

Definition "A" Degree of Hazard of Potential Contaminants

Hazardous

During the course of business, the facility may use, process or store significant amounts of contaminants that would be considered Toxic to Human Health if they were introduced into the public water supply, (e.g. toxic chemicals, toxic dyes, acids, alkalis, toxic detergents, bacterial cultures, blood & tissue waste, solvents, toxic insecticides & herbicides, antifreezes, sewage, etc.).

Aesthetically Objectionable

During the course of business, the facility does not use contaminants that are considered Toxic, but may use, process or store significant amounts of contaminants that if introduced into the public water supply may affect the taste, temperature, odor, color, and/or the aesthetic features of the public water supply (e.g. stagnant water, non-toxic soaps and/or cleaning agents, food grade dyes, non-chemically treated boiler/cooling water, etc.).

Non-Hazardous

The facility does not use, process or store significant amounts of contaminants that would be considered toxic, or of aesthetic concern by the above Hazardous/Aesthetically Objectionable definitions (e.g. office buildings, retail stores, commercial establishments utilizing public water for rest room and drinking fountains, private homes, etc.).

Definition "B" Potential for Cross Connection/Backflow to Occur

High

Domestic water use within the facility is directly connected (hard tapped) into equipment that have no internal backflow devices that would prevent direct contact with potential contaminants (e.g. tanks with water inlets below the flood rim overflow, aspirators, lawn irrigation, chemical injecting/mixing equipment, etc.). The concept being that any occurrence of backflow (back pressure or back siphonage) would directly pull or push contaminants unimpeded back into the public water supply.

Moderate

Domestic water use within a facility is directly connected (hard tapped) into equipment that have internal backflow devices installed on them such as air gaps, vacuum breakers, check valves, reduced pressure zone devices, (e.g. commercial dish washers, commercial garbage disposal, tanks with proper air gap on the inlet line, sprayers and aspirators with built in vacuum breakers, HVAC make-up lines with RPZ/check valves installed on them, etc.). The concept being that given an occurrence of backflow (back pressure or back siphonage) contaminants would be pulled or pushed back into the public water supply only if the internal backflow containment device on a piece of equipment (internal containment) failed first.

Minimal

Domestic water use within the facility is not directly connected (hard tapped) into equipment that may come into contact with potential contaminants (e.g. rest rooms, slop sinks, drinking fountains, hose bibs, etc.). The concept being that during an occurrence of backflow (back siphonage, back pressure) the internal plumbing would first have to be modified to create a cross connection (e.g. hose added to slop sink outlet, garden hose attached to a hose bib, etc.) for contaminants to be pulled or pushed back into the public water supply.

1. Hazardous Facilities

The following partial listing gives examples of the types of facilities which would require an acceptable RPZ or air gap to be installed in the service connection to the public water distribution system.

<u>Type of Facility</u>	<u>Potential Hazard</u>
Sewage & industrial wastewater treatment plants & plumbing stations, sewer flushers, etc.	Sewage industrial wastewater, contaminated water, toxic chemicals, etc.
Paper manufacturing or processing, dye plants, petroleum processing, printing plants, chemical manufacturing or processing, industrial fluid systems, steam generation, rubber processing, tanneries	Toxic chemicals, water conditioning compounds Examples: Toxic dyes, acids, alkalies, solvents, quaternary ammonia compounds, mercury, chromium, etc.
Canneries, breweries, food processing, milk processing, ice manufacturing, meat packers, poultry processing, rendering companies, etc.	Process wastewater, steam, detergents, acids, caustics, refrigeration lines
Hospitals, clinics, laboratories, veterinary hospitals, mortuaries, embalmers, etc.	Bacterial cultures, laboratory solutions, blood & tissue waste, toxic materials, etc.
Shipyards, marinas, etc.	Sea water, sewage, contaminated water, etc
Metal-plating, photo-processing, laundries, commercial car washes, commercial refrigeration systems, dry cleaning establishments, etc.	Toxic chemicals, concentrated cleaning agents, solvents, etc. Examples: Cyanides, fluorides, copper, chromium, caustic & acid solutions, etc.
Commercial greenhouses, spraying & irrigation systems using weedicides, herbicides, exterminators	Toxic chemicals Examples: Ammonium salts, phosphates, 2.4 D sodium arsenite, lindane, malathion, etc.
Boiler systems, cooling towers or internal fire fighting systems using conditioners, inhibitors, corrosion control chemicals, etc. Typically: apartment buildings, cooling towers, warehouses	Toxic chemicals Examples: Hydrazine, sodium compounds, antifreeze solutions, etc.

