



NAVAL FACILITIES ENGINEERING COMMAND
EUROPE AFRICA & SOUTH WEST ASIA


(NAVFAC EURAFSWA)

REGIONAL CROSS CONNECTION CONTROL & BACKFLOW PREVENTION PROGRAM

18/03/19

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Regional Cross Connection Control & Backflow Prevention Program Manager



Marco Flaminia

- Professional Engineer, Italy
- Backflow Prevention Assembly Tester Certification since 2006
- Certified Cross Connection Control program manager with UF TREEO
- Backflow Prevention Tester Instructor with UF TREEO



Accomplishments

- 2010 - CCC survey of 654 facilities at US Army installation in Vicenza (Italy);
- 2013 - CCC survey of 480 facilities at Naval Support Activity Sigonella, Italy; Identified approx \$700K of cross connection deficiencies;
- 2014 - CCC survey of 140 facilities at Naval Support Activity Souda Bay, Crete, Greece;
- 2015 - CCC survey of 75 facilities at Camp Lemonnier Djibouti, Africa (Plant Replacement Value (PRV) of the facilities \$1,072,268,155);
- 2015 - CCC survey of 198 facilities at and Naval Station Rota, Spain (PRV \$ 451,443,388);
- 2016 - CCC survey of 240 facilities at Naval Support Activity Manama, Bahrain (PRV \$ 491,513,464);
- 2017 - CCC survey of 21 facilities at Naval Support Facility Deveselu, Romania (PRV \$ 45,911,407).

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Area of Responsibility





- NSA Bahrain
- NSA Naples IT
- NAVSTA Rota SP
- Camp Lemonnier Djibouti
- NSA Souda Bay GR
- NAS Sigonella IT
- NSF Deveselu
- NSF Redzikowo

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PROGRAM REQUIREMENTS




POLICY

The Office of the Chief of Naval Operations with the Instruction (OPNAVINST) 5090.1B of 1 November 1994 requires that drinking water systems shall be constructed, operated, and maintained to comply with SDWA standards.

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PROGRAM REQUIREMENTS



GOAL

The goal of a Cross-Connection Control and Backflow Prevention Program is to ensure safe drinking water under all foreseeable circumstances.


A cross-connection control and backflow prevention program should establish policy, procedures, and instructions for installing, certifying, and maintaining backflow preventers to prevent contamination of drinking water systems.

(UG-2029-ENV)

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PROGRAM REQUIREMENTS



Guidelines for cross-connection control and backflow prevention contained in the UG-2029-ENV document pertain to all facilities served by drinking water systems.

Implementation of these guidelines is essential for the protection of the drinking water system against the entrance of contamination which may render the water unsafe or undesirable.

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PROGRAM REQUIREMENTS



PROGRAM TO BE PURSUED

•In general, a Cross-Connection Control and Backflow Prevention Program is a continuing effort to locate and correct all existing or potential cross-connection hazards and to discourage their creation.

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PROGRAM REQUIREMENTS



•The Government activity normally has jurisdiction **over the entire distribution system** (within the confines of Government property), the water service laterals, and the internal plumbing system and operations within facilities.

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PROGRAM REQUIREMENTS



•As such, the Government will oversee the execution of the Cross-Connection Control and Backflow Prevention Program for both internal plumbing and the external main drinking water distribution system.

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PROGRAM REQUIREMENTS



HOW IS THIS PROGRAM ACCOMPLISHED?

Cross-Connection Control Surveys

A survey of all facilities and equipment served by the drinking water system will be performed at least **every 5 years** and as facilities and piping/equipment systems are modified or replaced.

The purpose of the survey is to determine possible or actual cross-connections, the degree of hazard, location and adequacy of existing BFP's, and the need for installation of additional BFP's.

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PROGRAM REQUIREMENTS



REQUIREMENT FOR INSTALLATION OF BFP's:

• Where cross-connections exist, the problem shall be eliminated or isolated by creating an air gap, or properly installing an "approved" BFP to prevent the possibility of backflow into the drinking water system.

