# 65-407 PUBLIC UTILITIES COMMISSION

Chapter 640: PRIVATE FIRE PROTECTION SERVICES

SUMMARY: This rule provides that water utilities shall establish accounting for those portions of water lines for private fire protection service which are located within highway limits, provides a methodology for determining the allocation of costs between public and private fire protection as recommended by the Private Fire Protection Task Force, and establishes general provisions for private fire protection service.

1. DEFINITIONS

 A. Private fire protection - Water service to support the operation of a private fire protection system, including private hydrants, automatic sprinkler systems, standpipes, and other appurtenances installed by the customer to assist in extinguishing fires. Private fire protection includes all fire protection installations which are not provided by the utility as part of its public fire protection services.

 B. Back-up capacity or back-up facilities - The capacity and facilities (such as transmission and distribution mains, storage facilities, pumps, etc.) that must be present in order for the private fire protection system to perform as designed. This capacity and/or facilities may be provided by the utility or by the customer.

 C. Private fire service line - A water line installed at the customer’s expense extending from a main to provide private fire protection to a single customer, a single multi-unit building or complex, or a single commercial or industrial development.

 D. Service Drop - That portion of a water line that extends from the main to the edge of the utilities’ easement or the public right-of-way.

 E. Direct Costs - Those costs that are directly associated with the provision of public fire protection or private fire protection. For example, service line costs, hydrant maintenance, cost of utility participation in sprinkler system tests. These costs should be assigned directly to public or private fire protection service.

 F. Indirect Costs - Those costs that are shared or joint costs of providing private and public fire protection service. These costs are allocated between public and private fire charges.

2. GENERAL PROVISIONS REGARDING PRIVATE FIRE PROTECTION SERVICES

 A. The service drop portion of the private fire service line shall be installed at the expense of the customer, but shall be owned, maintained, and replaced by the utility at utility expense and shall extend from the main to the edge of the utility’s easement or the public right-of-way. The balance of the line shall be installed, owned, maintained, and replaced by the customer at the customer’s expense.

 B. A utility may institute service and maintenance policies, as contained in its filed Terms and Conditions of Service, which it determines to be in the best interest of its ratepayers or in the safe operation of the water utility, regarding the provision of private fire protection service. A utility may implement different policies for different types of private fire protection installations, such as private hydrants, sprinkler systems, or standpipes, where there is good cause to do so.

 C. A utility may require, as a term of service, a showing by the customer on a periodic basis that certain reasonable maintenance, testing, or inspection procedures have been conducted in order that the installation be consistent with the health or safety standards of the water utility.

 D. The utility may refuse service to or disconnect a private fire protection installation from service if it does not comply with the utility’s terms and conditions of service or in the reasonable opinion of the utility management subjects the water system to unnecessary potential risk or expense.

 E. The customer shall keep the water utility informed of the location of any private fire protection installation connected to the utility system and the operating status of each.

 F. A water utility shall not be required to upgrade its system in order to provide greater water pressure to support the installation of a private fire protection installation. The utility may upgrade its system for this purpose if it constitutes reasonable system development consistent with the factors contained in Chapter 65 section 2(G) of the Commission’s Rules, or if the customer agrees to pay the costs of the upgrade.

 G. Private fire protection service shall normally be provided on an unmetered basis. The utility may, for good cause, require a particular service or a class of services to be metered. Said meters shall be installed at the expense of the customers taking service and shall be sized to accommodate the maximum flow rate identified for the private fire service. If a customer is to be billed for water used for an incidental service, such incidental service shall be billed based upon the meter size required for the actual water use rather than the actual meter size. The private fire service shall be billed based upon the demand of the sprinkler system.

 H. A pipeline for separately metered domestic water service may be connected to a private fire service line outside the building provided that each system is provided with a separate shutoff which the utility may control. The utility may require a separate service from its mains in order to maintain water quality or to ensure access to disconnect either service.

 I. As a condition of service, the utility shall require its private fire service customers to report reasonable estimates of the volumes of water used annually for flushing and testing the private fire service and the amount of water used in the event of a fire.

3. RATE COMPONENTS

 A. A water utility’s private fire protection charge shall include reasonable amounts to cover the cost of:

 1. Depreciation and debt service or return on utility investment in the service drop portion of the private fire service lines;

 2. Normalized cost for the maintenance and repair of the service drop portion of private fire service lines;

 3. Any maintenance, repair, inspection, or testing services performed routinely by the utility for all private fire protection service customers; and

 4. A reasonable allowance for the cost of water used for flushing and testing the private fire service lines and for fire fighting.

 5. A reasonable allowance for the costs of back-up facilities necessary to provide private fire protection service.

 B. A water utility’s private fire protection charge shall not include any maintenance, repair, inspection, or testing services performed for private fire service customers on demand, i.e. any services beyond those included in the private fire protection charge. These additional services shall be treated as jobbing and shall be billed directly to the customer requesting the service.

 C. The utility shall establish and maintain the sub-accounts necessary to account for all private fire service capital, maintenance, operating and jobbing expenditures/expenses/revenues. These sub-accounts shall be used to determine the proper level of service charges allowed under section 3(A).

