

Case Study: 2000KVA Generator aboard Research Vessel



MV Western Patriot: docked at Loyang Offshore Supply Base: April 23, 2013.

This article will describe some recent Electrical Diagnostic Engineering that was performed in the generation spaces of a very important research vessel.



Background: Temperature alarms were triggered on one of the two 2000KVA shaft generators aboard the vessel. After discussions, the decision was made to put into harbor for diagnostics.

See the suspect Generator at left:



Occasionally, some motor repair shops have their skilled technicians poached by their competitors with promises of higher remuneration. EDE services are often required to re-train a new technician in motor testing. What better opportunity to do that than some onboard testing projects when a marine vessel is in port for some maintenance work?

That very scenario happened a couple of days ago when MV Western Patriot (a research and survey vessel) was docked at Loyang Offshore Supply Base, Singapore. The shaft generator was a AVK 2000 KVA (one of two on vessel) and it was running hot. Never passing up an opportunity, our customer wanted their fresh motor/generator technician to undergo “real hands-on” training onboard.

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A modern Surge/Hipot/Resistance motor tester was in the shipyard inventory, and was deployed by the Electrical Diagnostic Engineer. Surge testing revealed that the stator coils are showing signs of insulation deterioration and may fail at some time in the near future if allowed to operate in its present condition.

Summary: It was recommended that the stator in this generator be scheduled for reconditioning, before it could completely fail in service. In this case, a failure in service would reduce the capability of the vessel while at sea, and removed redundancy for generation. Loss of the second generator could have resulted in further risks. As an additional bonus, the motor/generator technician received the very best training possible, providing for better job and equipment performance.