



Q&A

a conversation with

Lorraine Reyes is a senior operations manager at the Richmond Refinery. She has worked for Chevron for eight years.

Q What are flares and how do they work?

The refinery maintains a comprehensive network of safety systems to keep our plants running safely and reliably during a range of operating conditions. One of the most visible components of those safety systems is our eight flares. Flares are essential pieces of safety equipment used

to burn any excess gases that may build up in pipes, vessels and towers within the refinery, so they are not released directly into the atmosphere. Flares work like the gas stove in our homes. They are equipped with a pilot light or an ignitor at the top. If the system sends gases to a flare it will ignite, just like your stove does when you turn on the gas. Routing gases through the flare prevents having to vent them directly into the atmosphere. Therefore, flares are safer for the environment and public health.

Q Why does the refinery flare?

Occasionally during the refining process, we may experience conditions that could trigger flaring activity, such as a loss of power, changes in pressure or temperature, loss of steam, equipment failure or excessive vibration. When this occurs, our safety systems are activated, and our operations team takes immediate action to assess and address the issue.

Our number one goal is to keep the refinery running safely and reliably, so we can protect our workforce and the community. We all take this very seriously and do everything we can to avoid flaring. If we do have to flare, our teams work hard to reduce or stop it as soon as possible.

Q How does the refinery prevent flaring during certain operating conditions?

The refinery has invested hundreds of millions of dollars over 15 years to deploy new technologies that have allowed us to significantly reduce flaring by recovering gases that would otherwise be flared and recycling them back through our processing plants.

The refinery uses a flare gas recovery system that helps capture flare gases and puts them through a compressor system. Depending upon the pressure and temperature, flare gases can either be recovered as gas or liquid product. Gas collected is used as fuel for the refinery. Recovered liquid product is recycled and reused during the refining process.

Q What happens when the refinery flares?

Sometimes it is not possible to fully recover all the excess gas in a safe manner. In these instances, the flare gas recovery system is designed to route any excess gas through a flare stack. Most of the excess gas is fully combusted before it is released into the atmosphere. The result is a bright flame that, at times, is visible to the community.

During certain operating conditions, the gas may not be perfectly combusted, which can result in some smoke. You may also see steam coming from the flares as steam helps increase combustion efficiency and reduce the potential for smoke. The flare stacks are very tall (approximately 200 feet above ground level). This design feature helps to ensure that materials are released into the upper atmosphere and dissipate over the refinery, minimizing or reducing the potential impact to surrounding neighborhoods.

Q Can the refinery flare whenever it wants to?

No, all flaring activity is regulated by BAAQMD and the EPA. We are required to submit an annual Flare Minimization Plan (FMP), which outlines the systems in place to keep flaring to a minimum. Flaring is required to be consistent with an approved FMP. We also submit monthly flaring data of volume and emissions flared, as well as reports related to the cause of BAAQMD reportable flaring events. These reports are available online at baaqmd.gov.

Q Why was there so much flaring in 2019 and 2020?

The refinery has a strong history of reducing flaring activity over the last 10-plus years. We experienced increased flaring activity in 2019 which was primarily related to startup activities at the Modernization Project's new, more efficient, hydrogen processing unit. This project is now complete. We also had some flaring at the end of 2020 and beginning of 2021. This was mostly related to startup and shutdown activities as part of routine maintenance improvements.