

**STOREY COUNTY FIRE DEPARTMENT
POLICIES AND PROCEDURES**

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AUTHORITY: Fire Chief

SUBJECT: Fire Pump Size – Fire Flows

- I. PURPOSE:** This is a guide to outline the required fire flows and fire sprinkler pump sizes required both in Storey County and Storey County Fire Protection District.

Storey County Fire Protection District recognizes and agrees with NFPA 20 A.4.8, which states “*The performance of the pump when applied at capacities over 140 percent of rated capacity can be adversely affected by the suction conditions. Application of the pump at capacities less than 90 percent of the rated capacity is NOT recommended.*”

II. POLICY:

Fire pumps shall be sized and operated at their rated UL or FM Capacity at 100 percent of their rated capacity as listed on the nomenclature plate. The greatest fire flow demand will equal the total flow for the greatest demand on the automatic fire sprinkler system or the standpipe requirements.

Fire pumps shall meet the following requirements:

- Fire pumps shall be diesel driven – variable speed.
- ALL fire pumps shall be redundant (two fire pumps installed in parallel).
- Approved by SCFPD prior to installation.
- Meet or exceed the requirements of NFPA 20.

III. PROCEDURE:

- A. Fire Pump Engineers and Contractors shall follow Appendix B of the Storey County Fire Protection District Amended Fire Code when determining the Fire Flow Requirements for all commercial structures. Fire Pumps within the district shall be permitted at 100 percent of the pumps rated capacity – NO EXCEPTIONS.

IFC Appendix B – Fire Flow Requirements.

Section B105, Fire-flow Requirements for Buildings:

B105.2 Buildings other than one- and two-family dwellings.

The minimum fire-flow and flow duration for buildings other than one- and two-family *dwellings* shall be as specified in Table B105.1.

Exception: A reduction in required fire-flow of up to 50 percent, as *approved*, is allowed when the building is provided with an *approved automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2. The resulting fire-flow

shall not be less than 2,000 gallons per minute (5678 L/min) at 100 percent of the pump capacity for the prescribed duration as specified in Table B105.1.

EXAMPLE: For a 700,000 sf warehouse that is of Type IV Construction would require a fire flow of 8,000 GPM. Storey County Adopted Fire Code allows up to a 50% reduction if the building has an approved automatic sprinkler system. This now makes the required fire flow 4,000 GPM.

This would require 2 fire pumps rated at 2,000 GPM at 100% of the rated UL or FM capacity to achieve a minimum of 4,000 GPM required for duration of 4 hours.

- B. Contractor shall fill out and submit a plan review and permit application to Storey County Fire Protection District. Applications can be located and fees paid online by visiting <http://www.storeycounty.org/Fire/Prevention.asp>.
- C. Once plan review and permit fees are paid, contractor shall submit a full set of plans on a PDF file to Nevada Blue <http://www.nvblue.com/> or calling the Reno office at 775-827-4441 or Carson City 775-833-6011.
- D. Contractor or design professional shall submit a full pump submittal including detailed plans indicating pump size, rating, capacity, nomenclature plate, pump curves, pump house layout and design, site water flows, pump manufacture information or any additional relevant information for approval. Plans shall bear the stamp of a Nevada licensed FPE, Engineer or design professional.
- E. Storey County Fire Protection District will review submitted plans and either mark up the plans for approval or re-submission as needed.
- F. Once approved plans for the proposed pump submittal are reviewed by Storey County Fire Protection District staff, the fire prevention staff will generate an email message to Nevada Blue to release the approved set of plans to the contractor or have the contractor re-submit with corrections.
- G. Once plans have been released by Storey County Fire Protection District staff, contractor shall pay any additional fees to Nevada Blue and pick up approved plans from the local Nevada Blue office.
- H. All contractors shall have an approved set of plans on the job site at ALL times.

IV. SUMMARY

Life safety is our primary objective and this policy has been established to maintain consistency in all commercial structures within Storey County as well as Storey County Fire Protection District.