

Case Study: Investing in safe, efficient lubricant handling, storage and delivery



Certas recently invested in two distribution warehouses
– *Downstream* brings you the equipment and safety set-up

On Saturday 18 March 1967, the bulk oil carrying tanker *SS Torrey Canyon* ran aground at Pollards Rock off Cornwall, spilling an estimated 32 million gallons of crude oil into the sea with disastrous results for human-life, marine-life, bird-life and numerous economies as far away as France, Guernsey and Spain. The repercussions have since seen all aspects of lubricant handling, storage and delivery remain firmly in the spotlight. Similar incidents down the years have kept the issue very much at the top of the agenda.

Every government has periodically introduced new legislation or amended existing legislation that seeks to make the oil handling industry safer while recognising and encouraging the expansion of activity that is inevitable in a successful, advanced economy, hungry for oil. Today, all companies across the UK that are involved in the handling, storage and delivery of oil have to meet stringent legal obligations in order to ensure safety for their staff, the public at large and the environment.

One company, Certas Energy, headquartered in Warrington, Cheshire, the largest independent fuel and lubricant distributor in the UK, has recently made significant investments in acquiring and equipping two huge distribution warehouse facilities located in Livingston, Scotland, and Kettering, Northamptonshire. The construction and installation of the new bulk storage tanks and heavy duty racking will enable the company to safely store and distribute more than one million litres of engine oils, gear and transmission oils, and hydraulic oils as well as cutting and soluble oils from major industry-leading

manufacturers such as Shell, Castrol and Gulf annually. The investments were made in preparation for an expected increase in future activity having successfully secured a number of new contracts.

To oversee the entire project at both sites, Certas commissioned Renfrew-based Trident Engineering Consultants whose wealth of experience of critical engineering projects worldwide would be utilised to draw up engineering specifications, appoint contractors and equipment suppliers as well as supervising the overall site installation and commissioning.

Edinburgh-based James Blake and Sons were appointed as the main contractor for the Livingston project and their objective was to supply, install and commission five 30,000-litre storage tanks at the Livingston site, each of which was to be equipped with all the necessary fill points, access platforms and gantry structures. Three of the five tanks are single compartment units while the remaining two are flexible dual-compartment units sectioned in a 50/50 arrangement. In addition, all tanks had to be fitted with heating elements and a loading platform where 1,000-litre Intermediate Bulk Containers (IBCs) are located for filling.

Although the project had a distinctly 'Scottish' feel about it, when it came to the 'discharge' equipment, Blakes had no hesitation in nominating Buckinghamshire-based Alpeco Limited as their preferred supplier as the two companies had previously worked together on a number of successful contracts where pump and metering equipment was required.

“The old saying that a chain is only as strong as its weakest link is indeed true but on these projects, every ‘link’ played its part.

Alpeco Limited is a supplier of liquid handling equipment to the petroleum road tanker and industrial petrochemical industry. With over 30 years' experience, their product range includes bespoke engineered pump and meter solutions for depot and plant, petroleum and chemical road tanker applications, and customised pump and meter solutions.

Following detailed discussions between the client, the main contractor and the nominated sub-contractors, the challenge for all involved was clear! Blakes fabricated and installed the new tanks along with a loading platform at the rear of each tank where the IBCs were to be positioned >

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for filling. The technical requirements were stringent: the loading system had to be easy to use, safe and clean in operation with minimal spillage and above all had to be capable of filling a 1,000-litre IBC quickly and accurately. The loading equipment supplied consisted of 2" LC M7 meters equipped with inlet strainers and TE550 electronic registers having temperature compensation which overcomes the issue of volumetric change in the delivered oil brought about by changes in temperature.

The electronic registers are programmed with multi-product names and densities for extremely accurate measurement, while a ticket printer provides a time and date stamped ticket which also shows a batch number, grade and quantity of oil loaded into each IBC. A 2" spring-balanced loading arm mounted on the top of a pipework riser incorporates swivel joints to allow articulation of the arm which enables loading of two IBCs consecutively when positioned side-by-side on the loading platform. The outlet of each loading arm is fitted with a stainless steel, spring-loaded check valve which closes automatically to prevent the contents of the loading arm discharging accidentally onto the loading bay area. Alpeco supplied the sub-assembled components to Blakes who completed the final assembly and installation at site.



The complex tank pipework is connected to a slow-running, high capacity RVP25 vane pump with close-coupled reduction gearbox and three-phase electric motor. This, along with the 2" low pressure drop loading arm and 2" Liquid Controls flow meter with electronic registration has produced a system capable of filling a 1,000-litre IBC with engine oil in under five minutes while benefitting from extremely quiet operation. Once the installation of the tanks and associated equipment was completed by Blakes, Alpeco returned to provide the essential on-site commissioning and operator training prior to final handover.



The success of these two major projects demonstrates that well-intentioned professionals can work together on highly technical installations that result in 100% success. The old saying that a chain is only as strong as its weakest link is indeed true but on these projects, every 'link' played its part and all proved exceptionally strong, especially given the fact that suppliers, contractors and site locations were so diversely spread.

The Kettering facility was virtually identical to the Livingstone installation except that the storage tanks were supplied by KORONKA. Both sites are now fully operational and are functioning as designed and intended, fully compliant with legislation and safe. ▯

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