

**May 2025**


# **Environmental, Safety & Security Sequential Safety Meeting**



**ANACORTES REFINERY**

# ESS Safety Metrics



DSA Eligible	OSHA rec	ORIR	AFPM 1a/1p	H2S >50ppm	PSE 1 / 2	DEI 3/4	Permit dev
✓	1	0.17	0 / 5	2	0	0 / 0	15
	-	<0.30	-	≤3	≤3	≤1	≤34

**AFPM 1a: Actual Incident** - serious injury that caused a fatality, hospitalization, or other life-altering event.

**AFPM 1p: Potential Incident** - an incident with the potential for fatality, hospitalization, or other life-altering event, including near misses.

**ORIR:** OSHA Recordable Injury Rate = (number of recordables/(contractor + employee hours worked))

**PSE:** Process Safety Event, refer to R-12-007

**DEI:** Designated Environmental Incident, refer to R-13-027

1p - Safety Incident Fall Hazard

1p - HVAC Electrical Spark



# Start Safe and Stay Safe:



**National Electrical Safety Month** is observed in May to raise awareness about electrical safety and educate the public on reducing electrical fires, fatalities, injuries, and property damage. The **Electrical Safety Foundation International (ESFI)** leads this nationwide initiative, offering resources to help individuals identify electrical hazards and minimize exposure.

At MPC, we proudly support ESFI's mission by promoting electrical safety across Refining, L&S, and G&P operations. This year, our focus is on preventing Electric Heat Trace incidents and enhancing Disaster Safety.

For additional resources on these and other electrical safety topics, please visit the MPC Corporate Electrical Safety SharePoint site.

[Electrical Safety](#)





# Start Safe and Stay Safe:



## Electrical Safety Month



Over the past two years, MPC has encountered multiple Electric Heat Trace incidents, primarily due to unexpected contact with electricity. These incidents serve as a reminder of the potential dangers that surround our daily operations and maintenance activities. This bulletin serves to heighten our awareness to Electrical Heat Trace.

### Electric Heat Trace Incidents

Date	Location	Details
1/15/25	DET	Electrical Heat Trace Wires Cut for NDT
11/18/24	MAN	Angle Grinder damages Electrical Heat Trace
10/9/24	KEN	Electrical Heat Trace Damage on Recovery Well
5/29/24	ROB	Damaged Electric Tracing (photo)
5/22/24	MAN	Electric Heat Trace Cut on V-2012 DDU
3/30/24	DET	Shocked Received while Operating Valve
10/30/23	ROB	Cut and Abandoned Electric Heat Trace Cable Arcs



Damaged Electrical Heat Trace from an Angle Grinder

# Start Safe and Stay Safe:

## Electrical Hazard Identification

- During JJSV field conversations, discuss whether the equipment to be worked on contains electric heat tracing.
- Could the work task compromise electrical heat tracing?
- Contact your local maintenance team to ensure the equipment is placed in a safe state prior to beginning work

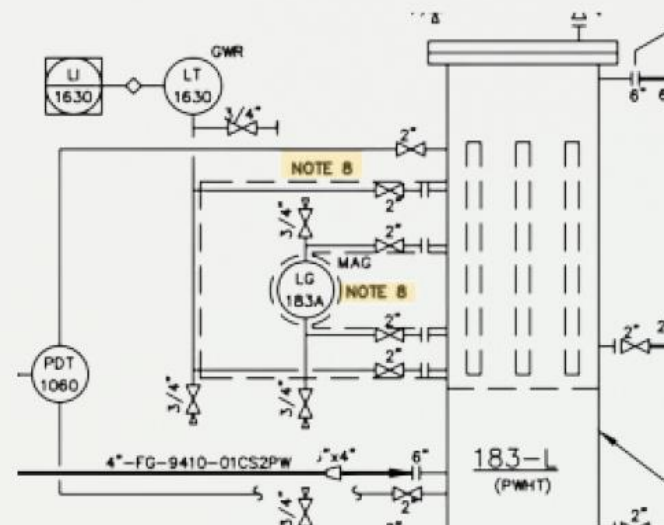


## How can we prevent Electrical Heat Trace Incidents:

- Review P&ID's to identify electric heat traced equipment:
  - Piping and Tubing
  - Vessels
  - Pumps
- Walk piping circuits and other equipment to identify electric heat trace labels, power connection and end kit boxes
- Involve E&I Planners to identify the power circuits
- Ensure the work scope is agreed upon by craft and Operations
- LOTO

### NOTES:

1. FOR SYMBOLS, GENERAL NOTES, AND STANDARD DETAILS, SEE DRAWING B-2200-1/65/66/67.
2. METER RUNS SHALL BE PRECISION TYPE PURCHASED FROM ORIFICE PLATE VENDOR.
3. VALVE STEM SHALL BE IN THE HORIZONTAL POSITION.
4. PROVIDE BREAKOUT SPOOL FOR MAINTENANCE.
5. GLOBE VALVE.
6. LOCATE CHECK VALVE NEAR RICH AMINE HEADER.
7. ALL INSTRUMENT CONNECTIONS ARE 300# 03CS-2PW.
8. ELECTRIC HEAT TRACE AND INSULATE.
9. GLYCOL FILL.



