

RV DAGON PROPULSION & PMS UPGRADE

- Main Switchboard Rebuild
- Power Management System Replacement
- Vessel Automation & Machinery Operating System (VAMOS) Replacement
- Generator Control & Protection



RV Dagon is an oceanographic research vessel originally delivered in the early 1980s by Tacoma Boatbuilding Company, with primary electrical equipment supplied by General Electric Company. The vessel is currently operated by Inkfish as part of its fleet dedicated to deep-sea exploration and scientific research missions worldwide.

Within Inkfish operations, RV Dagon supports advanced oceanographic campaigns, including deep-sea sampling and deployment of scientific instrumentation at depths of several thousand meters, often in conjunction with submersibles and seabed lander systems.

MJR & ELSYS have been contracted to undertake the design, engineering, and supply of the propulsion system, the generator control and protection system, and the power management system (PMS), as well as the 600 VAC main switchboard and the 450 VAC switchboard, including the emergency 450 VAC switchboard and generator. The scope of work also includes the integrated monitoring, alarm and control system (IMACS), together with the 24 VDC and 115 VAC control voltage systems.

In late 2025 and early 2026, MJR and ELSYS carried out the installation and commissioning, at Astican Shipyard, Las Palmas de Gran Canaria, Spain, of the supplied system including:

- Full upgrade of the 600VAC Switchboard
- Full upgrade of the 450VAC Switchboard
- Full upgrade of the 450VAC Emg. Switchboard
- Full upgrade of the Propulsion System (DC motors)
- Integrated Automation & Machinery Control System
- New Extension Alarm System
- New Dead Man Alarm System

At the core of the system upgrade was the ELSYS VAMOS Vessel Automation & Machinery Operating System, installed in conjunction with an advanced Power Management System and Propulsion System. The image below illustrates the final configuration of the bridge console.



Bridge Console complete with replacement VAMOS 24" Colour LED Operator Station

Throughout 2024 MJR carried out the basic and detailed design of the upgrade, with manufacturing of the electrical hardware carried out at MJR Teesside, UK facilities and manufacturing of the automation system at ELSYS facilities in Vigo, Spain.

Design & Engineering:

- Single Line Diagram
- General Arrangement Drawings & Layouts
- Main Switchboard Electrical Schematics
- Short Circuit Calculations
- Protection Study
- Load Balance
- Harmonic Compensation
- I/O List
- Alarm List
- IAS Mimic Screen Design
- PMS System Design
- DC Drives Replacement

Class Approval:

