Procrastinator Workshop
Columbus, Ohio
12/5/2018

Components of a Good Backflow Program

OTCO-B13195-OM 0.50 hr

Presented By Gary A. Espenschied
Backflow Coordinator for
The Operator Training Committee of Ohio Inc.

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The folloing checklist has been taken directly from the Ohio EPA Backflow Previntion and Cross-Connection Control Manual Four Edition- 2015

CHECKLIST FOR A GOOD BACKFLOW PREVENTION PROGRAM

In order to ensure a public water system has and maintains an adequate backflow prevention program, the following components will be addressed during a system's sanitary survey by the field office staff of Ohio EPA. A public water system must have these components addressed and be ready to discuss them at the time of a survey:

1. Does the water system have a cross-connection control ordinance or other legal mechanisms that are used to control cross-connections? (Indicate all mechanisms used.)
   a. Ordinances
   b. Service Contract
   c. Rental Agreement?
   d. By-Laws?
   e. Other (explain in notes)?

·In order to have an enforceable program, the system needs to have either an ordinance on the books or requirements in the by-laws.

2. Does the cross-connection control program include the following:

a. Requires installation and operation of appropriate type of approved backflow preventer?

·The backflow preventers have to appropriately protect the system in accordance with the potential degree of hazard and must be testable (OAC 3745-95-04)

b. Provides right-of-entry for inspection?

·Rules must permit entrance into a premises served by the PWS to conduct a thorough inspection of all water uses on-site.

c. Conducts inspections/tests for all installed backflow preventers every 12 months?

·The installed assemblies/air gaps have to be inspected and tested at least once every 12 months (not annually). The most recent inspection/test report must be made available.

STATE OF OHIO

Annual Test & Maintenance Report for Backflow Prevention Assemblies

Facility Name: _____

Address: _____ Contact Person: _____

Assembly Information

Make: _____

Model: _____

Size: _____

Serial Number: _____

Installation Information

Containment _ Isolation _

Meter Pit _ Basement _ Floor Number: _____

Penthouse _ Boiler Room _ Room Number: _____

Mechanical Room _ Protection Provided: _____

Double Check Assembly			
Initial Test	Outlet Valve		Pass _ Fail _
	1st Check Valve	___psid	Pass _ Fail _
Date _____	2nd Check Valve	___psid	Pass _ Fail _

Reduced Pressure Assembly		
1st Check Valve	____ psid	Pass _ Fail _
Relief Valve Opening Point	____ psid	Pass _ Fail _
2nd Check Valve		Pass _ Fail _
Outlet Valve	Pass _	Fail _

Pressure Vacuum Breaker		
Air Inlet Valve	___ psig	Pass _ Fail _
Check Valve	___ psig	Pass _ Fail _

Repairs & Materials Used			

Double Check Assembly			
Re-Test After Repairs	Outlet Valve		Pass _ Fail _
	1st Check Valve	___psid	Pass _ Fail _
Date _____	2nd Check Valve	___psid	Pass _ Fail _

Reduced Pressure Assembly		
1st Check Valve	____ psid	Pass _ Fail _
Relief Valve Opening Point	____ psid	Pass _ Fail _
2nd Check Valve		Pass _ Fail _
Outlet Valve	Pass _	Fail _

Pressure Vacuum Breaker		
Air Inlet Valve	___ psig	Pass _ Fail _
Check Valve	___ psig	Pass _ Fail _

Comments:

TESTER CERTIFICATION: *I hereby certify that the above data is correct and that the backflow prevention device is in proper working condition.*

Tester Name (Printed) _____ **Signature**_____

☐ **OTCO Certified Tester #:**_____ **OTCO Certified Tester Exp. Date:**____/____/____

☐ **Department of Commerce Certified Tester**

Company Name _____ **Ohio Certificate #:** _____ **Contractor #:** _____ **Date:** _____

I hereby certify that the above backflow prevention device has been in constant use at this location during the entire prescribed interval between test periods and during that period this device was not bypassed, made inoperative or removed without proper authorization. I further certify that I have the authority and responsibility to ensure the above.

