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**To:** Clean Agent Fire Extinguishing System Design or Contracting Firms

**RE:** Coldwater FD Standardized Plan Submittals

**EFFECTIVE FEBRUARY 20, 2009**

The Coldwater Fire Department would like to take this opportunity to inform you of our desire to achieve a standardized means and formatting for all future clean agent extinguishing system design plans for submittal to our department for review.

In accordance to the requirements of the Michigan Building Code and the National Standard on Clean Agent Fire Extinguishing Systems (NFPA 2001), all contractors performing work on clean agent fire extinguishing systems within the City of Coldwater shall apply for a mechanical permit through the Branch County Mechanical Inspector's Office (517) 279-4303. **All clean agent fire extinguishing systems and associated submittal documents for systems installed within the City of Coldwater are subject to the Coldwater Fire Department's review and inspection process.** The submitted documents shall be prepared by a professional engineer registered in the State of Michigan or a person who has achieved NICET certification for clean agent fire extinguishing system design layout. Supporting documentation shall be submitted with all plan submittals.

**The plans shall be submitted by the following means:**

- (2) Sets of plans, calculations and manufacturer's material listings or Electronic CAD files. (with manufactures listings and calculations in (*pdf) formats)

**WORKING PLANS:** (Extracted from NFPA 2001)

- Name of owner and occupant.
- Location, including street address.
- Name of contractor, address, phone number and email address.
- Point of compass and symbol legend.
- Location and construction of protected enclosure walls and partitions.
- Location of fire walls.

- Enclosure cross section, full height or schematic diagram, including location and construction of building floor/ceiling assemblies above and below, raised access floor and suspended ceiling.
- Agent being used.
- Design extinguishing or inerting concentration.
- Description of occupancies and hazards being protected, designating whether or not the enclosure is normally occupied.
- For an enclosure protected by a clean agent fire extinguishing system an estimate of the maximum positive and the maximum negative pressure, relative to ambient pressure, expected to be developed upon the discharge of agent.
- Description of exposures surrounding the enclosure.
- Description of the agent storage containers used including internal volume, storage pressure, and nominal capacity expressed in units of agent mass or volume at standard conditions of temperature and pressure.
- Description of nozzle(s) used including size, orifice port configuration, and equivalent orifice area.
- Description of pipe and fittings used including material specifications, grade, and pressure rating.
- Description of wire or cable used including classification, gauge [American Wire Gauge (AWG)], shielding, number of strands in conductor, conductor material, and color coding schedule. Segregation requirements of various system conductors shall be clearly indicated. The required method of making wire terminations shall be detailed.
- Description of the method of detector mounting.
- Equipment schedule or bill of materials for each piece of equipment or device showing device name, manufacturer, model or part number, quantity, and description.
- Plan view of protected area showing enclosure partitions (full and partial height); agent distribution system including agent storage containers, piping, and nozzles; type of pipe hangers and rigid pipe supports; detection, alarm, and control system including all devices and schematic of wiring interconnection between them; end-of-line device locations; location of controlled devices such as dampers and shutters; and location of instructional signage.
- Isometric view of agent distribution system showing the length and diameter of each pipe segment; node reference numbers relating to the flow calculations; fittings including reducers and strainers; and orientation of tees, nozzles including size, orifice port configuration, flow rate, and equivalent orifice area.

- Scale drawing showing the layout of the annunciator panel graphics if required by the authority having jurisdiction.
- Details of each unique rigid pipe support configuration showing method of securement to the pipe and to the building structure.
- Details of the method of container securement showing method of securement to the container and to the building structure.
- Complete step-by-step description of the system sequence of operations, including functioning of abort and maintenance switches, delay timers, and emergency power shutdown.
- Point-to-point wiring schematic diagrams showing all circuit connections to the system control panel and graphic annunciator panel.
- Point-to-point wiring schematic diagrams showing all circuit connections to external or add-on relays.
- Complete calculations to determine enclosure volume, quantity of clean agent, and size of backup batteries and method used to determine number and location of audible and visual indicating devices, and number and location of detectors.
- Details of any special features.
- Pressure relief vent area, or equivalent leakage area, for the protected enclosure to prevent development, during system discharge, of a pressure difference across the enclosure boundaries that exceeds a specified enclosure pressure limit.

**NOTE:** Deviation from approved plans shall require permission of the Coldwater Fire Department.

**GENERAL NOTES:**

- The detail on the system shall include information and calculations on the amount of agent; container storage pressure; internal volume of the container; the location, type, and flow rate of each nozzle including equivalent orifice area; the location, size, and equivalent lengths of pipe, fittings, and hose; and the location and size of the storage facility. Pipe size reduction and orientation of tees shall be clearly indicated. Information shall be submitted pertaining to the location and function of the detection devices, operating devices, auxiliary equipment, and electrical circuitry, if used. Apparatus and devices used shall be identified. Any special features shall be adequately explained.

- Pre-engineered systems shall not be required to specify an internal volume of the container, nozzle flow rates, equivalent lengths of pipe and fitting and hose, or flow calculations, when used within their listed limitations. The information required by the listed system design manual, however, shall be made available to the Coldwater Fire Department for verification that the system is within its listed limitations.

**NOTE:** Deviation from supplying details above will result in plans being refused for review.

All requested details noted above for paper submittals shall be included in plans submitted in electronic CAD format with accompanying (*pdf) manufacturer's equipment and device listings and flow calculations.

All submittals shall be a complete package submitted to the Coldwater Fire Department, Fire Marshal's Office prior to installation. Upon completion of the final acceptance testing inspection by the Coldwater Fire Department; the installing contractor shall provide the Coldwater Fire Department with the Certificate of Completion. The Coldwater Fire Department will generate an electronic inspection report and email it to your firm's contact person listed.

A copy of this notice has been distributed to the Branch County Mechanical Inspector's Office for their records. Should you have any questions concerning this notice, please contact our offices.

In Fire Safety,

Paul L. Dove

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*Pld/Letters/Clean-Agent-Firms/Plan-Submittals/2009/MSWord*