

PROJECT OVERVIEW

RSGx, through acquisition performed the design of the Vuda ULP 2800m3 (Nominal) Tank. The project, located around 120Km's North West of Suva is one of 6 storage facilities in Fiji, with the main terminals located at Walu Bay and Rodwell Road in Suva and Vuda Point in Lautoka.

The D&C contract, for end client Total (Fiji) PTE Limited included the design, fabrication, erection, calibration, testing and commissioning of 2800 m3 (nominal) mild steel vertical tanks and was awarded to Sun Engineering.

Sun Engineering then partnered with RSGx to perform the design component of the API STD 650-2800m3 (nominal) ULP tank. This extended to the internal floating cover in the existing Vuda depot, complete with ULP tank invariants and in conjunction with the latest API STD 650 version.

SCOPE OF WORK

The carbon steel ULP tank was designed in accordance with the latest versions of API STD 650 references, Total Specifications and associated/relevant international standards (AS/NZS, ASME, ASTM, AWS, EN, ISO, NACE and NFPA). RSGx also utilizes the application of specialised software to carry out tank and nozzle design analysis.

RSGx's scope also included design of the following:

- Foundation
- Earthing
- Tank skirt and walkway
- Tank and tank structure
- Access systems
- P&ID
- Liquid levels
- Fire system
- Roof and ventilation

The following design conditions applied:

- Design Pressure: 0.5 kPa
- Design Vacuum: 0.25 kPa
- Design Temperature: 0 to 50°C
- Design Specific Gravity: 1
- Seismic Design Data: Peak Ground Acceleration 16.67%; Hazard Factor 0.25; Probability Factor – 1; Site Classification – Class B; Seismic User Group – SUG II, Importance Factor – 1.25
- Design Wind Pressure: 3248 Pa (AS/NZS 1170.2:2011) Regional Wind Speed 80 m/s

The construction of the storage tank was completed in November 2021.

SOLUTION

RSGx communicated strongly with both Sun Engineering and Total to deliver the design of the tanks and associated works to both party's expectations and requirements. RSGx provided a cost effective solution while not cutting quality, which was clearly demonstrated by the third party verification, which was passed on first inspection.

ACHIEVEMENTS TO DATE

The ULP storage tank design was third party verified by Bureau Veritas to the extent detailed of submitted drawings and calculations.

CLIENT SUN ENGINEERING

SERVICES PROVIDED ENGINEERING DESIGN

SCOPE

M&E DESIGN

INDUSTRY OIL & GAS

LOCATION VUDA, FIJI







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