



REFERENCE LIST

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Rail Tank Car Unloading Station for Gasoline and Diesel, Northern German refinery

In 2011 MARCON got an order by a Northern German refinery for planning, delivering and construction of a complete new unloading system for rail tank cars (Turnkey).

The system was put into operation and handed over by the end of 2012.

The complete system consists of a 3-track tank car unloading area with dead-end tracks and a pump station positioned on a separately mounted pump plate. Collection pipes run between the tracks. They are embedded in trenches covered by grates.

The rail tank cars are emptied using unloading arms, which are positioned between the tracks in a way that allows rail tank cars on neighboring tracks to be emptied at the same time. The unloading arms are equipped according to the latest standard in sealing technology. Their swivel joints and spring cylinders allows an easy movement. Using product-specific fittings the product is fed into the collection main system for diesel and petrol.

The system is designed and built to enable a complete system drainage over separate drainage lines in case of a product change. The product is emptied directly into the tank petrol depot using the product-specific pump.

For redundancy and maintenance purposes, a backup system equipped with a filter, gas separator and product pump is installed. The product quality is continuously monitored using density measurement and product sampling. All vapours resulting from unloading are routed to a vapour recovery unit. The complete rail area and the pump station are designed as leak-proof collection pans. This entire area is covered with an anti-slip lighted grid.





Rail Tank Car On-Spot Loading Facility, Mozyr, Belarus

MARCON has designed, delivered, assembled and put into operation an ON-SPOT loading facility for tank cars in Belarus. The turnkey project was handed over to the customer in 2012.

The complete system is composed of a two-rail ON-SPOT loading system each consisting of two filling positions including the pump station, the vapor recovery unit and necessary safety and support systems such as fire extinguishing, instrument air generation, overpressure system for operator rooms, video surveillance and emergency drainage.

5 million tons of products can be loaded annually on two transit tracks. Using two shunting stations up to 32 tank cars can be moved and positioned on each track. Each sub-system consists of a reciprocating feeder buffer, a bumper towing system and a mechanism to allow the reciprocating feeder buffers to be pulled out.

All four filling positions are equipped with filling pipes and vapour discharge device. Each filling position is designed to load all five products separately or simultaneously. This ensures the highest possible flexibility. The provided vapour recovery unit (VRU) is intended to recuperate resulting vapour, ensuring environmentally friendly loading and product loss. On-track scales enable the direct registration of product quantities.

Highly efficient hermetically sealed and frequency modulated pumps transport product from tanks to loading stations. A stationary fire extinguishing system provides fire detection and foam extinguishing on filling positions. At the same time, uninvolved tank cars are automatically cooled with water mist. The automation consists of a redundant loading computer system, a redundant control system (controller and IO-modules) and a weighing system.





Rail Tank Car Series Loading Facility, Saratov, Russia

In 2008 - 2010, MARCON had planned, delivered, installed and put into operation the complete renovation and expansion of a series of facilities for loading petroleum products and facilities for unloading crude oil in Saratov, ordered by "OAO Refinery Saratov". In October 2010, MARCON handed over the facility to the customer.

The constructed facility is equipped with state-of-the-art machinery and meets all current requirements for environmental protection. The system allows to annually load 1,700,000 tons of heavy fuel oil (black-oil, Mazut), 1,900,000 tons of vacuum gas oil and to unload 750,000 tons of crude oil a year.

VGO and fuel oil can be loaded on the first track at 30 filling stations. Crude oil can be alternatively unloaded from below at 8 filling stations. On the second track, these 30 filling stations were equipped for filling with a product (VGO or fuel oil). Crude oil can be alternatively unloaded at the 8 filling stations from below. When loading or unloading, tank cars of different sizes can be transshipped.

To reduce the installation time, the automation systems and redundant instrument air generation devices were delivered in containers already fully assembled.

The movement and positioning of the tank cars within the facility can be performed either by the newly mounted shunter or by locomotives. A video system enables the monitoring of these operations from the operator's room. The discharge of crude oil, as well as Benzol and MTBE additives is performed by pumps to storage tanks and is monitored by the operator.

The system is equipped with an automatic fire extinguishing system. The complete fire protection system, including the water and foam tanks, pumps, and fire detection and extinguishing systems, is designed, built and put into operation by MARCON.





Tank Truck Loading Facility, Burgas, Bulgaria

In 2006 - 2007, MARCON had planned and delivered an automated tank truck loading facility for oil products to the customer "LUKOIL NEFTOCHIM" in Burgas. The tank truck loading system consists of 4 loading isles with a total of 8 tracks for Top-/Bottom loading of petrols, diesel products and jet A1. For the project a fully automated vapour recovery unit as well as a fire-fighting system was also planned and integrated.

