

УДК 65.011.3:658

Z. Kilic

Neksan Karoser Company, Nevsehir, Turkey

FOREIGN EXPERIENCE IN QUALITY MANAGEMENT IN STORAGE AND TRANSPORTATION OF HYDRICARBONES

Today lagging behind in terms of technology and civilization, there are some countries with its oil and gas reserves in the world. These countries can not benefit from these resources effectively belongs to them. Therefore, some countries which have technological power, these underdeveloped countries are competing with each other as well as to create artificial terror in order to share oil and gas reserves, by abuse of the concept of peace. As it is commonly known that managing any construction and exploiting oil storage construction requires technical international accepted standards.

We propose to consider the productive experience of designing companies that construct oil storages in Saudi Arabia.

An important task in the operation of tanks is the maintaining the quality and quantity of the product. This requires maximum sealing of the draining process, loading and storing. The main share of losses from evaporation during the entire path of the oil from the field to refinery factories, directly at factories accounts for storage (oil industry quantitative irrecoverable losses are as follows: loss in the oil output industry - 4.0 %; refineries - 3.5 % in the transport and storage of oil and oil products tanks and oil pipelines - 2.0 %. Total 9.5 %).

Researches have found some methods to reduce evaporation in variables studies. Studying the impact of the different variables present in the evaporation of the product in a tank centered on calculating losses by evaporation with different configurations of tanks in different places. Researchers used a mathematical model using emission factors published by the US Environmental Protection Agency "Organic Liquid Storage Tanks." They then checked the result of this theoretical model by measuring the energy balance of the tanks themselves.

The most important variables were: ambient temperature, wind speed, tank type, type of seal, stored product, paint color.

Tank volume also affects evaporation, but to simplify the study, and since it is obvious that it will directly correlate with evaporation volumes, it was held constant.

Studying location's effects, or the effect of the average ambient temperature, solar irradiance, and wind speed in the various cities where the tanks are installed, required tank type and volume be held constant. The tank studied in each setting is an external floating roof tank, 80 m in diameter and 17 m high, with the walls painted white, containing RVP 10 gasoline, with a mechanical primary seal and no secondary seal.

The Huelva example uses a mechanical shoe seal without a secondary seal, resulting in losses of 31,703 kg/year, 81 % of which were caused by seal type. Installing a product-mounted seal with a secondary seal reduced total loss by 76 %, to 7,601 kg/year. Having improved seal efficiency, proposals focused next on reducing

losses caused by the floating roof's legs (52 %). Installing leg socks (polyurethane covers) closed the gap between the leg and the roof, reducing losses an additional 52%, to 3,663 kg/year.

Designing of any store tanks should contain followings:

Health safety and environment, (Consulting engineering responsibility).

Shop manufacturing control, (Cutting sheet metal, Sand blasting and Painting).

Procedure for welding, (Consulting engineering responsibility)

Procedure for post welding treatment, (Consulting engineering responsibility)

Field erection control, (Consulting engineering responsibility)

Method statement for internal and external coatings, (Consulting engineering responsibility)

Hydrostatic testing, (Consulting engineering responsibility)

Capacity and static control, (Consulting engineering responsibility)

The proposed system of assurance management provides an opportunity to significantly reduce the losses of firm-customer as at the stage of tank construction and in the course of their operation by reducing both the natural and excess losses of petroleum products. This can lead to decrease in the cost of storing oil and oil products, and as a result - to decrease in prices for the final consumers of the oil products.

References

1. American Petroleum Institute, "Manual of Petroleum Measurement Standards," Chapter 19.2, Evaporative Loss from Floating-Roof Tanks, 2011. – 320 p.

2. American Petroleum Institute, "Manual of Petroleum Measurement Standards," Chapter 19.1, Evaporative Loss from Fixed-Roof Tanks, 2011. – 286 p.

3. Грудз В. Я. Технічна діагностика трубопровідних систем: монографія. / В. Я. Грудз, Я. В. Грудз, В. В. Костів, В. Б. Михалків, О. С. Тараєвський, Д. Ф.Тимків – Івано-Франківськ: Лілея-НВ. – 2012 – 512 с.

4. Грудз В. Я. Енергетична безпека держави: високоефективні технології видобування, постачання і використання природного газу: монографія. / В. Я. Грудз, Є. І. Крижанівський, М. І. Гончарук, А. В. Козлов, Р. М. Кондрат, М. А. Мислюк, Ю. Т. Разумний, І. Й. Рибчич, І. М. Фик . – К.: Інтерпрес ЛТД. – 2006 – 282 с.

5. Семенцов Г. Н. Основи моніторингу технологічних об'єктів нафтогазової галузі: навч. посіб. / Г. Н. Семенцов, М. М. Дранчук, О. В. Гутак, Я. Р. Когуч, М. І. Когутяк, Я. В. Куровець; Івано-Франків. нац. техн. ун-т нафти і газу. – Івано-Франківськ. – 2010. – 808 с.