

2026-09-15

Nihon Shipyard Co., Ltd. (NSY)

Kawasaki Kisen Kaisha, Ltd. ("K" LINE)

Mitsui O.S.K. Lines, Ltd. (MOL)

Nippon Yusen Kabushiki Kaisha (NYK Line)

MILES Co., Ltd.

Mitsubishi Shipbuilding Co., Ltd.

Approval in Principle (AiP) Acquired for Standard Low-Pressure Liquefied CO₂ Carrier toward Realization of CCS Business in Japan

-- First Successful Result for a Standard Design Framework Utilizing MILES --

- ◆ *AiP acquired after completing risk assessment of CO₂ handling operations specific to low-pressure liquefied CO₂ carriers and establishing a safety-focused design policy*
- ◆ *Utilizes the MILES-based standard design framework to ensure stable construction and supply of liquefied CO₂ carriers in Japan while improving economic efficiency*

Tokyo, September 15, 2026 – Six companies, including Nihon Shipyard Co., Ltd. (NSY, a ship design and sales joint venture between Imabari Shipbuilding Co., Ltd. and Japan Marine United Corporation), Kawasaki Kisen Kaisha, Ltd. ("K" LINE), Mitsui O.S.K. Lines, Ltd. (MOL), Nippon Yusen Kabushiki Kaisha (NYK Line), Mitsubishi Shipbuilding Co., Ltd., a part of Mitsubishi Heavy Industries (MHI) Group, and MILES Co., Ltd. (a joint venture among related companies for the design of liquefied CO₂ (LCO₂) carriers and low-carbon fueled ships) have acquired Approval in Principle (AiP)^{*1} for a low-pressure LCO₂ carrier from the Japanese classification society Nippon Kaiji Kyokai (ClassNK) following completion of a risk assessment for LCO₂ handling operations. A ceremony to present the AiP was held on September 15 at Gastech 2026 in Bangkok, Thailand.

Demand for LCO₂ carriers is expected to grow as a series of CCS (Carbon dioxide Capture and Storage) projects commence in Japan, requiring a means of transporting CO₂ captured in Japan to storage sites. Based on a Memorandum of Understanding^{*2} announced on December 1, 2025, the six companies have been advancing a standard design framework that utilizes MILES for LCO₂ carriers and alternative-fuel ships. Their goals include the stable domestic construction and supply of LCO₂ carriers, the standardization of LCO₂ carriers, and the establishment of a CCS value chain. This AiP marks the first concrete achievement through the MILES framework.

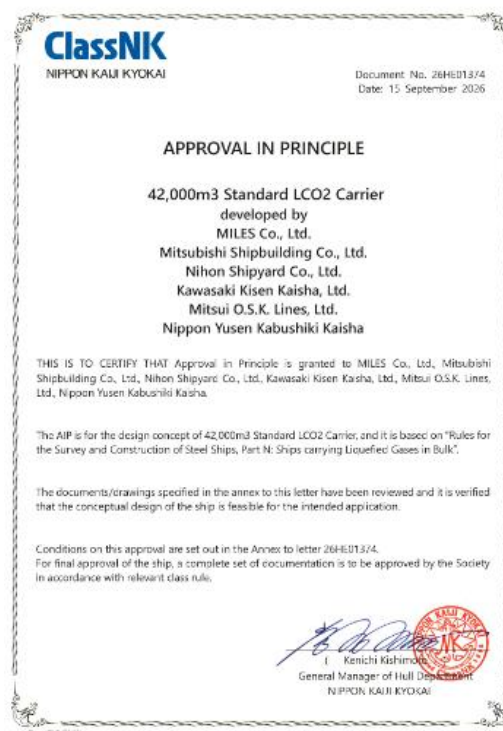
The six companies conducted a risk assessment (Hazard Identification Study "HAZID")^{*3} for LCO₂ handling operations on a low-pressure 42,000m³ class LCO₂ carrier, which is being standardized. The risk assessment drew on the extensive experience of "K" LINE, MOL, and NYK Line in low-pressure gas carrier operations to consider the risks unique to low-pressure LCO₂. A design policy stressing safety was established based on the findings, leading to the acquisition of the AiP. This policy will be reflected in the standard design of LCO₂ carriers and will serve as an important foundation for supporting CCS business

development in Japan. A common design platform for a standard vessel is expected to provide workload savings and greater efficiency in design and construction going forward, strengthening construction capabilities.

NSY has been actively developing and commercializing LNG-fueled and ammonia-fueled vessels in anticipation of increasingly stringent GHG emissions regulations, and will continue to advance these efforts. As our next initiative, we will contribute to the realization of a sustainable, carbon-neutral society by delivering LCO₂ carriers essential to the development of a CCS value chain.



AiP presentation ceremony at Gastech 2026



AiP certificate

Notes

*1: Approval in Principle (AiP) indicates that a certification body has reviewed the basic design of the subject equipment, and confirmed that it meets technical requirements and relevant safety standards. The inspection of the basic design for the LCO₂ carrier was conducted in accordance with ClassNK's "Rules For the Survey and Construction of Steel Ships (Part N Ships Carrying Liquefied Gases in Bulk)". This is the first AiP received for a standard design scheme utilizing MILES, and for the 42,000m³ class ship type.

Ref. "Approval in Principle (AiP) Acquired from Two Classification Societies for Low-Pressure Type Liquefied CO₂ Carriers undergoing Pursuit of Standardization toward Realization of Large-Scale International Transportation from 2028 onwards" (September 18, 2024).

https://www.nsys.co.jp/wp-content/uploads/2024/09/240918_news_en.pdf

*2: "Memorandum of Understanding Concluded on Establishing a Standard Design Framework Utilizing MILES for Liquefied CO₂ Carriers and Alternative Fuel Ships" (December 1, 2025)

https://www.nsys.co.jp/wp-content/uploads/2025/12/251201_news_en.pdf

*3: A Hazard Identification Study (HAZID) is a safety assessment method for plants and systems to identify potential risks (hazards) in design concepts, and evaluate the extent of those risks and the effectiveness of mitigation measures.