The fire extinguishing system contains of a foam system for direct firefighting, a spray flood arrangement for cooling as well as smoke detectors in the service building.

The loading station is so designed that at all filling scaffoldings the different products can be loaded parallel. All products go through a gas separator-/filter station at the unit entrance. Mass sensors for each product are on the filling isles and serve the exact product amount. Product datas, measures and temperatures are registered by an evaluation unit (CMR) which is a component of the control system. All informations will be sent to the loading computer and the control system.

The control of the arrangement, the monitoring of all conditions during the loading process as well as the safety devices occurs about a free-programmable control (SPS) which is in the service building.

The steel constructions built up on the loading isles take up all functional elements which are necessary for the loading of a tank truck.

Folding stairs are arranged at the operator's level to allow the access to the tanker for top loading. Furthermore the loading platform display is arranged at the operator's level with card reading device for the product amount pre-selection.

The loading computer in the control building takes over all loading orders and characteristics, visualizes and recorded every loading process and provides necessary dispatch papers after end of the loading.



1 Loading and Unloading Systems for rail tank cars (RTC)

Customer	Location	Country
OAO Gazprom Neft, Refinery	Moskow	Russia
AO Transneft West Sibirien	Novosibirsk	Russia
OAO Gazprom Neft, Refinery	Omsk	Russia
PCK Refinery GmbH	Schwedt/Oder	Germany
Refinery – Unloading station	Northern Germany	Germany
TNK-BP (ZAO RNPk Refinery)	Ryazan	Russia
TNK-BP (OAO Refinery) – Serial loading	Saratov	Russia
TNK-BP (OAO Refinery) – On-Spot-Loading	Saratov	Russia
OAO Refinery	Mozyr	Belarus
TRM (Total Refinery Mitteldeutschland)	Leuna	Germany
MOL	Szajol	Hungary
Ruhr Oel GmbH	Scholven, Gelsenkirchen	Germany
Lurgi Life Science	Novy Urengoy	Russia
OAO “Sibneft Refinery“	Omsk	Russia
CPN Naftobazy	Malaszewicze	Poland
OMV (Deutsche Marathon)	Burghausen	Germany
Gdansk Refinery	Gdansk	Poland
CPN Naftobazy	Debogorce	Poland
MOL	Zalaegerszeg	Hungary
Tank farm Moorburg	Hamburg	Germany
CPN	Nova Wies Wielka	Poland
Refinery	Atschinsk	Russia
Neste Oy	Porvoo	Finland
Ufaneftechim, Refinery	Ufa	Baschkortostan
MOL (DKV)	Szazhalombatta	Hungary
MOL (TIFO)	Tiszaujvaros	Hungary
Leuna-Werke AG	Leuna	Germany
DEA Erdölwerke	Heide/Holstein	Germany
Slovnaft	Bratislava	Slovakia
Esso AG, Refinery	Karlsruhe	Germany
Erdöl-Refinery Emsland	Lingen	Germany
DEA Mineraloel AG, Werk UK	Wesseling	Germany
Mobil Oil-Refinery	Wörth/Rhein	Germany

2 Loading and Unloading Systems for tank trucks:

Customer	Location	Country
OAO Gazprom Neft, Refinery	Moskow	Russia
OAO Gazprom Neft, Refinery	Omsk	Russia
LUKOIL NEFTOCHIM	Burgas	Bulgaria
Ruhr Oel GmbH	Gelsenkirchen Horst	Germany
NIS Refinery	Pancevo	Serbia
Refinery Nafte	Pancevo	Yugoslavia
Refinery	Angarsk	Russia
PCK Refinery GmbH	Schwedt/Oder	Germany
Refinery	Atschinsk	Russia
Wilhelmshavener Refinery (MOBIL/BETA)	Wilhelmshaven	Germany
Erich Doetsch	Andernach/Rhein	Germany
OMV (Deutsche Marathon)	Feldkirchen	Germany
HOLBORN Europa Refinery	Hamburg	Germany
DEA Mineraloel (Caltex) – Tank farm	Raunheim/Main	Germany
CONOCO Mineraloel GmbH	Hamburg	Germany
BAYERNOIL Raffineriegesellschaft mbH	Vohburg	Germany
Esso AG, Refinery	Karlsruhe	Germany
Erdöl-Refinery Emsland	Lingen	Germany
DEA Mineraloel AG, Werk UK	Wesseling	Germany
Mobil Oil-Refinery	Wörth/Rhein	Germany
Benzinol	Bratislava	Slovakia

