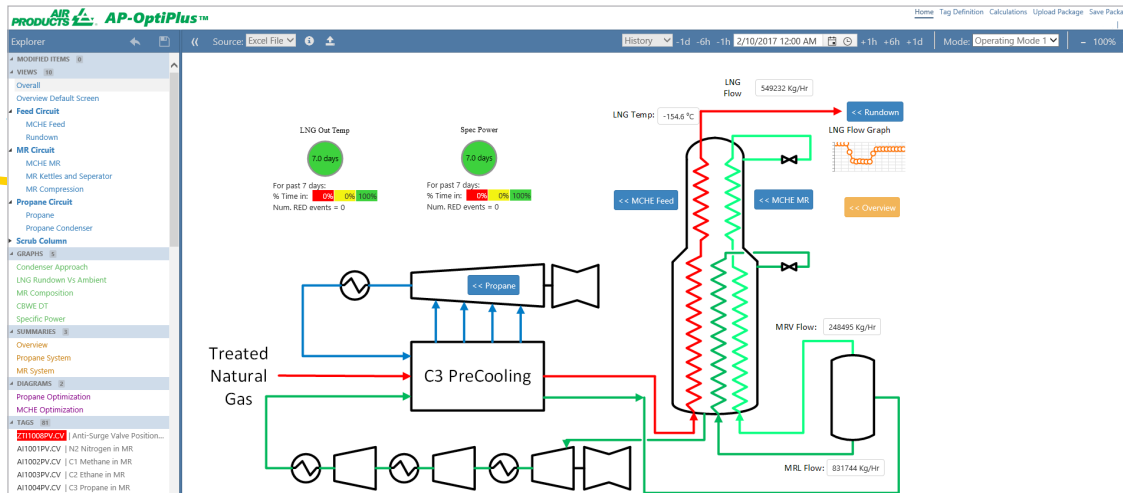


## Liquefier Optimization Program Automated Expertise at your Fingertips



Process monitoring dashboard

### Program features

Process monitoring dashboard to identify potential problems or suboptimal operation

Automated logic flowcharts for rapid troubleshooting

Optimization guides to manage critical process parameters

For single or multiple trains

Valuable training aid for engineers and operators

### Efficient and Reliable Operation

- Effective data analysis with thermodynamically supported calculations
- Automated guidance for improved operation based on 50+ years of Air Products extensive LNG experience
- Supplemented with periodic site visits and remote support from Air Products' experts
- Reduces the impact of plant upsets
- Optimize in unusual modes of operation such as during a feed gas booster compressor trip



The AP-OptiPlus™ Program gives operators and engineers access to valuable expertise for troubleshooting and performance optimization of the liquefaction unit of your LNG plant. The program incorporates Air Products' expertise into an easy-to-use software program that collects data from the plant historian and assesses the process conditions through monitoring of key parameters and calculated indicators. It then guides an engineer/operator on adjusting the liquefaction unit to operate at peak performance and maximum LNG production. Air Products works directly with your LNG facility's personnel to customize and install the AP-OptiPlus Program and offers an annual service plan.

### Customized for your liquefaction plant

The program is developed in close collaboration with your operations and technical personnel. This ensures your facility-specific goals and requirements are prioritized.

The AP-OptiPlus Program takes advantage of Air Products' 50+ years of process optimization experience to enable your operations team to easily and consistently optimize parameters that require intricate knowledge of the process, such as:

- MCHE temperature differences
- Mixed refrigerant composition
- MRL to MRV ratio

## About Air Products

Air Products is a world-leading industrial gases company celebrating 75 years of operation. The company's core industrial gases business provides atmospheric and process gases and related equipment to manufacturing markets, including refining and petrochemical, metals, electronics, and food and beverage. Air Products is also the world's leading supplier of liquefied natural gas process technology and equipment.

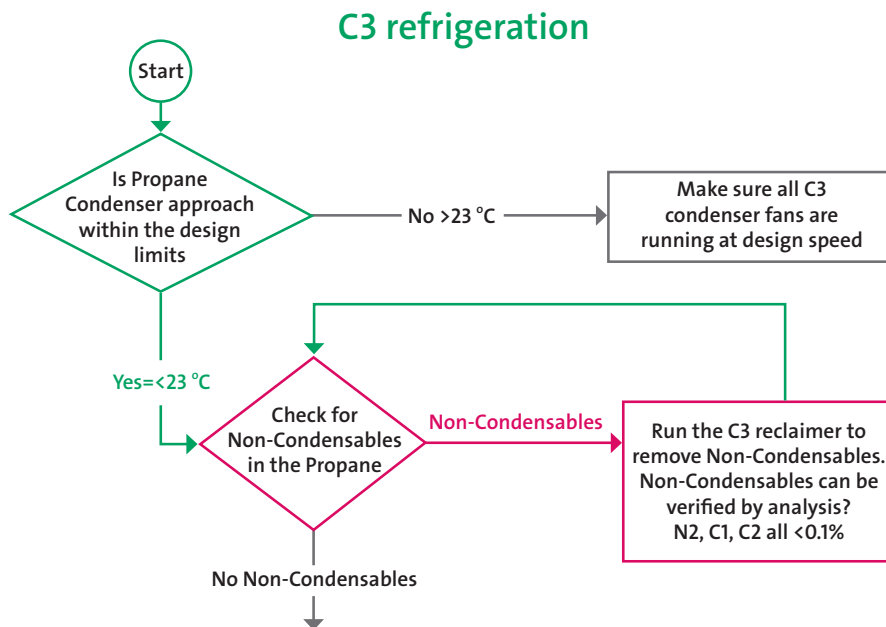
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## Logic Flowchart

Developed for key areas of the plant including propane refrigeration, MCHE optimization, and refrigerant machinery operation.



## Success stories

The AP-OptiPlus Program was first implemented in 2009 and has been successfully employed on 8 major LNG trains located in Peru, Papua New Guinea and Qatar. The optimization program has helped these LNG producers identify process improvements and equipment operation concerns very quickly and provided structured problem-solving solutions. This has led to better performing and more reliable liquefier operation. Some operators have experienced a 1 to 3% liquefaction production or efficiency gain. With the help of the AP-OptiPlus Program, our customers are able to produce LNG more efficiently and more easily meet their annual LNG production targets.



tell me more  
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