

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF THE EAST CASEY)
COUNTY WATER DISTRICT, A WATER DISTRICT)
ORGANIZED PURSUANT TO CHAPTER 74 OF THE)
KENTUCKY REVISED STATUTES, IN CASEY)
COUNTY, KENTUCKY, FOR (1) A CERTIFICATE)
OF PUBLIC CONVENIENCE AND NECESSITY,)
AUTHORIZING AND PERMITTING SAID WATER)
DISTRICT TO CONSTRUCT WATER DISTRIBUTION)
SYSTEM IMPROVEMENTS, CONSISTING OF)
TREATMENT PLANT IMPROVEMENTS, AN ELE-)
VATED STORAGE TANK, AND WATER TRANS-)
MISSION LINES; (2) APPROVAL OF THE)
PROPOSED PLAN OF FINANCING OF SAID)
PROJECT, AND (3) APPROVAL OF INCREASED)
WATER RATES PROPOSED TO BE CHARGED BY)
THE DISTRICT TO ITS CUSTOMERS)

CASE NO.
9899

O R D E R

IT IS ORDERED that East Casey Water District ("East Casey") 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 June 5, 1987. If the information cannot be provided by this date, East Casey 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. East Casey 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. In order to obtain realistic results when utilizing computer hydraulic analyses to predict a water distribution system's performance, engineering references stress the importance of calibrating the results predicted to actual hydraulic conditions. This calibration process should include matching field measurements to the results predicted by the computer over a wide range of actual operating conditions. As a minimum this should include average and maximum water consumption periods, as well as "fire flow" or very high demand periods.

Based on the above, explain the procedures used to verify the computer hydraulic analyses filed in this case. This explanation should be documented by field measurements, hydraulic calculations, etc.

2. The computer hydraulic analyses filed in this case are based on a diurnal customer demand pattern varying from .1 times the average day demand to 3 times the average day demand. The average day demand is defined as the 24-hour average demand.

Most engineering references state that instantaneous customer demands can peak at 3 to 15 times the 24-hour average demand. In addition, most engineering references also state that a water distribution system should be designed to meet at least the maximum hourly demand of its customers.

Based on the above information state exactly what measurements were made of East Casey's maximum hourly usage. If the maximum hourly usage was not measured directly, state why it was not.

In addition, state how the diurnal pattern for East Casey's system as well as the appropriate demand multipliers were determined. This response should be documented by appropriate field measurements.

3. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available at the locations listed below on East Casey's system. Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder. Also state the schematic junction number nearest the location of the pressure recorder.

a. Water line on the East Casey's water system at or near the connection point to the Liberty water system.

b. The water storage tank in the vicinity of junction 18.

c. Water line in the vicinity of junction 2.

d. On the upstream and downstream sides of the existing pressure reducing valve near in line 76.

e. On the suction and discharge sides of the pump in line 1.

4. East Casey filed six 24-hour pressure recording charts with its application. However, the exact location, the sea level elevation, and the schematic junction number nearest the monitoring location were not included. Provide this information (Note - if the previously filed pressure charts are for locations listed in Item 3, new pressure recordings do not have to be filed).

5. Provide a list of each of East Casey's existing pump stations. Give the location, number of pumps and their rated capacities, and the purpose of each pump station. Explain how the operation of each pump station is controlled. Provide a copy of the pump manufacturer's characteristics (head/capacity) curve for each of East Casey's existing pumps. Identify each curve as to the particular pump and pump station to which it applies. Also state if pump is in use and if pump will remain in use, will be abandoned or will be replaced.

6. Provide the criteria used in determining the location, size, overflow elevation and head range for the proposed water storage tank.

7. The engineering information submitted with the application indicates that East Casey is proposing to install approximately 19 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. 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 East Casey'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.).

8. The computer hydraulic analyses filed in this case for the proposed water distribution system indicate that the potential exists for the system to experience low pressure (less than 30 psig) at Nodes 8, 18, 36 and 63. Pressures at this level are in violation of PSC regulation 807 KAR 5:066, Section 6 (1). Provide details on any preventive measures or additional construction East Casey intends to perform to protect against this type of occurrence. Details should be documented by hydraulic analyses and field measurements.

9. 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 2, 22, 23, 29, 30, 31 and 46. Pressures at this level are in violation of PSC regulation 807 KAR 5:066, Section 6 (1). Provide details on any preventive measures or additional construction East Casey intends to perform to protect against this type of occurrence. Details should be documented by hydraulic analyses and field measurements.

10. Provide a Usage Table, in a format similar to those provided in Exhibit 15 for proposed customers, that gives an analysis of the bills and usage of present customers and an analysis of revenues from present rates. Also, all usage

information should be taken directly from the company's meter books and be based on a January through December 1986 test period.

11. Provide an analysis of the present customers that gives a breakdown of the number of customers by class and the size of each customer's meter. If any customer has more than one meter size please indicate so.

Done at Frankfort, Kentucky, this 13th day of May, 1987.

PUBLIC SERVICE COMMISSION


For the Commission

ATTEST:

Executive Director