

Complete Load Rack Solutions



Stolthaven Terminals — Newcastle

In late 2011, Marstel Terminals Pty Ltd released a scope of work specifications for the design, manufacture, installation, and commissioning of a four-bay gantry truck loading and automation control system that would fit the distribution needs of a diesel terminal. From the qualified respondents, Marstel considered Varec the right partner to design and deliver a complete load rack solution. This was due to the extensive industry knowledge and terminal automation experience offered by the local Varec employees as well as the capabilities offered from Varec's FuelsManager software.



During the design and engineering period, the scope of the project developed in complexity. This was due to the acquisition of Marstel by Stolthaven Terminals. Stolthaven have corporate requirements for instrumentation and safety systems that needed to be included in the scope. The scope also expanded to meet the specific requirements for two of the terminal's major customers — a global mining company and major oil company both operating in the local energy market.

In late 2013, the manufacturing of four truck loading skids that contained all measurement and control instrumentation required for efficient loading were completed. Varec personnel commissioned the first two skids and the terminal automation system on schedule and in time for the official opening. The second two skids were then brought online a month later — formally completing the project in June 2014.

Our Client

Stolthaven Terminals global network of terminals provides high quality storage and distribution services to customers worldwide. Its strategies include building new state-of-the-art terminals or upgrading existing facilities to meet the global and local market demand for safe, high-quality bulk liquid storage facilities. Stolthaven Australasia Pty Ltd operates, a network of 10 bulk-liquid storage facilities, five in Australia and five in New Zealand with a total capacity of approximately 259,950 cbm of storage.

Newcastle Facility Terminal Operations

One of Stolthaven's newest greenfield terminals is located in the Port of Newcastle in central New South Wales — Australia's largest coal export port and the gateway to the coal rich Hunter Valley. Officially opened in May of 2014, the terminal now serves the local market with the aim of improving local supply and reducing dependence on diesel fuel distributed from Sydney. It also anticipates meeting the growing demand for biofuels as a result of increased concern and regulation surrounding fossil fuels and climate change.

The terminal currently receives petroleum products from tanker ships. A dedicated pipeline that runs from the marine jetty to the terminal feeds the five diesel and two biodiesel storage tanks. Products is stored until it is loaded into trucks for delivery.



- The Varec Driver Entry Terminal interfaces to FuelsManager Oil & Gas Terminal Automation System to verify driver identity and control facility access.



- Each bay uses an FMC Technologies Smith Meter® AccuLoad® III to control injectors, flow meters, pumps and valves for blending, additive injection, and loading/unloading.



- Drivers are able to load using up to three Liquip® Load Arms simultaneously per bay. One bay provides two unloading arms for the receipt of additives to the terminal.

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Local Oversight from Design to Commissioning

The local Varec team provided all project management and oversight ensuring that project schedules and customer requirements were met. Varec worked closely with the Marstel Terminal's management team, the mechanical fabricator and electrical contractor during acquisition by Stolthaven Terminals. This demanded a level of scope management and flexibility at each stage of the project to ensure successful delivery.

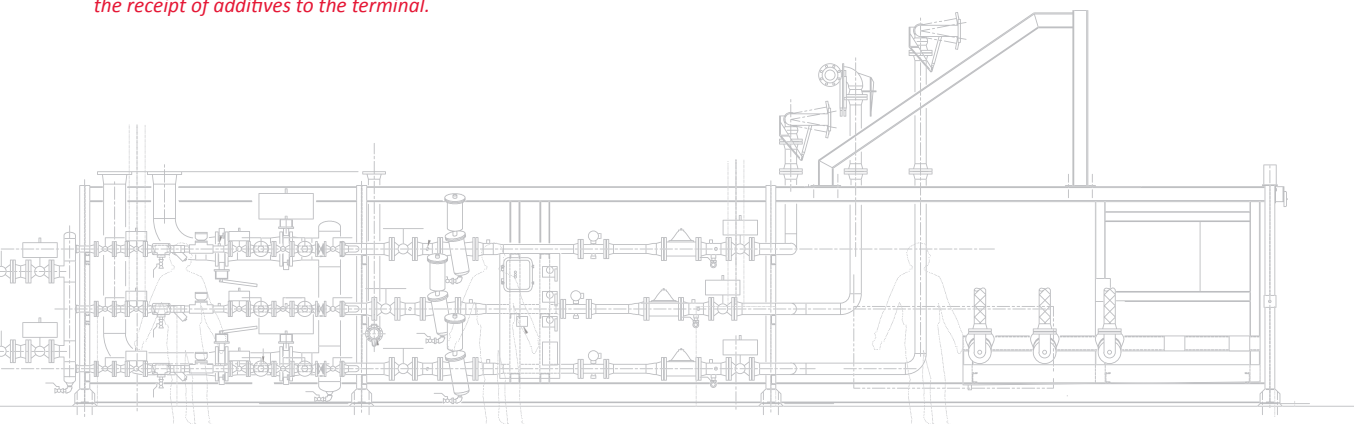
All mechanical and piping design was completed from Varec's corporate headquarters in Atlanta, USA. The design, selection, and purchase of the components was completed in parallel by the local Varec team. Every instrument, control, and safety device was selected from leading manufacturers based on proven capabilities and Stolthaven's application requirements. The final design specifications were then handed off to a local fabricator who manufactured and assembled the skids. After a factory acceptance test at the local fabricator's facility, the loading skids were shipped to the site. Stolthaven's mechanical and electrical subcontractors installed the skids in the loading bay ready for Varec's Engineers to commission and start up.

Loading Bay Operations

Each bay currently provides simultaneous loading using three arms. The driver is able to load specific blends of product directly from co-mingled storage based on customer specifications. One bay was designed for truck loading and unloading operations. When the terminal accepts receipt of additives two of the loading arms in the bay also unload products.

Future Blending and Additive Injection Capabilities

The initial scope requested a loading system with the ability to blend biodiesel, at the B5-B20 rates (5-20%), and provide additive injection. Varec, understanding the local energy market is continually developing in complexity, engineered each loading skid to explosion proof (IECEx Class 1 Zone 1) standards. This enables the skids to blend unleaded petrol products (ULP, PULP) if required. Each skid also has the capacity for five loading arms, allowing the terminal to upgrade each bay as future market demand and truck throughput increases.



Varec, Inc., 5834 Peachtree Corners East, Peachtree Corners (Atlanta), GA 30092 USA

Tel: +1 (770) 447-9202 | Toll Free: +1 (866) 698-2732 | Fax: +1 (770) 662-8939 | www.varec.com

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