This abstract will be presented during LNG2023 conference on 10-13 July in Vancouver, Canada among many other innovative projects, ideas and outlooks. LNG2023 will provide a unique platform for the global LNG industry and key stakeholders to discuss, debate, and showcase the latest industry developments and opportunities.

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ANALYSIS AND EVALUATION OF VIBRATION MONITORING FOR MAINTENANCE OF LIQUEFACTION SYSTEM

The reliquefaction system is an equipment to put the reliquefied natural gas that naturally vaporizes in the cargo hold during the operation of facilities at LNG production bases, LNG floating storage unit and LNG carriers back into the cargo hold, which can increase the operational efficiency. For the reliquefaction system NRS® (Nitrogen Refrigerant System) developed newly by Daewoo Shipbuilding & Marine Engineering Co., Ltd., the efficiency was increased by recovering the cold heat of LNG using nitrogen as a refrigerant. This reliquefaction system was applied to 2 ships of 360,000 ㎥ class LNG floating storage unit, and for LNG floating storage unit, the land service will be provided for remote monitoring and optimal driving support by applying the self-developed digital twin technology. To provide the land services, the vibration sensors were installed for monitoring and diagnosing the state of NRS equipment, and the smart maintenance by status diagnosis is available through the vibration monitoring from the applicable sensors. In this study, it is intended to do the vibration analysis and evaluation for reliquefaction system of LNG floating storage unit through the vibration sensors actually installed.