



BEATRIX POWER FAILURE IN FEBRUARY 2018

Case study

At 2am on Thursday, 1 February 2018, a tornado like storm destroyed the main and backup Eskom power lines that feed the shafts of Sibanye-Stillwater's Beatrix operations in South Africa's Free State province.

The result was a total power outage at the Beatrix 1, 3 and 4 shafts, and damage to critical technical equipment caused by the massive power surge. At the time, 1,291 mineworkers were underground.

This event was unique in the history of the South African mining industry, and the actions that followed to evacuate all employees as quickly as possible, served to highlight the professional and dedicated approach of Sibanye-Stillwater management and the world-class safety systems in place at the operations.

Sibanye-Stillwater is compliant with the South African regulatory requirement for a mine to have two fully independent sources of electricity in order to mitigate the risk of a loss of primary electricity supply and to provide back-up power so that employees can be safely brought to surface. All three Beatrix shafts are also equipped with diesel generators. The law requires the maintenance and testing of emergency equipment annually and our internal practice is that generators are tested monthly.

Back-up power was quickly restored by Eskom to Beatrix 4 shaft where 272 employees were safely brought to surface soon after the incident. Emergency generators were used to hoist a further 64 employees to surface at Beatrix 1 shaft during the early morning.

At Beatrix 3 shaft, the surge of power as the main supply lines short circuited down to earth, affected the generator and the software in the winder (a highly technical piece of equipment) and the 955 employees who had assembled at the shaft's waiting area could not be immediately brought to surface. Due to the surge-related damage, the generator was unable to reboot the winder software and despite bringing additional generator capacity from Harmony mines in the vicinity and from our Kloof mine, the software issues persisted, delaying the extraction of employees from underground.

All employees could have been evacuated at any time through the secondary escape way (in this instance, Beatrix 1 shaft where the generator was functioning and able to hoist employees). However, this option would have required employees having to walk approximately 3.5km underground while fatigued. While we deployed a large number of mine rescue personnel along the escape way route to provide assistance, in the interests of safety, it was decided by management that employees should remain in a safe and well ventilated area at Beatrix 3 shaft. In this location, we were able to communicate with our employees and provide food, water and medical assistance if required, while we attempted to restore power. In all, 1.2 tonnes of food and water was supplied to employees while they were underground. Waiting for the power to be restored was a considered decision, which proved to be the right one, and at no time were employees at risk.

Eskom finally restored power at approximately 2:30 am on Friday, 2 February 2018 – a commendable effort considering the extent of the damage caused by the storm. Sufficient power was then available to reboot the winder software and the remaining 955 employees were rapidly hoisted to surface.

Medical assistance and trauma counselling were available on surface. Only 16 of the 955 employees required attention for dehydration and relatively low blood pressure with a few cases of sprains and bruising due to employees jostling to get into the lift. All employees walked out of the mine unaided, despite being underground for over 30 hours – an indication of the conditions they were exposed to during that time.

At no point were our employees in danger and management was in total control of the situation throughout. After investigation by management and the Department of Mineral Resources, operations were resumed at the mine.

BEATRIX SHAFT SCHEMATIC

