



Prime power

> Case History

Mal Panakkukang, Makassar, South Sulawesi, Indonesia

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Where:

Mal Panakkukang, Makassar, South Sulawesi, Indonesia

What:

Five Cummins Power Generation 823DFJD generators powered by KTA38G5 engines, along with paralleling switchgear

Purpose:

With the mall open on all days of the week, four of the generators provide power required for lighting, air-conditioning, cold storage, the operation of escalators, etc., from 7 a.m. to 10 p.m.; another generator provides power from 10 p.m. to 7 a.m. for essential facilities such as cold storage and external lighting

Primary choice factors:

Product reliability, cost-competitiveness, suitability of the product for heavy-duty prime applications, effective service support

Prime power for shopping complex on Indonesian island facing power shortage

MAKASSAR, INDONESIA — The capital of South Sulawesi Province in Sulawesi Island has historical importance as its natural harbor. It was once the gateway to the former kingdom of Gowa and is now the point of entry to the whole province.

However, South Sulawesi faces a power shortage that hampers its economic progress. Estimates by experts indicate that there is a need to invest hundreds of millions of dollars in electricity generation in the near term, to sustain the GDP growth rate.

Opened in November 2002, Mal Panakkukang is a shopping center that serves the needs of the 1.5 million people of Makassar. Rising up to about 25 meters, Mal Panakkukang sits on a site of about 50,000 square meters, and its four levels provide approximately 84,000 square meters of retail space. It is owned by PT Margamas Indah Development.

Because the government utility is unable to supply the electricity, the building's entire requirement is being met by five 823DFJD generators with KTA38G5 engines from Cummins Power Generation. Each set is rated at 1,029 kVA.



Five Cummins Power Generation gensets are operated daily to provide power for the mall.



Paralleling switchgear ensure optimal use of gensets based on load requirements.

Four of the generators are operated daily from 7 a.m. to 10 p.m., to provide power required for lighting, air-conditioning, cold storage, the operation of escalators, etc., while one generator provides power from 10 p.m. to 7 a.m., for essential activities such as cold storage and external lighting. The mall is open every day.

The switchover between the generator systems at 10 p.m. is achieved in a very smooth manner. Firstly, the loads are deactivated manually, then the four “day” gensets are switched off one by one, and next the “night” genset is switched on, followed by the activation of the loads for the night. Similarly, at 7 a.m., the loads are deactivated, the “night” genset is switched off, while the four “day” gensets are powered up one by one, and then the loads.

“Although, in the context of the genset installations for prime power in South Sulawesi, there have been reports of malfunctioning and even burnouts, our emphasis on product quality, customer service and preventative maintenance assures the client of smooth operation,” said Mr. Hairuddin Halim of PT Altrak 1978.

All the gensets at Mal Panakkukang included control systems from Cummins Power Generation. The automatic paralleling system is incorporated in the generator control panel which was fabricated and supplied by PT Altrak 1978, the Cummins distributor in Indonesia.

The control system from Cummins Power Generation controls the generator set start and shutdown functions, facilitates automatic remote starting, controls the DC panel lighting and monitors engine performance.

Vibration isolators protect the control panel electronics and circuitry from generator set vibration. Rugged, non-fluctuating, and easy-to-read analog gauges display performance trends.

For Cummins Power Generation and Altrak, the key to successful prime power application is the high-quality after-sale service.

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“For Mal Panakkukang, this means we have to station one of our technicians at the site for the first year of operation. The technician undertakes routine inspections on a daily and weekly basis, and helps the shopping center staff to comply with the requirements of the Cummins manual,” Mr. Halim added.

A strict maintenance program ensures the efficient functioning of the gensets. This includes both preventive maintenance and schedules for the replacement of parts. Consumables such as filters (for oil, water and fuel) are scheduled for replacement after 250 hours of operation. In order to minimize downtime, the availability of parts such as the filters is kept at 95 percent, that of pistons and liners at 80 percent, and camshafts and crankshafts at 70 percent. Furthermore, the maintenance requirements for the shopping complex are forecast based on the operating times of the gensets.

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

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