

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF MOUNTAIN WATER)
DISTRICT FOR A CERTIFICATE OF PUBLIC)
CONVENIENCE AND NECESSITY AUTHORIZING) CASE NO. 10080
THE CONSTRUCTION OF A WATER DISTRI-)
BUTION SYSTEM IN THE BIG CREEK AREA OF)
PIKE COUNTY, KENTUCKY)

O R D E R

IT IS ORDERED that Mountain Water District ("Mountain") shall file an original and seven copies of the following information with the Commission with a copy to all parties of record no later than December 18, 1987. If the information cannot be provided by this date, Mountain should submit a motion for an extension of time stating the reason a delay is necessary and include a date by which it will be furnished. Such motion will be considered by the Commission. Mountain shall furnish with each response the name of the witness who will be available at the public hearing for responding to questions concerning each item of information requested.

1. Mountain filed computer hydraulic analyses for the proposed water distribution system with its application. Unfortunately these analyses did not depict the "on-off" operation of Booster Pump No. 1 and Booster Pump No. 2, and the "empty-fill" cycles of Tank No. 1 and Tank No. 2, etc. (Note - Pump and Tank notations are from the construction plans). Based on this,

provide hydraulic analyses, supported by computations and actual field measurements, of typical operational sequences of the proposed water distribution system. These hydraulic analyses should demonstrate the operation of all pump stations and the "empty-fill" cycle of all water storage tanks. Computations are to be documented by a labeled schematic map of the system that shows pipeline sizes, lengths, connections, pumps, water storage tanks, wells, and sea level elevations of key points, as well as allocations of actual customer demands. Flows used in the analyses shall be identified as to whether they are based on average instantaneous flows, peak instantaneous flows, or any combination or variation thereof. The flows used in the analyses shall be documented by actual field measurements and customer use records. Justify fully any assumptions used in the analyses.

2. Provide a copy of the pump manufacturer's characteristic (head/capacity) curves on which the designs of the proposed pump stations were based. Also provide the appropriate design calculations.

3. The computer hydraulic analyses filed in this case for the proposed water distribution system indicate that the potential exists for the system to experience high pressure (more than 150 psig) at Nodes 6, 7, 8, 11, 12, 13, 27, 28, 45 and 52. Pressures at this level are in violation of PSC regulation 807 KAR 5:066, Section 6 (1). Provide details of any preventive measures or additional construction Mountain intends to perform to protect against this type of occurrence. Details should be documented by hydraulic analyses and field measurements.

4. The engineering information submitted with the application indicates that Mountain is proposing to install approximately 61 fire hydrants as part of this project. KRS 227, the "Recommended Standards For Water Works" by the Great Lakes - Upper Mississippi River Board of State Sanitary Engineers ("Ten States Standards") and the Insurance Services Office ("ISO") all have requirements for providing fire protection. All of these references require fire hydrant installation on a minimum of 6-inch diameter water lines. The ISO requires the capability to deliver at least 250 gallons per minute at a residual pressure of 20 pounds per square inch for a minimum of 2 hours from any fire hydrant. The Ten States Standards allow a fire hydrant on dead-end mains for flushing only if flow and pressure are sufficient. Otherwise an approved flushing hydrant or blow-off valve should be used. Based on the above, provide information as to the purpose of the proposed fire hydrants. If the purpose of the proposed fire hydrants is to provide fire protection, provide hydraulic analyses demonstrating the capability of Mountain's system to comply with the requirements of KRS 227, the ISO and the Ten States Standards. If the fire hydrants are proposed for reasons other than fire protection state why other equipment was not considered (e.g. blow-off valves, drain valves, etc.).

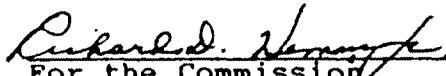
5. The computer hydraulic analyses of the proposed water distribution system utilized a useful horsepower input to model proposed Booster Pump No. 3 and proposed Booster Pump No. 6 (Note - Pump notations are from the construction plans). Provide the

rationale for using this input as opposed to using an actual pump curve which generally gives more appropriate results.

6. It is unclear from the engineering information provided whether the proposed Booster Pump Stations are duplex stations (i.e., duplicate pumps are provided). PSC regulation 807 KAR 5:066, Section 5 (3) and the "Recommended Standards For Water Works" by the Great Lakes - Upper Mississippi River Board of State Sanitary Engineers both require standby pumping equipment. Provide clarification concerning the proposed construction's compliance with the above mentioned regulations.

Done at Frankfort, Kentucky, this 23rd day of November, 1987.

PUBLIC SERVICE COMMISSION


For the Commission

ATTEST:

Executive Director