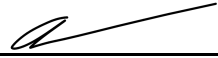


**ATTACHMENT C
30-DAY FOLLOW-UP NOTIFICATION REPORT FORM
CONTRA COSTA HEALTH SERVICES HAZARDOUS MATERIALS
PROGRAMS**

INSTRUCTIONS: A hardcopy and an electronic copy of this report is to be submitted for all Public Health Advisory – Level 2 and Public Protective Actions Required – Level 3 incidents or when requested by CCHSHMP. 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 also to be used for update reports after the initial 30-day report has been submitted. Forward the completed form to:

For CCHSHMP Use Only:

Received By: 
Date Received: 3/29/24
Incident Number: 23111101
Copied To: _____
Event Classification Level: 1

ATTENTION:
Hazardous Materials Programs Director
Contra Costa Health Services Hazardous Materials Programs
4585 Pacheco Boulevard, Suite 100
Martinez, CA 94553

INCIDENT DATE: Saturday, November 11, 2023
INCIDENT TIME: 4:22 PM
FACILITY: Martinez Renewable Fuels

PERSON TO CONTACT FOR ADDITIONAL INFORMATION

Anne Partmann Phone number 925-372-3006

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.:

The investigation into the pump fire is still underway.

I. INCIDENT INVESTIGATION RESULTS

Is the investigation of the incident complete at this time? X Yes No If the answer is no, submit a 30 day final or interim report.

If the answer is no, when do you expect completion of the Investigation?

If the answer is yes, complete the following:

SUMMARIZE INVESTIGATION RESULTS BELOW OR ATTACH COPY OF REPORT:

The investigation summary report is attached.

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

Please see the 'Root Causes and Corrective Actions' section of the attached incident report.

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

Please see the 'Root Causes and Corrective Actions' section of the attached incident report.

Marathon Martinez Renewable Fuels Facility – 2HDO Pump Fire Incident Investigation

Marathon Martinez Renewable Fuels Facility – 2HDO Pump Fire Incident Investigation

Location: Marathon Martinez Renewable Fuels Facility
Date of Incident: November 11, 2023
Time of Incident: 4:22PM (Pacific Standard Time)
Investigation Began: November 11, 2023
Date of Report: March 11, 2024
Name of Incident: Martinez Renewable Fuels Facility – 2HDO Pump Fire
Investigation Method: TapRoot™ Root Cause Analysis

Summary of the Incident

At 4:22 PM on November 11, 2023, the #2 Hydrodeoxygenation (HDO) Unit at the Martinez Renewable Fuels Facility experienced a fire at Fresh Feed Pump P-3939. At the time of the incident, the unit was in the process of starting up and renewable diesel was being fed through the Fresh Feed Loop. A leak occurred from a blind flange that was installed on a line directly from the discharge of Pump P-3939. The leak found an ignition source, resulting in a localized fire in the area.

The Investigation Team focused on identifying cause(s) of the release, the mitigations to protect worker safety, and developing action items to address the root causes of the incident.

Immediate Corrective Actions and Interim Measures Implemented

Operations immediately responded to the incident by activating nearby fixed fire monitors. The facility Emergency Response Team (ERT) responded, and the unit was de-pressured and the fire extinguished.

The unit was shut down and has been idle since the incident. Following the incident, the piping and equipment around the pump were inspected.

Meteorological Conditions

Wind speed: <10 mph
Wind direction: 258 Degrees NW
Temperature: 62°F

Materials Released

Renewable diesel.

Injuries

There were no injuries associated with this incident.

Community Impacts

There were no community or offsite impacts.

Marathon Martinez Renewable Fuels Facility – 2HDO Pump Fire Incident Investigation

Emergency Response

The ERT arrived on scene and responded to the fire in the appropriate Personal Protective Equipment (PPE). The fire was extinguished by 6:15PM.

Agency Notification

A CWS 1 was issued on Saturday November 11, 2023, at 4:28 pm. No other agency notifications were made. No off-site resources were required, and no agencies responded.

Incident Investigation Team

The investigation was started immediately after the incident on November 11, 2023. A collection of witness statements and preliminary interviews occurred shortly after the incident.

An investigation team was assembled and was led by a trained root cause incident investigator. The team consisted of the 2HDO project/process engineer, the reliability engineering group, site fixed equipment personnel, and a representative of the Operations Department.

Background

A fire was discovered at the 2HDO pump P-3939 at approximately 4:22PM. A leak had occurred from a blind flange that was installed on a pipe from the discharge side of the pump. The previous pump seal configuration utilized process flow from the discharge side of the pump. A MOC was conducted to change the pump seal configuration to a Flowserve Seal Plan 54 configuration. The seal flush piping from the discharge of the pump was no longer necessary, therefore the piping was removed, and a blind flange was installed at the previous location for the seal connection.

Event Description

On October 28, 2023, a blind flange was installed on an open-ended line that was directly at the discharge side of Fresh Feed Pump P-3939. In the following days, the unit isolation blinds were pulled and the unit progressed through their startup procedures. On the morning of November 11, 2023, the unit continued with renewable diesel feed, which is part of the procedure and done prior to introducing fresh feed.

At 8:35AM, the renewable diesel temperature began to rise due to an issue with the cascaded controller for the Feed Preheater (E-5648). Feed temperature at the outlet of the Preheater fluctuated between 250°F and 280°F degrees throughout the day.

