VANGUARD

Case Study

Power to the People

350-Ton Transformer Moved from Matimba Power Station to Medupi Power Station

When it came time to install one of the six GSU Transformers at the newly constructed Medupi Power Station, there was a slight issue in that it was not on-site at Medupi. The 350 ton transformer had been delivered to the Matimba Power Station a few years earlier for storage.

Matimba Power Station is located 7 km via national roads from Medupi. Typically, transformers of this size are carried on national roads using Nicolas beam trailers, but dispatching one of them to move this transformer only 7 km would not be feasible.

Vanguard stepped in with a solution to not only handle the transport of the unit but also the loading, offloading and positioning of the transformer in its final place, all of which was completed in less than two weeks.

Between the two power stations is a small conveyor bridge as well as a newly constructed bridge, over which loads of this weight had only been carried on beam trailer configurations. In order to lower the axle loadings and lessen the stress on the bridge, we had to employ more axles for the job, resulting in a 19-axle, 4-file PST trailer being used. To date, this is still the heaviest load moved on a single trailer configuration on national roads.

Hydraulic gantries were used to load, stage, and offload the transformer. And finally a jack and slide system was used to push the unit into position.

Cargo Details:

- Item: 900 MVA Transformer
- Weight: 350 ton
- Dimensions: 12 x 4.5 x 5 m

Vanguard Equipment Used:

- 500 ton Hydraulic Gantry System
- 19 axle, 4 file PST combination
- 10 axle, 4 file PST combination
- In-house designed Jack and Slide System
- Various stools and stands

**Note: This transformer is one of nine that Vanguard has handled for Siemens at both the Medupi and Kusile Power Stations.*

Scope of Work:

- Loading transformer at Matimba Power Station
- Transport 7 km between Matimba and Medupi Power Station
- Stage transformer on stools
- Lift transformer in 90 degrees orientation
- Carry forward to final plinth
- Offload transformer onto jack and slide rails
- Slide into position
- Position transformer using final alignment system