New Structures

Strand tendons - Computer assisted jacking

Kusile Power Plant

South africa

General contractor
Hitachi Mitsubishi

Customer/Owner
ESKOM

Engineer
Freyssinet South Africa

Freyssinet subsidiary
Freyssinet Posten (Pty) Ltd

Others subsidiaries
Freyssinet Hebetec

Works period
Start date: January 2010
End date: July 2018

PROJECT DESCRIPTION

Fourth largest coal fired Power Station in the world. There are 2 Power Stations being constructed co-currently. Each Power Station will generate 4800 megawatts once complete. Eskom can currently supply 45000 megawatts. The new Power Stations will add over 20% to the grid. Medupi is estimated to cost R170 billion and Kusile is estimated to cost R122 billion.
At any given time, there are between 10 and 16 thousand construction personnel working on each Power Station.

FREYSSINET MISSION

Freyssinet is responsible for lifting the Grillage and all the internal pressure parts. From first lift to last lift could take anywhere from 18 month to 28 months depending on the main contractors progress. The lifts are separated into 9 sections:
Roof – 100 Tons
Grillage – 1400 Tons
Upper Buck-stays – 880 Tons (4 parts)
Vertical Walls – 600 Tons (4 parts)
Element Bundles – 2700 Tons (9 Parts)
Transition Pieces – 80 Tons (4 parts)
Lower Buck-stays – 800 Tons (4 parts)
Spiral Walls – 880 Tons (88 parts)
Hopper – 480 Tons (2 parts)
Freyssinet lifts a total of 7920 Tons of material into position on 1 boiler (Estimated).

We use 4 different types of jacks on the Power Station, a 10 Ton, a 40 Ton, a 70 Ton and a 400 Ton.
We use 1 type of pump that can handle up to 4 jacks at a time. It can also connect a single jack to multiple blocks increasing the speed of the jack.
We currently have over 200 jacks and over 30 pumps across both sites.