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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MANAGING C10+ HEAVY HYDROCARBONS – THEORETICAL APPROACH AND BEST PRACTICE

The existence of trace volumes of heavy hydrocarbons (HHCs) in U.S. Pipeline gas, specifically C10+, has become a significant operations and maintenance concern issue for U.S. Liquefied Natural Gas (LNG) plants. It can cause a range of operations and maintenance issues, including build-up of excessive pressure drop in process equipment, foaming or degradation of the Amine solutions in the Acid Gas Removal Unit (AGRU), and loss of production capacity due to freezing of these HHCs.

A good understanding and development of a robust and cost-effective solution to eliminate those issues is hampered by the lack of solubility data in the low temperature/cryogenic range of operation.

The proposed paper uses a linear regression method through a Henry's law type correlation to estimate the solubility of HHCs in LNG facilities. This method has already been validated in solubility estimation for heavy paraffinic components (n-C8 to n-C10) in pure methane at cryogenic temperatures experienced in LNG production facilities. This paper extends the applicability of Henry's law type correlation to non-paraffinic components and even heavier hydrocarbons.

The paper also discusses several potential technologies and best practices used during the design and operation phases to avoid production losses or increases in the operating cost of the impacted facilities due to the existence of such HHCs in the feed gas.

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