Air Products’ MCR®
coil-wound heat exchangers:
The heart of your facility

The main cryogenic heat exchanger, or MCHE, is the heart of the LNG process. Air Products’ processes for baseload LNG utilize our own proprietary coil wound heat exchangers, which feature a proven and robust mechanical design, along with high quality fabrication critical to the successful operation of the LNG process. No one has more experience in the design and manufacture of coil-wound heat exchangers (CWHEs) for LNG service than Air Products. Since our first CWHE shipment in 1968, we have delivered more than 100 CWHEs to LNG facilities worldwide.

Custom CWHE designs:
Efficiency matched to process requirements

Each coil-wound heat exchanger (CWHE) is custom-designed by our engineers, who are experts in cryogenic liquefaction and engineering and who are dedicated to serving the LNG industry. Our CWHEs contain helically wound tube bundles housed within an aluminum or stainless steel pressure shell designed to retain refrigerants in the event of a shutdown. For LNG service, the heat exchangers may consist of one-, two-, or three-tube bundles, each made up of several tube circuits. With this type of exchanger, the tube circuit areas can be matched to the process requirements. The result is a very efficient and compact design.

MCR cryogenic heat exchangers:
Higher reliability and lower costs

The typical exchanger may be as large as 16.5 feet (5.0 meters) in diameter, 180 feet (55 meters) high, and weigh 500 tons (455 metric tonnes). The large size of the individual heat exchanger tube bundles facilitates the design of large process trains. In addition to providing economies of scale, this leads to simple piping and control systems and, consequently, to reductions in installation, operation, and maintenance costs. Air Products’ MCHEs are of robust design and contain no moving parts, ensuring minimal downtime and long service life. Heat exchangers we supplied more than 35 years ago are still operating, many at production rates well in excess of their original design capacity.
Integrated manufacturing:
No need for aluminum welding at the plant site

We are the world’s largest supplier of baseload LNG heat exchangers. Each CWHE is manufactured by skilled craftsmen at our state-of-the-art facilities in the United States, convenient to U.S. ports of export. We fabricate tube bundles, separators, distributors, piping, and other components and position them within the heat exchanger shell at the manufacturing facility. This enables us to ship each CWHE as a completed unit, so that no aluminum welding is required once the unit reaches the LNG plant site.

About Air Products

Air Products provides atmospheric, process and specialty gases; performance materials; equipment; and technology. For over 70 years, the company has enabled customers to become more productive, energy-efficient and sustainable. More than 20,000 employees in over 50 countries supply innovative solutions to the energy, environmental and emerging markets. These include semiconductor materials, refinery hydrogen, coal gasification, natural gas liquefaction, and advanced coatings and adhesives. In fiscal 2012, Air Products had sales approaching $10 billion.