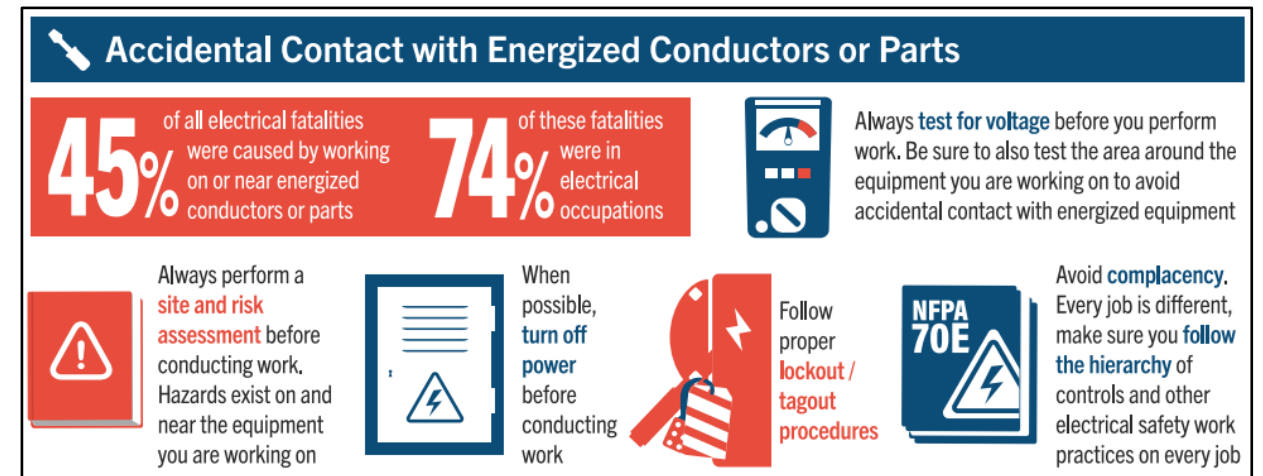


# Start Safe and Stay Safe:



## Engagement Questions

- What step do you take to ensure you are working safe around electrical components?
- What steps should you take if you identify damaged heat tracing or other electrical equipment?
- What number is the safety procedure we follow for all things electrical?





# April Environmental Deviations

YTD permit deviations: 15

YTD DEI 1/2: 17

YTD DEI 3/4: 0



## PSE Incidents

Level	1Q24	1Q25	%Change
PSE 1	1	1	↓ 0%
PSE 2	17	11	↓ 35%
PSE 3	905	1094	↑ 21%

## What's Going Well?

- 1Q25 PSE Score of 14 – Best 1<sup>st</sup> quarter PSE Score since integration!
- Ten sites had a PSE score of 0, with no PSE1 or PSE2 events: Anacortes, Canton, Detroit, El Paso, Kenai, Mandan, Martinez, Robinson, Salt Lake City, St. Paul Park.
- HOP adoption continues and several efforts continue to reduce incidents associated with human reliability.
- Process fires continue to decrease and are currently at a 5-year low.

## PSE3 Highlights

Type	4Q24	1Q25	%Change
Heater Trips	97	109	↑ 12%
ESD Trips	196	244	↑ 25%
NTE Exceedances	184	225	↑ 22%

## What Can We do Better?

- Human factors continue to be a major theme, involved in 50% of our PSE1 and PSE2 events, as do transient conditions (33%).
- The number of open and aging PSM recommendations continues to run at historical highs.
- NTE exceedances have significantly increased by 83% compared to this time last year.

## Recommendations

Type	4Q24	1Q25	%Change
A Risk	10	9	↓ 12%
B Risk	505	474	↓ 25%
Aging > 2 yrs	939	1020	↑ 9%
Aging > 5 yrs	281	287	↑ 2%

## What Are We Doing About it?

- Procedure Accelerator has been implemented at 10 of 15 sites; remaining sites targeted for 1Q26.
- GoPlant is live at 12 sites; 5 more to complete by 3Q25.
- ePermitting training and implementation at SPP begins April 28th. An enterprise-wide implementation schedule is in draft and is being socialized with leadership at each facility.
- Operations Turnaround Group piloted an electronic P&ID tool for walkdowns during LAR TAR startup with strong results; now demoing for potential enterprise-wide use.



