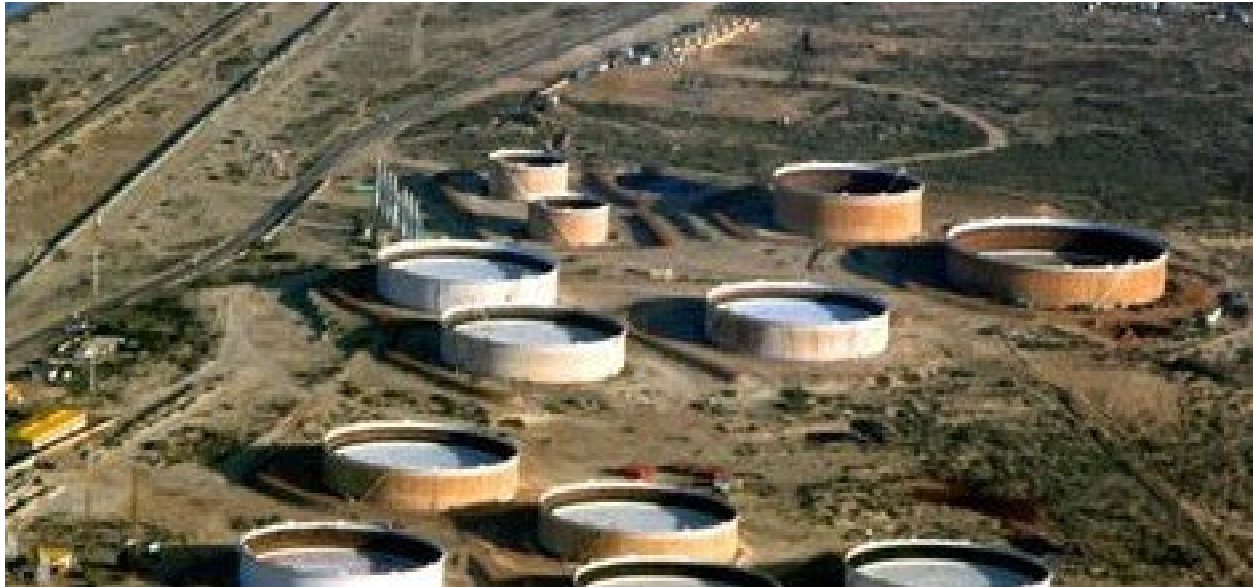

Zueitina Oil Terminal, Libya



Client: Zueitina Oil Company

The Zueitina Oil Company is a Libyan owned company based in Tripoli which carries out a whole range of oil operations. The company commercially produces 94,000 barrels of crude oil per day and 530,000 cubic feet of gas per day through the Intisar and EPSA oil fields.

The Zeuitina Oil Terminal is located 90 miles south of Benghazi on the Eastern edge of the Gulf of Sirte. The terminal is used to export 'Zeuitina Blend' crude oil. The export from the terminal equates to 20% of the total Libyan export of crude oil.

Incendia Consulting carried out the technical review to NFPA standards for the Fire Fighting System Upgrade project. The project involved the upgrade and enhancement of the existing fire system water supplies, fire water mains and fire fighting capabilities in the terminal.

The review encompassed an assessment of the existing and proposed new fire fighting capabilities at the terminal to cater for a major crude oil tank or

dike fire. The 17 tanks under consideration ranged from 66.0m to 109.0m diameter and 15.0m to 19.0m in height. The largest crude oil tank contained 1,000,000 barrels of crude oil.

Various worst case fire scenarios were reviewed including rim seal fires using rim seal foam pourers, full surface tank fires and dike surface fires using 7500lpm foam/water monitors. The rim seal pourers were connected to foam pumping and proportioning stations. A proposed new fire water ring main routed throughout the terminal would supply the existing foam stations and new foam/water monitors

Incendia Consulting developed a hydraulic model of the site's existing and proposed firefighting system, and developed the resource requirements for the extinguishment of the worst credible fire event.

A report was then prepared using latest international and industry standards as guidance to give observations on the existing fire protection system plus detailed analysis and recommendations for the required upgrades.