SUGGESTED FOAM SYSTEM TESTING (BLADDER TANK WITH TEST HEADER)

1. If bladder tanks are not filled, fill per ANSUL Bladder Tank Manual or Ansul representative instruction.
2. Prepare refractive index standards (2%, 3%, & 4% samples) and generate refractive index curve for testing foam discharge samples
3. Prior to testing make sure all valving on bladder tanks are in the correct position. All 1" vent, fill and drain valves are to be closed. Hydraulic actuated concentrate valve to be closed (1/4" connection not used is to be left open to vent air). Concentrate isolation valve to be closed. Slowly open the water inlet valve to pressurize tank.
4. Connect hoses to test header. With water only flowing, adjust hose valve to establish the desired system test flow. (Note: Recommended system test flow for closed head system is typically at the low end listed flow rate for the size proportioner being tested.) Shut down system valve without closing the adjusted hose valve and reset system valve for test actuation. If using a containment truck for the foam solution, attach discharge hoses to truck. A test sample valve (1/4" minimum) is required in the discharge piping somewhere between the proportioner and the containment truck. NOTE: Spraying or pretreating the truck tank with a defoaming agent is recommended to prevent nuisance foaming in the truck tank during testing.
5. Once the bladder tank has been filled and hose valves have been adjusted, one zone is selected for foam discharge. Personnel is required to be stationed at test sample valve to take sample of foam discharge, and at the bladder tank to shut the foam concentrate once the foam sample is taken. Communication between these two persons is important to minimize concentrate used.
6. Once everyone is in their positions, trip selected zone and thirty to forty-five second after foam appears from the test valve take a sample of the solution discharge. Shut concentrate isolation valve as soon as the samples are taken. Check refractive index against the standards that were made in step #2. If sample was low, retest. When sample tests OK, shut down test valve and change over to other risers that need to be tested repeating procedure.
7. After system tests are completed, refill bladder tank if required and return valves to their normal operation positions. On the main tank, the hydraulic valves needs to closed (this has to be done manually), the water inlet valve and the concentrate isolation valves are to be in the open position. On the reserve tank, all tanks are to be in the closed position as this is a reserve supply to put the system back in service quickly after a discharge.

Note: Containment and disposal of the foam solution is the responsibility of others.

BLADDER INTEGRITY VERIFICATION PROCEDURE

1. Isolate the bladder tank from the system by closing both the Water Inlet and Concentrate Isolation Valves. Drain water from the tank shell by opening shell drain and shell vent valves.
2. Transfer remaining foam concentrate in bladder to 55 gallon drums or some other container.
3. When tank is completely drained, the valves on the bladder tank should be in the following positions:

Water Inlet Valve	Closed
Concentrate Isolation Valve	Closed
Tank Shell Drain Valve	Closed
Tank Shell Vent Valve	Closed
Bladder Vent Valve	Open
Bladder Drain Valve	Open

4. Using a Wet/Dry shop vacuum of 2 HP minimum, attach the vacuum hose to the tank shell vent valve. This may be accomplished by using pipe fitting and securing with duct tape.
5. Connect vacuum hose to shop vacuum and start vacuum. Note the high pitched sound from the vacuum before opening the valve. This is the same sound that should be heard in step #7.
6. Open Tank Shell Vent Valve to pull the air out between the bladder and the tank shell, which will pull the bladder out to the tank shell wall.
7. When the change in pitch from the vacuum is heard, this indicates that bladder is now completely pulled out to the tank shell wall.
8. If no change in pitch is noted after about 15 minutes, then the bladder is damaged and needs to be replaced.
9. If there is a change in pitch, this indicates that the bladder is not damaged, close the Tank Shell Vent Valve and then turn off the vacuum. The bladder tank can now be refilled as per the ANSUL Bladder Fill Manual (P/N 74177; 1995 version), using the vacuum method.