



**Refinery maintains operations
during planned shutdowns with
reliable backup hydrogen supply
from Air Products**

Refineries play a critical role in supporting industrial operations and everyday life, making operational continuity a top priority.





One U.S.-based refinery operator depends on a consistent supply of hydrogen to sustain key processes across its facilities. By taking a proactive approach to hydrogen continuity planning, the organization has been able to protect output, reduce risk, and maintain operational stability during critical events.

Across its refining operations, hydrogen is produced onsite for hydroprocessing and hydrotreating to support the production of cleaner transportation fuels. However, during planned maintenance and turnaround events, typically occurring every 18 to 24 months, onsite hydrogen production must be temporarily taken offline. Without a dependable backup solution, these shutdowns could disrupt essential processes, extend downtime, and significantly impact overall operations.

“If you look at it over a two-week shutdown, having a reliable gas supplier onsite can make a meaningful difference in keeping critical systems running,” a refinery representative explained.

To address this challenge, the refinery partnered with Air Products, a global industrial gas company, to secure a reliable, short-term hydrogen supply for both planned and unplanned outages. This proactive approach enables critical systems to remain operational even when onsite hydrogen generation is unavailable.

The Challenge:

Maintaining hydrogen availability during turnarounds

During refinery shutdowns, operations are typically offline for approximately two weeks. Despite this, hydrogen is still required to regenerate catalysts and support the refinery's hydrogen system. Without access to an external supply, these essential activities would come to a halt, increasing operational complexity during already time-constrained turnaround windows.

“When we are shut down, our operations are down for an average of two weeks,” the representative noted. “Having a reliable hydrogen supplier allows us to keep systems running that would otherwise be offline.”

The Solution:

Temporary and emergency hydrogen services from Air Products

Through Air Products Express Services (APEX), Air Products provides safe, fast, and dependable access to temporary and emergency hydrogen supply. Air Products' mobile cryogenic hydrogen compressor (CHC) units and specialized delivery equipment are professionally commissioned onsite, allowing hydrogen to be supplied efficiently and safely during shutdown periods.

While bulk hydrogen tube trailer supply is available, Air Products' CHC systems are differentiated by their ability to supply gaseous hydrogen using a liquid hydrogen source delivering daily capacities equivalent to up to 100 bulk hydrogen tube trailers.



Air Products' Express Services can be your dependable backup plan for safe, reliable and fast short-term gas supply — where and when you need it.

By establishing a formalized relationship with Air Products in advance, the refinery has integrated backup hydrogen supply into its standard operating procedures, eliminating uncertainty during critical events. In addition to planned maintenance, Air Products has also supported the operation during unexpected disruptions, helping the site maintain continuity when onsite hydrogen production was impacted.

“Developing a relationship with a gas supplier before you need them is key,” the representative said. “Knowing where equipment will be staged, what the capabilities are, and how the system will operate makes everything simpler when both planned and unplanned events occur.”

The Results:

Reduced downtime and improved operational resilience

With temporary hydrogen supply solutions in place, the refinery can continue catalyst regeneration and maintain its hydrogen system throughout planned shutdowns. This capability helps minimize downtime, reduce operational risk, and protect overall productivity.

Building long-term operational resilience

By working with Air Products on an ongoing basis, the refinery has established a scalable and repeatable approach to hydrogen supply continuity. This proactive planning ensures future turnarounds and emergency events can be managed safely, efficiently, and with minimal disruption.

Doing research early and partnering with a trusted gas supplier from day one is essential to minimizing impact when planned maintenance or unexpected events occur.



Our proprietary mobile Cryogenic Hydrogen Compressor (CHC) liquid supply system uses specialized delivery trailers and is professionally commissioned on your site. Depending on your requirements, our advanced system can provide a cost-effective, reliable supply mode to keep your operation online and productive.

Refineries and hydrogen users interested in developing a tailored emergency or backup hydrogen supply plan can contact the Air Products APEX group at **1-800-273-9427** to begin an initial evaluation.

For more information:

To place an order or learn more about how APEX Services can help you maintain production, call our experienced team of customer service representatives and technical specialists **24/7** at **1-800-APEX-GAS** (1-800-273-9427).

Corporate Headquarters

Air Products and Chemicals, Inc.
1940 Air Products Blvd.
Allentown, PA 18106-5500
T 800-APEX-GAS (800-273-9427)
F 855-312-4777



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