

# Environmental Reportable Events Summary



<b>Event Date:</b> 11/19/2021
<b>Event Title:</b> Plant 2 FCC Startup Exceedances – Continued Startup from 11/04
<b>Impacted Media</b> (air, water, or soil): Air
<b>Operating Unit:</b> #2 FCC
<b>Event Summary:</b> <p>During the #2 FCC startup, to maintain proper pressure in the main column, process gases were sent to the flare for safe combustion. The process gases contained elevated H<sub>2</sub>S levels causing a permit limit exceedance in the flare gas. At the flare tip, H<sub>2</sub>S is combusted, which results in the generation of SO<sub>2</sub> and water vapor. In addition, the process gases flowing through the Sulfur Recovery unit (SRU) during this time were unable to be fully treated, resulting in an H<sub>2</sub>S permit limit exceedance in the fuel gas system for Plant 2. Operators adjusted the SRU to achieve needed treatment and reduced the H<sub>2</sub>S concentration in fuel and flare gas.</p> <p>This event began 11/19 at 6:00 a.m. and ended on 11/19 at 3:00 p.m.</p> <p>The specific permit exceedances for this event were:</p> <ul style="list-style-type: none"><li>• 162 ppm H<sub>2</sub>S in flare gas for a 3-hour average<ul style="list-style-type: none"><li>• Reported at <b>300 ppm</b> H<sub>2</sub>S in flare gas for a 3-hour average</li></ul></li><li>• 162 ppm H<sub>2</sub>S in fuel gas for a 3-hour average<ul style="list-style-type: none"><li>• Reported at <b>279 ppm</b> H<sub>2</sub>S in fuel gas for a 3-hour average</li></ul></li></ul> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>
<b>Event Date:</b> 11/28/2021
<b>Event Title:</b> Low Heating Value Plant 2 Flare
<b>Impacted Media</b> (air, water, or soil): Air
<b>Operating Unit:</b> Plant 2 Catalytic Polymerization Unit (Cat Poly)
<b>Event Summary:</b> <p>While preparing the Plant 2 Cat Poly unit for a catalyst change, steam and fuel flow to the flare were adjusted to attempt to minimize the height of the flame on the flare. This resulted in a low net heating value in the combustion zone of the flare. Operators adjusted the flow from the Cat Poly unit and increased fuel to the flare to ensure the heating value was within limits.</p> <p>This event began 11/28 at 11:15 p.m. and ended on 11/28 at 11:45 p.m.</p> <p>The specific permit exceedance for this event was:</p> <ul style="list-style-type: none"><li>• Flare combustion zone Net Heating Value (NHV) 270 Btu/scf for a 15-minute average<ul style="list-style-type: none"><li>○ Reported at <b>252 Btu/scf</b> for a 15-minute average</li></ul></li></ul> <p>The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.</p>

*\*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.*

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<b>Event Date:</b> 11/29/2021
<b>Event Title:</b> Tier 2 Event – Fire Alarm Activated
<b>Impacted Media</b> (air, water, or soil): Air
<b>Operating Unit:</b> Plant 2 Reformer
<b>Event Summary:</b> During the operational process of switching pumps in the Plant 2 Reformer, the electric pump, which was to be brought online, did not start which caused the heaters to trip. This caused a hydrogen leak at a flange which resulted in a small fire. Operations personnel quickly sounded the refinery plant alarm and activated a fire monitor to extinguish the fire. No injuries were reported, and the unit was quickly stabilized.  More details regarding this Tier 2 event will be included in a separate summary report which will be posted online.  The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.
<b>Event Date:</b> 12/07/2021
<b>Event Title:</b> Plant 1 Sulfur Recovery Complex Exceedances
<b>Impacted Media</b> (air, water, or soil): Air
<b>Operating Unit:</b> Plant 1 Sulfur Recovery Complex
<b>Event Summary:</b> As part of investigations from previous exceedance events it was found that piping was partially blocked or obstructed causing flow restrictions and performance issues to the Tail Gas Unit Incinerator. To remedy this issue, Suncor took Plants 1 and 3 to minimum safe production levels, to reduce the volume and concentration of gases being generated. The SRU and Tail Gas Unit (TGU) were then taken offline for a short period to replace this section of piping. During this mode of operation, gases normally treated by the SRU/TGU were routed to the flare for combustion. Extensive planning was done to minimize the duration and flaring required. The exceedances were resolved once the repairs to the line were completed and the SRU was brought back online to treat these gases.  This event began 12/07 at 4:00 p.m. and ended on 12/10 at 8:00 a.m.  The specific permit exceedances for this event were: <ul style="list-style-type: none"><li>• Emissions from sulfur pit (T2005) are routed to the TGU and vented through the TGU incinerator<ul style="list-style-type: none"><li>• Sulfur pit emissions were vented to atmosphere</li></ul></li><li>• 15.68 lb/hr of SO<sub>2</sub> 1-hour average from the tail gas incinerator<ul style="list-style-type: none"><li>• Reported at <b>150.54 lb/hr</b> of SO<sub>2</sub> for a 1-hour average (maximum)</li></ul></li><li>• 250 ppm SO<sub>2</sub> at 0% O<sub>2</sub> for a 12-hour rolling average from the tail gas incinerator<ul style="list-style-type: none"><li>• Reported at <b>3,811 ppm</b> SO<sub>2</sub> at 0% O<sub>2</sub> for a 12-hour average</li></ul></li><li>• 162 ppm H<sub>2</sub>S in flare gas 3-hour rolling average<ul style="list-style-type: none"><li>• Reported at <b>319 ppm</b> H<sub>2</sub>S in flare gas 3-hour rolling average</li></ul></li><li>• Emergency Planning and Community Right-to-Know Act (EPCRA) reportable quantity (RQ) exceedance for SO<sub>2</sub> – 500 lbs 24-hour rolling total<ul style="list-style-type: none"><li>• <b>1.92 tons</b> of SO<sub>2</sub></li></ul></li></ul> The Commerce City North Denver Air Monitoring network of sensors within a three-mile radius of the refinery did not detect any levels above the acute health reference guidelines during this event.

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