# PSE1 MPC PROCESS SAFETY ADVISORY

## ROBINSON REFINERY OSBL SAT GAS LEAK INC # 404159

PSA 25-04

Published 4/7/2025

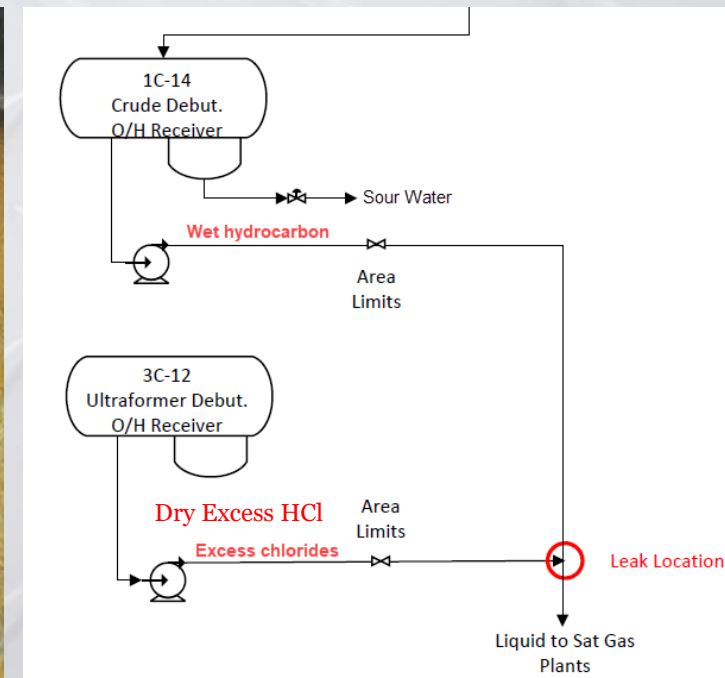
On November 5, 2023, a leak developed in the Outside Battery Limits (OSBL) pipe rack on a liquid charge line to the Saturate Gas units. The leak occurred at the mix point of the Crude and Ultraformer Debutanizer overhead liquid product streams.

➤ **This incident was categorized as a PSE1 due to the release of 47,000 lb./hr. of a flammable vapor.**



### Causal Factors:

- Corrosion was caused by a combination of two factors:
- Increased Ultraformer chlorides due to continuous perchloroethylene injection installed in 2022 and lack of chloride treatment system.
- Chlorides from the Ultraformer encountered excess free water from the Crude Debutanizer and caused accelerated mix point corrosion.



**“THE REST OF THE STORY”:** The chlorides in the system increased in 2022 when an online perchloroethylene injection was installed. The purpose of the injection is to increase catalyst activity in the Ultraformer reactors. Chlorides carrying through the liquid phase result as free Hydrochloric Acid (HCl) in the hydrocarbon stream entering the Debutanizer system, ending up in the overhead circuit. No chloride guard bed is present to protect the Ultraformer Debutanizer. On its own, this HCl will not cause corrosion as it needs to be combined with water. However, this stream combines with the Crude Debutanizer Overhead liquid product enroute to the Saturate Gas unit for further processing. The crude stream contains excess free water due to separation constraints and operational changes over the years. The combination of HCl and free water led to accelerated mix point corrosion at the piping junction, resulting in a loss of containment. Site upgraded metallurgy and increased inspection until project to install chloride guard bed is completed in coming years.

## DISCUSSION TOPICS:

### Operations/ Tech Service:

- For Reformer units (with or without perc injection), are chloride concentrations properly monitored to understand impacts on downstream equipment? This is especially important where the stream could mix with other streams containing water.
- Guard beds are an effective way to limit chlorides downstream.
- Are there overhead receivers in your fractionation systems that are inadequately sized to allow water separation/removal? Or are there any other issues leading to water carryover to streams which contain chlorides?
  - If “Yes”, notify the Inspection department of these situations for mix point inspection.

### **Lesson Learned:**

#### Inspection

An inspection grid was laid out on the mix point, but it was discovered to be in the wrong location (upstream, rather than downstream). How does your site ensure inspection grids are implemented at mix points to ensure representative hazard monitoring?

Review [PSA 24-01 Los Angeles Refinery North Area Fire](#) - Chlorides were present and contributed by lowering the pH of the aqueous phase

## Global Action

Recommendations	Assigned to:	Due Date:
Review this advisory with your leadership team, and cascade to your entire organization to ensure site-wide review to improve process safety hazard recognition.	Division Managers	6/30/2025
Review SP-90-10 Piping Inspection Program and update the corporate refinery standard practice to provide enhanced guidance on identifying and inspecting corrosion mix points.	Eddie Sanchez	4/30/2026
Review 2020 Chloride Guard Study results and verify recommendations have been followed/implemented with unit Technologist. Re-perform study on units considering routine perchloroethylene injection into feed. Add recommendations as necessary to Intellex.	Rhett Finch	10/31/2025

# Bring It Up!!!



***If there are Safety questions or concerns you wish to discuss, please bring them up!***