Downgrading Diesel Fuel for Highway and Nonroad

November 16, 2004

OVERVIEW

- Downgrading diesel fuel for both the Highway and Nonroad programs
- How the programs interrelate
- Specific Issues for terminal operators
- Sprague Energy's experience

HIGHWAY FUEL

- Diesel Sulfur Highway Rule concerns:
  - There will NOT be a sufficient amount of 15 ppm diesel available.
  - Much greater chance of accidental contamination particularly in the first year of the terminals transition to the lower sulfur product.
- Therefore, the regulations provide that each year, the terminal may downgrade 20 percent of its 15 ppm to be sold in a range above 15ppm but below 500ppm (for highway purposes).

HIGHWAY FUEL
(continued)

- The market assumes a significant economic spread between 15 ppm and 500 ppm; thus no terminal operator would have any incentive to downgrade.

HIGHWAY FUEL
(continued)

- The 20 percent limitation may become a difficult and very costly restraint with which to comply.
- If a terminal finds that more than 20 percent 15 ppm of its diesel fuel is contaminated, the volume above the 20 percent limitation must be downgraded to nonroad, locomotive or marine (including heating oil).

NONROAD, LOCOMOTIVE OR MARINE

- Under both the Highway and the Nonroad rules, 15 ppm diesel can be downgraded to Nonroad without limitation.
- Because it takes only a little higher sulfur material to contaminate a large volume of 15 ppm, a terminal may need to locate a place to store contaminated fuel.

NONROAD, LOCOMOTIVE OR MARINE (continued)

- Downgraded product raises several issues:
  - A terminal may not have sufficient storage and may have to store at another facility.
  - If the terminal has tankage available, the use of this additional capacity, which may have been originally dedicated to other fuels, may result in terminal inefficiencies, impose unanticipated costs and disrupt operations.
  - The terminal may have firm commitments to customers for highway fuel.
    - If a significant volume is downgraded, it may have difficulty in meeting those obligations.

NONROAD, LOCOMOTIVE OR MARINE
(continued)

- A terminal operator has to plan for such contingencies, particularly - available excess tankage.
- Plan now -- not when the problem of excess contaminated material arises.

Sprague
DEMAND MORE THAN SUPPLY

COMPANY'S EXPERIENCE

- My company, Sprague Energy, headquartered in Portsmouth, NH supplies petroleum products throughout the Northeast.
- Sprague has been supplying Ultra Low Sulfur Diesel fuel since 2000 and currently markets the product from multiple terminal facilities.
  - Typical ULSD specification = 15ppm.

COMPANY'S EXPERIENCE
(continued)

- From the onset our goals were to:
  - Maintain product integrity throughout the supply chain
  - Meet our contractual obligations with our customers
  - Develop operational efficiencies in all areas (product handling, safety etc.)
  - Meet the guidelines required by OEM's and emission control device manufacturer
- Based on our research at the time we determined that it would be difficult to use common infrastructure -- pipelines, barges, lines, tanks and trucks to supply ULSD.
- We elected to segregate the ULSD product from the dock to the loading rack:
  - Tank storage
  - Fuel lines
  - Pumps and hoses
  - Delivery transports

COMPANY'S EXPERIENCE

(continued)

- We made a substantial capital investment to create a dual system.
- Throughout the entire distribution system we worked to ensure the product's integrity including:
  - Refiner/supplier
  - Shipping and barging
  - Tank storage systems
  - Terminal pipelines and loading racks
  - Delivery transports
- Additionally, we worked with our customers to clean and segregate their storage and distribution facilities.

COMPANY'S EXPERIENCE
(continued)

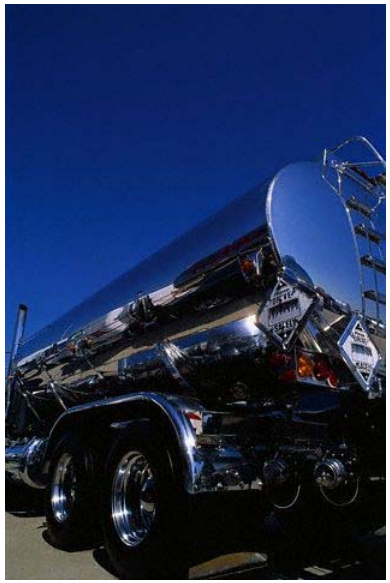
- The timing requirements for this effort varies from facility to facility.
  - Ranges from few weeks to months
  - Proper planning will help to streamline this process
- Initial cost incurred in handling segregated product will be offset as ULSD volume increases
- The project has been very successful.
- Operations have worked extremely well – we have experienced no contamination.

COMMON INFRASTRUCTURE

- If a terminal chooses to rely on common infrastructure -- barges and pipelines, lines and hoses, it must address these issues:
  - Anticipate contamination and downgrade of product;
  - Availability and cost of additional tankage;
  - Cost of transporting downgraded fuel, if available storage capacity is off-site;
  - Ability to meet obligations to customers to provide highway fuel if too much fuel is contaminated.

SINGLE TERMINAL

- This discussion has generally focused on the operation of a single terminal.
- A facility could have:
  - Two entirely separate storage and distribution systems to accommodate diesel fuel with different sulfur contents.
  - It could use common infrastructure for both 15 ppm and 500 ppm products.



SEPARATE TERMINALS

- A terminal operator could dedicate one terminal to 15 ppm and another to 500 ppm.
  - When contamination occurs and product is downgraded, it could be moved from one location to another.
  - The transportation cost would have to be factored into the original decision to operate in this manner.

TRACKING

- Finally, when product enters a terminal, it is tested batch-by-batch to determine if the sulfur level is accurate.
- Tracking downgraded fuel adds a reporting requirement to the normal Designate and Tracking of fuel moving through the facility -- from flange to gate.
- A terminal must account for downgraded material and properly identify its sulfur content and use -- highway or nonroad, locomotive or marine.

CONCLUSION

- Contamination and resulting downgraded product is likely to be a significant factor in any terminal operator's decision on how to establish operations.