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Halliburton Company
ENERGY SERVICES GROUP

REGULATORY AFFAIRS DEPARTMENT

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Halliburton Company is a cargo tank manufacturer and a shipper and private carrier of hazardous materials operating in excess of 1,000 DOT Specification Cargo Tanks in our U.S. Operations. Our transportation activities are done in conjunction with services provided to the energy industry at oil/gas well sites.

Halliburton is now beginning its fleet transition from MC 312 Cargo Tank Motor Vehicles (CTMV) to DOT 412 CTMV. Halliburton has invested time and money in the search for materials that will tolerate a corrosive environment and meet the requirements of the DOT 412 series code.

The design process for our 412 series cargo tank has been in motion since 1990. We have found a few suppliers that were willing to work with us to develop components that meet the requirements of the DOT 412 series code and have an acceptable service life in a corrosive environment. We have been instrumental in the development of a spring loaded relief valve to meet all the requirements as well as the 1995 no leakage requirements. Because of the unique design and special metal components used in these valves, their cost is approximately 3 times the cost of normal valves used in a non-corrosive environment and the valves must be replaced periodically due to corrosion damage at a great expense to the company.

However, we currently can not fully meet the requirements for the DOT 412 high level indicator as specified in 49 CFR 178.345-12 and 178.348-12. Below is a brief history of the search for an indicator and the problems we encounter in our services with the inclusion of the high level indicator.

1. A capacitance type indicator was considered. This seemed to be a good choice since its accuracy was independent of density. The fluids we carry in our transports can vary from 0.80 to 1.20 specific gravity. The main problem is that the metallic probes would need to contact the fluid to produce the indication. This would prevent the indicator from having an acceptable service life. Another problem with this type of indicator is that the fluids we transport contain

surfactants which causes them to foam. The probes would indicate the foam and not the payload.

2. A sonar type sensor was considered. This seemed to have good possibilities, since the internal parts would not need to contact the payload to indicate the level. The metallic internal parts would not have a long service life due to the fact that the vapor phase of some of our payloads is more corrosive than the liquid phase. Another problem was the foam on top of the payload. The sensor would again indicate the foam and not the payload.

3. A signal damping type sensor was considered. This device works by a probe in the tank that carries a magnetic vibration device. When the payload touches the end of the probe the signal is dampened and a switch completes a circuit. Once again the sensor would indicate the foam rather than the payload. The probe is 304 stainless and will not have an acceptable life in a corrosive environment.

4. A search was done to see what other manufactures are doing to meet the high level requirements. A manufacturer of DOT 406 and 407 trailer stated that they were using spew tubes for high level indication. This does meet all the requirements. The sensor is independent of density, it will ignore foam and can be made of corrosive resistant materials. The main problem is spewing corrosive liquids such as hydrochloric acid is not acceptable.

5. A float type indicator can be made of materials that will have an acceptable life in corrosive liquids. The main problem is due to the different densities of the fluids we transport, the buoyancy of the float will be different and therefore will not meet the accuracy requirements (0.5% of the nominal capacity of the tank). We have been working with a supplier to develop a sensor constructed of Ultra High Molecular Weight Polyethylene (UHMW-PE). This unit will have an indefinite service life, but the accuracy can be +/- 2.0% of the nominal capacity of the tank. This would be the worst case in our service.

Halliburton Company has safely operated its MC-312 fleet to date without high level indicators. Our materials are pre-measured before loading and the loading process is visually monitored by an inspector wearing the appropriate protective equipment in order to eliminate the possibility of overfilling. In addition, our fluids are primarily corrosive liquids with low vapor pressures or non-hazardous materials, eliminating a concern for sufficient outage considerations for fluids with high vapor pressures as would be the case for DOT 406 and 407 CTMV. Halliburton Company MC 312 and DOT 412 CTMV have design pressures below 15 psig and do not transport flammable liquids.

For these reasons, Halliburton Company respectfully requests a rulemaking change to the requirements for DOT 412 series CTMV as stated in 178.348-12.

Listed below are two options for the rule changes requested by Halliburton.

A. Halliburton requests that RSPA change 49 CFR 178.348-12 to except DOT 412 CTMV, with a design pressure below 15 psig, from the requirements of 49 CFR 178.345-12.

B. Halliburton requests that RSPA change 49 CFR 178.348-12 to read as follows: For CMTV with a design pressure less than 15 psig any gauging device must conform to 178.345-12 except that the gauging device indicates that maximum permitted liquid level to within +/- 2.0% of the nominal capacity of the tank.

Respectfully,

James McLauren Ferguson
Compliance Specialist

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