actions by the Appointing Official for each accident investigation, demonstrated a reasonable approach to the final report.

The February 2017 final report focused on the West Hackberry corrective action plan rather than all three of the corrective action plans included in the August 2015 draft report. The February 2017 report contained a statement that the scope changed because the West Hackberry accident was the most recent and the corrective actions were primarily focused on improving the overall subcontractor management process. It further stated that many of the corrective actions addressed conditions identified in previous reports and that many of the actions required by the

earlier reports had been overtaken by time. Additionally, the West Hackberry accident corrective action plan had not yet been fully completed. We were told that even though the facts and circumstances of the three accidents were different, they all involved a subcontractor. We were also told the SPR Project Management Office recognized that fact and determined that many of the issues in the prior accident investigations would be resolved by changing the subcontractor management process, which was part of the West Hackberry corrective action plan.

Additionally, there was a change in the contracting structure and a change in contractors managing SPR for the Department. Specifically, SPR transitioned from having work performed by both a management and operating contractor and a construction contractor to combining both roles and responsibilities under one management and operating contract. The combined contract was competed, and Fluor became the new SPR management and operating contractor in April 2014. This is relevant because all of the accidents occurred under the previous contracting structure, which we were told contributed to issues with subcontractor management.

Some of the differences between the draft and final report included deleting specific items that did not require a corrective action plan. The August 2015 draft report included compliance statistics that identified whether the 68 Judgments of Need and/or Opportunities for Improvement from the 3 accident investigations that were closed by the SPR Project Management Office were actually implemented. "Judgments of Need" are recommendations that require management to submit a corrective action plan. "Opportunities for Improvement" are recommendations for management's consideration and do not require a corrective action plan. These statistics showed whether the SPR Project Management Office completed the actions as stated in its corrective action plans. In addition to the statistical data, the results of the individual Judgments of Need and Opportunities for Improvement were included as Appendix A of the August 2015 draft report.

In contrast, the February 2017 report did not include these compliance statistics. The report language contained a specific acknowledgement that Fossil Energy did not retrace the 100-plus actions already taken related to specific Opportunities for Improvement or Judgments of Need associated with the Bryan Mound tank cleaning and lawn mower incidents. Rather, the report focused on the implementation of the corrective actions and ongoing safety management responsibilities. Even though the compliance statistics were not included, we determined that Appendix C of the February 2017 report included part of the results of the individual Judgments of Need and Opportunities for Improvement contained in Appendix A of the August 2015 draft report. However, 24 Judgments of Need, identified as not being implemented in the August 2015 draft report, were not included in the February 2017 report Appendix C even though the corrective actions had been approved for closure by the Appointing Official for each accident investigation.

We discussed the deleted statistics and the items omitted from Appendix C with Fossil Energy officials. Regarding the statistics, officials told us the August 2015 draft report did not meet the intended purpose and rather, was focused on the individual Judgments of Need and/or Opportunities for Improvement, not the corrective action plans as a whole. Specifically, one Fossil Energy official stated that the review was intended to have a programmatic approach rather than focusing on statistics. We found that there appeared to be confusion on the purpose

and direction of the report as even the complainant stated that the review team was never provided the full scope of the oversight review and he also alleged, the team was given misleading and changing guidance. Officials also told us the statistics were taken out of the report because there was no analysis to support the numbers, the validity was questionable, and the numbers did not provide value to the report. We did not verify the accuracy of the statistical data; therefore, we could not conclusively determine whether removal improved the appearance and extent of the completed actions. However, nothing came to our attention to indicate removal of the statistics diminished the implementation of the corrective actions as evident by the Appointing Official for each accident investigation's approval to close the corrective actions.

We also discussed the items omitted from Appendix C with Fossil Energy officials. When specifically asked why the 24 items were not included in Appendix C of the February 2017 report, a Fossil Energy official told us he would have to do further analysis. However, Fossil Energy did not provide a log or matrix-type document addressing the specific changes.

Fossil Energy also incorporated the results from the SPR Project Management Office's Quality and Performance Assurance Division review of the corrective actions taken to address the West Hackberry accident investigation. This review was performed by a team of subject matter experts, which included, among others, an industrial hygienist and a safety engineer. The review was completed in March 2016, 4 months after the complainant left the Department.

Finally, Fossil Energy officials told us that the significant delay between the original draft of the report in August 2015 and the final report issued in February 2017 was attributed to the time needed for multiple levels of review and revision of the report. For example, Fossil Energy needed time to consider and address the SPR Project Management Office comments regarding the August 2015 report.

