AALBORG INDUSTRIES PTE LTD
MISSION, SKID MOUNTED D-100 T/H BOILERS
FDPSO, FPSO & FSO Boiler Modules

ICON Engineering was contracted by Aalborg Industries Pte Ltd to provide conceptual and multi-discipline detailed engineering for eight of their boiler modules. ICON designed these boiler modules for Aalborg's clients, Prosafe and Talisman.

A total of six boiler modules for Prosafe were fabricated in Singapore and two each installed on the Azurite FDPSO, Ningaloo Vision FPSO and Cidade de Sao Mateus FPSO respectively. The other two boiler modules for Talisman were also fabricated in Singapore and installed on the Orkid FSO in Malaysia.

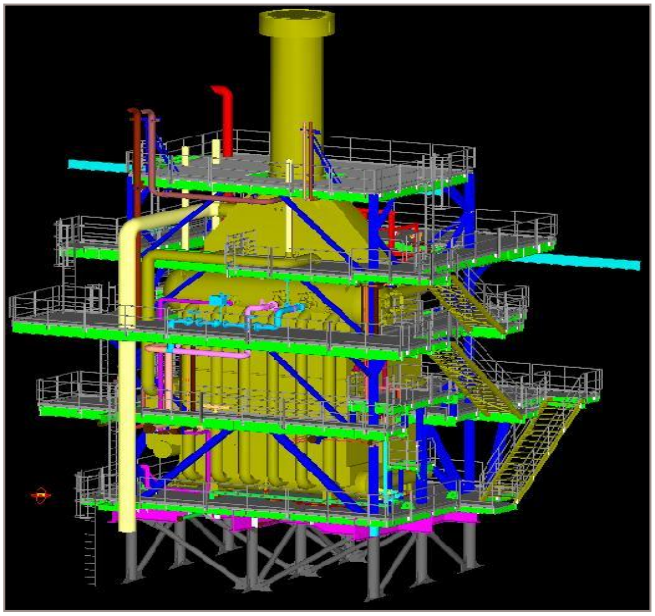
Aalborg boiler modules for Cidade de Sao Mateus FPSO

Aalborg boiler module installed on Azurite FDPSO

The boiler module design was simple in appearance but robust and catered to the client requirements for providing access to all major valves, fittings and openings on the boiler.

Mono-rail beams and lifting padeyes were also designed and fitted below different platform levels for handling of heavy mechanical equipment such as the forced draft fans, valves and fittings. ICON also designed the boiler pipework and generated stress analysis reports for the steam line and feed water lines that run from the boiler to the tie-in points on the pipe racks of the various FPSO units. A connecting bridge was designed to provide personnel and material access from the starboard to port side boiler module on the FDPSO and FPSO.

Staad Pro and Tekla software were used extensively for structural design and drafting while Caesar II and AutoPlant software were used for piping design and drafting. The boiler modules were designed in strict compliance with API, AISC and Noble Denton codes and certified by ABS, DNV, Lloyd's Register and BV marine class.



Tekla model of Cidade de Sao Mateus FPSO boiler module

The key deliverables for the detailed engineering of boiler modules included:

- A comprehensive Basis of Design;
- Detailed design report including; analysis for in-place, transit, damage, fatigue and lift conditions, pipe stress reports for the boiler pipe work and lux calculations;
- Detailed engineering and design drawings for the modules including; general arrangements, isometrics, junction box layouts and single line diagrams for the lighting system; and
- Fabrication shop detail drawings

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