

# Incident Investigation Findings Summary



<b>Incident Date(s):</b> February 2, 2022
<b>Incident Title:</b> Plant 2 No. 3 Sulfur Recovery Unit (No. 3 SRU) Vapor Release
<b>Executive Summary</b> <p>The No. 3 Sulfur Recovery Unit (No. 3 SRU) in Plant 2 tripped offline due to process upset conditions in the sour water stripper (SWS). As the unit was restarted an instrument was not reading correctly. Instrument technicians were called out to replace the instrument. As the instrument technicians began to remove the instrument, the isolation valve for the instrument did not fully close, which allowed process gases to be released. The instrument technicians and operators evacuated the area, sounded the plant alarm for a vapor release, and the unit was quickly shut down. No injuries were reported in association with this event.</p>
<b>Incident Summary</b> <p>At around midnight on February 2, the No. 3 SRU in Plant 2 tripped offline due to high pressure in the burners in the unit. Operations personnel were able to re-light the burners and bring the unit back online. After the unit was back online, an instrument in the unit was not reading correctly and instrument technicians were called to remove and replace potentially faulty instrument.</p> <p>When removing the instrument, the technicians closed the upstream isolation valve to ensure process gases would not escape the unit. As the technicians removed the instrument, heat and process gases were released indicating the isolation valve was not holding. The technicians and operators in the area evacuated and activated the plant alarm system for a vapor release from the unit. Operations personnel quickly responded by shutting the unit down to prevent any further process gases from being released.</p>
<b>Incident Investigation Summary</b> <p>Two investigations were launched following this incident. The first was to investigate the cause of the No. 3 SRU trip. The second was to investigate the vapor release from the isolation valve not fully blocking flow to the instrument prior to removal.</p> <p><b>1 – No. 3 SRU Trip</b></p> <p>A previous carry over of liquid hydrocarbon into the sour water stripper had caused an increase in the loading of the burner. Just before midnight, acid gas flow increased significantly in a short amount of time, which further increased burner pressure and loading on the burner. This increase caused the system to trip offline, in line with the unit programming, to protect the equipment and prevent a more serious incident.</p> <p><b>2 – Vapor Release from Isolation Valve</b></p> <p>The investigation performed on the valve for the instrument in the furnace showed the buildup of corrosion products which prevented full isolation of the process gases. The corrosion products were likely formed through insufficient purge gas to the instrument which typically keeps the instrument clean and cool.</p>
<b>Recommended Actions to Prevent Recurrence</b> <p>To reduce the likelihood of recurrence, the following actions were recommended:</p> <ol style="list-style-type: none"><li>1. Revise alarms on the acid gas flow to the No. 3 SRU to allow for more time for operators to react and prevent the unit from tripping offline.</li><li>2. Update operating procedures and instrument documentation to ensure proper purge gas flow is achieved at the instrument.</li></ol>

*\*Information in this report is based on the facts known to Suncor Energy (U.S.A.) Inc. at the time of preparation. We may update or change the information contained herein if and to the extent additional facts become available.*