Improper Monetary Awards (Allegation #8, Allegation #9, Allegation #10, and Allegation #11)

The allegation stated that OPR improperly gave monetary awards to SPR management and operating contractors in violation of OSHA and Department programs and regulations. Specifically:

- In FY 2013, the Department awarded SPR contractor DynMcDermott approximately $600,000 for having below average days away, restricted, or transferred and total case incident rates, which violated OSHA and Department programs and regulations.

- DynMcDermott received an approximately $1 million Performance Plan award for implementing 50 percent of the Accident Investigation Board recommendations from past accidents when it had not implemented the recommendations.

- The Department implemented monetary incentives for low days away, restricted, or transferred rates and total case incident rates for SPR contractor Fluor, hired in 2013 to replace DynMcDermott.

- In FY 2015, the Department awarded Fluor up to a $1 million Performance Plan award even though Fluor had not complied with the performance elements related to the West Hackberry scissor lift Accident Investigation Board corrective action plan.

- The complainant also expressed concerns regarding injury reporting at SPR, which related to the improper monetary awards. For example, the complainant asserted that at Bayou Choctaw, an injury to a work crew member was improperly reported in 2013.

- It was alleged SPR employees were told to go to Work Care if they had an injury so it could be treated in a way that did not trigger reporting, as opposed to seeing their personal physicians.

OSHA Voluntary Protection Program

SPR sites are independent OSHA Voluntary Protection Program – Star Program participants. Star Program participants are sites where employees are successfully protected from fatality, injury, and illness by the implementation of comprehensive and effective workplace safety and health management systems, and are self-sufficient in identifying and controlling workplace hazards. Star Program participants must meet the OSHA *CSP 03-01-002 and 003 Voluntary Protection Programs (VPP): Policies and Procedures Manual* (dated March 25, 2003, and April 18, 2008) requirements for a year prior to approval and thereafter, pass initial on-site evaluations completed between 30 and 42 months after approval, and pass all subsequent on-site evaluations completed within 60 months of each preceding evaluation. Voluntary Protection Program participation complements but does not replace OSHA enforcement activity. OSHA also investigates valid employee safety and health complaints, fatalities, catastrophes, and other significant events at participating sites.

One of OSHA's requirements for Voluntary Protection Program participation is adherence to OSHA Voluntary Protection Program policy memoranda, including *Revised VPP Policy Memorandum #5: Further Improvements to the Voluntary Protection Programs (VPP)* (dated June 29, 2011, and August 14, 2014), which addresses participant incentive programs and their impact on the reporting of injuries and illnesses. Further, OSHA guidance states that incentive programs must not be based solely on providing awards to employees for the reduction or absence of safety or health incidents.

Award Fee Process

The performance award fee process for the SPR management and operating contractors is identified in the contractor's Performance Plan. The Performance Plan supplements and implements the total available performance fee provisions of the contracts; defines the methodology and responsibilities associated with determining the fees awarded; and outlines the organizational procedures and evaluation periods for implementation. Each evaluation period, the Government and contractor mutually agree on the evaluation areas and allocation of fees to those areas. The contractor's performance relative to the evaluation areas determines the amount of fee earned out of the total performance fee available. However, the amount of otherwise earned fee may be reduced in whole or in part, if the Department determines that the contractor's performance was considered less than the minimum level established in any area.

The personnel responsible for administering the SPR Performance Plans and their primary responsibilities include:

Position	Primary Responsibilities
Fee Determination Official: Office of Fossil Energy Deputy Assistant Secretary for Petroleum Reserves	• Approves the Performance Plan, including any changes. • Approves the amount of performance fee earned and payable for each evaluation period.
SPR Project Management Office Contracting Officer	• Assures appropriate coordination of performance expectations and evaluation criteria with Department Headquarters and policy organizations, which includes submission of the Performance Plan to the Department's Office of Contract Management (under the DynMcDermott contract) and the Office of Procurement and Assistance Management (under the Fluor contract) for approval. • Negotiates performance fee amounts with contractors. • Forwards approved Performance Plans and evaluation criteria to contractors through a contract modification.
SPR Project Management Office Performance Fee Board (in FYs 13 through 15)/SPR Project Management Office Award Fee Board (renamed beginning in FY 16): -Project Manager -Assistant Project Managers -General Attorney for Office of Chief Counsel -Program Office Representative -Contracting Officer -Executive Secretary	• Meets quarterly to review contractor performance status against established targets and validation plans. • Prepares and submits the Performance Plan, including any changes, to the Fee Determination Official for approval. • Submits an annual report to the Fee Determination Official covering its findings on contractor performance and its recommendations for the determination of earned performance fee; after considering Performance Evaluation Committee reports; contractor self-assessments and comments on the Performance Evaluation Committee reports; and any other relevant performance information.
SPR Project Management Office Performance Evaluation Committee: -Division Directors -Configuration Management Officer -Contracting Officer (in FYs 13 through 14 only)	• Monitors and evaluates contractor performance. • Conducts quarterly meetings with contractors to provide feedback on performance. • Submits reports to the Performance Fee Board (for FYs 13 through 15)/Award Fee Board (beginning in FY 16) covering their evaluation of performance. • Recommends changes to the Performance Plan, as appropriate.
SPR Project Management Office Performance Measure Subject Matter Experts	• Verifies contractor completion of critical performance measures.
SPR Project Management Office Quality and Performance Assurance Division	• Validates methodologies used by the subject matter experts to verify contractor completion of critical performance measures. • Submits Quality Assurance Surveillance reports (for DynMcDermott in FYs 13 through 14)/Quality Assurance Review reports (for Fluor in FYs 14 through 16) to the Performance Fee Board (for FYs 13 through 15)/Award Fee Board (beginning in FY 16).
SPR Project Management Office Executive Secretary	• Manages the award fee process by preparing and coordinating the Performance Plans and all related documentation for/with the Performance Fee Board (for FYs 13 through 15)/Award Fee Board (beginning in FY 16), Performance Evaluation Committee, Contracting Officer, subject matter experts, Quality and Performance Assurance Division, and the Fee Determination Official.