2. Aesthetically Objectionable Facilities

The following partial listing gives examples of the types of facilities which would require an acceptable DCV to be installed in the service connection to the public water distribution system.

<u>Type of Facility</u>	<u>Potential Hazard</u>
Customer fire protection loops, fire storage tanks; with no chemical additives	Stagnant water, objectionable tastes, odors
High temperature potable water	Objectionable temperatures
Utilization of food grade dyes	Objectionable color
Complex plumbing systems in commercial buildings Typically: barber shops, beauty salons, churches, apartment buildings, gas stations, supermarkets, nursing homes, construction sites, carnivals	Plumbing errors, obsolete plumbing equipment, poor plumbing inspection/correction programs

3. Non-Hazardous Facilities

The containment approach would not apply. The following partial list indicates the type of facility that would probably qualify:

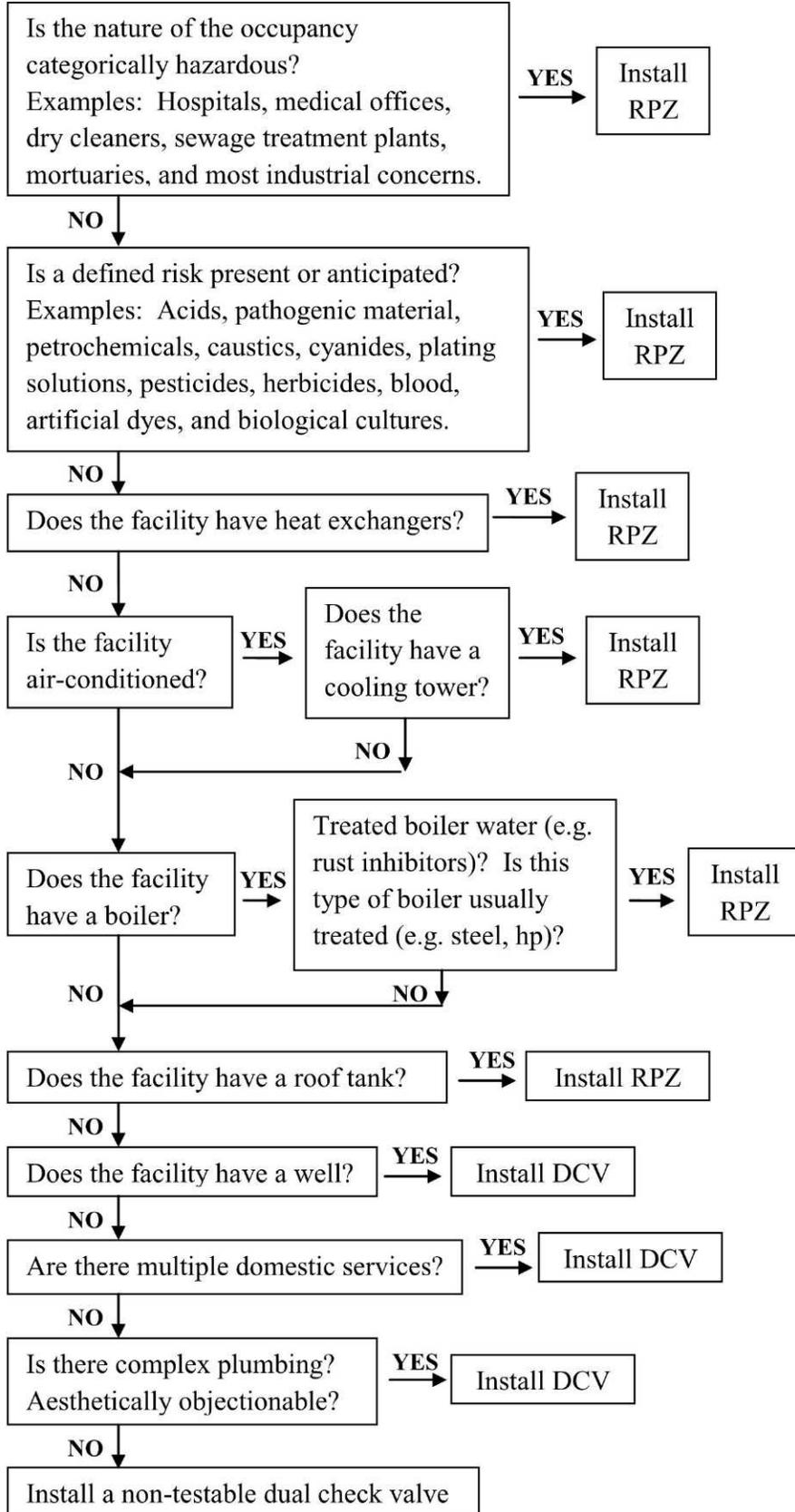
<u>Type of Facility</u>	<u>Corrective Measures</u>
Private homes	None; rely on internal plumbing control
"Dry" commercial establishments without complex plumbing systems	



