

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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FULLY AUTOMATED LNG PLANT OPERATION

Fully automated plant operation of start-up without shutdown due to abnormal situation has a lot of advantages such as maximizing production, reducing flaring and the start-up duration, prevention of equipment damage. The abnormal situation is the constraint to the automation. To perform fully automated operation, it is necessary to consider the abnormal situation and the process dynamic responses. Therefore, we developed digital twin and verified them. In this article, we will introduce the automated LNG plant operation that we are currently promoting.

1. Flawless Start-up

A. Automated MCHE cooldown

By performing automated MCHE cooldown, we can reduce the required time for cooldown, minimize the flaring, prevent damage to the equipment due to operation mistakes.

B. Abnormal sequence

We will provide following automated sequences to reduce the load on the operators and quickly stabilize the process.

- Forming measures for AGRU
- Operation condition adjustment for Scrub Column

2. Maximizing LNG production

By displaying the key performance indicators as a dashboard, we can contribute to maximizing LNG production.

- Gas turbine driver capacity of Refrigerant Compressors
- Optimization of MR refrigerant composition

Our goal is to achieve the fully automated operation of LNG plant including start-up and shutdown. Fully automated operation will lead to flawless start-up, improvement of safety and contribute reduction of OPEX.

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