DynMcDermott

Background

DynMcDermott was the SPR management and operating contractor from April 1, 2003, through March 31, 2014. DynMcDermott's earned award fee was based on performance relative to critical performance measures, which are evaluation areas crucial to successful execution of the SPR mission. We found:

- In FY 2013, DynMcDermott earned $7,945,000 out of an $8,000,000 total performance fee pool, for 23 performance measures. Of the fee earned, $1,290,230 was for Safety Statistics. The objective of the Safety Statistics performance measure was to strive to achieve zero work-related recordable injuries or illnesses, and included execution targets for less than or equal to 0.90 cases of days away, restricted, or transferred and a less than or equal to 1.40 total case incident rate, per 200,000 DynMcDermott and DynMcDermott subcontractor worker hours.[7]

- In FY 2014 (October 1, 2013, through March 31, 2014), DynMcDermott earned $3,575,000 out of a $4,050,000 total performance fee pool, for 23 performance measures. Of the fee earned, $600,000 was for Safety Statistics. The objective of the Safety Statistics performance measure was to strive to achieve zero work-related recordable injuries or illnesses, and included execution targets for less than or equal to 0.40 cases of days away, restricted, or transferred and a less than or equal to 0.60 total case incident rate, per 200,000 DynMcDermott and DynMcDermott subcontractor worker hours.

The Office of Procurement and Assistance Management waived review of DynMcDermott's Performance Plan for FYs 2013 and 2014. An official from the Department's Office of Acquisition Management[8] stated that waiving review is a common practice for sites that do not significantly change their Performance Plans from year to year. Our review of the *Department of Energy Acquisition Guide* found that Procurement Executive waiver approval is based on demonstration by the contracting activity that its internal processes are adequate to ensure that the performance measures and associated fee structures and incentives are properly developed and administered. The waiver prepared by the Department's Office of Procurement and Assistance Management stated that the internal processes of the SPR Project Management Office had been assessed as adequate to ensure that performance objectives, measures, and associated incentives were properly developed and administered.

Analysis Results

We did not substantiate that the Performance Plan awards the Department paid to DynMcDermott in FYs 2013 and 2014 violated OSHA or Department programs and regulations. We did confirm that DynMcDermott received $1,290,230 and $600,000 in FYs 2013 and 2014,

[7] 200,000 worker hours is equivalent to 100 full-time employees working 40 hours a week for 50 weeks per year.
[8] The Office of Contract Management, Office of Policy, and Office of Headquarters Procurement Services are all part of the Department's Office of Acquisition Management.

respectively, for having below average days away, restricted, or transferred and total case incident rates. OSHA teams conducted re-approvals of all four SPR sites in 2013 and 2014 and determined that the sites utilized incentive programs that met the requirements of *Revised VPP Policy Memorandum #5: Further Improvements to the Voluntary Protection Programs (VPP).* OSHA evaluation reports also noted that there had been no activity related to retaliation or discrimination. Additionally, OSHA tested and confirmed SPR site compliance with OSHA reporting requirements, during its 2013 and 2014 on-site evaluations, which included a review of injury and illness data from the prior 3 years. Further, our review found that for FYs 2013 and 2014 the Department followed the Performance Plan review and approval process outlined in DynMcDermott's contract and no indications that the awards violated Department programs and regulations were noted.

