

CASE STUDY

New Lift Pump Station and Abstraction Work on the Banks of the Vaal Dam in South Africa

The project consisted of abstraction works located at the Vaal Dam, border Gauteng and Free State, South Africa, to augment the water supply for the region. The scope for Sulzer included a low-lift pump station and a high-lift pump station. All the equipment was supplied by Sulzer South Africa.



Construction for the high-lift pump station where Sulzer SM and HPDM pumps are installed.



Suction manifold to high-lift pump station.

The Sulzer difference

Sulzer provides support and technical advice from the very beginning of the project. Our experience makes us a reliable partner in supplying quality products that meet customer's requirements.

The challenge

The transport of large volumes of water over long distances requires pumps with a sturdy design that ensure reliable service and require minimum maintenance. Sulzer's experience and knowledge in dealing with such turnkey projects was beneficial and resulted in finding an optimal solution.

The solution

Low-lift pump station

The mechanical scope works of Sulzer (contractor) for the low-lift pump station comprised the design, manufacture, supply, delivery, installation, and commissioning of:

- overhead cranes and mechanical hoists
- 6 no. ± 700 kW SMV pump sets for the low-lift pump station
- actuated suction and delivery isolating butterfly valves, control valves for each pump line, and major pipework specials for all pump lines
- cooling and service water pump sets complete with associated valves and pipework
- sump pumps with associated valves and pipework
- ventilation systems and split unit air conditioning systems
- 6 no. 6.6 kV, 800 kW variable speed drives

The following equipment also for the low-lift pump station was designed by third party (employer), but manufactured, supplied, delivered, installed, and commissioned by Sulzer:

- 2 no. vertical pipe stacks (intake structure); each with 3 no. intakes through bellmouths
- intake pipe stack butterfly valves (intake structure)
- 2 no. intake and delivery manifolds complete with connecting pipework
- manufacture and supply mechanical equipment comprising maintenance gates, fine screens and grapple

High-lift pump station

Sulzer designed, manufactured, supplied, delivered, installed, and commissioned:

- 1 no. 30t EOT crane
- 8 no. pump sets comprising 4 no. ± 1300 kW SM suction booster pump sets
- 4 no. ± 6 MW HPDM main high lift pump sets
- actuated suction and delivery isolating butterfly valves, control valves, major pipework specials for all pump lines

- cooling water and service water pump sets complete with associated valves and pipework
- sump pumps with associated valves and pipework and
- ventilation systems and split unit air conditioning systems
- 4 no. 6.6 kV, 6 MW variable speed drives

Customer benefit

Sulzer engaged with the end client long before the launch of the project and was involved in upfront investigations. The long-term collaboration enabled Sulzer to assist in finding the most suitable solution to deliver water to the region.



Low-lift pump station



High-lift pump station

Contact

federico.bally@sulzer.com

Applicable markets

Engineered water, water transport

Applicable products

SM & SMV axially split casing pumps
 HPDM axially split casing pumps