Clark County Department of Building & Fire Prevention

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Permit Type: 105.7.1
Control Number: H.0
Effective Date: 11/15/11

TITLE: FOAM SUPPRESSION SYSTEMS

SCOPE: Clark County Department of Building & Fire Prevention requirements for the submittal and approval of plans for installation of foam suppression systems.

Foam suppression systems are to be in accordance with the Clark County Fire Code and NFPA 11. Examples of foam suppression systems include fuel tank foam suppression systems and aircraft hangar foam suppression systems. This guideline does not address foam-water sprinkler systems. For information on foam-water sprinkler systems, please see the appropriate guideline. Further, where a pump is required, the pump submittal shall meet the requirements of the fire pump guideline.

For new work in existing buildings, see the “New Work in Existing Buildings” guideline.

PURPOSE: To standardize plan/permit requirements required by the Fire Prevention in accordance with the Clark County Fire Code. Permits are valid through the duration of construction. Work must commence within 180 days and remain active with no period of inactivity exceeding 180 days, or the permit becomes invalid.

DEFINITIONS:

Assessor’s Parcel Number (APN): A unique number assigned to each property by the Clark County Assessor’s office.

Foam Application Devices: Devices such as foam chambers, foam monitor nozzles, and other devices that apply foam/water to the hazard.

Foam Introduction Devices: Devices such as inductors and other devices that introduce foam concentrate to the water supply to create foam/water for application to the hazard.

PERMIT FEES:

Permit fees shall be assessed in accordance with the Permit Fee Schedule as adopted in the Clark County Fire Code. For applications that are expedited, additional fees shall apply.

SPECIFICATIONS AND REQUIREMENTS:

An application must be completed for each submittal. A minimum of three sets of plans shall be submitted with the permit application. In addition, a minimum of one set of calculations for all systems/designs and one set of manufacturer specification sheets for all installed components shall be provided with the application.

Plans shall show compliance in accordance with Clark County Fire Code and NFPA 11. All submittals must be legible and readable or the plan shall be issued a correction letter for cause.

Plans shall address the following:
Working plans shall be drawn to an indicated scale, on sheets of uniform size, and shall show those items from the following list that pertains to the design of the system:

(1) Name of owner and occupant.
(2) Location, including street address and APN.
(3) Name, address, phone number, and contractor's license number of installing contractor.
(4) Signature and NICET number, or engineer's seal, of the designer.
(5) General notes as required by the AHJ.
(6) Point of compass.
(7) A graphic representation of the scale used on all plans.
(8) Top view of hazard being protected.
(9) Full height cross section, including structural member information, of hazard being protected. Information to include ceiling construction, both for interior and exterior roof and floor assemblies.
(10) Ceiling/roof heights and slopes not shown in the full height cross section
(11) Location of partitions, as applicable.
(12) Location of dike walls, as applicable.
(13) Routing of all piping, including both underground and aboveground. All piping between the foam concentrate tanks and the foam application devices shall be installed piping preconnected to the system.
(14) Pipe type and schedule of wall thickness.
(15) Nominal pipe size and cutting lengths of pipe (or center-to-center dimensions).
(16) Make, type, model, and nominal size of foam chambers or foam monitor nozzles, or other application device. All foam application devices shall be in accordance with NFPA 11 and installed in conformance with manufacturer specifications and installation instructions.
(17) Type of fittings and joints and location of all welds and bends. The contractor shall specify on drawing any sections to be shop welded and the type of fittings or formations to be used.
(18) Type and locations of hangers, sleeves, braces, and methods of securing sprinklers when applicable. Provide details for each, with individual components labeled. Each detail to be labeled and identified by label on floor plans.

(19) All control valves, check valves, drain pipes, and test connections. Provide details for riser diagram and inspector test connection, with individual components labeled.
(20) Details of water supply for the system. Systems are required to have automatic water supply, except for fuel storage tank farms that are subject to long duration fires, which are permitted to have manual water supply.
(21) Size of city main in street and whether dead end or circulating; if dead end, direction and distance to nearest circulating main; and city main test results and system elevation relative to test hydrant.
(22) Private fire service main sizes, lengths, locations, weights, materials, point of connection meters, and valve pits; and the depth that the top of the pipe is laid below grade.
(23) Piping provisions for flushing.
(24) Information about backflow preventers (manufacturers, size, type).
(25) Size and location of hydrants, showing size and number of outlets and if outlets are to be equipped with independent gate valves. All water supply results, including identification of static and residual hydrants that were used in the flow tests, orifice flowed and pitot pressure, shall be shown on the plans.
(26) Utility plans and/or plumbing plans necessary to show connection from water supply to fire sprinkler system.
(27) Location of pump, as applicable.
(28) Foam concentrate tank storage, to provide both the initial as well as reserve volumes. Foam concentrate must be preconnected to the system.
(29) Location of foam inductor, or other device used to introduce foam concentrate to the system.
(30) Size, location, and piping arrangement of fire department connections. The fire department connections must be shown on a specific detail. Any signage that is required for the fire department connection shall also be detailed.
(31) A detail of signage provided at the Fire Department Connection.
(32) For manual systems, detailed instructions shall be provided as a sign at the Fire Department Connection. Provide detail(s) for the sign(s).
(33) For hydraulically designed systems, the information on the hydraulic data nameplate, including a detail of the hydraulic information sign.
(34) Hydraulic reference points shown on the plan that correspond with comparable reference points on the hydraulic calculation sheets.
(35) The minimum rate of foam application (density or flow or discharge pressure) and the design area of foam application.
(36) The total quantity of water and the pressure required noted at a common reference point for each system.
(37) Relative elevations of foam application devices, junction points, and supply or reference points.