We reviewed the SPR site and OSHA documentation for the 2013 through 2015 Voluntary Protection Program annual site evaluation submissions to OSHA, and found that the sites had met annual submission requirements, and received no questions from OSHA or recommendations for improvement. We also reviewed the latest OSHA Voluntary Protection Program – Star Program re-approvals and reports for on-site evaluations conducted in 2013 and 2014. The on-site evaluation reports were based on the results of site documentation reviews; previous evaluation reports; and annual site self-evaluation submissions; formal and informal interviews with site and contractor employees (229 out of 469 total employees); and facility walk-throughs.

The OSHA teams found that its re-calculation of the 3-year days away, restricted, or transferred rates; total case incidence rates; and total hours worked the sites reported in their most recent annual self-evaluations matched the calculations and hours OSHA obtained during the on-site evaluations. All elements of the sites' safety and health management programs met the high quality expected of Voluntary Protection Program – Star Program participants. All Voluntary Protection Program requirements continued to be met, and all OSHA standards were appropriately covered. The only OSHA inspection activities, beyond the regularly scheduled on-site evaluations, were for the contractor fatalities that took place at Bryan Mound on July 8, 2010, and September 13, 2011. According to an OSHA report, no citations were issued to Bryan Mound as a result of those inspections.

In addition, we reviewed the DynMcDermott contract clauses related to personnel health and safety performance measures and award fees, and employee safety incentives, and found that the overall performance award fee was paid to DynMcDermott's corporate office, not to individual SPR sites, and the only payment to SPR employees was through the regular payroll process. DynMcDermott's employee safety incentive programs were behavior-based with non-cash incentives. According to the SPR Project Management Office Contracting Officer, DynMcDermott spent a total of $3,426.25 in FY 2013 on employee safety incentives, which she determined was allowable and was reimbursed to DynMcDermott in full by the Department. According to a Department Office of Acquisition Management official, there was no ban or prohibition in the *Department of Energy Acquisition Guide* or in any of the Department's policies that prohibited DynMcDermott from using the low days away, restricted or transferred, and total case incident rates as incentives. The official also stated that most Department contracts have contract clauses related to occupational safety and health, and Department sites generally have a lot of latitude on how they incentivize contractor performance from year-to-

year. We also noted that an April 2012 Government Accountability Office report, *Better OSHA Guidance Needed on Safety Incentive Programs,* found that approximately 75 percent of manufacturers in the United States had safety incentive programs or other workplace safety policies, and nearly three quarters provided rewards for workers having no reported injuries and illnesses, 40 percent provided rewards for having low numbers or rates of injuries and illnesses during a specific time period, and 23 percent provided rewards for reducing the numbers or rates of reported injuries and illnesses. Thus, we found that the use of safety incentives was a common practice across the Department, as well as in private industry and did not violate Department programs and policies.

Department Order 232.2, *Occurrence Reporting and Processing of Operations Information,* requires reporting of certain injuries and illnesses resulting from activities facility personnel and subcontractors performed in support of facility operations, in the Department's Occurrence Reporting and Processing System. We reviewed all of the injuries and illnesses DynMcDermott reported to the Department in 2013, to test its reporting of work-related injuries and illnesses. We reviewed DynMcDermott's Weekly First Aids and Recordables reports, which include the date of injury or illness, the employer (the Department, DynMcDermott, or subcontractor), incident descriptions, actions taken, reporting status, and any reporting corrections or updates. We compared these reports to the injuries and illnesses reported to the Department's Office of Health, Safety, and Security through the Computerized Accident/Incident Reporting System, to the Department's Occurrence Reporting and Processing System, and to OSHA through the sites' Voluntary Protection Program 2013 annual self-evaluation submissions.

We found that all injuries and illnesses were reported appropriately in the Computerized Accident/Incident Reporting System and the Department's Occurrence Reporting and Processing System, and in the OSHA annual self-evaluations, as required by Department Order 232.2, *Occurrence Reporting and Processing of Operations Information* and OSHA requirements. Forty-seven of the 57 injuries and illnesses reported in the DynMcDermott 2013 Weekly First Aids and Recordables reports were minor, ranging from ant bites to back pain, and most of them would have been easy to hide if employees had chosen to do so. None of the injuries and illnesses met the 2013 "reportable" criteria in OSHA 29 CFR 1904.39, *Reporting Fatalities and Multiple Hospitalization Incidents to OSHA*, which required reporting all work-related fatalities and all hospitalizations of three or more employees. Injury and illness descriptions and actions taken appeared to be reasonable, and gave no indication that workers had been discriminated against for reporting work-related injuries or illnesses in violation of OSHA 29 CFR 1904.36, *Prohibition Against Discrimination*, or that employees were coerced or did not have input into their injury or illness treatment options.

