A New Efficient Tanker Loading & Unloading System

Techflow Marine’s Quay Reel® system offers significant improvements over conventional port and terminal fluid transfer systems such as reduced loading times, less dock space, increased safety and reliability.

Techflow Marine are a proven global supplier of fluid transfer systems to the oil, gas and petrochemical industries, delivering solutions to major blue chip companies worldwide.

Working together with an international petrochemical company Techflow Marine has developed a new, more efficient loading and unloading system that facilitated reduced loading times, less demurrage and sustainable future increase in volume.

The solution provided by Techflow Marine was a multi-product loading system that allowed simultaneous and safe loading of fluids to product tankers fulfilling the clients key project drivers.

The Quay Reel® loading and unloading system is based on technology already proven in the offshore oil and gas industry where Techflow has supplied over 1000 reels of this type, on over 100 separate projects. The equipment is often installed in extreme and harsh environments with some of the world’s toughest safety requirements.

For over 20 years this type of package has proved to be a safe, reliable and robust method of product transfer which is proven to reduce lifetime costs and improve hose life and integrity whilst providing a flexible, efficient loading solution.
Techflow Marine Quay Reel ®

Key Features & Benefits

- **Envelope & Footprint Reduction**
- **Envelope Size Reduction**
- **Footprint Size Reduction**
- **Minimises Spillage Risk**
- **Maintenance Reduction**
- **Reduces Operation Times**
- **Reduces Port Occupation**
- **Tanker Fuel Savings**
- **Reduces CO₂ Emissions**

**Hose Auto-Wind Feature**
Automatically deploys hose if vessel moves away.

**Suction & Delivery Hoses**
Custom made to suit product.

**Power & Control**
Hydraulic, electric or pneumatically driven.

**Raised Quay Reel Platform**
Bespoke design to suit site application.

**Wireless Control Unit**
Improves operator visibility & safety.

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Enamel & Footprint Reduction

- **Multi Loading Arm Arrangement New Quay Reel ® Loading System**

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**Marine Break-Away Couplings**
Weak link dry break couplings between hose sections.

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**PATENT APPLIED 14382336.7**
CEPSA Tanker Loading Case Study

This is the first system of its kind and was developed for multinational petrochemical company CEPSA in order to replace their existing loading arms. This project demonstrates Techflow Marine’s collaborative approach to developing bespoke products in line with customer requirements.

01. STARTING POINT
THE ‘REINA SOFÍA’ PIER IN HUELVA SHOWS SIGNS OF SATURATION

The increase in volume caused delays of up to 3,000 hours between 2010-2011. The port suffers delays when it operates at over 50% capacity. The impact of delays increases exponentially with occupation rates.

02. PREVIOUS
LOADING ARMS SYSTEM

Loading and unloading of tankers will no longer be viable in 2015 without a new system.

03. CURRENT
HOSE SYSTEM

Why do they cause delays?
- There are only two births for tankers
- Not all products are available at each birth
- Distant and rigid loading arms
- High loading times
- Limits on loading of combined products

Why is viability guaranteed?
- System untried in ports until now
- Proven robustness in all types of conditions
- Certified by classification associations

04. RESULTS
AFTER ROLL OUT

1. MAXIMUM SAFETY: MINIMIZES RISK OF ACCIDENTAL SPILLAGE

2. OPERATION TIMES ARE REDUCED BY BETWEEN 50% AND 60%

3. HUELVA REFINERY PORT FACILITIES OCCUPATION RATE IS REDUCED BY 20%

4. FUEL SAVINGS FOR TANKERS 400 T/YEAR

5. FUEL SAVINGS MEAN A REDUCTION IN CO₂ EMISSIONS -20%

NEW SYSTEM IN DETAIL

Hose System

- Suitable for working with 98% of existing chemical products.
- A system of 5, thirty metre long hoses
- Electro-hydraulic drive
- Activated by remote control.

Weak Link, the Key to Safety
- The new hose’s safety fitting system reduces any risks to a minimum.

Our innovative new system permits simultaneous loading of ALL available products, reducing loading operation times by 50-60%.

José María Cuadro Saéz
Director de Supply Chain de Petroquimica de Cepsa

Cepsa has patented the technology used in collaboration with Techflow Marine.
QUAYREEL®

flexible loading & unloading system

- MAXIMUM SAFETY
- SIMULTANEOUS LOADING
- REDUCE OPERATION TIMES
- REDUCE PORT OCCUPATION
- TANKER FUEL SAVINGS
- REDUCE CO₂ EMISSIONS

techflow marine

OFFSHORE AND MARINE SYSTEMS

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