



## WEST MEMPHIS UTILITY COMMISSION

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### Article XIV—Cross Connections

The purpose of this policy is to protect the public water supply of the City from the possibility of contamination or pollution by isolating within the user's system such contaminants or pollutants which could backflow into the public water supply; and to provide for the monitoring and enforcement of a continuing program of backflow prevention which will prevent the contamination or pollution of the City's potable water supply.

#### 14.1 Definitions

- (a) Approving Authority. The West Memphis Utility Commission, which may act through the General Manager, his deputy, agent or representatives.
- (b) Backflow. The reversal of normal flow of water caused by either backpressure or backsiphonage.
- (c) Backflow preventive assembly. An assembly or means designed to prevent the reversal of the normal flow of water caused by either backpressure or backsiphonage.
- (d) Contamination. An impairment of the quality of potable water by sewage, industrial fluids or waste liquids, compounds or other material to a degree which creates an actual or potential hazard to the public health through poisoning or through the spread of disease.
- (e) Cross Connection. A physical connection between a public water supply and either an unsafe or a questionable quality water supply or any toxic or objectionable material.
- (f) Pollution. The presence of any foreign substance (organic, inorganic or biological) in the water which tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affects such waters for domestic use.



Department of Environmental Quality

- (g) Water, potable. Any water which, according to recognized standards recognized by the City, is safe for human consumption.

**14.2 Regulatory Requirements-**The Rules and Regulations Pertaining to Public Water Systems (PWS Regs) as adopted January 29, 1991, state, in section VII.E., page 11.

- (a) The owner shall institute a routine cross connection program to locate and eliminate cross connections. The program shall include routine inspections of commercial and industrial establishments and the routine maintenance of a listing of locations of cross connection control devices. Each program shall include the mandatory testing of backflow prevention devices by certified testers, on a frequency approved by the Department of Health.
- (b) Additionally, the State Plumbing Law requires all public water utilities to conduct a Plumbing Inspection Program, whereby a plumbing code, at least as stringent as the State Plumbing Code, is enforced. This generally consists of inspections of newly constructed plumbing and remodeling or major repair of existing plumbing systems. Under the State Plumbing Code, the building water distribution system shall be protected against backflow by an air gap or approved backflow preventer.
- (c) The PWS Regs and the State Plumbing Code are complementary in protecting the consumer from contamination introduced through cross connections. The PWS Regs basically are designed to protect the public water distribution system from contamination, while the Plumbing Code is designed to protect the building potable water plumbing system.
- (d) Location of an approved properly functioning backflow preventer on the customer's service line will be sufficient to protect the public water distribution system from backflow, but this arrangement will not protect the user's of the building potable water plumbing where the cross connection occurs. Such a cross connection control program is called a containment system, since any potential damage from a cross connection is contained within the plumbing of the facility where it occurs.
- (e) To protect the users within the building itself, each device or plumbing fixture which contains a cross connection must be



individually protected by an approved cross connection control device. This is where the State Plumbing Code currently requires, and such a program is referred to as an isolation program, since any contamination from a cross connection is isolated to the plumbing device where the cross connection occurs.

- (f) The containment program is sufficient to meet the requirement of the PWS Regs, the Department of Health recommends that each utility coordinate implementation of the requirements of these two regulations. Fully enforcing the Plumbing Code requirements, along with tracking the routine inspections of the facilities and devices, will provide the greatest amount of protection to the consumer. Coordinating inspections and record-keeping will reduce the total amount of manpower dedicated to the total program.
- (g) The annual routine inspection of these devices by qualified, certified inspectors is as critical as the original installation of the device itself.

#### 14.3 Administration-

- (a) Powers and Authorities of Inspectors
  - (1) The Approving Authority or duly authorized employees of West Memphis Utility (WMU) or the City of West Memphis (City) bearing proper credentials and identification shall be permitted to enter all properties for the purpose of inspection, observation and testing to verify adherence to the provisions of this program. The Approving Authority or their designated representative shall have no authority to inquire into any process including metallurgical, chemical, oil refining, ceramic, paper or other industries beyond that point of having a direct bearing on the determination of the degree of hazard. Authorized personnel shall have authority to inspect and copy records pertaining to the threat of a hazard to the City's water system.
  - (2) The consumer's property shall be available for inspection at all reasonable times to authorized representatives of the Approving Authority to determine whether cross



connections or other structural or sanitary hazards, including violations of the program exist.