Additionally, we did not substantiate that the Department gave DynMcDermott an approximately $1 million Performance Plan award for implementing 50 percent of the Accident Investigation Board recommendations from past accidents when it had not implemented the recommendations. We reviewed DynMcDermott's FYs 2013 and 2014 Performance Plans, and found that there was no performance measure to implement 50 percent of the Accident Investigation Boards' recommendations from past accidents. However in FY 2014, there was a critical performance measure for the completion of a redesigned subcontracting process that would allow for the closeout of West Hackberry Tank 14 final corrective actions, at the fundamental process level. DynMcDermott earned $250,000 for completing this process.

Our review of the FYs 2013 and 2014 Performance Plans, award fee letters, and associated documentation found that the determination of fees earned or deducted went through multiple levels of review and approval, including the SPR Project Management Office Performance Evaluation Committee and Performance Fee Board, and Department Fee Determination Official. Subject matter experts at the SPR Project Management Office validated compliance with the performance measures, and the SPR Project Management Office Quality and Performance Assurance Division confirmed the subject matter experts' evaluation. Therefore, we determined that the Department followed the Performance Plan review and approval process outlined in the DynMcDermott contract and no indications that the awards violated Department programs and regulations were noted. Furthermore, OSHA determined that the sites utilized incentive programs that met OSHA requirements. Additionally, OSHA tested and confirmed SPR site compliance with OSHA reporting requirements. Finally, we found that all injuries and illnesses were reported appropriately in the Computerized Accident/Incident Reporting System and in the Department's Occurrence Reporting and Processing System.

Fluor

Background

Fluor has been the SPR management and operating contractor since April 1, 2014. Fluor's performance fee is made up of an incentive fee for objective critical performance measures, and an award fee for subjective evaluation areas. The subjective component cannot exceed 25 percent of the available fee during any contract year, and the Performance Plans specify the allotment of the 25 percent among each of the evaluation areas. Individual criteria within each subjective evaluation area are considered in the overall evaluation, and are not individually rated or assessed an award fee. We found:

- In FY 2014 (April 1, 2014, through September 30, 2014), Fluor earned $3,567,202 out of a $4,171,512 total performance fee pool, for eight critical performance measures and three subjective evaluation areas. Of the fee earned, $292,006 was for Environment, Safety, and Health Performance. Environment, Safety, and Health Performance was one of the subjective evaluation areas. The Environment, Safety, and Health Performance area included criteria for environmental and regulatory compliance, safeguards and security, and a contractor safety program that reflected a mature and effective safety culture.

- In FY 2015, Fluor earned $7,948,220 out of an $8,295,932 total performance fee pool, for eight critical performance measures and five subjective evaluation areas. Of the fee earned, $564,123 was for Environmental, Safety, and Health Performance. Environmental, Safety, and Health Performance was one of the subjective evaluation areas. Specific Environmental, Safety, and Health evaluation criteria related to personnel health and safety included: 90 percent or more of the corrective actions for the West Hackberry Tank 14 Accident Investigation Board Judgments of Need were 100 percent implemented, and no OSHA reportable injuries/fatalities during the fiscal year.

- In FY 2016, Fluor earned $7,453,419 out of an $8,169,210 total performance fee pool, for 11 critical performance measures and 5 subjective evaluation areas. Of the fee earned, $614,325 was for Environmental, Safety, and Health. Environmental, Safety, and Health was one of the subjective evaluation areas. Specific Environmental, Safety, and Health evaluation criteria related to personnel health and safety included: 100 percent of corrective actions for the West Hackberry Tank 14 Accident Investigation Board Judgments of Need were 100 percent implemented, and no OSHA reportable injuries/fatalities during the FY.

Analysis Results

We did not substantiate that the Department implemented monetary incentives for low days away, restricted, or transferred rates and total case incident rates in Fluor's Performance Plan. While we found that Fluor had received monetary awards related to personnel health and safety, the awards did not include incentives for low days away, restricted, or transferred rates and total case incident rates. We did find that Fluor's FYs 2015 and 2016 Performance Plans included evaluation criterion for no OSHA reportable injuries/fatalities during the fiscal year. According

to a Department Office of Acquisition Management official, there was no ban or prohibition in the *Department of Energy Acquisition Guide* or in any of the Department's policies that prohibited Fluor from using this type of safety criteria.

We confirmed with a Department Office of Acquisition Management official that they had reviewed the Fluor Performance Plans from FY 2014 (April 1, 2014, through September 30, 2014) through FY 2016. We reviewed the FYs 2014 through 2016 Performance Plans and associated documentation, and found that the SPR Project Management Office Performance Evaluation Committee, Performance Fee Board (in FYs 14 through 15)/Award Fee Board (renamed beginning in FY 16), the Contracting Officer, and the Fee Determination Official in Fossil Energy reviewed and approved the critical performance measures, subjective evaluation areas, and respective award fees. The SPR Project Management Office performance measure subject matter experts also validated completion of critical performance measures, and the SPR Project Management Office Quality and Performance Assurance Division confirmed the subject matter experts' evaluation.

