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Standpipe and Hose System Permit Submission Requirements

In accordance with the Uniform Fire Prevention and Building Code of New York State and the Standard for the Installation of Standpipe and Hose Systems (NFPA 14), all sprinkler contractors performing work on standpipe systems in the City of Syracuse shall apply for a permit through City of Syracuse Permit's Desk (315) 448-8600. All standpipe systems and associated submittal documents for systems installed within the City of Syracuse are subject to the Syracuse Fire Prevention Bureau's review and inspection process. The submitted documents shall be prepared by a professional engineer registered in the State of New York and bare the seal of the design professional in accordance with Article 145 of the New York State Education Law. Supporting documentation shall be submitted with all plan submittals.

The following will describe in general information necessary for our review:

- Written scope of work which includes the design standards, overview of installation, and intent of the system.
- A floor plan which identifying locations of all stairwells and all standpipe hose connection locations.
- All depicted detail and locations of risers, piping, sizes, supports, heads, drains, ITV's and valves.
- Manufacturer's equipment and material listing information.
- All obstruction detail and mechanical equipment that could affect system operations.

Submissions must consist of two (2) sets of all documents (plans, hydraulic calculations, and manufacturer's material information).

The following outlines the in detail what submitted plans shall include:

Working drawings: (extracted from NFPA 14)

Working plans shall be drawn to an indicated scale, on sheets of uniform size, with a plan of each floor, and shall show those items from the following list that pertain to the design of the system:

- (1) Name of owner(s) and occupant(s)
- (2) Location, including street address
- (3) Point of compass
- (4) Name and address of installing contractor
- (5) For automatic and semiautomatic standpipe systems, the following:
 - (a) Size of city main in street and whether dead end or circulating; if dead end, direction and distance to nearest circulating main
 - (b) City main test results and system elevation relative to test hydrant
- (6) For automatic and semiautomatic standpipe systems, other sources of supply, with pressure and elevation
- (7) Approximate capacity of each dry pipe system
- (8) For automatic and semiautomatic standpipe systems, water supply capacity information, including the following:
 - (a) Location and elevation of static and residual test gauge with relation to the riser reference point
 - (b) Flow location
 - (c) Static pressure [psi (bar)]
 - (d) Residual pressure [psi (bar)]
 - (e) Flow [gpm (L/min)]
 - (f) Date
 - (g) Time
 - (h) Name of person who conducted the test or supplied the information
 - (i) Other sources of water supply, with pressure or elevation
- (9) Pipe type and schedule of wall thickness

- (10) Nominal pipe size and cutting lengths of pipe (or center-to-center dimensions)
- (11) Type of fittings and joints and locations of all welds and bends
- (12) Type and location of hangers, sleeves, braces, and methods of securing piping
- (13) All control valves, check valves, drain pipes, and test connections
- (14) Make, type, model and size of alarm, dry pipe, or deluge valve
- (15) Type and location of alarms
- (16) Size and location of standpipes, hose outlets, hand hose, nozzles, cabinets, and related equipment
- (17) Information on the hydraulic data nameplate
- (18) Hydraulic reference points shown on plan that correspond with comparable reference points on the hydraulic calculation sheets
- (19) The setting for pressure-reducing and pressure-restricting valves
- (20) For automatic and semiautomatic standpipe systems, size and location of hydrants, including static and residual hydrants used in flow tests
- (21) Size, location, and piping arrangement of fire department connections
- (22) Scale and graphical representation of the scale
- (23) Hose valve manufacturer and model
- (24) Pressure-reducing valve(s) manufacturer and model
- (25) Required pressure at hose valve outlet
- (26) Location of hose valves used in the hydraulic calculations
- (27) Standpipe system demand (flow and pressure) at the following locations:
 - (a) Fire department connection (FDC) inlet
 - (b) Fire pump discharge flange
 - (c) Water supply tank discharge
 - (d) Water supply source if different from (a) through (c)

Hydraulic Calculations Forms: (Extracted from NFPA 14)

Hydraulic Calculations shall be prepared on forms that include a summary sheet, detailed worksheets, and a graph sheet as required and outlined in NFPA 14. All documents must be submitted in paper form.

Summary Sheet. The summary sheet shall contain the following information, where applicable:

- (1) Date
- (2) Location
- (3) Name of owner and occupant
- (4) Building number or other identification
- (5) Description of hazard
- (6) Name and address of contractor or designer
- (7) Name of approving agency
- (8) System design requirements, as follows:
 - (a) Number of standpipes flowing
 - (b) Minimum rate of water application gpm (L/min)
- (9) Total water requirements as calculated, including allowance for inside hose, outside hydrants, and sprinklers for buildings with partial sprinkler protection

Detailed Worksheets. Detailed worksheets or computer printout sheets shall contain the following information:

- (1) Sheet number
- (2) Hose connection description and discharge constant (K)
- (3) Hydraulic reference points
- (4) Flow in gpm (L/min)
- (5) Pipe size
- (6) Pipe lengths, center-to-center of fittings
- (7) Equivalent pipe lengths for fittings and devices
- (8) Friction loss in psi/ft (bar/m) of pipe
- (9) Total friction loss between reference points
- (10) Devices per 8.3.1.5
- (11) Elevation head in psi (bar) between reference points
- (12) Required pressure in psi (bar) at each reference point
- (13) Velocity pressure and normal pressure if included in calculations
- (14) Notes to indicate starting points or reference to other sheets or to clarify data shown

Graph Sheet. A graphic representation of the complete hydraulic calculation shall be plotted on semiexponential graph paper (Q^{1.85}) and shall include the following:

- (1) Water supply curve
- (2) Standpipe system demand
- (3) Hose demand (where applicable)
- (4) Partial sprinkler demand where applicable (see 7.10.1.3.2)

December 2018