

Prime power

> Case History
Bedarra Island Resort, Australia

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Where:

Bedarra Island, Great Barrier Reef, Queensland, Australia

What:

Fully integrated prime power solution incorporating three Cummins Power Generation (C200 D5) generator sets individually controlled by PowerCommand® digital paralleling PCC3100 controllers; all three generator sets are then controlled by an MC150 master control system

Purpose:

To provide continual, reliable power for the luxury resort

Primary choice factors:

Cummins Power Generation's ability to provide a total integrated solution of a turnkey prime power system

System solution powers paradise

BEDARRA ISLAND, QUEENSLAND, AUSTRALIA — One of Australia's most exclusive resorts, Voyages Bedarra Island on the Great Barrier Reef, now has reliable electricity supply following installation of a new state-of-the-art power system by Cummins Power Generation.

Each of the three new generator sets is providing a substantial relative fuel saving due to the technology incorporated in the fully automated, unmanned power station.

The previous power system at Bedarra, which used another manufacturer's gensets with a manually operated paralleling switchboard, had become unreliable and the resort was experiencing regular power outages.

Looking for a solution, Voyages — the travel company that operates Bedarra Island along with a number of other award-winning Australian resorts — approached Des Dykes, senior project engineer (electrical) for Bovis Lead Lease.

Turnkey prime power solution
Dykes was asked to evaluate suppliers and the solutions they could offer, and as a result Cummins Power Generation was chosen to design and install the new, fully automatic



The fully integrated power system utilizes three Cummins Power Generation generator sets, Cummins PowerCommand digital paralleling equipment, and a Cummins digital master control system which is integrated in a new paralleling and distribution switchboard.



power system, remote PC-based monitoring system, paralleling switchboard and site load distribution switchboard.

“The fact we were capable of carrying out the entire spectrum of work required in providing a turnkey prime power system was obviously a key factor in Cummins Power Generation being chosen for the project,” says Darek Zimnoch from Cummins Brisbane.

“We analyzed 12 months of load data from the previous power station before selecting the generator sets for the job.”

The fully integrated system utilizes three Cummins Power Generation C200 D5 generator sets and PowerCommand digital control technology.

The maximum power demand at Voyages Bedarra Island requires at least two of the gensets to be operational at any one time — one machine continuously running to supply the base site load, with the second to automatically come online during peak load periods — while the third genset is on standby in the unlikely event of any problems.

The three gensets automatically assume the continuous duty role on a rotating basis. This duty cycle rotation reduces the wear and tear on any individual genset that could occur due to excess usage in the duty role.

Challenging project

Cummins Power Generation was given a two-week window during the 2006 off-season to carry out the installation. It was unknown during development of the installation strategy in January 2006 that Cyclone Larry would devastate Bedarra Island on its way to the well-publicized demolition of Innisfail in March 2006. The resort was badly damaged, with reconstruction and all repair work taking until early August to be completed. For this reason, the timing of the power system installation work became critical to ensure the work would not delay the grand reopening.

The entire power station was preassembled at the Cummins Brisbane facility and representatives from Voyages and Bovis Lend Lease witnessed the system testing before it was shipped to Bedarra Island.

The radiators are remote-mounted units and are fully galvanized with polyurethane-coated cores to handle the corrosive environment. The fans are electrically driven to reduce the load on the generator sets, resulting in significant fuel savings. Additional Cummins Filtration fuel and bypass oil filters are also used to extend service intervals from 250 to 500 hours.

For more information about integrated prime power systems, contact your local Cummins Power Generation distributor or visit www.cumminspower.com.

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