Additionally, we did not substantiate that the Department awarded Fluor up to $1 million Performance Plan award even though Fluor did not comply with the performance elements related to the West Hackberry scissor lift Accident Investigation Board corrective action plan in FY 2015. In Fluor's FY 2015 Performance Plan, one of six evaluation criteria under the Environmental, Safety, and Health subjective evaluation area was that 90 percent or more of the corrective actions for the West Hackberry Tank 14 Accident Investigation Board Judgments of Need were 100 percent implemented. In FY 2015, Fluor earned $564,123 for the Environmental, Safety, and Health subjective evaluation area. Approximately $94,000 of the $564,123 was applicable to this one criterion. Our review focused on the Department's Performance Plan process. As such, we did not perform an evaluation of the implementation status of the corrective actions mentioned in the complaint. We found that the FY 2015 Performance Plan and associated documentation, as well as the award fee determination, went through the appropriate process. This process included multiple levels of review and approval, including the SPR Project Management Office Performance Evaluation Committee and Performance Fee Board, and the Fee Determination Official in Fossil Energy.

We did not perform a review of Fluor's reported safety incidents, because Fluor's performance measures did not specifically include days away, restricted, or transferred and total case incident rates. However, we reviewed the performance fee payment and employee safety incentive clauses in Fluor's contract. We found that the performance award fee was paid to Fluor's corporate office, not to individual sites or employees. Additionally, Fluor spent $5,788 and $3,950 in FYs 2014 and 2015 respectively on employee safety incentive programs. All of the awards were for non-cash and non-rate-based motivational items for all SPR employees, which the Department determined were allowable. Thus, the Department reimbursed those amounts to Fluor in full.

Related Concerns (Allegation #12 and Allegation #13)

Bayou Choctaw Injury (Allegation #12)

We did not substantiate the allegation that the injury to a work crew member at Bayou Choctaw in 2013 was improperly reported. The complainant stated that a crew member working to fix an issue with piping smashed his hand, and was not able to work the remainder of the day. The next day, the worker reported for duty but was unable to work. Because the task required everyone in the crew to be able to work, the entire crew was required to take leave for the next few days. A report prepared by a SPR Project Management Office subcontractor noted that the accident was not currently documented in either the Non-Routine Spill/Noncompliance reports or the Department's Occurrence Reporting and Processing System. The subcontractor report stated that Bayou Choctaw maintained its record of no days away, restricted, or transferred or total case incident rates. Further, the report stated that maintaining this record for such a long period aided in obtaining Bayou Choctaw's star status Voluntary Protection Program certification.

We reviewed this accident in the 2013 Weekly First Aids and Recordables reports, and noted that the description indicated that on the day of the accident the employee felt no excessive pain, and the hand functioned fully. Overnight, the hand became swollen, stiff, and hard to move, so Work Care was called the next day. Work Care recommended that the employee have his hand x-rayed. The hand was x-rayed at the local clinic and was not broken, and the attending physician returned the employee to full duty. The injury met the OSHA 29 CFR 1904.7, *General Recording Criteria*, definition of "first aid," because a diagnostic test, such as an x-ray, is not considered medical treatment and no other treatment was performed. The injury did not meet the OSHA 29 CFR 1904.7 definition of "recordable," because it did not result in death, days away, restricted, or transferred, medical treatment beyond first aid, or a loss of consciousness. Even if the injured employee took leave, the leave days would not count as days away, restricted, or transferred, because the attending physician had returned the employee to full duty status.

We also reviewed the requirements of Department Order 232.2, *Occurrence Reporting and Processing of Operations Information*, and this injury did not meet the Department's Occurrence Reporting and Processing System reporting requirements. For example, there was no fatality, no in-patient hospitalization of three or more personnel, or a fracture that required surgery or an inpatient hospital stay. Further, we found that Bayou Choctaw had reported a recordable case in January 2013. Therefore, Bayou Choctaw did not have a record of no total case incident rates to maintain.

Finally, although Bayou Choctaw's rates for days away, restricted, or transferred and total case incidents may have aided in obtaining its Voluntary Protection Program certification, that determination is made by OSHA. OSHA's on-site evaluation reports and recertification of all the SPR sites gave no indication that the sites were having issues with injury and illness reporting. An OSHA official also verified there was no documentation of OSHA inspection activities due to employee health and safety complaints at the SPR sites.

