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## BENRICH SERVICE COMPANY TRAINING PROGRAM©

### Plumbing – Crossover Troubleshooting

#### Temperature/Pressure Fluctuations:

#### What do we inspect/look for first when investigating crossover?

1. Which units are complaining and where are they located within the system? In most cases crossover happens on the first floor – closest to the cold supply.
2. Inspect and make sure water heating equipment, shutoff valves and check-valves are functioning correctly and that pumps are installed correctly and running.
3. Identify where the pressure reducing valves are. There must be equal pressure in both the cold and hot water systems. Pressure reducing valve on the cold feed, the cold and hot pressures need to be balanced. If the cold-water supply to the boiler(s) is on the same main as the cold supply to the system, the PRV on the boiler should be removed.
4. Find out where is the boiler/water heater(s) located (roof, hallway, garage, front/back of property). Also, find out where the cold-water main is located.

#### How do we test for crossover?

1. Identify which building and/or apartments are fed by which boilers/water heaters. You must have access to all units in affected system.
2. The heating equipment, pumps and cold-water supply to boilers need to be shut off.
3. Once the hot system is off, run the hot water inside a few apartments and check to see if the pressure drops in the running faucets. Any running water is crossover! Evaluate all single handle fixtures within the system that are allowing cold water into the hot water system by listening for running water within the valve body. Generally, the valves that are affecting the hot water delivery temperature will be located closer to the boiler on the hot water supply.
4. Another way to test and narrow down crossover is if the system has multiple cold-water supplies feeding one or more buildings. Shut down power to the boiler/water heater and pumps (leave hot water pressure on) and go back to the cold-water

supply to the building and turn it off and open a hose bib (if there isn't a hose bib, open a fixture in an apt/condo that is fed cold water by the supply you shut off). Any pressure coming from the hose bib or fixture is crossover.

5. In restaurant application, thermostatic mixing valves, pot sprayers and mop sinks must be inspected.

**How do we proceed once crossover is identified?**

1. Must have access to all units in affected systems. After steps 3 & 4 from testing are complete, continue running hot or cold water (same supply that is shut off) and investigate all units. Recommend which fixtures in which units should be replaced.