BLACK POWDER SOLUTIONS
THE LEADER IN PIPELINE CORROSION AND EROSION MANAGEMENT

Case Study

LPG Loading Line
Targa Resources
Houston, 2016

Problem:

Traditional basket strainers designed for high flow LPG ship loading applications are inefficient in filtering Black Powder. High levels of Black Powder (10 microns and larger) cause basket screens to plug off with minimal volumes of black powder. The majority of Black Powder is below 10 microns to submicron in size, continues downstream with the LPG. The old basket strainer technology requires cleaning several times during the loading process causing costly downtime and demurrage penalties.

Variables:

Loading Arm:	16”
Volume of Flow:	10,000 GPH
Ship Size:	15,000-20,000 M3
Volume of Lube Oil	3.2 - 4,2 Million gallons on smaller ships
	20.2 - 40.2 Million gallons on larger ships

Solution:

The installation of Black Powder Solutions (BPS) Magnetic Separator technology into the existing basket strainers to clean the Black Powder from the LPG down to and below 1 micron.

Results:

The BPS Magnetic Separator holding capacity ensured loading of three ships was completed in under three days because it was not necessary to stop loading to clean the basket strainers. In excess of 6kg of Black Powder was captured during loading. The amount of contamination collected indicates the loading process would have shut down 3 times, resulting in 12 hours of downtime and extra maintenance costs. This downtime may have lead to demurrage penalties of $25,000 per day per vessel including the standby vessel.

Return on Investment (ROI): 3 DAYS + YEARS OF CONTINUED SERVICE

BPS Magnetic Separators are an environmentally responsible solution because they are a cleanable, reusable technology. This $14,000 unit has an operating life of 15+ years. The ROI resulted after the initial 3 loading days eliminating downtime and maintenance improving the reliability of the loading system by eliminating 9 cleaning intervals to 0. The cleaning was conducted during embarking and docking the next ship. This saved extended demurrage costs of $25,000/day/vessel and labor costs of $8,000.

Recommendation :

Install BPS technology before the inlet to loading facility to reduce the volume of Black Powder and protect the pumps, compression equipment and meters. By removing high levels of Black Powder from LPG, equipment is protected and production time increases. Furthermore, BPS technology helps provide a cleaner product and reduces displacement in the storage reservoirs on the boats.

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