Work Care (Allegation #13)

We did not substantiate the allegation that DynMcDermott employees were told to go to Work Care if they had an injury so it could be treated in a way that did not trigger reporting, as opposed to seeing their personal physicians. Our review of Work Care found that it was a managed care contractor, similar to Ask-a-Nurse, which SPR employees call for all non-life threatening issues. According to SPR personnel, typically, after a workplace illness or injury, the employee, supervisor, and emergency response team (if applicable), call the Work Care toll-free number, discuss what happened, discuss treatment options, coordinate visits, and arrange for second opinions, but the care ultimately received is up to the patient. The Work Care website advises that its clinicians provide responsive and responsible evaluation of the accident; direction on the appropriate course of action; and consultation with the employee's treating physician to design a treatment plan that meets the needs of the employee and the employer. Nothing in our review of the injury and illness descriptions and actions taken in DynMcDermott's 2013 Weekly First Aids and Recordables reports appeared to be unreasonable or gave the impression that employees were coerced or that they did not have input into their course of treatment.

Additional Concerns (Allegation #14, Allegation 15, and Allegation #16)

During our inspection, the complainant expressed additional concerns that:

- An SPR Federal and contractor employee-owned warehouse was improperly leased to SPR;
- Improper relationships between SPR Federal and contractor employees existed; and
- Emergency pipeline repair subcontracts at SPR were non-competitively awarded to the same contractor for the last 20 years.

Allegations concerning the leased warehouse and improper relationships were referred to and accepted by the Office of Inspector General, Office of Investigations. The Office of Investigations has closed its case and found no evidence to support the allegations. The Office of Investigations determined that the National Aeronautics and Space Administration currently owns the warehouse and is leasing it to the Department. Prior to that, the only other owner of the warehouse was the Department of the Army. The Office of Investigations also found that there were controls in place when awarding contracts that would not allow for improper relationships.

We did not substantiate the allegation regarding a subcontractor being awarded a non-competitive contract for emergency pipeline repairs at SPR. The scope of our review was 2013 to present. Therefore, we focused our review on contracts awarded for emergency pipeline repairs within that time period. Since 2013, the contract for emergency pipeline repairs was a competitively bid contract. In January 2013, DynMcDermott issued Request for Offer BTG-2013-025 Task MS-OM-1119, *Emergency Pipeline Repairs at the Strategic Petroleum Reserve Sites and Off-site Pipelines in Louisiana and Texas*. The procurement was an unrestricted solicitation to result in a time and materials labor-hour primary subcontract and secondary subcontract with firm-fixed unit rates.

DynMcDermott sent a pre-qualification letter to five potential sources resulting in three responders who met minimum qualifications to participate in the solicitation. The three offers received were from L.S. Womack Inc., Texas Gulf Energy Inc., and Cajun Constructors. L.S. Womack Inc. submitted the lowest bid for the primary contractor and Texas Gulf Energy Inc. submitted the lowest bid for the secondary contractor. DynMcDermott made the decision to recommend award of the subcontracts to L.S. Womack Inc. and Texas Gulf Energy Inc. In March 2013, L.S. Womack Inc. was issued the Notification of Award, which stated the period of performance would start on April 3, 2013. It also stated that DynMcDermott would issue delivery orders against the subcontract when L.S. Womack Inc.'s services were required.

OBJECTIVE, SCOPE, AND METHODOLOGY

Objective

On May 9, 2016, the United States Office of Special Counsel referred a whistleblower disclosure to the Secretary of Energy (OSC File No. DI-16-2328). The Secretary of Energy referred the issue to the Office of Inspector General (OIG) for evaluation. The complainant alleged that Department of Energy Orders requiring Accident Investigation Boards were not followed after two accidents occurred in 2015 and 2006 at the Strategic Petroleum Reserve (SPR) Bryan Mound site that could have caused catastrophic explosions. Related to this concern, the disclosure stated that the alleged severity of these two accidents was minimized by filing accident reports that omitted important details. In addition, the Department's Occurrence Reporting and Processing System for the 2015 accident had improperly indicated that no further evaluation of the accident was required. The complainant also alleged that the Office of Petroleum Reserves had not implemented required safety measures after multiple workplace fatalities occurred at Bryan Mound and an injury caused by a scissor lift that occurred at West Hackberry. Related to this allegation, the complainant stated that the Office of Petroleum Reserves *SPR Oversight Report*, that evaluated corrective actions taken after three Accident Investigation Boards, was altered for the purpose of improving the appearance and extent of completed actions before providing the report to senior management. Moreover, the complainant alleged that the Office of Petroleum Reserves improperly gave monetary awards to SPR management and operating contractors in violation of Occupational Safety and Health Administration and Department programs and regulations. The complainant further expressed concerns regarding injury reporting related to improper monetary awards. The concerns were that an injury to a work crew member at Bayou Choctaw in 2013 was improperly reported, and DynMcDermott Petroleum Operations Company employees were told to go to Work Care[1] if they had an injury so it could be treated in a way that did not trigger reporting.

