



NEWS RELEASE

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CB&I Receives Approval for Liquid Hydrogen Cargo Containment System for Gas Carriers from DNV

HOUSTON, Aug. 30, 2023 /PRNewswire/ -- CB&I, McDermott's storage business, has received Approval in Principle (AiP) for its design of a liquid hydrogen (LH2) cargo containment system from DNV, a leading classification society for shipping. CB&I collaborated with Shell International Trading and Shipping Company Limited (Shell) to provide safe LH2 shipping solutions that enable hydrogen energy supply chains.

The AiP confirms that the containment system aligns with applicable safety standards. These include class rules, the International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk (IGC Code), as well as the Interim Recommendations for Carriage of Liquefied Hydrogen in Bulk, Resolution MSC.420(97), issued by the International Maritime Organization (IMO). A Hazard Identification (HAZID) risk assessment was carried out as an integral part of the AiP process to ensure that the hazards and uncertainties associated with the containment system were identified and dealt with.

"Through collaboration with Shell and DNV, we're making large scale liquid hydrogen storage and transport more economical," said Cesar Canals, Senior Vice President of CB&I. "This approval is a major milestone in making this groundbreaking technology available to all companies looking to build LH2 carriers, and we look forward to the possibilities this brings to advancing the hydrogen energy supply chain."

Steve Brown, Technology Manager at Shell emphasizes: "This is an important milestone, resulting from a lot of hard work and collaboration between companies working at the forefront of innovation in this sector. To support the role of liquid hydrogen in the energy transition it is critical that we demonstrate its potential as a viable energy carrier with urgency and achieving this AiP is a significant step in the right direction."

Ivar Håberg, Director of Approval, Ship Classification, DNV, said: "We are delighted to have been invited by CB&I to work on this AiP. Hydrogen, with its potential as an energy carrier and fuel, is likely to play a significant role in the energy transition. It is important for industries to confidently pursue new technologies while ensuring safety. An AiP serves to enhance this confidence by demonstrating the assessment of innovative solutions against established, independent and trusted standards."

The containment system design is based on CB&I's proven vacuum-insulated spherical technology for onshore LH2 storage. CB&I has designed and constructed more than 130 large, field-erected LH2 storage tanks worldwide over the past 60 years. This experience provides the energy transition industry an economical, low-risk shipping solution with the best available time to market. CB&I expects the design to be scalable to 40,000 m³ per tank, with estimated boiloff rates less than 0.1% per day for small tanks and less than 0.05% per day for large tanks. The combined cargo containment system and hull design effort aims to address the energy density challenge, benefitting from LH2's properties and achieving more energy onboard. The cargo containment system was integrated into a concept vessel design developed by Houlder, which includes a hull that is optimized for the low-density cargo around the three large tanks.

About CB&I

CB&I is the world's leading designer and builder of storage facilities, tanks, and terminals. With more than 60,000 structures completed throughout its 130-year history, CB&I has the global expertise and strategically located operations to provide its customers world-class storage solutions for even the most complex energy infrastructure projects. To learn

more, visit www.cbi.com.

About McDermott

McDermott is a premier, fully-integrated provider of engineering and construction solutions to the energy industry. Our customers trust our technology-driven approach engineered to responsibly harness and transform global energy resources into the products the world needs. From concept to commissioning, McDermott's innovative expertise and capabilities advance the next generation of global energy infrastructure—empowering a brighter, more sustainable future for us all. Operating in over 54 countries, McDermott's locally-focused and globally-integrated resources include more than 30,000 employees, a diversified fleet of specialty marine construction vessels, and fabrication facilities around the world. To learn more, visit www.mcdermott.com.

About DNV

DNV is the world's leading classification society and a recognized advisor for the maritime industry. We enhance safety, quality, energy efficiency and environmental performance of the global shipping industry – across all vessel types and offshore structures. We invest heavily in research and development to find solutions, together with the industry, that address strategic, operational or regulatory challenges. For more information visit: www.dnv.com/maritime

About Houlder Limited

Houlder has been a wholly independent provider of design, engineering services and equipment supporting a network of global projects for over thirty years. Houlder's project managers, naval architects, marine engineers, and consultants, support clients through the entire procurement cycle from conceptual ideas to through-life operations. Houlder employs 80 professionals across the UK and the company holds numerous business and industry awards for its innovation, design and business success. For more information on Houlder's latest projects, visit: <http://www.houlderltd.com/>

Forward-Looking Statements

McDermott cautions that statements in this communication which are forward-looking, and provide other than historical information, involve risks, contingencies and uncertainties. These forward-looking statements include, among other things, statements about the expected scope of the project discussed in this press release. Although we believe that the expectations reflected in those forward-looking statements are reasonable, we can give no assurance that those expectations will prove to have been correct. Those statements are made by using various underlying assumptions and are subject to numerous risks, contingencies and uncertainties, including, among others: adverse changes in the markets in which we operate or credit or capital markets; our inability to successfully execute on contracts in backlog; changes in project design or schedules; the availability of qualified personnel; changes in the terms, scope or timing of contracts; contract cancellations, change orders and other modifications and actions by our customers and other business counterparties; changes in industry norms; actions by lenders, other creditors, customers and other business counterparties of McDermott and adverse outcomes in legal or other dispute resolution proceedings. If one or more of these risks materialize, or if underlying assumptions prove incorrect, actual results may vary materially from those expected. You should not place undue reliance on forward-looking statements. This communication reflects the views of McDermott's management as of the date hereof. Except to the extent required by applicable law, McDermott undertakes no obligation to update or revise any forward-looking statement.

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