

designated Government agency and shall be free of gross contamination and visible free water, maximum of 8.0 mg/gallon solids and free water not to exceed 2 ml per quart for aviation fuel systems.

3.4.2 Fueling System Piping

The flushing of system pipelines shall be accomplished by pumping fuel from one storage tank through the fueling system piping. After high-speed flush of main system piping, all piping laterals shall be flushed with at least one refueling truck (5,000 gallons) of fuel. Air shall be bled from system high points. The procedure shall be continued until the fuel being delivered into the tanks is acceptable to the Contracting Officer. After the main piping system has been flushed to the satisfaction of the Contracting Officer, and periodically during the flushing operation, the Contractor shall flush all high point vents and low point drains for a minimum of 10 seconds at a pressure of 30 psig. Remove any accumulated water from storage tank sumps and bottoms. Strainers shall be kept clean in order to insure maximum flow rate. All accumulated material from the strainers shall be reviewed and identified, including source if possible. Upon completion of the first flushing operations, the cone strainers shall be removed from the system. In addition, baskets from all strainers shall be removed and cleaned.

3.4.3 Pier Piping

Pier piping ~~and loading arms~~ should be hydrostatically tested with fresh water per the applicable specification. After testing, flush piping with fresh water at 12 FPS for 30 minutes. The Contractor will be allowed to use Government-furnished hoses. Drain all water from piping system and refill with product. Perform flushing with product at 12 FPS for 30 minutes.

3.4.4 Piping Flushing Checklist

The Contractor shall generate a comprehensive matrix of all new piping sections in the system. Matrix shall serve as an Owner's piping inventory and a checklist for all Contractor-provided flushing operations. Column entries shall include pipe section name, location, diameter, approximate length, flushing fuel velocity and volume achieved and acceptable results of sampling.

3.5 CLEANING, TESTING, AND SAMPLING

After the completion of the initial flushing, and all new piping shall be cleaned in accordance with the procedure specified hereafter. The intent of this cleaning operation is to remove trace solids and water from the system.

3.5.1 Preparation for Cleaning

Filter elements shall be installed in the filter/separators. Adjust filter/separator flow control valve. Valves and equipment removed for flushing shall be reinstalled. Cone strainers shall be removed. Tanks shall be drained, vapor freed and cleaned per the tank cleaning specification. Transfer the contents from one storage tank to the other through the filter/separators for the purposes of cleaning.

- e. Tank gauging system.
- f. Fire detection/suppression system performance (if AFFF system is used, do not test into tanks).

Ensure certified strapping charts are provided to the Contracting Officer. Demonstrate all other tank features and functions per the applicable specifications.

3.8.3 Transfer/Delivery Systems Demonstrate the following features:

- a. Manual start/stop pushbutton control.
- b. Pump shutdown upon no-flow condition signal from flow switch,
- c. Pump shutdown upon signal from remote EFSO switch.

3.8.4 Marine Fueling Systems Demonstrate the following features:

- a. Performance of loading meters and verification of proper calibration.
- b. Performance of filter/separators.
- ~~c. Loading/unloading arm function and operating range.~~
- d. Stripping pump operation.
- e. Operation of vents, drains, air eliminators, and hose connections.

Verify correct installation of piping expansion loops and supports. Verify electrical isolation between pier piping and ship. Verify that pier piping thermal relief system is properly installed.

3.8.5 Truck Fillstands

Demonstrate the following features:

- a. Manual start/stop pushbutton control.
- b. Static and continuity ground verification (with actual ground/continuity readings) and overflow prevention system.
- c. Control valve deadman control, surge shutdown, and pressure control features.
- d. Issue meter performance and preset controls.

3.8.6 Satisfactory Performance

In the event a portion of the system or any piece of equipment fails to meet the test, the Contractor shall make the necessary repairs or adjustments and repeat the Performance Test until satisfactory performance is obtained. Measured flow rates should be within 5 percent of design. Tank level gauging and alarm measurements should be within 5 percent of design. Any component found not to be working as specified shall be