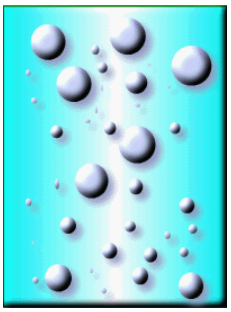
Hydrostatic Testing

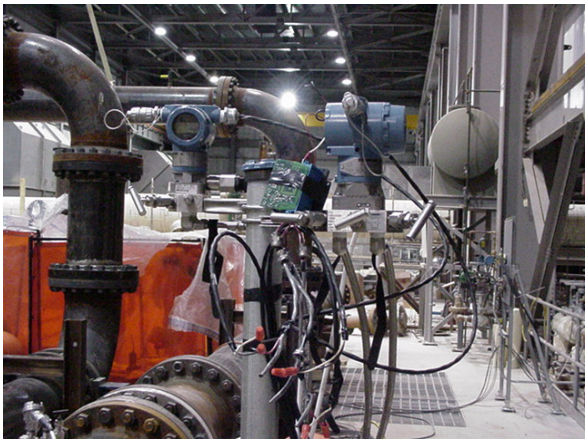
During Hydrostatic testing, all high points are targeted to ensure complete water fill, eliminating the small air pockets by utilizing rapid fill rates. Secured hoses are connected to high points to allow water to flow through high point valves, and directing excess test water away from exposed insulation that has not yet been covered by cladding.

Test water is often run through partially open valves to ensure contamination is removed from seats and seals prior to pressurization, since many valve seats will be contaminated initially with dirt and debris. If vent or drain piping is plugged with debris, sections of the system may not fill properly; therefore this preliminary testing is vital to successful hydrostatic tests.

Once sealed, it is often beneficial to perform preliminary pneumatic tests at pressures below 25 psig to identify valves and fittings that have not been adequately tightened, or have excess debris in seals and seats. Valves that have not sealed under pressure may have their seats cut by high pressure water. Leaking valves are opened to flush contamination before the valve is resealed to stop the leak. Hydrostatic test water is filtered to remove the solid contaminates that are often present in new plants.



Since the solubility of air in water increases with pressure, small air pockets will slowly dissolve into pressurized test water, which will typically result in a slow loss of pressure as the void is filled with water. Good practice allows for this phenomenon by slow pressurization and adding additional water, as required, to maintain test pressure.



Ice is also a dangerous threat to a new HRSG, so complete draining will follow hydrostatic testing to prevent damage to pressure parts. Ice can plug and damage new drain and vent piping, and can ruin valve seals, so attention to drainage following hydrostatic testing is carefully engineered into all procedures related to this testing.