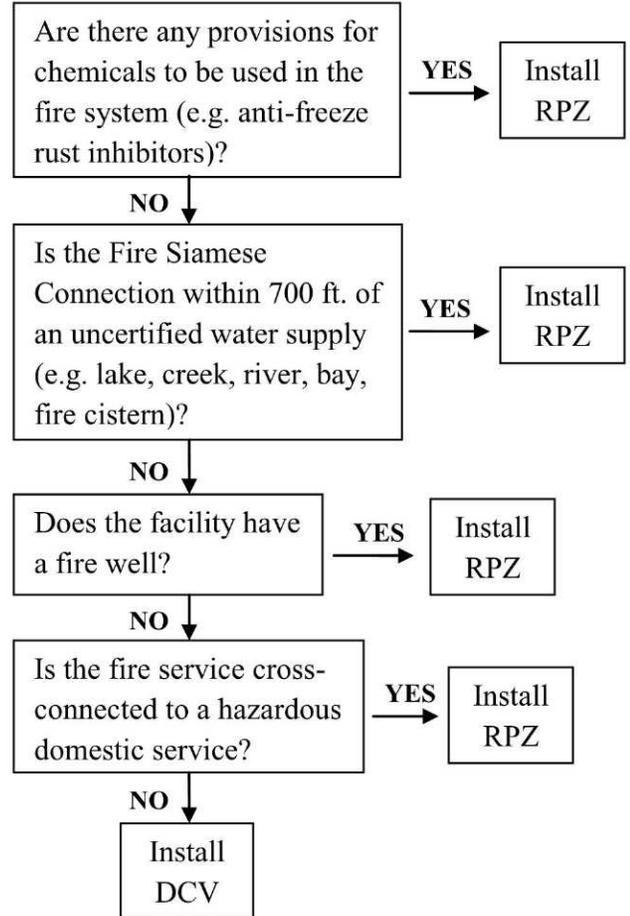
Jamestown Board of Public Utilities
Water Division
Cross Connection Control Risk Assessment

For each domestic and/or fire service at your facility, follow through the respective flowchart to determine the type of backflow prevention device that should be installed on the service to protect the public water system. (*See note below)

General Domestic



General Fire Sprinkler / Standpipe



DCV = approved Double Check Valve Assembly
 RPZ = approved Reduced Pressure Zone Device

*** Please note that these flowcharts are general guidelines. Each facility is unique and requires an evaluation by a licensed plumbing contractor in order to assess the appropriate degree of hazard and determine the type of backflow prevention device(s) that should be installed. Your plumbing contractor will then submit an application to the Jamestown BPU for approval before installation of the backflow prevention device(s).**