4. METHODOLOGIES

 A. A water utility’s private fire protection charge may be billed on the basis of the design flow demand required by the customer’s private fire protection system or the maximum available flow measured at the customer’s end of the service drop, whichever is less.

 1. A water utility using a full allocation study to determine total fire service charges shall apportion such charges between public and private fire services based upon the relative flow demand required by each segment as set forth by the following formula (See Section 4(A)(4) for definition of Terms):

 A= B/(C+D)

 P= (AxD)+ E

 T= (CxA)+ M

 2. A water utility using PUC Chapter 690 to determine total public fire protection charges shall use the following formula for determining the revenues required for private fire protection services (See Section (A)(4) for definition of Terms):

 P=(T/C)\*D[[1]](#footnote-1)

 3. Regardless of whether a water utility determines private fire protection charges by Subsection A(1) or A(2) above, for cost allocation purposes, public hydrants shall be assumed to have flow rates of 500 GPM in residential areas and 1000 GPM in all other areas. All private hydrants, except the first hydrant with each sprinkler system, shall be assumed to have flow rates of 500 GPM. The first hydrant connected to a sprinkler system is excluded from the calculation and there is no additional charge for that hydrant. In the absence of more specific information, flow rates for sprinkler systems may be determined using the National Fire Protection Association (NFPA) Table 13 provided in Appendix B. Utilities may use different flow rates if they can be justified and supported by adequate documentation.

 4. TERMS

 The terms contained in Sections 4(A)1 and 2 are defined as follows:

 A = Indirect gallon per minute cost

 B = Total indirect fire protection costs

 P = Revenue requirement for private fire protection

 T = Revenue requirement for municipal fire protection

 C = Total flow demand required for municipal fire protection

 D = Total flow demand required for private fire protection

 E = Private fire protection direct costs

 M = Municipal fire protection direct costs

 5. This method of determining private fire protection charges may be implemented at the discretion of the water utility, or a water utility may be ordered to do so by the Commission after a finding of good cause. In either case, reallocation of charges, if excessive, may be phased-in on a case-by-case basis.

STATUTORY AUTHORITY: 35-A M.R.S.A. §§ 101, 103, 104, 111, 301, 310, 502, 1301, 6104 and 6105.

EFFECTIVE DATE: June 21, 1979

AMENDED: May 1, 1995

EFFECTIVE DATE (ELECTRONIC CONVERSION): May 4, 1996

AMENDED: This rule was approved as to form and legality by the Attorney General on June 4, 1998. It was filed with the Secretary of State on June 4, 1998 and will be effective on June 9, 1998.

NON-SUBSTANTIVE CORRECTIONS: July 6, 1998 -

 error in addition in Appendix A Step 3; NFPA 13 reference in Appendix B.

APAO WORD VERSION CONVERSION (IF NEEDED) AND ACCESSIBILITY CHECK: July 19, 2025

**Appendix A**

**Method for Determination of Demand Based Fire Protection Charges**

Step 1: Determine Total Revenue Requirement

 1) From Rate Case Filing or Income Statement $1,750,080

Step 2: Determine Revenue Required From Municipal Fire Protection (T)

 2) From Chapter 69 of PUC Rules $274,763

Step 3: Determine Municipal Fire Protection Demand Flow Requirements (C)

 Customer Number of Demand Total

 Class Hydrants Flow Demand

 GPM GPM

 Residential 343 500 17,500

 Commercial 128 1,000 128,000

 Industrial 68 1,000 68,000

 Total 539 367,500 GPM

Step 4: Determine Private Fire Protection Demand Flow Requirements (D)

 Private Fire Number of Average Total

 Protection Class Services Demand Demand

 GPM GPM

 Private Hydrants(a) 47 500 23,500

 Sprinkler 0-99 GPM 26 80 2,080

 Sprinkler 100-199 GPM 4 196 784

 Sprinkler 200-399 GPM 130 200 26,000

 Sprinkler 400-599 GPM 32 535 17,120

 Sprinkler 600-999 GPM 3 881 2,643

 Sprinkler 1000+ GPM 2 1,800 3,600

 Total 244 75,727 GPM

 (a) excludes the first hydrant with each sprinkler system

Step 5: Determine the Total Revenue Required from Private Fire Protection (P)

 Formula: P= (T/C)\*D

 P = ($274,763/367,500) \* 75.727 = $56,618

Step 6: Allocate Private Fire Protection Revenue Requirement Based Upon Average Demand

Private Fire Number of Average Cost Average Revenue

Protection Class Services Demand Per Cost Allocation

 GPM GPM

Private Hydrants(a) 47 500 $0.747659 $373.83 $17,569.99

Sprinkler 0-99 GPM 26 80 $0.747659 $59.81 $1,555.13

 Sprinkler 100-199 GPM 4 196 $0.747659 $146.54 $586.16

 Sprinkler 200-399 GPM 130 200 $0.747659 $149.53 $19,439.14

 Sprinkler 400-599 GPM 32 535 $0.747659 $400.00 $12,799.93

 Sprinkler 600-999 GPM 3 881 $0.747659 $658.69 $1,976.06

Sprinkler 1000+ GPM 2 1800 $0.747659 $1,345.79 $2,691.57

Total 244 $56,618.00

(a) excludes the first hydrant with each sprinkler system

**Appendix B**

**Demand Based Fire Protection Charges**

*Revised September 10, 1997*

The “Demand Based Fire Protection” is a refinement of so called Method “A” as recommended by the Fire Protection Task Force to the Maine Public Utilities Commission on January 16, 1996. A number of water utilities have attempted to implement Method “A” and have found the lack of available data on actual sprinkler system fire flow demands to be impediment to its implementation. This refinement is necessary to address these problems of incomplete fire flow demand data for individual private sprinkler systems.

