

New hydrogen pipeline on the Gulf Coast

Air Products is nearing completion on a 600-mile hydrogen pipeline (Fig. 1) that connects petrochemical plants and refinery customers from Louisiana to Texas. To get us up to speed on how the project has progressed, we caught up with Wilbur Mok, Air Products' vice president for North America Tonnage Gases.

Q: What can you tell us about this industry-first, 600-mile hydrogen pipeline?

It's a massive project, and one that needed to be done. We anticipate that hydrogen needs along the Gulf Coast of North America will increase in the years ahead, and found it prudent to expand our hydrogen supply network. By building a 180-mile pipeline (Fig. 3) that connects Air Products' existing Texas and Louisiana systems, we've united 22 hydrogen plants and 600 miles of pipeline, with a total hydrogen capacity of over one billion scf/d. So, if an event disrupts operations on one side of the Gulf, hydrogen can keep flowing from the other, giving refinery and petrochemical

consumers the reliable, uninterrupted supply of product that they need.

Q: When did construction begin and how close is the project to completion?

Air Products first announced the project in October 2010. It's now over 95% complete and it's expected to be operational by this fall.

Q: How will this pipeline benefit hydrogen consumers along North America's Gulf Coast?

Connecting Air Products' Gulf Coast hydrogen plants via this pipeline will offer our customers in this market enhanced supply capabilities and reliability of hydrogen supply, which is critical to their operations. In the early phases of this project, Air Products evaluated the implementation of an underground storage cavern for hydrogen and was convinced that the Gulf Coast connecting pipeline would bring far greater benefits to customers and shareholders.

The new pipeline extension will connect Air Products' Texas facilities

to the Louisiana system near Baton Rouge. Once complete, Air Products' hydrogen pipeline supply network will stretch from the Houston Ship Channel in Texas to New Orleans, Louisiana. Air Products continues to add new hydrogen capacity in the Gulf Coast, with completed startups of plants in Garyville and Baton Rouge, Louisiana, as well as a new world-scale hydrogen production plant built in Luling, Louisiana. In addition, Air Products acquired and commissioned a new standalone hydrogen plant in Corpus Christi, Texas.

Q: What's the purpose of hydrogen in petroleum refining?

Hydrogen is widely used in petroleum refining processes to remove impurities found in crude oil such as sulfur, olefins and aromatics. Removing these components allows gasoline and diesel to burn cleaner and makes hydrogen a critical component in the production of cleaner fuels needed by modern, efficient internal combustion engines.

Q: What's Air Products' history in hydrogen and pipelines?

Globally, Air Products' hydrogen pipeline operational expertise is evidenced by 40 years of safe operation of its network of systems. Pipelines offer a robust and reliable supply of hydrogen to the refinery and petrochemical industry around the world, and Air Products' hydrogen pipeline design and operations meet or exceed government requirements. In addition to the Gulf Coast hydrogen pipeline system, Air Products also has hydrogen pipeline networks operating around the world: in the US in Southern California; in Canada in Sarnia, Ontario, and Edmonton, Alberta; and in The Netherlands in Rotterdam.

Q: Can you sum up the key milestones of the project?

In October 2010, Air Products announced its plans for the construction of a pipeline connecting its existing Louisiana and Texas hydrogen pipeline systems and creating the world's largest hydrogen pipeline supply network. The investment provided the company a unique opportunity to utilize its expertise in project execution and com-



WILBUR MOK



FIG 3. Laying Pipe for the Gulf Coast's new hydrogen pipeline.

mercial and asset management to deliver value and continuous improvement to its Gulf Coast hydrogen customers. We anticipate an onstream date of early fall 2012. Here are the key milestones:

- The pipeline route selection process was completed in fall of 2009
- Right-of-way acquisition process commenced in January 2010
- Permit approval for the Texas construction received from Galveston District of the US Army Corp of Engineers in July 2011
- Permit approval for the Louisiana construction received from New Orleans District of the US Army Corp of Engineers in December 2011
- The pipeline route required right-of-way agreements for utilizing more than 1,000 parcels of property
- The project execution plan included the US Army Corp approval for a 150 acre wetland mitigation project to offset impacted wetland areas
- Compression systems are mechanically complete
- Project has employed up to 900 people (Fig. 2) supporting field construction activities. ●

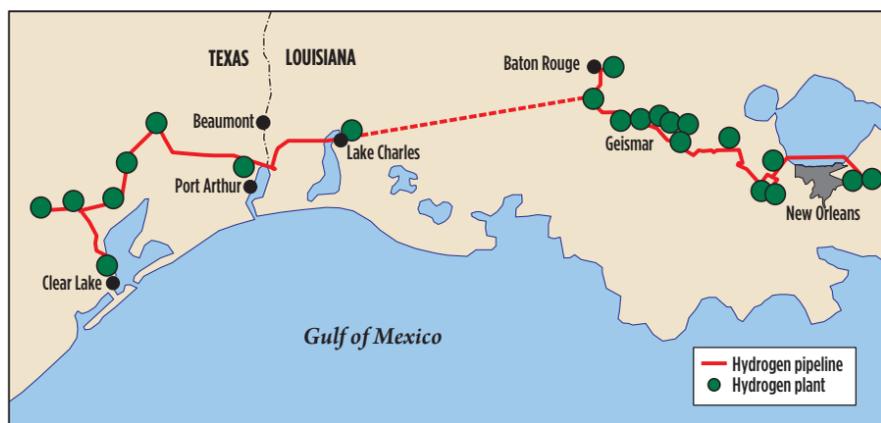


FIG 1. Air Products' 600-mile Gulf Coast pipeline.



FIG 2. The multi-year project has employed 900 people.