

GOLTENS RESOLVES STEAM TURBINE VIBRATION PROBLEMS ONBOARD FPSO TURBINE FOUNDATION MODS & CHOCKFAST APPLICATION OFF NIGERIAN COAST WITH ZERO OPERATIONAL IMPACT

After experiencing severe vibration problems during operation of their Siemens Steam Turbine Generator aboard the Knock Adoon FPSO, Fred Olsen Marine Services and Goltens Dubai agreed in late 2012 to design, manufacture and install a new support frame foundation including additional under deck stiffening. All work needed to be completed in-situ onboard the FPSO off the coast of Nigeria in West Africa.

An excessive vibration resulting from a weak substructure 'elastic foundation' was causing resonance since conversion work was completed in a large dock yard in the Middle East in 2006. The vibration was causing frequent damage to the turbine rotating elements. Onboard inspections by the client and a combined Goltens Mechanical & Fabrication Team resulted in a detailed design and a detailed execution plan in order to overcome this technical problem.

The main challenges were the logistics involved in getting equipment & material, including hazardous Chockfast material, to the FPSO off the coast of Nigeria, as well as providing required offshore BOSIET training for the team within the stipulated timeframe. Design, manufacturing, tools and material were organized and just prior to Christmas 2012 the Goltens team was onboard the vessel off Nigeria and the job was completed in the scheduled 8 weeks

IN-SITU REPAIRS CONSISTED OF:

- Removal, lifting of the whole skid weighing ~30 tons
- Manufacturing and installation of new steel foundation within a very confined space
- Strengthening of under deck steel
- Chocking & Alignment using ITW Polymers Chockfast product

CHOCKFAST APPLICATION RESULTS:

Goltens proven multi discipline experience & versatility in machinery Chockfast application combined with our structural steel skills, removed the vibration problems within the required time frame with no operational interruption for

PROJECT FACTS: FPSO KNOCK ADOON

Tonnage:	244,492 DW
Engine / Equipment:	Siemens KKK AFA 6 G6a
Turbine Output:	2.5 MW
RPM:	11,543 RPM

