

When you need to service a 106-million litres tank

Bibo pumps and generator will do the job

North Atlantic Refining Limited is operating a petroleum refinery near the small village of Come by Chance, in the Placentia Bay area of Newfoundland. This facility was originally built in 1972 and normal preventive maintenance requires the storage tanks to be taken out of service in order to complete inspections and any required repairs.

The Challenge

Crude Oil Tank No. 102 was being undergoing rehabilitation for more than a year. The project manager for NARL was concerned about the hydrostatic testing that needed to be completed before year end. Normally the company's fresh water system would have been used, but the summer of 2003 was unusually dry and the 106 million litres of water required would drain their existing reserves many times over, leaving the plant without water for fire fighting.

The Solution

It was agreed that sea water from Placentia Bay would be used to fill the tank and the intention was to dewater the tank via the same route. With the necessary approvals from the Department of Environment, Flygt engineers were asked to help with equipment selection. The critical path of the tank's re-commissioning was reviewed and 20 to 25 days maximum were allowed to complete the process.



The check valves and by-pass gate valves are installed just above the beach near the generator.

With a static head of 30 meters and a run of approximately 500 meters from the pump location to the tank inlet, two BS-2250 Flygt drainage pumps with 434 impellers were selected. The delivered flow would be 128 l/s with a TDH of 54 meters giving a filling period of 7 to 8 days. A 150 kW generator located near the beach would power both pumps.



BS-2250 being tied off from the mooring lines approximately 100 feet from the low water level. The pump flotation module, model PFM 200, is used to keep the messenger off the bottom. The 150 kW generator and tank in question is in the background.

Both pumps were suspended from individual PFM 1150 pump flotation modules and moored off shore. Parallel runs of 8" Oroflex 20 discharge hose were installed with HDL check valves located at the tank. It was decided to add additional check valves near the beach in order to prevent the loss of the water upstream in the event of a power failure. By-pass gate valves were added at this location to facilitate dewatering the tank.

Following the completion of the hydrostatic test, pressure was removed from the hose lines and the balls were removed from the check valves. The tank was allowed to drain by gravity flow while a BS-2250 was converted to high volume. It was then connected to the water draw-off nozzle and dewatering continued. Project duration was 22 days and was completed on time and on budget. Crude oil Tank No. 102 was repainted and placed back into service during the winter of 2004.

When you need to service a large tank, Flygt Bibo pumps and generators will do the job!



Both BS-2250's suspended from PFM 1150 pump flotation modules.

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