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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LNG PLANT OPERATIONAL IMPROVEMENT JOURNEY TO INTERCEPT LEAN GAS ENTRANCE TRANSITION TO SECURE FUTURE LNG PLANT OPERATION

Badak LNG plant was originally designed to process rich gas with methane content of around 85%. Starting in 2017, Badak LNG Plant received leaner feed gas with the methane content >89%. The leaner feed gas entrance has promoted several issues such as lower LNG quality than the sales specification, lower fractionation turn down ratio risking of having heavier hydrocarbon plugging in the liquefaction unit, and significantly lower ethane production for plant refrigerant make-up.

Several strategies were implemented to manage those challenges. In order to address LNG sales specification requirement, Badak LNG has modified the plant operation to be able to produce dual LNG heating value grades. Meanwhile, in order to address operability issues, a specific lean to rich gas ratio was maintained at the lean gas entrance. Other operational improvements were also made, such as by accommodating external LPG and Ethylene utilization, modifying fractionation columns operation, transferring refrigerant between LNG trains, conducting a dedicated LNG train test to process much leaner gas, and lastly installing an additional cooler downstream of the scrub column condenser to enable processing leaner gas without importing external LPG. These series of improvement programs have been proven successful in managing the leaner gas entrance to Badak LNG facilities.

Keywords: Heating value, Lean Gas, Quality Issue, Operability Issue, Operational Strategies

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