3 MARCON[®] Filling tubes (On-Spot telescopic filling tubes)

Customer	Location	Country
PJSOC Bashneft	Ufa	Russia
Flow Technics Sp. z o.o.	Nova Wies Wielka	Poland
PCK Refinery GmbH	Schwedt/Oder	Germany
OAO „Gazprom Neft” – Refinery	Omsk	Russia
TNK-BP (ZAO RNPk Refinery)	Ryazan	Russia
TNK-BP (OAO Refinery) – On-Spot-Loading	Saratov	Russia
OAO Refinery	Mozyr	Belarus
TRM (Total Raffinerie Mitteledeutschland)	Leuna	Germany
MOL	Szajol	Hungary
Lurgi Life Science	Novy Urengoy	Russia
OAO “Sibneft Refinery“	Omsk	Russia
CPN Naftobazy	Malaszewicze	Poland
OMV (Deutsche Marathon)	Burghausen	Germany
Gdansk Refinery	Gdansk	Poland
CPN Naftobazy	Debogorce	Poland
OMV Tank farm Lobau	Wien	Austria
MOL	Zalaegerszeg	Hungary
Petromidia	Constanza	Romania
MIDER-Refinery	Leuna/Spergau	Germany
CPN	Nova Wies Wielka	Poland
Refinery	Atschinsk	Russia
Neste Oy	Porvoo	Finland
Ufaneftechim, Refinery	Ufa	Baschkortostan
MOL (DKV)	Szazhalombatta	Hungary
MOL (TIFO)	Tiszaujvaros	Hungary
Enpetrol Refinery	Portolano	Spain
Esso AG, Refinery	Karlsruhe	Germany
Erdöl-Refinery Emsland	Lingen	Germany

4 Vapour Recovery Units (VRU's)

Customer	Location	Country
OAO „Gazprom Neft“ – Refinery	Omsk	Russia
TNK-BP (OAO Refinery) – On-Spot-Loading	Saratov	Russia
OAO Refinery	Mozyr	Belarus
LUKOIL NEFTOCHIM	Burgas	Bulgaria
OAO “Sibneft Refinery“	Omsk	Russia
Refinery	Angarsk	Russia
Refinery	Atschinsk	Russia
Ufaneftechim, Refinery	Ufa	Baschkortostan
TOTALFINA Germany GmbH – Tank farm	Kehl	Germany
Erich Doetsch	Andernach/Rhein	Germany
HOLBORN Europa Refinery	Hamburg	Germany
DEA Mineraloel (Caltex) – Tank farm	Raunheim/Main	Germany
BAYERNOIL Raffineriegesellschaft mbH	Vohburg	Germany
Esso AG, Refinery	Ingolstadt	Germany
Esso AG, Refinery	Karlsruhe	Germany
Shell Refinery	Godorf/Rhein	Germany
Mobil Oil-Refinery	Wörth/Rhein	Germany

5 Loading and Unloading Systems for ship's

Customer	Location	Country
Ruhr Oel GmbH – Hafen	Hafen Bottrop	Germany
DEA Mineraloel (Caltex) – Tank farm	Raunheim/Main	Germany
DEA Mineraloel – Tank farm	Brunsbüttel	Germany
Mobil Oil, Werk Wedel	Hamburg	Germany
Erdöl-Refinery Emsland	Lingen	Germany
Mobil Oil-Refinery	Wörth/Rhein	Germany
Omnitank (ERS)	Speyer	Germany

6 Automation

Customer	Location	Country
LUKOIL NEFTOCHIM	Burgas	Bulgaria
OAO „Gazprom Neft” – Refinery	Omsk	Russia
TNK-BP (PAO “LINIK”)	Lisichansk	Ukraine
TNK-BP (ZAO RNPk Refinery)	Ryazan	Russia
TNK-BP (OAO Refinery), Serial loading	Saratov	Russia
TNK-BP (OAO Refinery), On-Spot-Loading	Saratov	Russia
OAO Refinery	Mozyr	Belarus
LUKOIL NEFTOCHIM	Burgas	Bulgaria
Telvent Germany GmbH		Germany
Sasol Germany	Herne	Germany
Lurgi Life Science	Novy Urengoy	Russia
Total Germany GmbH – Tank farm	Kehl	Germany
OAO „Sibneft-Refinery“	Omsk	Russia
HGM Tanklager GmbH	Bremen	Germany
DSM Polyolefine GmbH	Gelsenkirchen	Germany
Gdansk Refinery	Gdansk	Poland
Ruhr Oel GmbH	Gelsenkirchen, Horst	Germany
Total Germany GmbH – Tank farm	Bremen	Germany
Total Germany GmbH – Tank farm	Düsseldorf	Germany
Total Germany GmbH – Tank farm	Kiel	Germany
Total Germany GmbH – Tank farm	Köln	Germany
MIRO (OMW/ESSO)	Karlsruhe	Germany
Total Germany GmbH – Tank farm	Duisburg	Germany
Flughafen	Warschau	Poland
NIS Refinery	Pancevo	Serbia
Petrol Ofisi - Tank farm	Aliaga	Turkey
Petrol Ofisi - Tank farm	Derince/Izmit	Turkey
Petrol Ofisi - Tank farm	Haramidere	Turkey
Flughafen	Bratislava	Slovakia
Rayong	Purifier	Thailand
PETS – Tank farm	Seefeld	Germany
Refinery	Angarsk	Russia
Chepro	Pilsen	Czech Republic
Hydrierwerk	Zeitz	Germany
Flughafen	Prag	Czech Republic
Nafta	Lendava	Slovakia

