



**Generator
Technologies**



Hybrid Marine Propulsion

Case History

VARD

Where:

Søvik, Norway

Specified:

2 x **AvK**[®] DSG 144 alternators and
3 x **AvK**[®] DSG 114 alternators

Purpose:

Hybrid power for the newly constructed
Skandi Iceman offshore vessel

AvK[®] alternators provide power in
VARD's hybrid marine system

When the hybrid power system for a customer's new oil and gas offshore support vessel required alternators, it was a natural decision for VARD to specify AvK. Over many years, VARD has come to rely on the Cummins Generator Technologies sales, order handling and application engineering teams for their high level of technical knowledge and quick response to requirements. On this project, VARD were impressed with a particularly swift response in support of final contract negotiations with VARD's end customer, DOF Subsea.

VARD won the contract, which was to supply the onboard hybrid power system for the Skandi Iceman, to be built at the Vard Søviknes shipyard in Norway. DOF Subsea's new Anchor Handling Tug Supply (AHTS) vessel is designed for offshore operation in the oil and gas sector.

AvK[®]



VARD supplied a rugged hybrid power system to ensure constant operation across the globe

In addition to the features of conventional platform supply vessels, AHTS vessels have winches for towing and anchor handling, and an open stern that allows anchors to be brought on deck.

The Skandi Iceman is designed to be deployable worldwide, and able to operate continuously in order to pay back its investment. The vessel's specification called for high speed, low fuel consumption, excellent manoeuvrability and stability. VARD ensured the overall power system achieved the internationally recognised DNV certification, while DNV Green Passport accreditation was provided by Cummins Generator Technologies.

DOF Subsea called for a number of modifications, which VARD and Cummins Generator Technologies collaborated on and successfully delivered. The automatic voltage regulator had to be in a separate box from the alternator, while a custom redesign of the alternator's external dimensions was required to fit into limited space in the machining room. Other bespoke work included oil supply and oil cooling of sleeve bearings, plus the locations of water connections and of power cable entry. The system benefits from IP44 enclosure protection with an air/water heat exchanger.

Because of the vessel's deck machinery and its Diesel Electric Propulsion (DEP) capability, including tunnel thrusters and acipod thruster, the power system had to be able to handle high load steps.



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Five AvK alternators provide reliable power to the vessel's hybrid marine power system

The DOF Subsea design called for a number of modifications, which VARD and Cummins Generator Technologies successfully delivered

And because the vessel would have to operate in heavy seas, its power system had to be rugged enough to cope with the demands of a harsh marine environment.

The Skandi Iceman has now entered service in the North Sea with all its design requirements met by a power solution built around five alternators. Two **AvK**[®] DSG144n/10W alternators function as shaft alternators for non-propulsive power – “hotel power” in marine terminology – and also for propulsive hybrid power. Three auxiliary generator sets fitted with **AvK**[®] DSG 114M1/8W alternators deliver power for the DEP system while manoeuvring, as well as power for deck machinery and the vessel's FiFi I-II specification fire fighting pumps. Between them, the two 5,500 kVA DSG 144 alternators and the three 3,000 kVA DSG 114 alternators meet the vessel's 20,000 kVA total power requirement.

For more information on Cummins Generator Technologies' **AvK**[®] range of alternators visit www.stamford-avk.com



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Part No.CS_MAR_VARD_P_EN_GS_01