Owner/Officer (Printed) _____ **Signature** _____

Title: _____ **Date:** _____

Updated 6/15/16

d. Enforces discontinuance of service to any facility where suitable or operable backflow preventers have not been provided for a cross-connection?

· The PWS has to have the right to cut off water service to any service connection where the backflow preventers are not properly maintained and tested.

e. Require appropriate protection and inspection of all other booster pump installations?

LOW PRESSURE CUT-OFF CONTROLLER TEST REPORT

Premises Address:_____Company Name:_____
Contact Name: _____Contact Phone No:_____Type of Controller:Fire Pump_____Domestic Booster Pump_____Pressure Sustaining Valve_____Manuf:
Model No:_____Serial No:_____Type of Inspection: Initial Annual_____Date of Inspection:_____

****

YES	NO	
_____	_____	Found the sensing line seal intact
_____	_____	Found the normal power light (green) on

MANUAL START

_____	_____	Low suction light (red) comes on when suction pressure reaches 10 psig
_____	_____	The alarm sounds after a minimum 30 second delay
_____	_____	The pump shuts off immediately after the low suction pressure alarm sounds
_____	_____	The pump has automatic restart when the sensing line is recharged

AUTOMATIC START

_____	_____	Low suction light (red) comes on when suction pressure reaches 10 psig
_____	_____	The alarm sounds after a minimum 30 second delay
_____	_____	The pump shuts off immediately after the low-suction pressure alarm sounds
_____	_____	The pump has automatic restart when the sensing line is recharged

RESET PUMP

_____	_____	Opened outlet valve at pump discharge
_____	_____	Pump restarted in manual start mode
_____	_____	Pump restarted in automatic start mode
_____	_____	Resealed sensing line valve in open position

I certify that the low pressure cut-off controller test as described above was performed by me on the date indicated and the findings were as indicated:

INSPECTOR:
Signature_____Printed Name: _____
_____
Cert. Tester No:_____Date:_____

****

I certify that the inspection was performed on the date indicated and that the following statement is true. The low-suction pressure cut-off controller has been in use during the interval between inspections and during that period has not been bypassed or otherwise made ineffective.

Company Representative:
Name (Please Print)_____Date:_____

Signature_____Title: _____

f. Ensure that customers with auxiliary water systems (i.e. private wells) have the appropriate backflow protection and inspection?

· Service connections must have a physical separation between the PWS and the auxiliary water system and a proper backflow preventer unless the PWS follows all the requirements of OAC 3745-95-04 (C)(2)

3. Who does the water system accept to perform the every 12-month inspection on the backflow prevention assemblies?

a. Department of Commerce Certified Tester
b. OTCO Certified Tester
c. Licensed Plumber
d. PWS Personnel
e. Other

4. Have all existing customers required to have backflow prevention been identified?

· Not just industrial, institutional and larger commercial users, but also small commercial users, rural customers with aukiliary water systems or yard hydrants and residential users with underground irrigation systems or booster pumps must be surveyed.

5. Is there a mechanism to identify the need for backflow prevention on new service connections?

· PWS should have construction inspection completed prior to connecting initial tap

SAMPLE CROSS_CONNECTION QUESTIONAIRE

Company Name: _____ **Address**: _____ **Contact Name**: _____ **Contact Phone**: _____

Meter No: _____ **Meter Size**: _____ **Use Type**: Commercial Industrial Residential **Service Type**: Domestic Fire Combined Irrigation:

Inspector Name: _____ **Company Name**: _____ **Inspection Date**: _____

DOMESTIC SYSTEM:

Description of Water Use(s) at Premises: _____

Existing Backflow Preventer Installed: Yes No **Manf**: _____ **Model**: _____ **Size**: _____ **Serial No**: _____ **Date Last Test**: _____