Customer	Location	Country
Tank farm Moorburg	Hamburg	Germany
PCK Refinery GmbH	Schwedt/Oder	Germany
Refinery	Atschinsk	Russia
Refinery Ufaneftechim	Ufa	Baschkortostan
TOTALFINA Germany GmbH – Tank farm	Kehl	Germany
Wintershall Erdöl-Refinery	Salzbergen	Germany
Erich Doetsch	Andernach/Rhein	Germany
Jugopetrol Belgrad	6 Tankläger	Yugoslavia
OMV (Deutsche Marathon)	Feldkirchen	Germany
Leuna-Werke AG	Leuna	Germany
DEA Mineraloel (Caltex) – Tank farm	Raunheim/Main	Germany
Esso AG – Schmierölwerk	Hamburg	Germany
BAYERNOIL Raffineriegesellschaft mbH	Vohburg	Germany
Shell AG	Rotterdam	Netherlands
DEA – Schmierölwerk	Hamburg	Germany
Esso AG – Refinery	Karlsruhe	Germany
FINA Tank farm (ERD)	Duisburg	Germany
Campsa	Madrid	Spain
Erdöl-Refinery Emsland	Lingen	Germany
DEA Mineraloel AG, Werk UK	Wesseling	Germany
Mobil Oil-Refinery	Wörth/ Rhein	Germany
Benzinol	Bratislava	Slovakia

7 Consulting / Engineering / Study

Customer	Location	Country
HES Wilhelmshaven Tank Terminal GmbH	Wilhelmshaven	Germany
TotalEnergies Refinery Mitteldeutschland GmbH	Leuna	Germany
PCK Raffinerie GmbH	Schwedt/Oder	Germany
Sasol Germany GmbH	Brunsbüttel	Germany
Sasol Wax GmbH	Hamburg	Germany
Cargill GmbH	Hamburg	Germany
OAO „Gazprom Neft“ – Refinery	Omsk	Russia
ZAO MARCON Terminal (Gazpromneft terminal) TKW Loading station	Kemerovo	Russia
ZAO MARCON Terminal (Gazpromneft terminal) KWG serial unloading station	Kemerovo	Russia
ZAO MARCON Terminal (Gazpromneft terminal) KWG Pumpenstand	Kemerovo	Russia
ZAO MARCON Terminal (Gazpromneft terminal) TKW Loading station	Novokuznetsk	Russia
ZAO MARCON Terminal (Gazpromneft terminal) KWG serial unloading station	Novokuznetsk	Russia
ZAO MARCON Terminal (Gazpromneft terminal) KWG Pumpenstand	Novokuznetsk	Russia
Refinery – Unloading station	Northern Germany	Germany
TNK-BP (ZAO RNPk Refinery)	Ryazan	Russia
TNK-BP (OAO Refinery) – Serial loading	Saratov	Russia
TNK-BP (OAO Refinery) – On-Spot-Anlage	Saratov	Russia
OAO Refinery	Mozyr	Belarus
Total Refinery Mitteldeutschland GmbH	Leuna	Germany
Ruhr Oel GmbH	Scholven	Germany
Ruhr Oel GmbH	Gelsenkirchen	Germany
Total Germany GmbH – Tank farm	Kehl	Germany
Hachez GmbH	Bremen	Germany
Ruhr Oel GmbH	Gelsenkirchen Horst	Germany
NIS Refinery	Pancevo	Serbia
PCK Refinery GmbH	Schwedt/Oder	Germany
Erich Doetsch	Andernach/Rhein	Germany