Title: DNV: New Initiatives Related to Classification of DP Systems

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Abstract

DNV: New initiatives related to classification of DP systems **Abstract** DNV: New initiatives related to classification of DP systems - Additional DP notations - New notation for Enhanced System Verification - New guideline for FMEA (This abstract was also submitted to Lew Weingarth 9/4-2010 by email) Abstract: New flexible and redundant DYNPOS notations: The traditional industry practice for redundant dynamic position systems is typically based on an approach where the redundancy is based on running machinery, thus not utilizing stand-by units or change over mechanisms. Typical examples of standards used are DNV DYNPOS notations and IMO MSC/Circ. 645 “Guidelines for vessels with dynamic positioning systems”. The new classification notation is related to redundant and flexible DP systems. The new rules are adapted to, and make it possible to better utilize the latest technology within power generation, power distribution, thruster technology and advanced integrated control systems in order to allow for flexible and efficient operation of the power and thruster plant. New IMO MSC/Circ. 645 corresponding DP notations: As a response to market requests, DNV is developing new DP notations customized to markets where the existing DYNPOS standard is considered to be beyond the actual need (e.g. operation in benign waters). New notation for Enhanced System Verification The “Enhanced System Verification” optional rules establish the generic requirements for an earlier, deeper, and broader testing of functionality provided by software based control systems. So far the generic requirements are specifying requirements for the Enhanced System Verification by use of HIL testing. The ESV rules refer to functional requirements established in other rule chapters like DYNPOS (dynamic positioning) and POSMOOR (thruster assisted mooring). The overall content of the HIL test package is also defined. New DNV guideline for FMEA DNV requires FMEA (Failure Mode and Effect Analysis) and FMEA testing for redundant ship system class notations like e.g. the redundant DYNPOS notations. As per today a lot of the FMEAs received by DNV are considered to be weak on items like: documentation of the redundancy design intent, separation, single failure identification, and analysis. As a response to this, DNV has arranged workshops with several major equipment suppliers and FMEA suppliers during 2008-2010 in order to propose a new guideline for FMEA of redundant systems. The aim is to provide a standard by the end of 2010 which can help to improve the overall quality of FMEAs of redundant ship systems.

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