

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.



#### LEAD AUTHOR

**Rahmat Minullah**  
Process Engineering Specialist, Qatargas

#### CO-AUTHORS

Ibrahim Al-Khawaja  
Head of Operation Qatargas

### PROCESS OPTIMIZATION AND FLARE MINIMIZATION FOR LNG PLANT

Mega LNG trains were built as world-class facilities with adoption of latest technologies available at the time of engineering and construction phase. However, new and unique challenges were identified while operating these mega LNG facilities for the first time in Qatar and the world. With these challenges, innovative approaches were adopted in order to operate the plant at the highest reliability targets possible while meeting customer requirements for LNG volumes.

At an early stage, the facility was assessed and tested to operate at 109% of design capacity to overcome

any production shortage due to unplanned events. In addition, numerous efforts were put in place to optimize the process conditions and minimize impact due to unavailability of critical equipment without the need to completely interrupt LNG production. The following improvements were successfully carried out in the mega LNG trains: I) Orloff NGL Operation without Liquid/Gas Braze Aluminum Heat Exchanger, II) Crossover Operation between Trains 6&7, III) Maximizing the capacity of Slug Catcher. IV) Lean Gas Compressor Operation without helper motor, V) Sulfur Recovery Unit enhancement project. VI) Advance Process Control, and VII) Minimum turn down operation of Acid Gas Removal Unit.

In addition to the process optimization, Qatargas focused on flare minimization during shutdown and start-up processes. Efforts includes I) NGL dynamic defrosting by utilizing long loop recirculation, II) NGL Column Cooldown by sending lean gas to domestic gas grid, and III) Mixed Refrigerant piping cooldown without flaring.

To view the full conference agenda, visit <https://www.lng2023.org/lng-programme-overview>