COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE APPLICATION OF THE WHITE HALL WATER DISTRICT, A WATER DISTRICT ORGANIZED PURSUANT TO CHAPTER 74 OF THE KENTUCKY REVISED STATUTES OF MADISON COUNTY, KENTUCKY, FOR (1) A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY, AUTHORIZING AND PERMITTING SAID WATER DISTRICT TO CONSTRUCT AN EXTENSION OF ITS PRESENT DISTRIBUTION SYSTEM TO THE AREAS KNOWN AS PINEUR ACRES . . . AND SHADY HILLS: (2) APPROVAL OF THE FINANCING PLAN OF SAID PROJECT: AND (3) APPROVAL OF INCREASED WATER CONNECTION CHARGES	)	CASE NO. 9280

O R D E R

IT IS ORDERED that White Hall Water District ("White Hall") shall file an original and 7 copies of the following information with the Commission with a copy to all parties of record by May 3, 1985. White Hall shall also furnish with each response the name of the witness who will be available at the public hearing for responding to questions concerning each area of information requested. If neither the requested information nor a motion for an extension of time is filed by the stated date, the case may be dismissed.

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. Provide information as to why the pressures, predicted at Node 13, Node 14, Node 15, Node 16, Node 21, Node 24, Node 28, Node 30 and Node 32 by the computer hydraulic analyses do not closely match the pressure charts for these locations for the various conditions which were "modeled."

3. A pressure recording chart was filed for "Fountain Park 312, New Section - High Point." Provide the location (junction number) where this pressure was monitored.

4. Provide the exact location and approximate sea level elevations for all pressure recorder locations previously submitted.

5. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available on

the suction side of White Hall's existing pump station (Pump No. 1). Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder.

6. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available on the discharge side of White Hall's existing pump station (Pump No. 1). Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder.

7. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available at White Hall's water storage tank (Tank No. 1). Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder.

8. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available at White Hall's water storage tank (Tank No. 2). Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder.

9. Provide a pressure recording chart showing the actual 24-hour continuously measured pressure available on White Hall's existing water line near the connection point to the City of Richmond. Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder.

10. Provide a list of each of White Hall's water storage tanks. Give the location, capacity, and overflow elevation of each tank. Explain how water is supplied to each tank.

11. Provide a list of each of White Hall'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 characteristic (head/capacity) curve for each of White Hall's existing pumps. Identify each curve as to the particular pump and pump station to which it applies.

12. The pressure measured on both the suction and discharge side of Pump No. 2 would seem to indicate the cycling "on" and "off" of this pump station very frequently. Provide information as to how this pump station is controlled, and what improvements, etc., are proposed to correct this erratic pump station operation. If this problem has already been corrected, provide updated pressure recording charts showing the actual 24-hour continuously measured pressure available on both the suction side and discharge side of this pump station. Identify the 24-hour period recorded, the exact location of the pressure recorder and the sea level elevation of the recorder.

13. Provide pertinent information concerning the existing altitude valve at Tank No. 2. As a minimum this

should include the manufacturer, model number, type, rated opening pressure, rated closing pressure, actual field measured opening pressure, actual field measured closing pressure, and the exact location of the valve. State whether the altitude valve is "single-acting" or "double-acting" and provide a sketch of the installation piping and appurtenances.

14. Provide pertinent information concerning the existing pressure switch which controls Pump No. 2. As a minimum this should include the manufacturer, model number, type, maximum "set-point," minimum "set-point," actual field measured "pump on" pressure, actual field measured "pump off" pressure and the exact location of the pressure switch.

15. Provide clarification on the operation of lines 54 and 55. Were they included only to insure the operation of the computer program during Extended Period Simulation or do these water lines actually exist and the water storage tanks (Tanks No. 1 and 2) can actually backfeed past the pump stations (Pumps No. 1 and 2). If these water lines actually exist, provide information as to how the operation of these water lines in conjunction with the pump stations are controlled.

16. Provide information on how the customer demands utilized in the computer hydraulic analysis were determined and allocated to the various junctions. Also provide information on how the diurnal demand pattern used in the computer analysis was determined.

17. Provide flow test data for fire hydrants at or near the connection point to serve Shady Hills and the connection point to serve Pineur Acres. The flow tests shall be conducted in accordance with AWWA Manual No. 17. As a minimum this should include selecting a hydrant to be the "flowing" hydrant and selecting an additional hydrant for residual pressure readings. If a "back" hydrant (a hydrant between the "flowing" hydrant and the source of water) is not available, a residential hose bibb or faucet should be sufficient.

Care should be taken that there is no use of water at the location of the residual gauge while the flow test is being performed.

At the start of the test observe and record the normal system pressure at both hydrants. Then open the "flowing" hydrant and while the hydrant is flowing determine the discharge pressure by the use of a Pitot gauge, and record that pressure. Also observe and record the pressure at the residual hydrant.

18. Provide a map or sketch showing the exact location of the "flowing" and "back" hydrants and determine the approximate sea level elevation of each. Provide the observed level of water in the water storage tanks at the time of the flow tests and state which pumps were on and which were off during the flow tests.

19. Provide an explanation as to why the elevation and pressure for Junction 52 was not printed out for the

computer hydraulic analysis which includes Pineur Acres and Shady Hills Subdivisions.

Done at Frankfort, Kentucky, this 12th day of April, 1985.

PUBLIC SERVICE COMMISSION

Richard D. Heman

For the Commission

ATTEST:

Secretary