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February 3, 2009

To: All Concerned State Agencies  
From: Office of the State Fire Marshal  
Subject: Information Bulletin Regarding Water Supply for State Facilities in Rural Areas

When State facilities are constructed in rural areas of the state, there is usually no water supply and distribution system such as that which is commonly found in urban municipalities. When the State Fire Marshal's Office adopted the 2007 California Fire Code, Appendix B Fire Flow Requirements for Buildings was adopted for the first time. Water availability in rural areas has lead to issues regarding storage capacity of water tanks and fire flow requirements as required by Appendix B.

For example, a 5,000 square foot office building of type V-B construction will need to provide 2000 gallons of water per minute for a duration of two hours which equates to 240,000 gallons.

California Fire Code, Section B105 allows the fire chief to reduce the fire flow requirements up to 75% of the required fire flow provided that the building is equipped with a fire sprinkler system that has been installed in accordance with Section 903.3.1.1 or 903.3.1.2 of the 2007 California Fire Code.

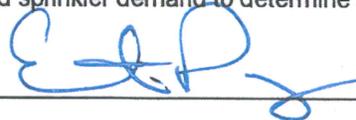
California Fire Code Section B103 gives the code official the authorization to use NFPA 1142, 2001 edition. Using the formulas in this standard substantially increases the water supply requirement based on building volume, construction type, hazard classification and exposure proximity factor. There is not a reduction in water supply by percentage given for automatic sprinklers, however section 7.4.1 of NFPA 1142 does authorize the fire official to waive the water supply requirements if the buildings are provided with an NFPA 13D, 13R or 13, automatic fire sprinkler system.

It is the policy of the Office of the State Fire Marshal that the fire flow requirements for projects in rural areas may be reduced provided that there is compliance with each of the following requirements:

- 1) Buildings that are in excess of 500 square feet shall be provided with an automatic sprinkler system in accordance with NFPA 13 with total coverage and 100 gallons per minute for outside hose allowance.
- 2) The water supply shall meet or exceed the demand of the sprinkler system of the building. In cases where multiple buildings are located on the same parcel, the sprinkler system demand of the largest and most hazardous building on that lot shall be used.
- 3) For fire flow calculations using NFPA 1142 to calculate fire flow required for the building or the most hazardous and/or largest building on the same lot, use the formula for fire flow with exposures for buildings that are within fifty (50) feet of other buildings, reduced by 50%. (It is assumed that not more than one or two buildings may be involved in a fire at any one time).
- 4) For fire flow calculations using California Fire Code Appendix B, use the square footage, construction type and gallons per minute with a 75% reduction for a sixty (60) minute duration.
- 5) Combine the calculated fire flow with the required sprinkler demand to determine the tank capacity required for fire protection.



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