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

Takashi Noda
Group Manager, Gas/LNG Group, Process Engineering Department, JGC CORPORATION

CO-AUTHORS

Mizuho Komaki
Senior Process Engineer, Process Engineering Department, JGC CORPORATION

Susumu Nagashima
Principal Process Engineer, Process Engineering Department, JGC CORPORATION

Toru Nakayama
Expert of LNG Process, Project Solutions Center, JGC CORPORATION

TECHNICAL PROBLEMS AND SOLUTIONS OF FLOATING LNG LOCATED IN SHALLOW SEA WATER AREA

Floating LNG (FLNG) plants that JGC has constructed are located in deep sea water area and have adopted closed cooling water as the cooling system for process fluids and refrigerant circuits which is cooled by low-temperature deep sea water. However, since FLNG is located in a shallow sea water area, low-temperature deep sea water is not available. Therefore, Air Fin Cooler is adopted as the cooling system for the process fluid and refrigerant circuit instead. However, when adopting the Air Fin Cooler, there are some technical concerns such as;

- ✓ Plot Area becomes large due to Air Fin Cooler, which affects the Module Size and Hull Size.
- ✓ Possibility of split Air Fin Cooler due to module size limitation resulting in performance degradation due to maldistribution.
- ✓ Air Fin Cooler occupies most of the top deck level of modules, which causes problems such as an increase of intake air temperature due to Hot Air Recirculation.

JGC solved the above technical problems and concerns by leveraging our past experiences and technical capabilities such as minimization methods of Hot Air Recirculation (consideration of plot plan and module design, adoption of chimney for Air Fin Cooler) and adoption of high efficiency Air Fin Cooler.