Thermal Expansion
Does it really happen?

A problem that can often occur in the private plumbing system of a customers premise is thermal expansion. This will cause the venting of the Temperature and Pressure relieve valve (T&P) on hot water heater tanks. The situation does not occur when the plumbing system is open to the distribution main allowing water to freely flow from the plumbing back into the public water distribution system. However, when the system is "closed", by installing a double check valve (DCVA), pressure reducing valve, or any type of backflow preventer on the service line, venting of the relief valve on a customer's hot water heater tank may become a serious problem.

Because substances contract when they are cooled, and expand when they are heated, and the fact that water as a liquid is incompressible, the hot water tank provides the right environment for the expansion of the water in the plumbing system. If that increase in the volume of the water has no where to go, such as would be found in ridged piping materials, this expansion will cause a dramatic and rapid rise in the pressure in the plumbing system. When the pressure reaches the preset point of the relief point of the relief valve, the valve will open relieving the excess pressure from the hot water tank. The T&P valve is a safety devise designed to prevent water heater tank damage and explosion, not to routinely release pressure from the system. Keep in mind, most T&P valves do not function after approximately one year due to encrustation of the valve.

Another means must be found to control thermal expansion. There are a number of methods that are relatively easy to utilize and are not prohibitively expensive. One method is a thermal expansion tank, designed to fit the size of the tank can be installed on the cold water side of the hot water tank. This expansion tank contains an air bladder which will accommodate the increase in volume of water heated.

You, as a Graham Hill Mutual Water Company consumer, are hereby notified that with the installation of the DCVA at the meter, a closed system and a thermal expansion problem has been created. You will need to contact a plumber to correct this potential problem.