



Eaton emergency rescue is a match-winning performance at South Africa football game

Location:

Nelspruit, capital of Mpumalanga province, South Africa

Challenge:

To provide, hours before a sold-out football match, an emergency service for Mbombela Stadium's four 400 kVA 9315 uninterruptible power supply (UPS) units, including the replacement of a failed battery bank on one unit.

Solution:

Eaton's service facility team, based 250 miles away, delivered and installed 140 replacement batteries on one of the four UPS units, which had suffered an unexpected battery bank failure, and carried out a service test on all of the units to confirm that the electric service was fully operational and there would be no power interruptions.

Results:

Eaton's team completed the battery replacement without any issues, carried out a service test and restored the power in four hours, two hours before the game kicked off.

"When the battery bank on one of the four UPS units failed unexpectedly only a few hours before a major football game, we knew we could rely on the Eaton team to respond quickly and fix the problem. Eaton's decisive action restored the power in good time and enabled us to proceed with this hugely anticipated match."

Roelf Kotze, Mbombela Stadium's manager

Background

South African Premier Soccer League rivals Black Aces Football Club, who play their home games in Mpumalanga province, and the Kaizer Chiefs from Johannesburg were due to meet for a competitive fixture at the 40,929-seat Mbombela Stadium on 12 April 2016. The sold-out match was scheduled to start at 7pm but on the morning of the game, the stadium manager Roelf Kotze was informed that the lighting was not functioning because the battery bank on one of the four uninterruptible power supply (UPS) units had failed unexpectedly at very short notice. At 10am, Eaton's service facility in Wadeville, Johannesburg, nearly 250 miles west of Nelspruit, received an urgent call to provide an emergency rescue of the electrical system.

In South Africa, mains power is generally not very stable and stadia usually run on diesel generators during matches and events to ensure sufficient and continuous power supply. In the case of Mbombela Stadium, the ground crew have to run the stadium's four generators an hour before and up to an hour after each game to ensure that all systems powered by the generators are working.

The UPS units were installed at the stadium to provide uninterruptible power in case one of the two generators used for power generation fails and one of the other two redundant diesel generators needs to take over. The UPS safely bridges the change-over period while the manual switching takes place. Double conversion technology ensures a high power quality is maintained for the stadium at all times.

Mbombela Stadium was one of the 10 venues used for the FIFA World Cup in 2010 and was completed in 2009. Eaton had installed all four of the UPS units after the stadium's completion and also assisted the stadium with routine maintenance and any minor technical issues that had occurred with the minimum amount of downtime over the intervening years. With these particular UPS units, Eaton had advised the client on the need to replace the battery banks and were in discussions to take this forward. However, due to an unexpected fault, the battery bank on one of the four units had failed prematurely and switched the unit off.



Powering Business Worldwide

Challenge

Eaton's service facility team would have to deliver and install 140 replacement batteries, each weighing 33 kg, and complete an emergency service for the stadium's four 400 kVA 9315 UPS units, including a service test to confirm that the electrical service was fully restored, a minimum of an hour before the match kicked off at 7pm.

To be safe, the stadium manager Roelf Kotze gave Eaton a 5pm deadline to complete all the work and fully restore the power before making a decision on whether to cancel the eagerly awaited match.

The immediate challenge for the Eaton's seven-man technical team was to check that its supplier had the 140 replacement batteries required to rescue the electrical system.

The shipment of 140 replacement batteries and Eaton's technical team arrived at Mbombela Stadium at around 1pm, leaving four hours to complete all of the work within the deadline.

Solution

On arrival, the team made its way to the UPS rooms, disconnected the faulty battery bank and had to remove the 140 old batteries before the replacements were installed and the battery links were connected.

The team took about an hour to dismantle the 140 batteries and remove them from the room so that they would not cause an obstruction. Once positioned on the battery stand and straightened up, the replacement batteries had to be connected up. The total time for the replacement was about three hours.

This left the team with an hour to undertake additional testing, including running the generators and checking the new batteries before handing the restored electrical system back to the stadium manager.

As part of the service, the team had to test the three remaining UPS units where the batteries had not failed during the morning test. The client needed to be reassured that all four UPS units would be operational without any power interruptions at any time.

Results

The team tested the working units between 4-5pm with the client present and was able to demonstrate that the electrical system was fully restored.

The restoration work was greatly helped by the experience of the Eaton team. By splitting the technical team into pairs to focus on the remaining units, the team saved valuable time, speeding up the process.

Once the restored electrical system was handed back to the stadium crew, the Eaton team remained until after the match had ended to ensure that no problems arose and there was no power interruption.

A very relieved Mbombela Stadium crew started the match on time and a packed stadium of rival football fans cheered their teams to a 2-2 draw without any power interruptions.

Despite a tight deadline, the Eaton team successfully completed the instalment, performed a service test and confirmed that the electrical service was fully restored. The emergency service meant that the stadium manager did not have to cancel a sold-out match.

"We have a long standing relationship with Eaton, which has been a reliable and trusted supplier ever since the company installed the UPS units in 2009," says Roelf Kotze, Mbombela Stadium's manager.

"When the battery bank on one of the four UPS units failed unexpectedly only a few hours before a major football game, we knew we could rely on the Eaton team to respond quickly and fix the problem. Eaton's decisive action restored the power in good time and enabled us to proceed with this hugely anticipated match."

For more information about Eaton's innovative technology and products please visit www.eaton.eu



One of the four 400 kVA 9315 UPS units, which provide uninterruptible power in case one of the stadium's two generators fails (Source: Eaton)



The stadium's lighting was not functioning because the battery bank (left) on one of the UPS units had failed unexpectedly. Eaton's team delivered and installed 140 replacement batteries and carried out a service test on all four UPS units (Source: Eaton)



In South Africa, mains power is not reliable and stadia usually run on diesel generators during matches and events to ensure sufficient and continuous power (Source: Eaton)

Eaton
EMEA Headquarters
Route de la Longeraie 7
1110 Morges, Switzerland
www.eaton.eu

© 2017 Eaton
All Rights Reserved
Publication No. CS083123EN
January 2017

Eaton is a registered trademark.

All other trademarks are property of their respective owners.