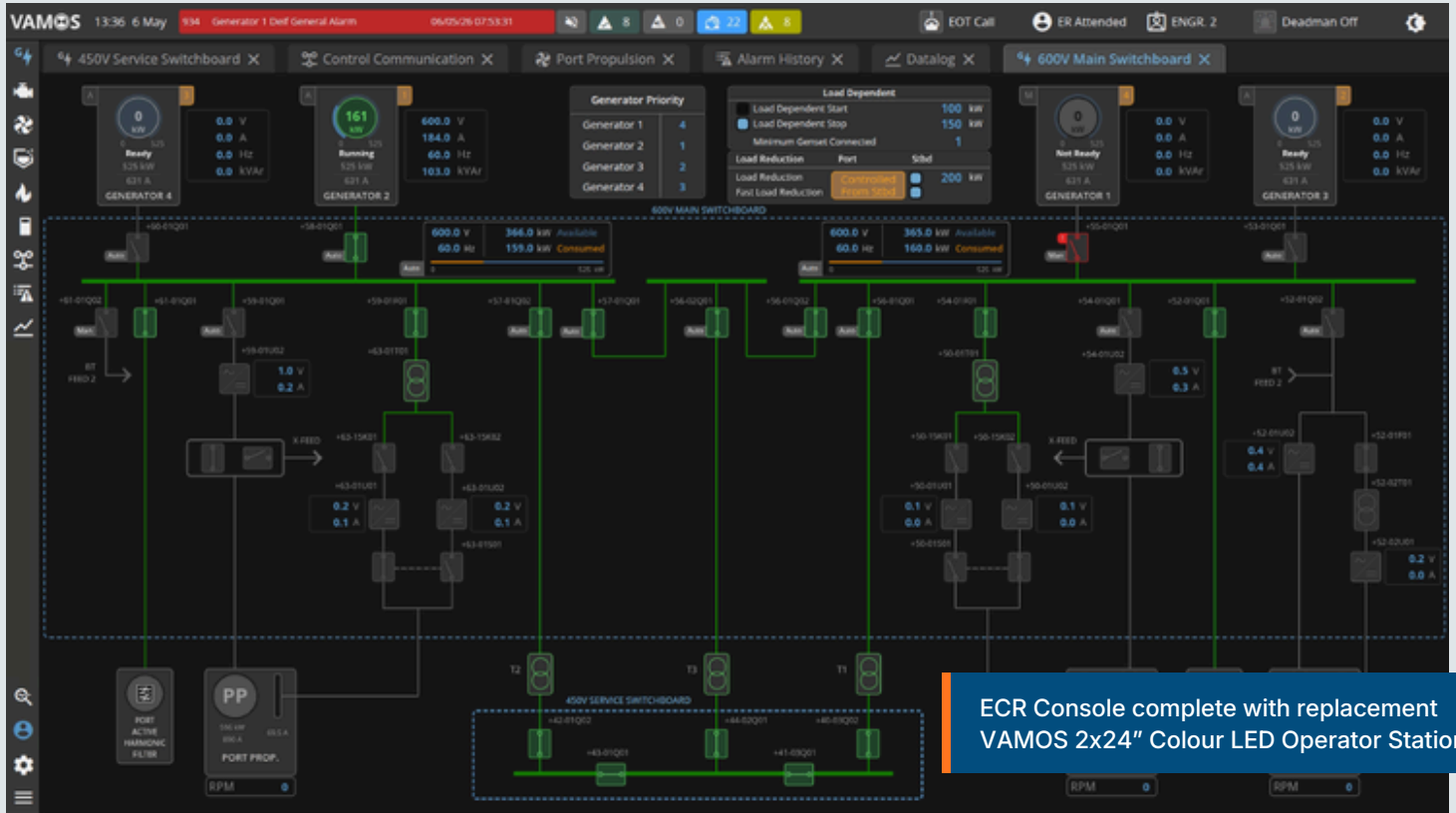
MJR were responsible for ABS approval of the full electrical power and automation design with FAT of the Integrated Automation & Machinery Control System and Power Management System carried out at ELSYS in Vigo.



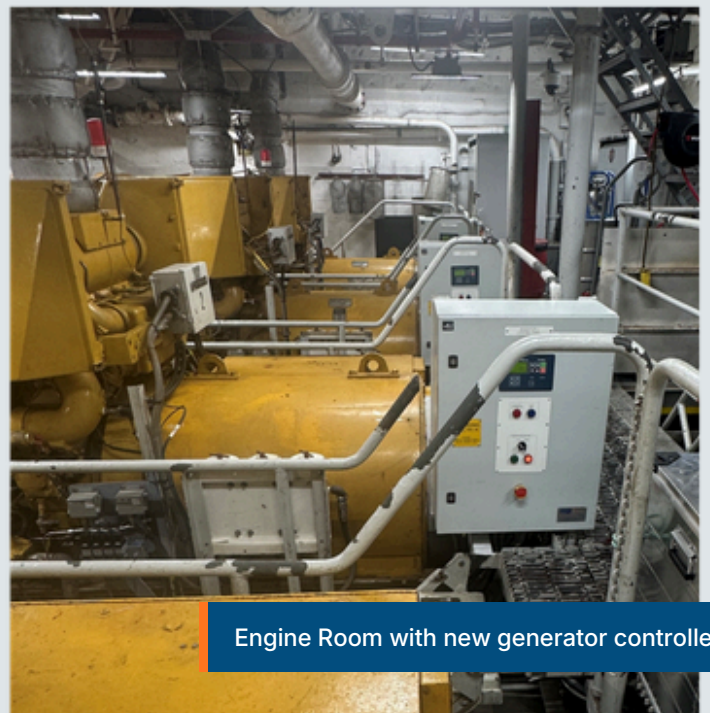
ECR Console complete with replacement VAMOS 2x24" Colour LED Operator Stations

Main Switchboard & Power Management System Upgrade

The existing 600 and 450 VAC main switchboards were originally operated manually. MJR/ELSYS upgraded the system to a fully automated, state-of-the-art configuration based on the VAMOS Power Management System (PMS).



Main Switchboard fully rebuilt with new PMS, instrumentation & controls



Engine Room with new generator controllers

Propulsion System Upgrade

The vessel's propulsion system was upgraded by installing new DC drives while retaining the existing DC motors and integrated the propulsion system with the vessel's automation system.



ECR Console complete with replacement VAMOS 2x24" Colour LED Operator Stations



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