Comprehensive Liquefaction Capabilities

With more than 60 years of experience in LNG, McDermott remains at the forefront of the LNG technology and innovation. McDermott has both the expertise and knowhow to deliver proven low cost solutions as well as cutting edge designs incorporating state-of-the-art equipment and the latest digital technology.

Drawing upon our global resources in engineering, procurement, fabrication and construction, McDermott is able to deliver an integrated vertical solution to our clients across the entire LNG value chain from upstream through liquefaction.

McDermott maintains LNG engineering and operations centers in London and Houston, two of the world’s LNG hubs. Our approach to LNG projects is flexible, both in terms of services provided and in contracting methodology. We can provide whatever commercial and contractual framework is appropriate for the project or client needs, including lump sum EPC, EPCm or a hybrid approach.

A Legacy of Experience and Innovation

Since our first LNG project in 1958, McDermott continues to design and execute world class LNG projects. Our track record of first of a kind projects demonstrates our commitment to innovation.

MORE THAN 60 YEARS
LNG EXCELLENCE AND EXPERIENCE

1965 – Designed and constructed the first LNG peak shaving plant in the United States
1971 – Designed and constructed the first LNG marine import terminal in Boston, Massachusetts, USA
1986 – Designed and constructed the first concrete full containment LNG storage tanks at Das Island, Abu Dhabi, UAE
2010 – Designed and constructed the first baseload liquefaction plant in South America at Pampa Melchorita, Peru
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Full Scope – From Concept to Completion

McDermott’s capabilities in the design and construction of liquefaction facilities cover the complete physical scope of the plant – upstream through to the ship flange.

Furthermore, we offer a comprehensive suite of project services that encompass the entire project, from concept to completion, including:

- Permitting, environmental assessment, site selection
- Conceptual development and pre-FEED
- Front-end engineering and design (FEED)
- Detail engineering
- Procurement
- Fabrication
- Construction, both modular and stick-built
- Commissioning and start-up
- Initial operation
- Plant services

McDermott has been responsible for the mechanical erection of five liquefaction plants over the past eight years. On the PERU LNG liquefaction facility, McDermott performed the entire scope of work from FEED verification and optimization through commissioning and initial operation.

Integrated Approach

We have the people and experience to perform an entire LNG project from start to finish. Our in-house operations include engineers, supply chain experts, fabrication facilities and specialized construction crews around the world. Moreover, our LNG subject matter experts work directly with our customers and process licensors from the earliest phase of a project all the way through operations, aftermarket support and consulting services.

Process Flow Diagram – Typical Liquefaction Plant
One McDermott Way

McDermott employees have embraced one culture – in all areas of our business and across our global footprint – in the way we execute projects. This creates company-wide consistency in systems, processes and execution. We are all part of one organization, doing things the same way so we can share work across regions to better match our capacity and capabilities to customer demand.

This culture drives efficiency and facilitates growth by enabling us to make full use of our global capabilities. With McDermott, customers can count on uniform processes and systems that uphold our consistently high standards worldwide.
Spotlight on PERU LNG

The PERU LNG natural gas liquefaction plant is the first baseload LNG export facility in South America and the largest industrial project ever undertaken in Peru.

In January 2007, the PERU LNG partners awarded McDermott the lump-sum engineering, procurement, construction and commissioning contract to construct the onshore plant facilities. The plant produced its first LNG cargo in June 2010, 40 months after the project started, and achieved facility acceptance in 44.5 months, ahead of schedule. McDermott’s scope of work for the facility included the entire liquefaction plant from the inlet gas valve to the ship loading flange.

The liquefaction plant is located at Pampa Melchorita, approximately 170 kilometers south of Lima at an elevation of 140 meters above sea level. Gas reserves developed on the eastern side of the Andes mountains are transported to the plant via pipelines extending more than 600 kilometers.

LNG Liquefaction Facility, Pampa Melchorita, Peru

Overcoming Challenges

The location and infrastructure surrounding the facility presented several challenges. The high level of seismic activity in the region required the design of large seismic isolators to support the two 130,000 cubic meter single containment tanks. Additionally, 68 miles (110 kilometers) of the Pan American highway had to be repaired to facilitate the transportation of the main cryogenic heat exchanger to the jobsite.

Safety and Environmental Performance

Peak employment reached 5,650 people and more than 30 million work-hours were performed with a lost time incident rate of 0.01.

The project was managed according to the strictest national and international standards of environmental protection, including International Finance Corporation and Inter-American Development Bank regulations.
Investing Locally

Ninty percent of the workers were local on the PERU LNG project site and McDermott provided more than 1 million work-hours of skills training for the local workforce to ensure top-quality performance standards were maintained throughout the construction phase. Many of these trained workers have since joined the global McDermott workforce.

Although McDermott used its global procurement network to source materials and equipment for the project, local suppliers when used when available. In fact, the majority of supplies to support the workforce were procured locally.

The company invested in a number of initiatives for residents in the nearby communities of Chinchas and Cañete, including educational and cultural development programs, construction of public health and sanitation facilities, health campaigns and screenings, and agricultural campaigns to improve crop productivity.

Project Services Provided by McDermott

- FEED verification and optimization
- Engineering
- Procurement, including heavy haul program
- Fabrication
- Construction – Heavy lift program, direct perform labor, subcontract management
- Commissioning, start-up and performance testing
- Initial operation for the first six months, including loading of the first 10 cargos
- O&M services
McDermott is a premier, fully-integrated provider of technology, engineering and construction solutions to the energy industry. For more than a century, customers have trusted McDermott to design and build end-to-end infrastructure and technology solutions to transport and process oil and gas into the products the world needs today. Our proprietary technologies, integrated expertise and comprehensive solutions deliver certainty, innovation and added value to offshore, subsea and downstream energy projects around the world.

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