Flaring helps keep a refinery running safely
A flare is a safety relief device a refinery can use to safely burn excess material, or hydrocarbons, which cannot be recovered or recycled. The excess hydrocarbons are combined with steam and safely burned in the flare, which is more environmentally sound than releasing the hydrocarbons directly into the atmosphere.

Flaring happens for specific reasons
Refineries minimize flaring as much as possible, but sometimes a refinery may purposely flare as part of start-up or shut-down procedures during maintenance, or when unplanned process interruptions happen such as a power outage or equipment failure. In an emergency, flaring is used to protect the integrity of the facility and ultimately the people who work inside.

Refineries are ready to flare when needed
Just like a pilot light on a hot water heater, the flare tip is always lit in case flaring is necessary – for example during an unplanned power loss. When a refinery experiences a process interruption like this, the refinery’s systems may not be able to send the hydrocarbons through for further refining. In this case, the excess hydrocarbons are routed to the refinery flare systems to be safely burned.

Sometimes a noise or smoke can accompany a flare
Steam helps minimize the amount of smoke produced by the flare, but there still may be some smoke during flaring. A rumbling noise can sometimes be heard as well during flaring. This is due to mixing hydrocarbons, air, and steam – chemistry at work! While this may cause concern, it is a normal part of the process that is controlled and closely monitored by the refinery operators.

Did you know?
Flaring produces some emissions, but it is the safest and most environmentally sound manner for a refinery to dispose of excess hydrocarbons. It is regulated by both the EPA and state environmental agencies. Whenever a refinery flares, operators must report it to their state regulatory agency and abide by their environmental guidelines and operating permits.