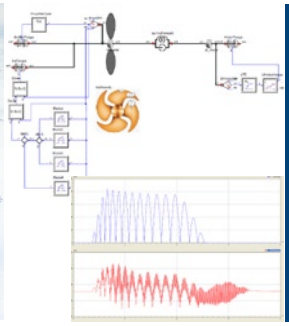
SIMULATION X®

Powered by ITI

Marine & Shipbuilding



DNV uses SimulationX to assess safe and effective ship operations in Arctic ice conditions

Det Norske Veritas (DNV) is a global provider of services for managing risk. An independent foundation with the objective of safeguarding life, property and the environment, DNV comprises 300 offices in 100 countries, with about 9,000 employees.

DNV has long traditions in the Arctic and as early as 1932 DNV introduced the first special requirements for ships intended for operation in ice covered waters. Most of the ships trading globally with an ice class (strengthened hull and machinery) are to DNV class.

Challenge

Propulsion in ice-infested waters

The POLAR ice class requirements for ships designed for navigation in ice-infested Arctic or sub-Arctic waters calls for extensive response torque analysis of the complete propulsion drive line caused by the heavy ice impacts on the propeller. The various ship types needed for operation in such waters call for different propulsion plant configurations, and it is of vital importance that the usability of all components is evaluated. DNV looked for an intelligent and efficient simulation tool to verify sufficient static- and fatigue strength of the various drive line components.

Solution

SimulationX Professional Edition

The SimulationX software platform, Modelica support and intuitive GUI together with the ready-to-use standard library of rotary transmission components are the ideal prerequisites to solve differential state-equations in time domain. Individual component models are designed and stored in the system and can be quickly exchanged for adaptation to different propulsion line configurations and ship types. The reporting facilities are intuitive, presentable and even easy to export to other standard software applications.

Benefits

Safe and effective ship operations

By combining the in-house knowledge of dynamic behavior of various propulsion drive line components with the SimulationX modeling capabilities, DNV is able to analyze and predict the torque response caused by heavy ice impacts on the propeller blades. The results from these simulations are of vital importance for the further static- and fatigue strength analysis of the same components in order to assess safe and effective ship operations in Arctic ice conditions.

»We are very pleased with the stability and user-friendliness of the program and the excellent technical support from the simulation engineers at ITI.«

Jonny Roaldsøy, Principal Approval Engineer, Machinery – DNV Maritime Technology and Production Centre, www.dnv.com

ITI Global ITI Headquarters • Schweriner Straße 1 • 01067 Dresden/Germany
www.itisim.com • sales@itisim.com • T + 49 (0) 351.260 50 - 0 • F + 49 (0) 351.260 50 - 155
SimulationX For your local representative please visit: www.simulationx.com/global