



**CALPINE®**

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March 30, 2017

**RECEIVED**

**MAR 31 2017**

Mr. Randall L. Sawyer  
Chief Environmental Health and Hazardous Materials Officer  
Contra Costa Hazardous Materials Programs  
4585 Pacheco Boulevard, Suite 100  
Martinez, CA 94553

Contra Costa Health  
Hazardous Materials

**RE: Second 30-Day Update Report: January 29, 2017 Delta Energy Center Incident**

Dear Mr. Sawyer:

As requested by Contra Costa County Health Services and in accordance with the Contra Costa County Health Services (CCCHS) Department of Hazardous Materials Incident Notification Policy, Delta Energy Center is providing a second 30 day report for an event that occurred at the Delta Energy Center on January 29, 2017.

If you have any questions, please contact: Barbara McBride at 925-570-0849.

Sincerely,

Barbara McBride  
Director Environmental, Health and Safety  
Calpine Corporation

**RECEIVED**

**MAR 31 2017**

Contra Costa Health  
Hazardous Materials

**ATTACHMENT C  
30-DAY FOLLOW-UP NOTIFICATION REPORT FORM  
CONTRA COSTA HEALTH SERVICES**

INSTRUCTIONS: A hardcopy and an electronic copy of this report is to be submitted for all Level 2 and 3 incidents or when requested by CCHS. See Attachment C-1 for suggestions regarding the type of information to be included in the report. Attach additional sheets as necessary. This form is to be used for update reports after the initial 30-day report has been submitted. Forward the completed form to:

**ATTENTION:**

Randall L. Sawyer  
Chief Environmental Health and Hazardous Materials Officer  
Contra Costa Hazardous Materials Programs  
4585 Pacheco Boulevard, Suite 100  
Martinez, CA 94553

**INCIDENT DATE:** January 29, 2017

**INCIDENT TIME:** 15:42

**FACILITY:** Delta Energy Center

**PERSON TO CONTACT FOR ADDITIONAL INFORMATION**

Barbara McBride Phone number: 925-570-0849

**I. SUMMARY OF EVENT:**

On Sunday, January 29, 2017, at approximately 15:42, the Delta Energy Center experienced a failure of the steam turbine and steam turbine generator. The failure resulted in a lube oil fire inside the steam turbine generator compartment that resulted in the deployment of the fire department to the facility. The Delta Energy Center is a natural gas-fired, combined-cycle power plant consisting of three combustion turbines, three heat recovery steam generators and one steam turbine and steam turbine generator. There were no injuries associated with the event. The incident is currently under active investigation. An outside contractor has been secured to conduct the investigation and the results are pending. The timing of the final report is not yet known.

Suppressing the fire resulted in the discharge of approximately 5,000 gallons of water and 150 gallons of lubricating oil to a stormwater inlet grate on the Facility site. The inlet grate is connected to a subsurface drainage system that flows to Dowest Slough on property owned by The Dow Chemical Company (Dow), resulting in potential discharge to Dowest Slough. CH2M and Clean

Harbors were deployed within 24 hours and the removal of the oil from the surface water. The clean up has subsequently been completed and a final report issued to the Regional Water Quality Control Board and the Army Corp of Engineers and is attached here as Attachment 1.

**PROVIDE ANY ADDITIONAL INFORMATION THAT WAS NOT INCLUDED IN THE 72- HOUR REPORT WHEN THE 72-HOUR REPORT WAS SUBMITTED, INCLUDING MATERIAL RELEASED AND ESTIMATED OR KNOWN QUANTITIES, COMMUNITY IMPACT, INJURIES, ETC.:**

1. INCIDENT INVESTIGATION RESULTS Is the investigation of the incident complete at this time?  
\_\_\_\_\_ Yes \_\_\_\_\_x\_\_\_\_\_ No If the answer is no, when do you expect completion of the investigation? At this time, the incident investigation is ongoing and is expected to be extensive. The results are not yet available. If the answer is yes, complete the following:

**SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:**

Currently the root cause analysis into the event is ongoing. Preliminary indications are that there was a mechanical failure of one of the steam turbine (ST) and steam turbine generator (STG), which resulted in a fire that was contained to the ST and STG collector compartment. The fire appears to have also been fueled, in part, by hydrogen from the STG. At this time, the fire is believed to have been a result of the main event and not a causal factor.

The root cause analysis into the ultimate cause of the event remains ongoing with both internal and external experts fully engaged. Given the extent of the event, it is expected that the root cause analysis, including various forms of metallurgical and other testing, will continue for several months.

On March 8, the California Energy Commission (CEC) approved the Facility's request to install specific temporary safety modifications to allow the option for steam turbine repairs to be performed while the facility is in operation in steam bypass mode. The facility is currently working with the assigned Certified Building Official (CBO) and the CEC on the plans for these temporary modifications and expect that they will be in place prior to June.