From the Preheater, the feed enters the Fresh Feed Surge Drum (V-4001). Liquid from the surge drum is pumped to the 2HDO Reactor via either pumps P-3938 or P-3939. Directly downstream of the Feed Pump is a Flexim Ultrasonic flow meter, which is used to provide total flow indication as well as being the input element for the pump spill-back control. As the process material temperature began to rise, the temperature rating of the Flexim Flow Meter (266°F) was exceeded. The spill-back controller lost its input signal, and the last position (per control scheme design) was held. The spill-back control valve was nearly fully open when the control held the valve position, resulting in continuous recirculation from pump discharge to pump suction. The continuous recirculation of pump discharge to suction added heat into the process.

Ultimately, as the process temperature rose and the recirculation continued, the blind flange connection

Marathon Martinez Renewable Fuels Facility – 2HDO Pump Fire Incident Investigation

began to leak. There were no obvious sources of ignition in the area and the released material was below the auto-ignition temperature. The released material ignited, resulting in the localized fire at the pump.

Timeline

A timeline of the events was established based on witness statements, interviews, and process data.

Date	Time	Description
10/28/2023		Blind flange at the discharge of P-3939 installed
11/5 – 11/09/2023		Unit progresses through startup procedure
11/10/2023	10:09AM	Dust Flush started with P-3939
11/11/2023	2:00AM	Dust Flush completed
	8:35AM	Fresh feed temperature begins to rise from ~190°F
	10:00AM	Feed flow to the Reactors are reduced and spill-back (in Auto) opened to maintain total pump flow
	3:42PM	FT-1774 (spill-back controller) was not reading properly. FV-1774 was held (via controller) at 91.8% Open
	3:45PM	Feed Surge Drum (V-4001) Pressure begins to rise from 30 psig to ~70 psig
	4:04PM	Board operator closed FV-1774 to 50% open manually and then to 0% open
	4:20PM	Board and field operator troubleshooting high pressure issues at the Feed Surge Drum V-4001
	4:22PM	Fire Discovered at the 2HDO Feed Pump P-3939
	6:15PM	Fire extinguished
	7:55PM	All-clear call made
11/13/2023		Inspection Department conducts inspection of piping

Post Incident Follow-up

In the following days after the incident, the piping and equipment in the area was inspected. No failure or leaks points could be identified on piping near the pump. P-3939 seal was sent to Flowserve for a seal analysis. The seal analysis indicated that the seal did not fail.

Marathon Martinez Renewable Fuels Facility – 2HDO Pump Fire Incident Investigation

Root Causes and Corrective Actions

The causal analysis for this incident yielded the following root causes and corrective actions. The recommendations below are specific to the equipment associated with the incident and the 2HDO Unit, except for Recommendations 3 and 5, which were issued to address other units. In addition, the recommendations below will not result in a major change that could reasonably result in a major chemical accident or release:

Causal Factor (CF)	Root Cause	Corrective Action	Hierarchy of Control Analysis
LC1396 and TC1293 were on different DCS processors. This did not allow the primary controller output to properly cascade down to the secondary control.	Equipment Difficulty > Design > Design Specs > Problem Not Anticipated	1. Place LC1396 and TC1293 on the same DCS processors. Due Date: 3/29/2024	Engineering Control
		2. Review other cascaded controllers within the 2HDO unit and ensure both controllers for the cascaded control are in the same DCS processor. Due Date: 8/1/2024	Engineering Control
		3. Review other cascaded controllers in all other units (aside from 2HDO) and ensure both controllers for the cascaded control are in the same DCS processor. Due Date: 2/28/2025	Engineering Control
No temperature indication available around process side of Feed Pumps (P-3938/3939).	Equipment Difficulty > Design > Design Review > Independent Review NI > Hazard Analysis NI	4. Install temperature indication at the 2HDO Fresh Feed Pumps (P-3938/3939) common suction and implement a prioritized high temperature alarm with operator actions. Note, TI-1859 (DWG 004-DA149-003) to be installed as part of 2HDO rebuild. Due Date: 12/31/2024	Administrative control
		5. Submit PRF to install temperature indication at the Fresh Feed Pump in the 1HDO Unit. Due Date: 5/31/2024	Administrative control
Flexim Ultrasonic Meter pad overheated and failed, resulting in loss of signal to FC-1774. FC-1774 transitions from "Automatic" control to "HOLD" when input element signal is loss. "HOLD" was at 94% open (rapid increase from 53%) indicating that last FI-1774 reading was low.	Equipment Difficulty > Design > Design Specs > Problem Not Anticipated	6. Upgrade the Flexim Ultrasonic meter pad/transducer at FT-1774 with a higher temperature rated component and coupling grease. Due Date: 12/31/2024	Elimination
		7. Evaluate/determine the new design temperature rating for the 2HDO feed system and verify components within this loop are sufficient for the new design temperature and issue recommendation(s) to upgrade components. Due Date: 5/31/2024	Elimination
Possible QA with installation with the blind flange (e.g., inadequate blind flange installation leading to nonparallel flange faces and insufficient gasket stress levels) and the increased temperature (feed preheater	Human Performance > Management System > SPAC NI > Not Strict Enough	8. Evaluate improvement opportunities for QA/QC of machinery related flanges (e.g., implement flange inspection tag for these types of flanges) and implement agreed upon improvements. Due Date: 8/30/2024	Administrative Control

Marathon Martinez Renewable Fuels Facility – 2HDO Pump Fire Incident Investigation

Causal Factor (CF)	Root Cause	Corrective Action	Hierarchy of Control Analysis
and pump spill-back recirculating flow) putting stress on the installation resulting in the leak.			