HOW TO Set Up a Basic Cross-Connection CONTROL PROGRAM

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Plumbing cross connections pose a serious health threat. Defined as "any actual or potential connection between the public water supply and a source of contamination or pollution," cross connections have caused drinking water contamination that has resulted in the spread of disease and even death. Therefore, an active and effective community cross connection control program is essential to the delivery of a safe potable water supply.

While water suppliers have the primary responsibility for preventing contamination from entering the public potable water system, a community's water or public works department will likely be responsible for administering and maintaining the records of a cross-connection control program.

Although such programs needn't be overly time-consuming, small water systems may want to consider obtaining additional help to carry out these tasks. That assistance might be available from personnel at a larger neighborhood system, public health officials, or a water-related assistance organization.

Of course, water suppliers have little or no control over what happens to water once it enters the distribution system. Contaminants can enter the potable supply when the pressure of the polluted source exceeds the pressure of the potable source. This action is commonly referred to as backsiphonage or backflow. The following steps can be used to establish a basic community cross-connection control program that guards against this health risk.

1. Establish Authority

The first step in developing a program is to write an ordinance that establishes the necessary legal authority, if it doesn't already exist. Where a community has adopted a modern plumbing code, such as the National Plumbing Code, its provisions will govern cross connections. In that case, an ordinance to establish an inspection program may be all that is necessary, or such an authority may already exist in your state water regulations or be possessed by your water department or authority. In such cases, no additional ordinance or document is needed.

If no legal authorization for a control program exists, a cross-connection control ordinance should be developed that includes the proper authority to carry out the program. These items should be addressed in the ordinance:

- Technical provisions, such as specifying the types of backflow prevention devices to be used in high hazard locations and how often inspections should occur to eliminate and/or control cross connections;
- Defined responsibilities (who has what responsibilities) for the cross-connection program; and
- Penalty provisions; such as water service shutoff or fines, for violators of the ordinance.

Communities adopting such ordinances should check with state health department officials to assure conformance with state codes. The final form of the ordinance should comply with local legal requirements and be adopted by the community.

2. Develop the Program

Once an authorizing ordinance has been developed, the cross-connection control program may be developed. An active program should identify who has authority to enforce codes and regulations of cross-connection backflow prevention devices including their:

- inspection
- installation
- testing, and
- maintenance

It is important that the responsibility of these tasks be clearly defined. Usually, the owner of the premises where the backflow device is installed is responsible for its proper installation and maintenance, while the water system is generally responsible for devices installed within the public water system, such as those installed at the service connection or meter box to contain, or isolate, the customer from the water mains. (This protects the water supply from contamination by the customer, but does not protect customers from potential contamination within their own buildings.)

Licensed plumbers and municipal building inspectors likely will be active in the inspection, installation, testing, and repair of backflow devices on private properties. These procedures also should be clearly defined within the control of the program and should include deadlines for installation and testing, provisions for deadline extensions due to unusual circumstances, and stipulations for the inspection of new and existing facilities.

It should be stipulated, for instance, that new facilities should be inspected before they are occupied and again after occupancy. This is necessary because new tenants frequently alter plumbing to meet their individual needs, and the type of backflow prevention required depends on the degree of hazard.

3. Inspect Facilities

This involves the onsite inspection of the facilities your water system serves. Inspectors, who might include plumbing or building professionals,

trained water system personnel, or a consulting firm, should begin with high hazard locations such as hospitals, funeral homes, and industrial locations. The inspector should make an appointment, tell the water user what he or she plans to look for, and be willing to answer any questions. He or she should bring along a prepared inspection form, use it, and send the user a copy of the completed form.

Low-hazard connections, such as schools and households, can be sent a return envelope with an abridged "short form" for the owner or maintenance supervisor to complete. This information will determine whether a more thorough site visit will be required. If possible, also enclose an article or fact sheet describing what backflow is and listing examples of the types of items that require backflow prevention devices. Such examples might include an underground sprinkler system, swimming pool, drinking fountain, and dishwasher.

4 Install & Maintain Devices

A detailed file on the various types of backflow prevention devices, their applications, installation instructions, and suppliers should be maintained by a designated party, such as your community building or plumbing inspector or the water or public works department. This information can then be passed along whenever it is determined that a backflow prevention device should be installed.

Before it's installed, however, the plans for installation should be reviewed and approved by the water system or other designated party, and a maintenance and mandatory testing schedule should be determined.

5 Keep Your Records

Your water or public works department should keep records of the locations and types of all installed devices. Notification procedures should be established to alert building owners of backflow device testing, repair, and reporting requirements. For instance, all tests and repairs should be conducted by trained, certified personnel, and the results must be reported to the state health department. The water system should regularly test and repair those devices that it is directly responsible for as well.

Provisions can be included to recover the community's costs of administering the cross-connection control program. Water systems may choose to test devices themselves, then charge for this testing as part of regular billing (similar to connection and reconnection charges). If certified commercial testers are available, facility owners can be required to have devices tested at their own expense.

Through public education and a planned approach, your community can develop an effective control program that combats the dangers of cross connections.

This article first appeared in the ABPA News *and has been adapted with permission from the author and the American Backflow Prevention Association.*

For more information

The National Environmental Services Center offers a *Cross-Connection Control Manual* (#DWBLDM03). Call (800) 624-8301 or e-mail *info@mail.nesc.wvu.edu* for more information or to order this product.

Web sites addressing cross connections and backflow prevention may be found on page 10 this *On Tap*.

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