Geiger

A brand of
Aqseptence Group

Thermal Power Plant with Seawater Desalination (MSF), Doha West

PROJECT-REPORT
Renewal of Seawater Intake at the Doha West Power Plant, Kuwait on behalf of the Ministry of Electricity and Water (MEW).

Challenge

Renewal of the machine technology on an existing plant. The replacement equipment was already supplied by Geiger® in 1980 and the machines have been in operation since then. The new machines had to be state of the art as well as mostly compatible with the existing machines of the pre-delivery.

Solution

In order to achieve a particularly high torque, Geiger® Travelling Band Screens were equipped with 2 geared motors on the drive shaft.
The design of the Traversing Trash Raking Machine (Mobile Cleaner) was transferred to the present day. Thus, both a new machine could be delivered and the existing machine could be extensively renovated and modernized.
The conversion at site took place in 2018 during ongoing operation over a period of two years, as only 4 channels (out of a total of 16) could be taken out of operation at the same time.

Technical Data

- 16 channels
- Channel width 5.5 m
- Channel depth 13.1 m
- Flow Rate per channel 35,000 m^3/h sea water

- 16 new bar racks 5.5 m wide, 5 m long, gap width 40 mm, bar profile 80x10 mm made of stainless steel 1.4404/1.4571
- 1 new Traversing Cable-Operated Bar Screening Machine identical in construction to the advance delivery for 5.5 m wide channels with on-board container and container lifting unit.
- 1 Complete renovation of the existing Traversing Trash Raking Machine,
- Renewal of all drives, gears, turned parts and other wear parts
- 16 new Geiger® Centre-Flow Travelling Band Screens, width 5.5 m wide, 3 m long with 60 roof-shaped mesh panels each, mesh size 6mm
- Special feature: 2 geared motors on the drive shaft. The machine can still be started at a water level difference of 0.8 m. The motors are controlled by variable frequency drives.
- 2 curved screens for wash water treatment, radius 1.75 m, width 2 m, bar spacing 6 mm
- Complete control technology
- Cathodic corrosion protection system with impressed current

Key Features

- Geiger® Travelling Band Screens in compact machine size with roof-shaped mesh panels (larger free area/stability)
- Intensive mesh panel surface cleaning due to highly efficient spraying system
- No permanent deposits on the chamber bottom due to the flow direction from inside to outside
- Less wear on the chains due to arrangement of the chain guide on the clean water side
- Highly effective sealing between mesh panels and chain guide
- Easily replaceable polyamide sprocket teeth
- Economical equipment of the plant with 2 Cable-Operated Bar Screens for cleaning up to 8 channels each
- Intelligent control of the Geiger® Cable-Operated Bar Screens which ensures that all bar racks are reliably cleaned when required
- Cleaner carriage with large-volume gripper and high payload capacity, as well as exchangeable comb plates
- On-board containers collect the cleaned screenings. An integrated additional container lifting mechanism and a hinged side wall on the container facilitate emptying at the unloading point
- The entire equipment is protected from the particularly corrosive seawater of the Gulf region by the proven Geiger® Cathodic Corrosion Protection System with impressed current

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