The Method “A” is an allocation methodology for the equitable apportionment of cost associated with providing Public and Private Fire Protection. The allocation methodology relies on data from the actual design of individual private fire protection systems (sprinklers). The demand required for an individual sprinkler system in terms of flow design is in gpm (gallons per minute).

Deficiencies in availability of fire flow data on sprinklers have been found. The State Fire Marshal Office has minimal records of sprinkler system designs.

Due to this deficiency, an alternative technique is proposed to be used to provide an estimate of the Fire Flow Demand for sprinkler systems where actual system design data is not available.

The following table titled “Water Sprinkler System Flows for Fire Protection Rates” shall be used in the calculation of the “Fire Flow Demand” when the design data for a sprinkler system is not available. Design data must be completed by a Sprinkler System Engineer registered in the State of Maine with the State Fire Marshal Office.

|  |  |
| --- | --- |
| Occupancy Hazard | System Flow Rate\* |
| Per NFPA 13 | Wet System | Dry System |
| Light Hazard | 175 gpm | 230 gpm |
| Ordinary Hazard 1 | 260 gpm | 340 gpm |
| Ordinary Hazard 2 | 350 gpm | 460 gpm |
| Extra Hazard 1 | 875 gpm | 1140 gpm |
| Extra Hazard 2 | 1150 gpm | 1500 gpm |

\* For dry sprinkler systems the flow rates are 30% above the requirement for a wet sprinkler per NFPA 13.

A-1-.7 Occupancy examples in the listings as shown in the various hazard classifications are intended to represent the norm for those occupancy types. Unusual or abnormal fuel loadings or combustible characteristics and susceptibility for changes in these characteristics, for a particular occupancy, are considerations that should be weighed in the selection and classification.

 The Light Hazard classification is intended to encompass residential occupancies; however. this is not in preclude the use of listed residential sprinklers in residential occupancies or residential portions of other occupancies.

 A-14.7.1 Light Hazard Occupancies include occupancies having conditions similar to:

Churches

Clubs

Eaves and overhangs, if combustible construction with no combustibles beneath

Educational

Hospitals

Institutional

Libraries, except large stack rooms

Museums

Nursing or convalescent homes

Office, including data processing

Residential

Restaurant seating areas

Theaters and Auditoriums excluding stages and prosceniums

Unused attics

 A-1-4.7.2.1 Ordinary Hazard Occupancies (Group 1) include occupancies having conditions similar to:

Automobile parking and showrooms

Bakeries

Beverage manufacturing

Canneries

Dairy products manufacturing and processing

Electronic plants

Glass and glass products manufacturing

Laundries

Restaurant service areas.

MOVING AND STORAGE

 STORAGE 20' / 21' BELOW EX (1)

 STORAGE 22' ABOVE EX (2)

 RACKS EX (2)

 A-1-4.7.2.2 Ordinary Hazard Occupancies (Group 2) include occupancies having conditions similar to:

Cereal mills

Chemical plants - ordinary

Confectionery products

Distilleries

Dry cleaners

Feed mills

Horse stables

Leather goods manufacturing

Libraries - large stack room areas

Machine shops

Metal working

Mercantile

Paper and pulp mills

Paper process plants

Piers and wharves

Post offices

Printing and publishing

Repair garages

Stages

Textile manufacturing

Tire manufacturing

Tobacco products manufacturing

Wood machining

Wood product assembly.

 A-1-4.7.3.1 Extra Hazard Occupancies (Group 1) include occupancies having conditions similar to:

Aircraft hangars (except as governed by NFPA-409) Combustible hydraulic fluid use areas

Die casting

Metal extruding

Plywood and particle board manufacturing

Printing [using inks having flash points below 100º F (37.9º C)]

Rubber reclaiming, compounding, drying, milling, vulcanizing

Saw mills

Textile picking; opening. blending. garnetting, carding, combining of cotton, synthetics, wool shoddy, or burlap

Upholstering with plastic foams.

 Extra Hazard Occupancies (Group 2) include occupancies having conditions similar to:

Asphalt saturating

Flammable liquids spraying

Flow coating

Manufactured home or modular building assemblies (where finished enclosure is present and has combustible interiors)

Open oil quenching

Plastics processing

Solvent cleaning

Varnish and paint dipping.

1. See Appendix A for an example of this method, including allocation of revenues. [↑](#footnote-ref-1)