

Title: **Methods of Reducing Frequency and Voltage Variations on DP Vessels**

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Abstract

This paper considers two methods for reducing frequency and voltage variations in the power distribution system of dynamically positioned vessels. The first method is called Dynamic Load Prediction (DLP) and in short uses predicted future load changes as feedforward to the vessel motor generator set (MGS) controllers. The second method is called Dynamic Load Control (DLC) and in short links together load control and station-keeping control in order to minimize variations of the former by accepting small deviations in the latter. By using these methods, frequency and voltage variations can be reduced such that the number of online MGS can be reduced without the risk of blackout. Reducing the number of MGS in turn results in reduced fuel consumption and emissions, as well as reduced maintenance of the engines.

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