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PROGRAM REQUIREMENTS



CERTIFICATION OF BFP's:

•The certification of BFP's will be accomplished by **certified** testers. A new BFP should be accepted only after receiving official certification that it fully satisfies approved installation and performance standards.

•BFP Testers are certified locally by **UF TREEO instructors.**

•Most of BFP Testers do not speak English. We conduct BFP Tester courses in Italian and / or in Spanish.

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PROGRAM REQUIREMENTS



CERTIFICATION OF BFP's:

•All certification tests shall be made using certified test equipment and test procedures conforming to those outlined in the latest edition of the "Cross-Connection Control Manual" published by the FCCCHR or Manual M14 published by the AWWA.

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PROGRAM REQUIREMENTS



Certification of BFP's

BFP's **shall be** routinely certified based on the following maximum certification intervals (UG-2029-ENV) but may be certified more frequently if desired:

Class of Hazard	Maximum Interval Certification
Non Health	12 Months
Health	6 Months

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PROGRAM REQUIREMENTS



Maintenance/Replacement of BFP's

•Maintenance of BFP's shall be performed by experienced personnel. Should a BFP be found defective, **it will be repaired promptly or replaced** to provide proper backflow protection.

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PROGRAM REQUIREMENTS



•Following repair/replacement, it is to be certified as satisfying acceptable performance standards.

•Overhaul intervals shall be set according to the age and condition of the BFP and recommendations by the manufacturer, but should not exceed 5 years.

•It is required that "non-testable devices" be automatically replaced on a scheduled basis **not to exceed 5 years**.

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PROGRAM REQUIREMENTS



Enforcement Actions for Failure to Correct Cross-Connection Deficiencies

•Where cross-connections, interconnections, auxiliary intakes, or bypasses are found to constitute a high hazard of contaminating the drinking water system, **immediate corrective action shall be taken to eliminate the deficiency.**

•Failure to correct conditions threatening the safety of the drinking water system shall be grounds for denial of water service.

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PROGRAM REQUIREMENTS



RECORDKEEPING

•**Document that BFP's have been properly installed, certified, and maintained.**

•**Keep a binder with the test report properly filled and signed by the backflow tester**

•Information regarding BFPs are maintained in Maximo.

•It is responsibility of the Public Works to keep updated inventory in Maximo

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PROGRAM REQUIREMENTS



Training/Education:

- At NAVFAC EUAFSWA we conduct a one day class "Introduction to backflow Prevention" for management, engineers, technicians, etc....
- We conduct also the Initial BFP Tester training (40 hours) and the RE-CERT
- If Base Operating Services Contracts (BOSC) contractor personnel are used for implementation of any portion of the program, these individuals must also be properly trained/certified.

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PROGRAM REQUIREMENTS



Training conducted at the Navy base in Sigonella, Sicily

- Base Operating Services Contracts (BOSC) contractor
- Public Works personnel, etc...



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PROGRAM REQUIREMENTS



Review of Plans and Specifications

- One effective technique for controlling cross-connections is to incorporate BFP'S into new construction, repair, or modification projects during the design phase.

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CHALLENGES



Non-approved backflow assemblies

In Europe most of time the contractors purchase non-approved backflow assemblies because Navy Engineers do not specify correctly the requirements into the contract

Examples of non-approved assemblies: CALEFFI, Watts Europe, etc...

In the picture:
Make: WATTS
Model: BA 909
Serial: 10280111
Size 3"
(NOT USC APPROVED ASSEMBLY)



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CHALLENGES



- US Navy Housing in Marinai – 526 units.
- BOS Contractor installed non-approved assemblies

Make: WATTS Europe
Model: BA/BM 032
(NOT-APPROVED)



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CHALLENGES



- BOS Contractor installed non-approved assemblies between potable water and sewer



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CHALLENGES



In Europe Backflow Assemblies are rarely used

- Most of the times, both Engineers and Contractors do not know what a backflow assembly is!
- The following picture is an example

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CHALLENGES



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CHALLENGES



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INCORRECT INSTALLATIONS



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Any question?



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