

**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:

For CCHS Use Only:

Received By: _____
Date Received: _____
Incident Number: _____
Copied To: _____
Event Classification Level: _____

ATTENTION: Matt Kaufman
Hazardous Materials Program Director
Contra Costa Health Services Department
4585 Pacheco Boulevard, Suite 100
Martinez, CA 94553-2229

INCIDENT DATE: October 24, 2021

INCIDENT TIME: 8:25am

FACILITY: Chevron Richmond Refinery

PERSON TO CONTACT FOR ADDITIONAL INFORMATION

Laura Leeds (510) 242-3887

Dear Mr. Kaufmann,

In accordance with the Contra Costa County Health Services (CCCHS) Department Hazardous Materials Incident Notification Policy, Chevron Products Company, a division of Chevron U.S.A. Inc. ("Chevron") is providing the 30 day report for the flaring that occurred on 10/24/21 during the shutdown of multiple process units after the loss of operating plants that generate power and steam, including a fire that occurred in one of the units affected by the steam loss.

- I. 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.:**

There is no additional information at this time not included in the 72-hour report.

II. INCIDENT INVESTIGATION RESULTS

On October 24th, 2021, a storm dropped 4 to 6 inches of rain in a 24 hour period at the Refinery. Despite the refinery's robust efforts to inspect and prepare equipment in preparation of the storm, water breached the building containing electrical switchgear located at the Refinery's cogeneration plant (Cogen). The water intrusion resulted in an electrical ground fault at 08:09 that activated the safety protection system for the electrical bus. This resulted in a full shutdown of one of the two Cogen trains, the loss of power to half of the motor control center near the Cogen, and the loss of primary power to the Cogen control room. Back-up battery power to the control room, called the Uninterrupted Power Supply (UPS), immediately activated to keep the control room in operation. Approximately 7 minutes after the UPS was activated, operators lost control board indication for both Cogen trains due to a failure of the UPS system. This resulted in the need to shut down the second

Cogen train in a controlled manner around 08:16. Without both Cogen trains, the Refinery was required to go into steam load shed forcing multiple process units to shut down. The incident resulted in visible flaring from the Fluidized Catcracker, Alkylation, Low Sulfur Fuel Oil, North Isomax, South Isomax, and Richmond Lube Oil Project flares. Efforts to stabilize, troubleshoot, and recover were initiated.

Separately, when the first Cogen train tripped offline, operators in the Diesel Hydrotreater (DHT) were working to stabilize the unit due to loss of steam, but once the second Cogen train tripped offline, the rapid loss of steam resulted in safety systems activating in the DHT and the unit shutting down at approximately 08:35. These abnormal conditions created a large temperature differential between the two sides of a heat exchanger resulting in failure of the sealing surface, or joint, on the heat exchanger. This resulted in a small hydrocarbon leak that caught fire at the DHT at approximately 08:55. This fire was observed and extinguished within 10 minutes of initial notification to Chevron Fire Department using in plant firefighting equipment.

The following items have been identified as key root causes and include measures to prevent recurrence for the:

- Loss of Cogens:
 - Root Cause: The roof on the building housing critical electrical components for the Cogen was not able to handle the severe weather that occurred.
 - Preventative Measure: Repair roof of building -Complete
 - Preventative Measure: Assess potential design changes for roof in order to withstand severe weather events and assess current roof inspection processes - Due by 12/15/2022
 - Root Cause: The Cogen UPS system did not function as designed to provide backup power.
 - Preventative Measure: Assess Cogen UPS design by working with the UPS manufacturer and implement actions to improve functionality of Cogen backup power system - Due by 12/15/2022
- DHT Exchanger Fire:
 - Root Cause: The heat exchanger sealing surface, or joint, was not adequately designed for the transient conditions experienced.
 - Preventative Measure: Implement new joint design and new heat exchanger gasket assembly instructions for the exchanger – Complete