

Flaring Prevention by Modifying the Fuel Gas Pressure Control Scheme

Lead author: Abdulla Al-Emadi, Lead of Process Engineering, QatarEnergy LNG

Fuel gas supply to Gas Turbines (GT) machines is pressure controlled by a pressure controller (PC016) with a set point of 21.6 barg. Prior to this proposal, a split range control loop was utilized to import fuel from feed (FFF) through PV-016A whenever $PC-016 < 21.6$ barg, and to discharge fuel gas to wet gas flare through PV-016B whenever $PC-016 > 21.6$ barg.

During usual mol sieve drier regeneration cycle, frequent pressure fluctuations occur, hence; PV-016B frequently opening on daily basis to discharge the fuel gas to wet gas flare for maintaining fuel gas pressure at 21.6 barg. This is resulting in unnecessary daily flaring. In some situations, to avoid flaring, the operator switches the controller to Manual mode to prevent flaring, and when the pressure stabilizes back, the operator switches back the controller to AUTO mode. This practice results in multiple AUTO/MANUAL operation every day. In a recent incident, there was a scenario of sudden decline in BOG flow, but operator could not shift the pressure controller PC016 to AUTO mode. This resulted in Total train trip and financial loss.

A multidisciplinary analysis including Process Engineering & Instrument team studied the above-mentioned issue and recommended to convert the “split range control” to “two individual PID control loops” to help in preventing daily flaring and even avoiding train trip scenario. An OTS trail for the proposed logic modification was executed and found feasible for implementation.

The above control loop modification was implemented on all the 3 LNG trains at N-1 Asset. After implementation, this proposal resulted in fuel gas loop operating continuously in AUTO mode and ever since, flaring quantity from fuel gas loop reduced by ~ 41% from 95.7 kNm³/h to 39.7 kNm³/h after the proposal implementation.

To view the **full technical programme**, visit <https://lng2026.com/technical-programme>

This abstract will be presented during LNG2026 conference on 2-5 February in Doha, Qatar