General Notes shall be added to the plans to provide clarity of design. The plans shall contain the following general note narratives:

(1) Describe the scope of work that is covered by permit. Indicate where foam protection is being provided and for what purpose. For permits where the scope of work is only over a portion of a facility, the area of work shall be marked by a boundary line that is labeled "Scope of Work", and the narrative shall address this situation.
(2) Provide a general description of the hazard being protected.
(3) Provide a description of the design, including discharge duration, density of foam/water application, the minimum foam % in foam/water solution, required submergence rate, etc.
(4) Indicate whether the system is automatic or manual.
(5) For systems that utilize fire pumps, indicate the pressure and flow ratings of the pump required.
(6) Indicate the manufacturer and description of foam concentrate used.
(7) Indicate the manufacturer, schedule, and type of main piping.
(8) Indicate the manufacturer, schedule, and type of fittings and couplings.
(9) Indicate the manufacturer, schedule, and type of underground piping.
(10) Indicate the manufacturer, model number and type of water meter assembly
(11) Indicate the type of freeze protection provided (i.e. building heated to 40 ºF at all times, dry system, etc.).
(12) Indicate the maximum anticipated system pressure for each riser/system, and indicate the minimum pressure required for the hydrostatic test of each riser/system (test pressure must be a minimum of 50 psi greater than the maximum anticipated system pressure).
(13) Indicate the methods for flushing the system.
(14) Describe the required acceptance tests, including a description of the discharge test.
(15) Edition year of NFPA 11 to which the sprinkler system is designed.

PERMIT REVISIONS AND RESUBMITTALS

Revisions to approved plans are required to be submitted and approved. Revisions will be assessed additional plan review fees. A copy of the previously approved plan shall accompany the revised submittal to facilitate the review. Clearly indicate all changes to the revised plans by clouding the change with a delta number signify the date of plan change. When several changes have been made, a detailed list of changes is required.

Re-submittals to address a Letter of Correction will require a full submittal. These plans require a copy of the red lined plan from the previous submittal to facilitate the review. Clearly indicate all changes by clouding the change with the delta number to signify the date of plan change.

PLANS CHECK STATUS INSTRUCTIONS:

The status of the review can be checked by logging on to:
www.clarkcountynv.gov/building/fire-prevention

INSPECTIONS THAT MAY BE REQUIRED AND SCHEDULING INSTRUCTIONS:

If approved, an inspection will need to be scheduled. To schedule an inspection, go to: www.clarkcountynv.gov/building/fire-prevention
A fire inspector will review your site in accordance with the approved plans and this guideline.

The Fire Prevention (FP) may witness and accept inspection, testing and maintenance of fire and life safety systems conducted by approved individuals as required by and within the scope and authority of the Clark County Fire Code.

This Guideline does not take the place of the Fire Code and does not take precedence over any Fire Code requirement or position taken by the Fire Chief. When a conflict exists between the requirements of this Guideline and the Fire Code or the opinion of the Fire Chief, the Fire Code or opinion of the Fire Chief prevails.

Technical Assistance, when required by the Fire Chief, will require a Technical Opinion and Report prepared by a State of Nevada licensed: qualified engineer, specialist, laboratory, or fire safety specialty organization acceptable to the Fire Chief and the owner. The Fire Chief is authorized to require design submittals to bear the Wet Stamp and Signature of a professional engineer.

Acceptance of Alternative Materials and Methods requires a Technical Opinion and Report prepared by a State of Nevada licensed: qualified engineer, specialist, laboratory, or fire safety specialty organization acceptable to the Fire Chief and the owner. The Fire Chief is authorized to require design submittals to bear the Wet Stamp and Signature of a professional engineer.