Question 28: In light of IMO (International Maritime Organization) 2020 and the potential for shipping intermediate streams from refinery to refinery, what are your plans to ensure H2S specification in the vapor space is met, either at the shipping or receiving point?

STEVE WILLIAMS (Marathon Petroleum Corporation)

- Movement of intermediate streams from refinery to refinery has been a common practice, including movement of heavy oils. This activity is expected to increase following implementation of the IMO 2020 rules reducing the sulfur content in maritime fuels.

- In recent history, following the more widespread use of personal H2S monitors, the exposure potential that these streams and associated handling operations presented became more apparent.

- This data initially surfaced from the various means of asphalt handling from refiners to terminals/docks to customers.

- The goal is to maintain consistent workplace exposures below 10ppm H2S in the breathing zone for all transfer activities.

- Depending on the method of transportation, various means of mitigation and elimination of exposure potential was explored. These included various methods of vapor recovery, fan systems and remote gauging methods.

- While these systems provided some mitigation, they did not provide the desired reduction in exposure potential.

- In parallel with these system trials, the direct injection of chemical H2S scavengers was explored.

- These scavengers proved to be the most effective means of achieving the exposure potential reduction goals.

- Since this testing, scavengers have been used extensively in asphalt product and various intermediate stream transports with consistent results.

- While the scavenger addition increases the cost of production, it has proven to be the only means to consistently reduce the exposure potential.

- Several types of H2S scavengers are available from various chemical vendors. MPC has chosen a Zinc based scavenger based on the speed of reaction H2S and overall effectiveness.

XIOMARA PRICE (SUEZ Water Technologies & Solutions)

H2S HS&E requirements can be met by hydrotreating the intermediate streams, stripping them or chemically treating it with an H2S scavenger. If hydrotreating and stripping are not feasible, chemical treatment is the next available option. Chemical suppliers can provide guidance on how to effectively treat to meet the specification depending on the amount H2S present in the intermediate stream.

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IMO

Naphtha Hydrotreating

Operations

Safety

Year

2019

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