

PURPOSE

Fire flow tests are conducted on water distribution systems to determine the rate of flow available at various locations for fire fighting purpose.

POLICY

In order to accurately predict the strength of the distributing system, the fire flow test shall comply with the NFPA 291 *Recommended Practice for Fire Flow Testing and Marking of Hydrants (2007)* with modifications. The flow tests for design purpose shall be witnessed by authorized personnel of Peoria Fire Department.

PROCEDURE

Tests should be made during a period of ordinary demand that approximates maximum daily demand. The recommended testing time is 7:00am to 8:00am.

The testing agents shall check with the Fire Department and/or the Utilities Department for system map prior to the tests.

This is to verify that the both the test hydrant and the flow hydrant are in the same pressure zone.

One hydrant, designated the residual hydrant, is chosen to be the hydrant where normal static pressure will be observed with the other hydrants in the group closed, and where the residual pressure will be observed with other hydrants flowing.

The residual hydrant is chosen so it will be located between the hydrant to be flowed and the large mains that constitute the immediate sources of water supply in the area.

To obtain satisfactory test results of theoretical calculation of expected flows, sufficient discharge should be achieved to cause a drop in pressure at the residual hydrant of at least 25 percent, or to flow the total demand necessary for fire-fighting purpose.

Exception 1: When the actual flow is larger than the required flow, 25% pressure drop shall not be required.

In the tests without 25% pressure drop, the actual flow would be determined as the available flow at 20psi.

All pressure gauges should be calibrated at least every 12 months.

From the standpoint of accuracy, the 2.5-in. outlets should be used. When two or more hydrants are open, and the pressure drop is less than 25%, the pumper outlets should be allowed to use. The coefficient of discharge of 0.83 should be applied for pumper outlet.

The test results shall be prepared and sealed by a registered engineer in the State of Arizona. Alternatively the test results can be prepared by an individual or firm with Level II NICET certification in Fire Sprinkler.

Standard Operating Procedure

PEORIA FIRE DEPARTMENT

Community Services

Fire Flow Testing Procedure

600.05

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The flow test results should be recorded in the Fire House database. The flow test results are valid for 180 days.

Approved:  _____ 10/10/2007
Robert McKibben, Fire Chief Date