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SCIENTIFIC & RESEARCH PROJECTS

Project No.: 07 **Year: 2021**

Project Field: GHG Emission Reduction

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Project Title:

Flare Gas Reduction in an Olefin Plant Under Different Start-Up Procedures

Abstract:

A gas flare is a safety device in oil, gas and petrochemical plants, but excessive flaring causes remarkable material and energy losses as well as environmental and economic problems. In the current study, the optimal start-up procedures for an olefin dynamic operation are presented. The flaring locations that have been identified showed that the most important flaring locations are compressor inlet suction and C2/C3 separation column overhead. The key parameter to reduce flaring in the olefin plant is the rapid start-up of compressors. For better performance of compressors, two alternative procedures have been suggested that can reduce flare amounts during start-up operation. The best start-up scenario showed 27% reduction in released off-specification gases as well as 16% reduction in CO₂ emission comparing to the existing amount.