

Technically Speaking

Risk surveys and risk engineering, research, loss estimation, failure investigations, KRRIS risk rating system

Wind, Oil, Gas, Cement and Telecoms

Aden Refinery



Risk Survey

Despite the recent unrest, the refinery in Little Aden in Yemen has remained fully operational. Processes and technology have remained largely unchanged for several decades. Committed staff are very familiar with processes and procedures. International experience has resulted in the reduction of risks. CTt has recently completed a survey of the refinery with a rapid turnaround of the report. For more information contact: Doug.Scott@ctcplc.com



Kenya Ports

Liability Survey

CTt has recently undertaken a liability survey of Mombasa port owned by Kenya Ports Authority. Container traffic for the east African countries it serves has been increasing and new handling equipment requires well-trained operators to ensure accidents are minimised. More information: Richard.Radevsky@ctcplc.com

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Oil field construction in Iraq

Risk Engineering



CTt has started a programme of risk engineering for a plant being built at a rapid rate by a Chinese contractor in Iraq. The plant will receive oil well products and will separate oil and gas.

In operation, the oil will be pumped to coastal terminals and the gas will be used for power generation. The contractor is working with a largely Chinese workforce but with a number of staff of other nationalities. A high level of security is required from the point of arrival in Baghdad through to eventual departure. Around the construction site and accommodation security includes ditches, fences, barricades and check points. For more information contact Doug.Scott@ctcplc.com

Eastern European Wind Park

Failure investigation

Damage to wind parks most commonly results from mechanical failure, poor design or construction. The damage in this case resulted from transient high voltages circulating in two phases of the distribution network after the loss of the star point earthing resistor connection. Damage occurred to the substation protection systems including protection voltage transformers (as shown in the photograph). Circuit breaker and connection cables between turbines and substation were also damaged.



Understanding why this damage occurred required a detailed analysis of what happens to three phase systems under fault conditions. After careful investigation it was possible to tie together electrical theory with the damaged items. In a case such as this it is important to understand the role that electrical protection systems and equipment play in the operation of generator systems. For more information contact: Jeff.Ashman@ctcplc.com

Cement production in Pakistan

Pakistan's largest cement factory by volume has recently installed waste heat boilers and a steam turbine to further improve energy efficiency and reduce electricity imports from the grid. The original plant, which was a joint venture with the Canadian government, was commissioned in 1956 and has gradually been added to. It was built in a remote location as part of a new industrial area to make use of local coal stocks. Older plants at the site use wet cement technology and the latest use dry technology with preheat (as shown in the photograph).

CTt surveyed the plant as part of a programme covering cement plants, power plants, an oil jetty, a car plant and several polyethylene terephthalate (PET and fibre) plants. The survey programme was undertaken for one insurer to maximise the benefit from travel costs and time. For more information contact: Roger.Barrett@ctcplc.com

Risk Survey



Telecoms in Iraq

Risk Survey



CTt recently carried out a survey programme of mobile phone transmission stations in Iraq such as that shown in the photograph.

Sites have to be self sufficient in power. Careful design is essential when diesel tanks and batteries are stored near to electrical equipment.

For more information contact Roger.Barrett@ctcplc.com

Project re-start

Risk Survey



Sometimes circumstances dictate that projects are halted at short notice without the possibility of putting in place protective measures to preserve what has been built. During a recent survey of a partially completed gas plant being restarted in Nigeria, problems were seen with intrusion of vegetation and foundation movement as well as corrosion in places. The intended utilisation of the plant has also changed requiring a complex re-design process.

Documentation was poor or unavailable. Due to continuing civil unrest, access was by helicopter rather than road. When completed the plant will provide additional gas supplies into the Nigerian National Grid. For more information contact Doug.Scott@ctcplc.com

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Key Risk Rating Indicator System

Look out for KRRIS²