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**Session 7**

**Power Plant**

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**Power Management**

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## Power Management

The primary reason for power management is to prevent load related blackout, by starting engines and connecting them on line automatically as load demands. Secondary reasons might include capacity management, machinery monitoring and logging for post-fault analysis.

There is much variation in how this function is executed. Some companies prefer that ship's engineer departments oversee this function by monitoring a engine control panel, albeit sometimes remote from where DP decisions are made. Other companies assign this duty to machinery monitoring and power management systems and the informed supervision of the DP operator. Much variation exists not only on the operator arrangement but also in the detailed philosophy of such systems. For example, most systems will start a prime mover, with some safeguards some vessels allow the power management system to automatically stop diesels or thrusters while others regard "stop" as a reserved for judgment by the system operators.

What ever philosophy is chosen there is a clear advantage to the application of "fail-safe" to the control system. That provides that any control system failure will result in a situation where control capability may be lost but no unplanned changes take place in the controlled system. This is not the same issue as redundancy. Power for the system should be via UPS, other securities such as redundancy may be appropriate. Any vessel power management system should be proven by test, referenced to documentation.

The DP system itself contributes to power management by anti blackout load limiting of the thrusters, allowing the power management system time to provide additional on line capacity, and by the consequence analysis feature which provides advice on capacity requirements.

A data logging system can add substantial value as part of the DP and power management system. This system can be thought of as a aircraft crash recorder. It must establish or recognize a common time base between its data gathering systems and it can provide valuable data for post analysis of events that often prove to beyond accurate real time observation and recollection of multiple observers on the vessel. A secondary function can be to provide a wealth of data for post operation performance analysis of the DP system and

