Project identification

Fast Track 3A Cooling Water Intake System

Type of project

Tender Design Services

Client

Afcons Infrastructure Limited

In co-operation with

Project assignment

Tender design services

Country

Malaysia

Location

Manjung Site, Perak

Project duration

2012-2014

Project phase

Completed

Construction cost

N.A.
(excl. VAT)

Consultancy fee

€ 50.000
(excl. VAT)

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Project description

A new 1 x 1000 MW coal fired power plant is to be built at Manjung site, Perak, Malaysia. This site is located on a man-made island next to an existing facility. The plant will utilize a once-through sea water circulating water system. The sea water intake is to be located approximately 1.8km offshore of the Island.

DAELIM has been awarded the construction of the new power plant. As part of the Scope of Works, DAELIM invited tenderers on a D&C basis for the offshore part of the cooling water system. The cooling water system consists of a combined intake velocity cap and offshore shaft, a 2.5km long, 5.8m diameter bored tunnel and an onshore shaft. The tunnel is to be constructed using EPB shield tunnelling. Also, the design of an offshore navigation marker is required. Afcons Infrastructure Limited approached TEC to act as their preferred designer for the Tender submission and to provide design services for the complete offshore system.

TEC's deliverables, whilst meeting the design requirements, enabled Afcons to submit a competitive price for the Tender package. TEC's design processes considered the preferred construction methods of and installation equipment available within Afcons to allow for a cost-effective approach to the design and ultimately construction costs. Alternatives were considered for comparison purposes and to meet design and contractor requirements.

Scope of work

TEC preformed tender design services for the following elements of the Cooling Water System:

- Launching and reception Shaft
- Bored Tunnel
- System Hydraulic Design
- Velocity Cap structural design
- Chlorination dosing system details and Offshore Navigation Marker.

The details of the tender design were presented to Afcons for their submission in a concise design report, along with tender detailed drawings, specifications and quantities.