Heating:Forced Air Electric Solar Boilers Chem Treatment: Yes No **Direct Boiler Make-Up From City Water**: Yes No **ASSE 1013 Installed**: Yes No

Boiler Make-Up at Chem Tank: Yes No **Air-Gap**:Yes No **Cooling**: None Forced Air Cooling Tower Chiller **Chem Treatment**: Yes No **Direct Chiller**

Make-Up Line:Yes No **ASSE 1013 Installed**: Yes No **Chiller Make-Up at Chem Tank**: Yes No **Air-Gap**:Yes No **Air-Gap at Tower Make-Up**:Yes No

Dishwasher: Yes No **VB Installed**: Yes No **Soap/Sanitizer/Rinse/Wax Eductors/Aspirators**: Yes No (describe each in comments) **VB Installed**: Yes No

Garbage Disposal with Direct Connection: Yes No **VB Installed**: Yes No **Carbonated Beverage Machine**: Yes No **ASSE 1032 Installed on Line**: Yes No

Hose Faucet (s): Yes No **VB Installed**: Yes No **Ice Machine**: Yes No **Air-Gap at Ice Machine Drain Line**: Yes No **Hydro-Aspirator (s)**: Yes No

Type: Lab Dental Medical Irrigation Hand-Held Sprayer Process (describe each in comments) **VB Installed**: Yes No **Therapy/Sitz/Sonic Baths**: Yes No

Submerged Inlet: Yes No **VB Installed**: Yes No **Lab Faucets**: Yes No **VB Installed**: Yes No **Tanks/Vats:** None Wash Dip Rinse Dye

Cooling Plating **Air-Gap at Make-Up Line**: Yes No **Swimming Pool/Fountain**: Yes No **Air-Gap**: Yes No **Jacuzzi**: Yes No **Air-Gap**: Yes No

Commercial Laundry Equipt: Yes No **VB Installed**: Yes No **Hot Water Heater (s)**: Yes No **How Many**: _____ **Thermal Expansion Tank**: Yes No

Air-Gap at Water Heater Drain: Yes No **Shampoo Hose**: Yes No **VB Installed**: Yes No **Domestic Water Pump Installed**: Yes No **Capacity**: _____GPM

Low-Suction Pressure Cut-Off Controller Installed on Pump: Yes No **Manf**: _____ **Model**: _____ **Serial No**: _____

Other Domestic Water Source (s) at Premises: Yes No **Type**: Well Cistern Storage Tower Reservoir City Service **City Service No**: _____

Interconnected: Yes No **If Yes, Where is Interconnection**: _____

------ enter descriptions/comments concerning the domestic system on the back of this form ------

6. Does the system periodically resurvey all customers to ensure that cross-connections have been identified?

· Service connections must be re-surveyed with an on-site investigation or other approved documented methodology to determine current water use practices and changes which may warrant additional protection.

CHAPTER 11 – CROSS-CONNECTION CONTROL SURVEYS

SAMPLE SURVEY FORMS

This form is intended for use as a generic survey form:

Company Name:	
Address:	
Type of Business:	
Contact Person:	
Contact Person's Phone Number:	
Meter Number:	
Meter Size:	

Existing Backflow Preventer Installed	Yes	No	Size	Manufacturer	Model	Serial Number	Date Last Tested

HEATING
☐ Forced Air
☐ Electric
☐ Solar
☐ Boiler
☐ Chemically Treated
☐ Make-up Water From City Water
☐ Feed from Chemical Feed Tank
☐ ASSE 1013 Installed at Make-up

KITCHEN	
☐ Dishwasher	☐ ASSE 1001 Installed
☐ Soap Eductor	☐ ASSE 1001 Installed
☐ Garbage Disposal	☐ ASSE 1001 Installed
☐ CO2 Dispenser	☐ ASSE 1032 Installed
☐ Ice Machine	☐ Air-Gap at Drain Line
☐ Hose Bibs	☐ ASSE 1011 Installed
☐ Other	
☐ Other	
☐ Other	

