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**Power
Generation**



Critical Power Test

Case History

Witness testing of a generator set

Where:

Cummins Power Generation (Kent)
United Kingdom

What:

A generator set built around a QSK78 engine on a 4 MW testbed surpassing ISO 8520 G3 standard performance.

Purpose:

Proving engine and generator set capabilities to an audience of key decision makers from customers and potential customers in the UK.

Witnessing the Power - Cummins Power Generation Test Days Make An Impression On Mission Critical UK Customers

The Cummins Power Generation factory in Kent in the south-east of England staged a series of test demonstration days for customers and potential customers recently. The witness tests conducted using a generator set equipped with a QSK78 engine proved to be good profile for Cummins Power Generation, and look likely to lead to product orders.

The first impetus for holding the test days came from a customer request made to distributor Cummins UK. With one customer potentially interested in testing new developments in the QSK78 engine, there was an opportunity to share test-time and bring in other customers and potential customers. Thanks to close co-operation between the Kent factory and Cummins UK, the idea was put successfully into action.

The QSK78 engine was of particular interest to customers owing to its power density. It has a smaller footprint than comparable products from other companies, and is 1m shorter in length than



The generator set was put through its paces and performed above the target standard



More than 20 people from 13 organisations attended the tests over a four day period

its closest competitors. It is also lighter in weight, making it more suitable to siting on a rooftop.

The 700,000 sq ft factory at Manston in Kent was the ideal location to stage the tests. The site brings in products from Cummins factories around the UK and the world, then assembles and tests them before they ship to EMEA and, increasingly, also to Asia.

Even at so well-equipped a site, it would not be a trivial matter to set everything up for the test. It would mean, for example, dedicating one of the factory's eight test cells for four days, which was a major decision to make since the test cells are regularly in heavy use - on a typical working day the plant tests six engines.

However, the potential benefits dictated that the tests should go ahead. An initial survey was sent out to find out visitor priorities, including whether they preferred to see the generator set running at prime rating or at standby - 3000 kVA and 2750 kVA respectively for the QSK78. It quickly became clear that most wanted to see it run at standby, which would represent the more stringent of the two tests.

The tests themselves required a dummy load to be applied to the generator set, using load banks that simulate real working conditions. For regular use the factory has load banks that go up to 3.3 MW, but for the witness tests a load bank that could reach 4 MW was set up. The test target was to see the generator set meet ISO 8520 level G3, the standard requirement of data centres, hospitals and other sites that need exceptionally high performance. As an extra challenge, where the ISO standard specifies G3 only needs to be met for a 30% load step, a higher target of 60% was set.

When the testing week arrived, Monday was used as planned for setting up. Then from Tuesday to Thursday tests were conducted for visitors in groups of three to six people at a time. Four-hour sessions were held each morning and afternoon. Guests were also offered presentations of Cummins capabilities, and a tour of the plant.

The witness testing of a Cummins Power Generation generator set equipped with a QSK78 engine attracted and impressed influential guests from organisations with mission critical power needs.

The attendees comprised both actual customers and potential customers, and included consultants and contractors who specify generator sets for major projects. In total over the four days more than 20 people attended from 13 organisations and companies, many of them concerned with large and critical applications at hospitals, data centres and banks.

The generator set was put through its paces and performed above the target standard, including handling the 60% load step. As a result of the successful testing days, Cummins UK has seen increased interest in the QSK78 engine and is close to securing its first order directly as a result of the tests. All sales will be handled through Cummins UK, supported by the factory.

The event would not have been possible without widespread support from all around the company, including people travelling from Columbus in the US to assist with the engine, and experts from Power Electronics to set up the modular 3.3 controller panel which was an important part of the overall assembly.

The tests as a whole highlighted what can be achieved by Cummins facilities in the UK and across the world when they come together to focus on a special project. Given the success of the test days and the interest they have raised, a similar event is likely to be staged at some point in the future.



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