

Thruster Fast Phase Back to Prevent Blackouts and Promote Better Engine Utilization

Author: John J. May, P.E., *Transocean Offshore & Deepwater Drilling Inc.*

Abstract

The paper describes the thruster fast phase back, blackout prevention, and improvement of engine utilization for the three “Enterprise Class” Drillships constructed in Astano Shipyards and now working in the Gulf of Mexico.

A basic description of the power systems layout, arrangement, and load analysis is provided. The initial vessel operating procedures with respect to engine utilization is also presented. The paper describes the DP (dynamic positioning) power limit system and how it works with the drilling and other ships loads. Some KW and frequency trends with time are provided to demonstrate the power system’s response to an unexpected loss of a loaded engine, prior to the fast thruster phase back modification.

To improve the power system’s dynamic response for a worst case, loss of a loaded engine, a thruster fast phase back system was developed, installed, and thoroughly tested. The mechanics of the phase back system and its critical timing are highlighted with slides and actual trends of frequency and KW versus time. These trends were recorded in the commissioning and test the system for the worst case failure, an unexpected loss of a loaded engine. The expected operability and benefits of these systems such as improved engine utilization are also provided.

After the systems had been installed and commissioned additional benefits became apparent. These benefits are listed and highlighted in the closing summary.

[Click here to review the complete paper](#) ►

[Click here to review the Power Point Presentation](#) ►

[Click here to return to Session Directory](#) ►

[Click to return to the Dynamic Positioning Web Site \(General Proceedings Page\)](#) ►