MISC EQUIPMENT	
☐ Hose Bibs	☐ ASSE 1011
☐ Eductor	☐ ASSE 1001
☐ Aspirator	☐ ASSE 1001
☐ Lab Faucet	☐ ASSE 1001
☐ Shampoo Hose	☐ ASSE 1001
☐ Wax Eductor	☐ ASSE 1001
☐ Thermal Expansion Tank	☐ Yes ☐ No
☐ Other	
☐ Other	

COOLING
☐ None
☐ Forced Air
☐ Chiller
☐ Cooling Tower
☐ Chemically Treated
☐ Make-up Water From City Water
☐ Feed from Chemical Feed Tank
☐ ASSE 1013 Installed at Make-up
☐ Air-Gap at Make-up

THERAPY/POOLS/TANKS/RESERVOIRS	
☐ Sitz/ Sonic Bath	☐ ASSE 1001 Installed
☐ Jacuzzi	☐ Air-Gap at Make-Up Line
☐ Whirlpool	☐ Air-Gap at Make-Up Line
☐ Fountain	☐ Air-Gap at Make-Up Line
☐ Irrigation	☐ ASSE 1013 Installed
☐ Comm Laundry	☐ ASSE 1001 Installed
☐ Swimming Pool	☐ ASSE 1013 Installed ☐ Air-Gap at Make-Up Line
☐ Wash, Dip, or Rinse Tanks	☐ Air-Gap at Make-Up Line
☐ Plating or Coolant Tanks	☐ Air-Gap at Make-Up Line
☐ Other	
☐ Other	

AUXILIARY WATER	
☐ Well/Cistern	☐ Yes ☐ No
☐ Tower	☐ Yes ☐ No
☐ Reservoir	☐ Yes ☐ No
☐ Interconnected	☐ Yes ☐ No
☐ 4-Way/Swing	☐ Yes ☐ No

☐ Domestic Pump LPS Serial Num.	☐ With LPS
☐ Fire Pump LPS Serial Num.	☐ With LPS
Backflow Preventer on Fire	☐ No ASSE_____
Model #of Device	
Serial Number	

Comments: _____

Survey by: _____ **Date:** _____

Company: _____ **Company Phone Number:** _____

7. Are backflow preventers at treatment plants and other facilities owned by the water system/ municipality tested every 12 months?

· The installed assemblies/air gaps have to be inspected and tested at least once every 12 months. The most recent inspection/test report must be made available.

INTERCHANGEABLE CONNECTION INSPECTION REPORT

Premises Address:_____Company Name:_____

Contact Name: _____Contact Phone No:_____

Location of Interchangeable Connection: _____

Type of Connection: 4-Way_____Swing_____ Meter Number: _____

Type of Inspection: Initial_____Annual_____Date of Inspection:_____

YES	NO	
_____	_____	The interchangeable connection was found to be properly installed in accordance with the requirements of the Ohio Environmental Protection Agency and the plans as approved
_____	_____	The interchangeable connection has not been bypassed, removed or relocated
_____	_____	The reduced pressure principle backflow preventer installed as part of the interchangeable connection has been tested for tightness and proper operation (test report attached).

I certify that the interchangeable connection as described above was inspected by me on the date indicated and the following findings were made.

COMMENTS:_____

INSPECTOR:
Signature_____Printed Name: _____

Cert. Tester No:_____Date:_____

****

I certify that the foregoing inspection was performed on the date indicated and that the following statement is true. The interchangeable connection as described above has been in uninterrupted use during the entire prescribed interval between inspections and that during that period has not been bypassed or otherwise made ineffective.

Company Representative:

Name (Please Print)_____Date: _____

Signature: _____Title: _____

8. air gaps provided on all bulk water sale stations?

· All bulk water stations have to be equipped with air gaps which cannot be compromised.

9. Who in the organization is trained in cross-connection control?

· The whole public water system staff needs to be trained in cross-connection control in order to be able to run a good program. It takes more than just the chief operator to get the work done.

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