

reducing ATEX level in engine room by active ventilation.

LNG FUELED INLAND VESSEL

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Goal

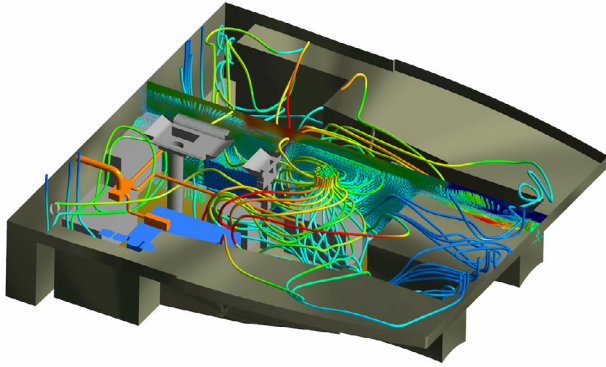
The engine rooms of a LNG fueled inland vessel must suffice ATEX 1999/92/EG guidelines to ensure a safe working environment and prevent explosions. Furthermore, a lower ATEX level decreases the certification level of the ATEX Ex II 1g tools and equipment needed.



MULTIPHYSICS

Approach

An active ventilation system is designed and analyzed using CFD tools. A simplified model of the engine room is made and meshed. Multiple simulations are conducted with varying circumstances. The flow and thermal distribution in the engine room is visualized and the ventilation requirements are checked.



Results

The simulations successfully proved that the ventilation design meets safety requirements. It was possible to lower the ATEX zone with active ventilation, requiring a lower certification for equipment and tools and improving the working environment.