**SUMMARIZE PREVENTATIVE MEASURES TO BE TAKEN TO PREVENT RECURRENCE INCLUDING MILESTONE AND COMPLETION DATES FOR IMPLEMENTATION:**

Corrective actions will be determined as part of the incident investigation. When the investigation is complete, the correct actions will be listed in the follow up report.

**STATE AND DESCRIBE THE ROOT-CAUSE(S) OF THE INCIDENT:**

The root cause of the incident is not yet available.

# DELTA ENERGY CENTER, LLC

717 TEXAS AVENUE  
SUITE 1000  
HOUSTON, TX 77002

March 15, 2017

Frances Malamud-Roam  
Regulatory Project Manager  
South Branch  
US Army Corps of Engineers  
1455 Market Street, #16  
San Francisco, CA 94103

Katie Hart, P.E.  
Watershed Management Division  
SF Bay Regional Water Quality Control Board  
1515 Clay St., Suite 1400  
Oakland, CA 94612

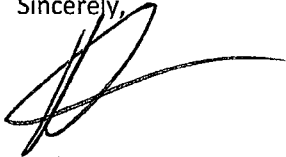
Subject: Delta Energy Center Oil Discharge – Emergency Response Final Report

Dear Ms. Malamud-Roam and Ms. Hart,

On behalf of Calpine, CH2M HILL, Inc. prepared this *Emergency Response Final Report* to present the observations and results of emergency response activities conducted at the Delta Energy Center ("Facility," located on the 1200 block of Arcy Lane in Pittsburg, California).

Please contact Barbara McBride at (925) 570-0849 or by email at [bmcbride@calpine.com](mailto:bmcbride@calpine.com) if you have any questions.

Sincerely,



Barbara McBride  
Calpine Corporation  
Director, Environmental, Health and Safety

REPORT

# Delta Energy Center Oil Discharge – Emergency Response Final Report

*Prepared for*

Delta Energy Center, LLC

March 2017



CH2M HILL  
150 Spear 7th Floor  
San Francisco, CA 94105

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# Acronyms and Abbreviations

BNSF	Burlington Northern Santa Fe
CDFW	California Department of Fish and Wildlife
Dow	The Dow Chemical Company
Facility	Delta Energy Center
USACE	U.S. Army Corps of Engineers
Water Board	California Regional Water Quality Control Board, San Francisco Bay Region

# Introduction

On Sunday, January 29, 2017, at approximately 15:42, the Delta Energy Center (“Facility,” located on the 1200 block of Arcy Lane in Pittsburg, California) experienced a failure of the steam turbine and steam turbine generator. The failure resulted in a lube oil fire inside the steam turbine generator compartment that required the deployment of the fire department. The Facility is a natural gas-fired, combined-cycle power plant consisting of three combustion turbines, three heat recovery steam generators, and one steam turbine. Suppressing the fire resulted in the discharge of approximately 5,000 gallons of water and 150 gallons of lubricating oil to a stormwater inlet grate on the Facility site. The inlet grate is connected to a subsurface drainage system that flows to Dowest Slough on property owned by The Dow Chemical Company (Dow), resulting in potential discharge to Dowest Slough.

This report) provides a “post-construction report” as required by the U.S. Army Corps of Engineers (USACE) in its February 2, 2017, letter (File Number 2017-00076S) that authorized emergency response activities in Dowest Slough under *Department of the Army Regional Permit Number 5 Emergency Repairs*. This report concurrently provides the “completion report” required by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) and the “post-project assessment report” required by the National Marine Fisheries Service, enclosures 4 and 5 of the USACE letter, respectively.

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# Emergency Response Activities

The emergency response activities and site inspections are summarized below.

- On January 29, 2017, Contra Costa Hazardous Materials Division responded to the incident, and assisted Delta Energy Center in deploying booms and pig mats in the outfall area and downstream of the outfall at Location C on Figure 1. The pig mats and absorbent booms were inspected every 2 hours and replaced with new booms, as appropriate, as they absorbed the oil.
- On January 30, 2017, Delta Energy Center contained a wetlands biologist from CH2M and requested that they inspect the outfall area and neighboring wetlands. It was determined at that time that the oil had been contained and had not reached the Antioch Slough. Additionally, Clean Harbors was contracted to assist with the oil clean-up at the Facility and in the wetlands. USACE was also contacted and notified that an application would be submitted for coverage under the *Department of Army Regional General Permit 5 for Repair and Protection Activities in Emergency Situations*.
- On January 31, 2017, oil absorbent floating booms were installed at the stormwater drain outfall to waters connected to Dowest Slough (Figure 1, Location A), the access road crossing south of the stormwater drain outfall (Figure 1, Location B), the Burlington Northern Santa Fe (BNSF) bridge crossing at the margins of the BNSF right-of-way (Figure 1 Location C), the culverts at East 5th Street (Figure 1, Location D), and the bridge at East 3rd Street (Figure 1, Location E). A vacuum truck was also deployed to the stormwater drain outfall to remove as much residual oil from the subsurface drainage system as possible. A summary of initial site observations, emergency response activities, and recommendations was presented in the *Calpine Delta Energy Center Oil Discharge - Site Observations and Response Recommendations* dated January 31, 2017. In addition, a permit application was submitted to USACE and the Water Board for the General Permit.
- On February 2, 2017, a site inspection was conducted by California Department of Fish and Wildlife (CDFW) staff, which confirmed that the absorbent material was in good condition and was deployed at the appropriate locations and in the appropriate manner. CDFW staff, led by Mr. Michael Schommer, directed the deployment of additional adsorbent pads at locations in waters connected to Dowest Slough where oil was observed within small pools (less than 1 square foot). The *Department of Army Regional General Permit 5 for Repair and Protection Activities in Emergency Situations* was issued by USACE.
- On February 7, 2017, a follow-up site inspection was conducted by CDFW, at which time the boomed containments were observed to have contained the oil and to have effectively prevented oil from spreading further underneath the BNSF bridge crossing. Rain events experienced over the prior several days had caused some natural flushing of oil that had been trapped in vegetation near the stormwater drain outfall, and this was being contained and absorbed by the pads and booms. Additionally, good progress had been made in absorbing the small pools of oil that had been identified.