- (3) On request of the Approving Authority, the consumer shall furnish information on water use practices within the consumers premises.
- (b) Variance
- (1) Request for deviation or relief from a any of the provisions of this program shall be submitted in writing to the Approving Authority. The Approving Authority may grant a variance if not in conflict with the spirit and intent of the program.
  - (2) If request for deviation has been submitted, the consumer shall not proceed with any construction or installation of assemblies without the written permission of the Approving Authority.
- (c) Cross Connection Surveys-Personnel authorized by the Approving Authority will survey the property of consumers considered likely to have cross connections to determine if backflow can occur. Routine surveys will be made periodically to determine if backflow prevention measures are maintained, are functioning properly and new cross connections have not been created.
- (d) Scheduling Surveys-The selection of existing property for cross connection surveys will be made on the basis of suspected hazard. Those customers suspected of having the most hazardous cross connection will be surveyed first. Survey shall continue until all property considered likely to have cross connection problems have been surveyed. Information for the review process will be obtained from questionnaires sent to industrial, commercial and institutional establishments.
- (1) First Priority survey list of possible sources of Biological or Chemical contamination shall be developed. Type of corrective action and follow up surveys will be according to severity.
  - (2) Second Priority Establishments suspected of lesser degree hazards or Biological or Chemical pollution will receive second priority inspection by the Approving Authority.



- (e) Other Surveys-As other establishments are found which should be included in one of the priority listings, they will be included and a survey conducted as workload permits. Cross connection surveys will continue with the aim being to survey all industrial, commercial or institutional type customers and agricultural operations that may pose a hazard. Prompt attention will be given to identifying residential type customers that may have significant cross connection problems.
- (f) Follow-Up Surveys-Follow-up surveys will be made as needed.
- (g) Enforcement Action-Where backflow prevention is required, the Approving Authority shall require the problem to be eliminated or controlled by a properly installed, approved backflow prevention assembly. Such protective measures may include but not limited to a backflow prevention assembly on the consumer's water service line. Every effort will be made to secure the voluntary cooperation in correcting cross connection hazards. If voluntary corrective action can not be obtained within a reasonable period of time, the water service shall be terminated.

**14.4 Coverage Requirements-**This program must cover all industrial and commercial customers of the water utility.

- (a) Inspections must include fire sprinkler connections, industrial equipment, and lawn sprinkle connections, as well as normal plumbing fixtures, at these facilities. (Please note: the cross connection control program mandated by the PWS Regs does not currently cover residential lawn sprinkler systems. However, the Plumbing Code currently requires backflow protection on this type of system. A complete cross connection program would include regular testing of all backflow prevention devices, even if such testing is not required by the state regulations.)
- (b) The PWS Regs do not require that existing cross connection control devices be replaced if they are not equipped with the necessary test cocks. If any such device is relocated, or requires more than minimal maintenance, the final device shall meet current requirements. An example of such a device is the combination of two single check valves in series, often found on fire protection connections. However, each utility may require



replacement of the device if it determines that the operation or maintenance of existing device constitutes a hazard to health. (This could include, for instance, a device in a high hazard location that can not be tested, and there is no record of periodic maintenance for the device.)

#### **14.5 Testing-**

- (a) All backflow prevention assemblies shall be tested within ten (10) working days of initial installation, and at least once per year thereafter. In some instances, where the hazard is deemed to be great, a test may be required at a more frequent interval.
- (b) Testing, maintenance and repairs to such devices shall be made at the customer's expense by a certified backflow prevention device tester that is approved by the State of Arkansas. It shall be the responsibility of the customer to see that these tests are made at the time of the initial installation and at least once a year. The Backflow Prevention Assembly Test Reports will need to be kept on file with West Memphis Utility. These reports shall be made on forms approved by West Memphis Utility.

#### **14.6 Record Keeping Requirements-West Memphis Utility shall maintain the following records:**

- (a) For each commercial and industrial customer:
  - Meter or Account number
  - Owner Name
  - Facility Address
  - Date of initial cross connection survey
  - Survey result (cross connections found - yes/no)
- (b) For each cross connection found at one of the above:
  - Location of cross connection
  - Degree of hazard
  - Exact location of backflow prevention device
  - Type device required
  - Make, Model, Size, & Serial # of device installed
  - Date of installation
  - Date of initial certification
  - Certified tester number
  - Date of most recent test



Repair date

Certified repairman number

Date of latest retest

Retest status (pass/fail)

- (c) Monthly reports should be generated showing the status of all facilities inspected the previous month, including those needing devices installed, tested, or repaired, and a listing of all facilities and devices due for inspection the following month.

