

Marine Technology Society

Dynamic Positioning Conference

21 - 22, October, 1997

Session 7

Power Plant

Introduction to the Power Plant Session

By: Pete Fougere

Transocean (Houston)

Session Planner

Pete Fougere: *Transocean (Houston)*

Introduction to Powerplant Session

Dynamically positioned (DP) vessels generally have relatively large power plants for the vessel size compared to many other types of vessels. The power plant size for a DP vessel is driven by the environmental requirements, the hull form and the redundancy requirements. It must be able to support the specified worst case environment and vessel hotel load and other critical loads. A typical non self propelled drilling vessel that is moored might have a power plant of 6 to 8 megawatts, a DP vessel might have two or three times that. Recent designs have even larger powerplants, for example the drillship the Transocean Enterprise will have a powerplant close to 40 Megawatts.

After capacity the most important aspect of a DP powerplant is reliability. Early examples of DP vessels often had rich and diverse failure experiences. Today the design of new DP vessel powerplants benefit from the emphasis on the requirement for reliability, and from engineering tools such as the FMEA. Test programs support and confirm the design, manufacturing and installation.

Engineering a reliable DP powerplant includes a lot of disciplines and much effort is required to ensure that a comprehensive solution is achieved. The multiple engineering disciplines and the complexity of systems in redundant powerplants increases the opportunity for failure. The effort required to obtain excellence cannot be over estimated. For this reason several issues are attractive

- simplicity, KISS principle, within limits of DP Class being implemented
- testability
- maintainability

The authors for this session are:

Amrick Kallah, is currently Chief Application Engineer - Power and Propulsion for CEGELEC and has over 20 years engineering experience. He has a Masters and Phd from Salford University, Manchester, UK

James Warwick of Ascherl, Barr, Warwick and Associates has over 30 years experience in electrical system analysis. He has a Masters in Industrial Eng. from University of Houston, and a BSEE from University of Texas.

Mika Laurilehto is Manager of Application Technology with Wartsila. He has a degree in Naval Architecture and Marine Engineering from the University of Helsinki, Finland.

Roger Cornes of WAVESPEC has over 12 years experience with FMEA studies and audit of DP vessels, primarily in the North Sea. He has a Marine Engineering degree from Surry University, UK.

Pete Fougere of Transocean Offshore, Inc has over 23 years experience in the offshore drilling industry. He is currently Manager of Electrical Engineering, his work includes power plants, DP systems and multiplex BOP control systems. He has a Electrical Engineering degree from Wentworth College of Technology in Boston.