

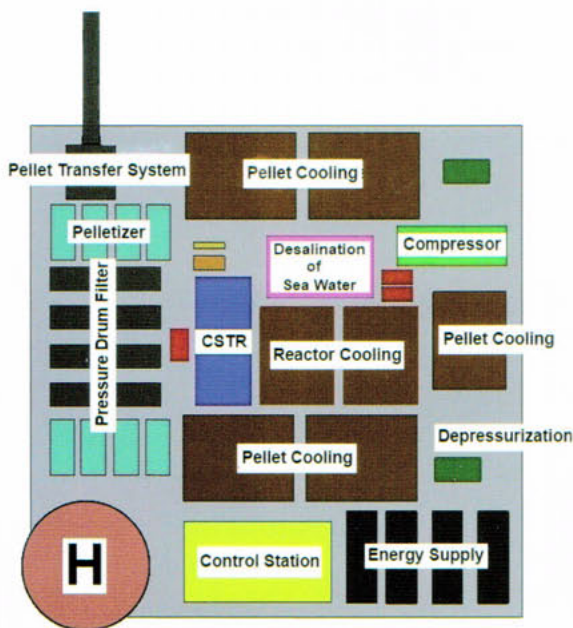
Infrastructure concepts for the interfaces Production-Carrier and Carrier-Terminal for Methane Hydrate Pellets

As a scientific partner of the SUGAR B3-subproject the task of the University of Applied Sciences Kiel is the development and conceptual design of the floating production unit at the exploration field and the cargo handling system to transfer methane hydrate pellets from the production to the carrier and from the carrier to the terminal.

An offshore platform has been dimensioned taking into account the weather and sea conditions at the selected exploration area considering the relevant equipment data for the methane hydrate pellet production process provided by Linde Engineering. This also includes solutions for the short-term storage of produced pellets. Especially the design of the cargo handling system is a technical challenge in order to transfer pellets from the floating production unit to the hydrate pellet carrier designed by the MEYER WERFT.

Based on its wide experience in mechanical engineering and maritime technology the University of Applied Sciences Kiel calculated the relevant data of the semi-submersible offshore platform concerning its stability characteristics to assure a continuous production during different environmental conditions. The relevant data was made available to the MEYER WERFT for the model tests of the platform-carrier-system at the Hamburg Ship Model Basin of the HSVA (Hamburgische Schiffbau - Versuchsanstalt) at realistic sea conditions.

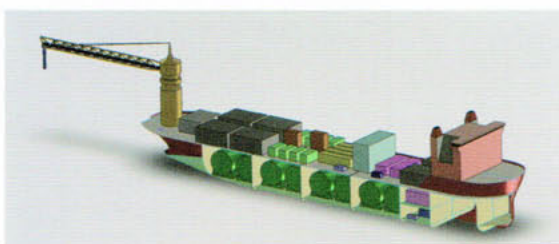
As an alternative solution a constellation FPSO (Floating Production Storage and Offloading) – hydrate pellet carrier has been developed and conceptually designed. In this context the cargo handling system to transfer pellets has also been compiled taking realistic conditions as a basis.



Configuration of the pellet production equipment on the offshore platform.



Cargo handling system FPSO - hydrate pellet carrier.



Developed and conceptually designed FPSO.

FPSO main characteristics:

- Length over all: 208,10 m
- Length between perpendiculars: 200,00 m
- Breadth: 36,00 m
- Height: 20,00 m
- Draught max.: 12,17 m
- Deadweight: 16.650 t
- Tank volume: 20.000 m³ at 100 %
- Engine output: 1 x 8.400 kW
- Speed: 13 kn
- Classification: Germanischer Lloyd (GL)