CDFW observed that some oil was still visible in small pools (less than 1 square foot) in the vegetation near the stormwater drain outfall, and CDFW provided direction that pads and a pipette should be strategically used to remove the oil in these areas. CDFW also directed that a boom should be placed by the fence immediately south of the BNSF bridge crossing, and that the booms should remain in place for an extended period of time, with the goal of removing as much oil associated with this release as practicable.

SECTION 2 – EMERGENCY RESPONSE ACTIVITIES

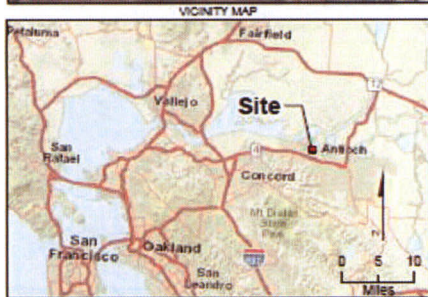
- On February 8, 2017, CDFW requested that an underflow dam be installed at Location C (Figure 1) to reduce potential migration of oil beyond the BNSF bridge crossing that could be caused by forecasted heavy rains.
- On February 9, 2017, installation of the underflow dam was completed.
- On February 13, 2017, CDFW recommended application of water to the vegetation near the stormwater drain outfall to flush residual oil from the release area into the absorbent pads and booms.
- On February 14 through 15, 2017, Calpine flushed the release area with approximately 50,000 gallons of water obtained from New York Slough to flush any residual oil into the absorbent pads and booms.
- On February 16, 2017, flushing activities were halted following the onset of rain.
- On February 24, 2017, a final site inspection was conducted by CDFW. During the site visit, Mr. Michael Schommer concluded that emergency response activities had been adequately conducted and all qualitative endpoints had been achieved. Mr. Schommer concluded that remediation was completed and authorized removal of remaining emergency response materials (for example, absorbent booms and pads). A photographic summary of post-emergency-response conditions is provided in Appendix A.

# Conclusions and Recommendations

Substantial emergency response activities implemented immediately following the release and continuing for more than 1 month in accordance with CDFW guidance appear to have successfully mitigated any potential adverse effects from the release, including preventing the spread of the release into Dowest Slough.

Based upon the results of emergency response activities described here and the direction from CDFW, all qualitative endpoints for the remediation have been achieved. Therefore, no further action is necessary.

Figure



**FIGURE 1**  
**Site Figure**  
 Calpine Delta Energy Center Oil Discharge -  
 Emergency Response Closeout  
 Calpine Delta Energy Center, Pittsburg, California

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Appendix A  
Representative Site Photographs



*Photograph 1. Under the Burlington Northern Santa Fe Bridge Crossing (Location C). February 28, 2017.*



*Photograph 2. The Outfall (Location A). February 28, 2017.*



APPENDIX A – REPRESENTATIVE SITE PHOTOGRAPHS



*Photograph 3. The Outfall (Location A). February 28, 2017.*



*Photograph 4. Post Boom and Dam Removal (Location B). February 28, 2017.*



*Photograph 5. Post Boom and Dam Removal (Location C). February 28, 2017.*



*Photograph 6. Under the Burlington Northern Santa Fe Bridge Crossing (Location C). February 28, 2017.*

APPENDIX A – REPRESENTATIVE SITE PHOTOGRAPHS



*Photograph 7. Gravel Road near the Outfall (Location A). February 21, 2017.*



*Photograph 8. Gravel Road near the Outfall (Location A). February 15, 2017.*



*Photograph 9. The Burlington Northern Santa Fe Bridge (Location B). February 6, 2017.*



*Photograph 10. Under the Burlington Northern Santa Fe Bridge (Location C). February 4, 2017.*



*Photograph 11. The Outfall (Location A). February 4, 2017.*