During our inspection, the complainant expressed additional concerns that: a SPR Federal and contractor employee-owned warehouse was improperly leased to SPR; improper relationships between SPR Federal and contractor employees existed; and emergency pipeline repair subcontracts at SPR were non-competitively awarded to the same contractor for the last 20 years. Allegations concerning the leased warehouse and improper relationships were referred to and accepted by the OIG, Office of Investigations. We initiated this inspection to review the facts and circumstances regarding the remaining allegations.

Scope

We conducted our inspection fieldwork from June 2016 through October 2017 at Department of Energy facilities in Freeport, Texas; New Orleans, Louisiana; and Washington, DC. The inspection was focused on calendar years 2013 through present. This inspection was conducted under OIG project number S16IS012.

[1] According to a former DynMcDermott Petroleum Operations Company and current Fluor Federal Petroleum Operations LLC official, Work Care is a managed care contractor similar to Ask-a-Nurse that SPR employees call for all non-life threatening injuries.

Methodology

Inspection activities included:

- Formed a cross-functional team of auditors and inspectors to review the allegations;
- Interviewed and obtained a signed statement from the complainant;
- Used the complainant's signed statement to determine the scope of the inspection;
- Reviewed applicable laws, regulations, orders, guidance, policies, and local procedures;
- Conducted site visits at Bryan Mound in Freeport, Texas; the SPR Project Management Office in New Orleans, Louisiana; and Department Headquarters in Washington, DC;
- Interviewed relevant Federal and contractor personnel;
- Obtained and reviewed documents and emails concerning various aspects of the inspection; and
- Reviewed related Government Accountability Office and OIG prior reports, as well as other related assessments and external reviews.

We conducted this allegation-based inspection in accordance with the Council of the Inspectors General on Integrity and Efficiency's *Quality Standards for Inspection and Evaluation*. Those standards require that we plan and perform the inspection to obtain sufficient, appropriate evidence to provide a reasonable basis for our conclusions and observations based on our inspection objective. We believe the evidence obtained provided a reasonable basis for our conclusions and observations based on our inspection objective. Accordingly, the inspection included tests of controls and compliance with laws and regulations to the extent necessary to satisfy the inspection objective. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our inspection. Additionally, we assessed the implementation of the *GPRA Modernization Act of 2010* and found that the Department had established multiple performance measures related to our inspection objective. Finally, we did not rely upon computer-based data to satisfy our inspection objective.

Due to nature of the disclosure, this report did not follow our customary process for inspections regarding obtaining Department comments and holding an exit conference. Also, the OIG will not be publicly releasing the report until advised by the Office of Special Counsel. The OIG is available to discuss the need for any additional information with the Office of Special Counsel.

RELATED REPORTS

Government Accountability Office Report

- *Better OSHA Guidance Needed on Safety Incentive Programs* (GAO-12-329, April 2012). The Government Accountability Office found that many employers use safety incentive programs to encourage safety in the workplace, including nearly 75 percent of United States manufacturers, with 11 or more employees. Incentive programs include rate-based programs that reward workers for achieving low rates of reported injuries or illnesses, and behavior-based programs that provide rewards for certain behaviors, such as recommending safety improvements. The Government Accountability Office found little conclusive academic research on whether safety incentive programs and other workplace safety policies affect workers' injury and illness reporting.

Assessments and External Reviews

- Safety Leadership Training Report – Findings (Project Enhancement Corporation, May 2013). The initial training objective was to understand the value of an Integrated Safety Management System and how it could be used to help accomplish the mission while preventing injury and illness. This report compiled the feedback received following the training, which included comments regarding the perception of leadership and organizational culture.

- Strategic Petroleum Reserve Focus Groups Report (Project Enhancement Corporation, October 2013). This report summarized feedback received concerning organizational weaknesses that impacted safety at the Strategic Petroleum Reserve in the categories of leadership, communication, accountability, and reporting environment.

- Office of Petroleum Reserves Organizational Safety Culture Assessment (Project Enhancement Corporation, April 2014). This report found safety-related organizational issues exist that were detrimental to the safety culture and performance of the Strategic Petroleum Reserve.

- Observation Reports (The Strategic Petroleum Reserve Project Management Office). Site officials prepared these reports on a recurring basis to identify issues/concerns with day-to-day operations.

FEEDBACK

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