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REPETITIVE FOAMING EVENTS IN AGR UNIT

Acid Gas Removal (AGR) units are widely used for sour gas sweetening process which utilize formulated Methyl Diethanolamine (MDEA). One of the main problems associated with AGR process is the formation of stable foam during the absorption of H₂S and CO₂. Foaming in AGR unit is undesirable as it can cause solvent loss, plant volumetric downtime (VDT), or probable damage to downstream equipment. The AGR unit at Al-Khaleej Gas Project Phase-2 (AKG-2) located in Qatar experienced repetitive amine absorber foaming since mid of year 2022 and resulted in total plant trip twice. After performing deep analysis on AGR unit, it was identified that the root cause of foaming in AKG-2 is mainly due to contamination of solvent during start-up activities which caused stable foam in the AGR column. This poster/presentation introduces a detailed engineering analysis which was conducted to troubleshoot the repeated foaming events in AGR unit. The underlying causes of foaming have been studied and accordingly mitigative action plan was developed to troubleshoot the foaming issue. More than 120 actions were implemented such as replacement of antifoam type, performing de-pollution of amine loop, performing skimming in AGR unit, adjustment of process parameters, providing dynamic alarms, etc. After implementation of the recommendations, the foaming symptoms in AGR unit have disappeared, which helped to ensure continuous supply of sales gas and fulfill customer satisfaction. In addition, the less

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