

Roads, Railways, Materials and Power Distribution

Charles Taylor
technical

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Technically Speaking is the newsletter for the technical team within Charles Taylor

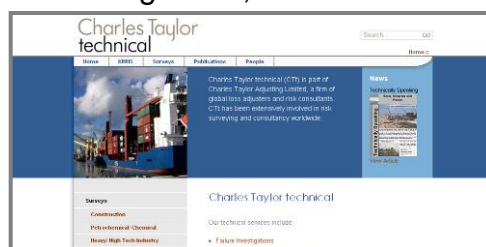
Major motorway in Algeria



A major new motorway is under construction in Algeria which crosses the country from East to West. This involves large numbers of multi-span structures which cross roads, railways, rivers, pipelines. The motorway passes near to towns, industrial complexes and through very varied terrain. A large workforce is made up of Algerian and Chinese engineers and workers. The schedule for construction is very challenging and sections of the motorway are being opened as they are completed. This is the first major civil engineering project built by a Chinese contractor that CTt has surveyed. It has provided an interesting insight into how extremely rapid progress can be achieved. For more information on Risk Engineering contact: Richard.Radevsky@ctcplc.com

New website: www.CTtechnical.com

To provide existing and potential clients with better information about what we do and how we do it, Charles Taylor technical has launched a new website. It offers information sheets on surveys of a range of industries, EML analysis, research, failure investigations, KRRIS and more.



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Technically Speaking

Transmission and distribution in El Salvador



One key subject covered by a risk survey is emergency preparedness. For most risks that CTt surveys, plans exist and emergency simulation exercises will have taken place. There is however nothing like a real event to put plans to the test. As a result of its location, El Salvador is subject to relatively frequent natural peril events. As a consequence, power companies have used their emergency plans in different circumstances enabling them to fine tune their responses.

Power utilities regularly encounter torrential rain, tropical storms, earthquakes and mudslides leading to equipment and building damage. Plans examined by CTt during a recent survey had been modified as a result of this experience enabling companies to recover their networks rapidly. Simple precautions such as moving vehicles and emergency resources to outlying areas limits localised vulnerability. Sub-stations are manned in strategic locations and several types of communication system are used in case one is knocked out. Close integration with government emergency response capability is important if early reconnection of power is to be achieved which is crucial for rapid recovery. For more information contact: Jeff.Ashman@ctcplc.com

New power in Middle East



Power demand in many areas of the Middle East is expanding rapidly particularly during periods of exceptionally hot weather when the temperature has been known to reach 60 °C. With many new air conditioned buildings being completed and new industries coming on stream, additional power plants are needed for supply to keep pace with demand. CTt was engaged to survey a major plant which will contain 15 gas turbines in open cycle. Some units were brought into operation soon after delivery. Work on a second phase will shortly commence to convert operations to combined cycle with the addition of steam turbines fed from the exhaust gasses of the gas turbine units.

More information contact: Richard.Radevsky@ctcplc.com

Cement production in Africa



CTt's technical expertise has recently been applied to a cement plant in a remote location in Africa. The site review was widespread and covered physical and machinery breakdown risks associated with cement production that occur in grinding equipment and the rotary kilns. The survey also looked at wider factors, including the delivery system for feed stock, explosives storage for mining; fuel storage, export systems and utilities – all essential for effective operation.

As normal, the survey looked at management systems, including operation and maintenance plus fire protection systems in place. Whilst a number of recommendations were generated these were based on what was possible given the site's location and the resources available.

For more information contact: Doug.Scott@ctcplc.com

New railway tunnels and stations for Stockholm

CTt has recently completed the first of a series of risk engineering visits to a major project taking place in the centre of Stockholm. Considerable care is needed to avoid damaging nearby structures as new tunnels and underground stations are being added to overcome a historic bottleneck in Sweden's railway network. At the centre of the project is a new immersed tube tunnel that is to be sunk across one of Stockholm's busiest stretches of water. Tunnel sections are currently being fabricated and towed across the Baltic then through rivers to the construction site. The project is programmed to be completed in 2017. The lengthy construction period allows time for work in



and around the existing railway networks whilst minimising disruption to passengers. The project has been divided into a number of sections being undertaken by several international construction consortia. For more information: Richard.Radevsky@ctcplc.com

Fertiliser production in North Africa



CTT's fertilizer production expertise was called upon by an appointment to survey an Ammonia/Urea plant in North Africa. This was an unusual assignment requiring an in depth assessment beyond the normal property damage, machinery breakdown and business interruption aspects. A detailed assessment of feedstock supply, utility systems and product export was also undertaken.

The result of a review of third party liability exposures were presented in the final report in the form of risk matrices, together with a description of the risk mechanisms plus exacerbating and mitigating factors. Computer modelling with proprietary software was undertaken to determine the dispersion of ammonia gas that could occur following a major leak in the storage facility. For more information contact: Doug.Scott@ctcplc.com

The technical team within Charles Taylor provides risk focussed technical expertise. Services include engineering, surveying, failure investigation, risk research and analysis. A worldwide capability is available drawing on the resources of the CTC Group. For more information contact:



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