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

For CCHS Use Only:
Received By: _____
Date Received: 9/8/23
Incident Number: 230309-01
Copied To: _____
Event Classification Level: 1

ATTENTION: Nicole Heath
Acting Hazardous Materials Program Director
Contra Costa Health Services Department
4585 Pacheco Boulevard Suite 100
Martinez, CA 94553

INCIDENT DATE: March 9, 2023
INCIDENT TIME: 19:45
FACILITY: Chevron Richmond Refinery

PERSON TO CONTACT FOR ADDITIONAL INFORMATION
Laura Leeds (510) 242-3887

There is updated information available to correct the 72-hour report for one section, *Section V. Identity of Material Released and Estimated or Known Quantity.* The values for vent gas volume and SO2 release data have been updated to reflect the known measured values using mass spectrometer. Emissions from flaring associated with the event are summarized below. Vent gases were combusted with at least 98% combustion efficiency.

	Flare emissions
Vent Gas Volume (SCF)	4,640,645
SO_2 (lbs)	6,387

I. INCIDENT INVESTIGATION RESULTS

On 3/9/2023 at 19:45, flaring occurred at the North Yard as stabilizing actions were performed in reaction to a hydrogen producing plant tripping offline due to electrical equipment malfunction. Separately, a fire at a pump was quickly extinguished at one of the units affected after the pump developed a seal leak on the inboard seal.

Two investigations were conducted for the two events. For the hydrogen producing plant tripping offline due to electrical equipment malfunction, the following items have been identified as key root causes and include measures to prevent recurrence:

- Root Cause: A motor had a design vulnerability in the undervoltage ride through system that allowed a ground fault to trip several common electrical systems.
    - Preventative Measures:
        1. Replace motor. **Complete**
        2. Evaluate other motors installed during same project for similar undervoltage ride through system design vulnerabilities and implement recommended solutions. **Due Date**: January 31, 2024

After the loss of the hydrogen producing plant, Operators at a different plant affected by the loss of hydrogen were attempting to pull feed from the plant when a motor driven pump would not shut down after several attempts. The investigation found that during efforts to shut down the pump/motor, the pump and its seals had been damaged. When responding operators observed the pump sparking and a seal leak, immediate actions to initiate response protocols were taken. The following items have been identified as key root causes and include measures to prevent recurrence:

- Root Cause #1: The electrical trip system for the pump/motor did not function appropriately as the trip system components had been damaged.
    - Preventative Measure(s):
        1. Improve guidance within maintenance procedure for personnel when conducting regular preventative maintenance of trip system. **Due Date**: March 31, 2024

        2. Reinforce need to routinely perform pump swaps to cycle all components and help identify when components have been damaged, including enhancements to management stewardship program of pump swaps. **Due Date:** January 31, 2025

- Root Cause #2: There was no procedure or guidance on what operators were to do in the event of this type of motor/pump not being able to trip or shutdown due to abnormal condition from first root cause.
    - Preventative Measure(s):

        1. Cross functional team to identify, develop, and implement guidance for operators, and other key personnel, on what to do when electrical equipment of this type is not able to be shut down or deenergized as designed. **Due Date:** January 31, 2025

        2. Share this incident across the refinery to increase awareness. **Due Date**: October 31, 2023