

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

NOV -5 11:42

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Helen F. Hoyt, Chairman
Richard F. Cole, Administrative Law Judge
Dr. Jerry Harbour, Administrative Law Judge

In the Matter of

Philadelphia Electric Company : Docket Nos. 50-352
(Limerick Generating Station, : 50-353
Units 1 and 2) :

TESTIMONY OF BRUCE APTOWICZ
AND CHARLES ZITOMER DESCRIBING
THE CITY OF PHILADELPHIA'S
WATER SUPPLY AND TRANSMISSION SYSTEM

Q.1. Please state your names, addresses, positions with the City of Philadelphia and the purpose of your testimony.

A.1. My name is Bruce Aptowicz, Manager of Operations, Water Department, City of Philadelphia. My business address is One Reading Center, Third Floor, Philadelphia, Pennsylvania, 19102.

My name is Charles Zitomer, Chief of Load Control, Water Department, City of Philadelphia. My business address is One Reading Center, Third Floor, Philadelphia, Pennsylvania 19102.

8411060535 841102
PDR ADDCK 05000352
T PDR

The purpose of this testimony is to describe the City of Philadelphia's water supply and transmission system.

Q.2. What are the City's current water consumptive demand rates for both average day and peak periods?

A.2. These values vary somewhat from year to year. However, for Fiscal Year 1984, the average day demand was 342 million gallons/day ("mgd"). For the period, July 1, 1983 through June 30, 1984 the maximum day demand was 480 mgd. The peak half hourly rate was 717 mgd.

Q.3. Please describe the current total and usable volume capacities of the City's water storage structures.

A.3. These values, with the inclusion of the recently constucted Northeast and Northwest basins of East Park Reservoir, are:

<u>Raw Water</u>	
Total Capacity	428 MG
Maximum Usable Capacity	245 MG
<u>Filtered Water</u>	
Total Capacity	738 MG
Maximum Usable Capacity	705 MG
<u>Total Water Storage</u>	
Total Capacity	1166 MG
Maximum Usuable Capacity	950 MG

Q.4. Please describe the City's water distribution system.

A.4. The City's water distribution system provides water service to

approximately 500,000 customer accounts through over 3,200 miles of water main piping, ranging in diameter from 3 inches to 93 inches. The distribution network is divided into eleven pressure districts, with individual district water pressures ranging between 30 Psi and 140 Psi. See "How Water in Philadelphia is Treated and Distributed, 1982," City Exhibit "A". Filtered water is conveyed both directly by gravity and by the use of pumps and equalizing storage reservoirs. Pumping capabilities are provided by six (5) primary pumping stations and six (6) booster stations, while filtered water is stored in fourteen (14) reservoirs and standpipes ranging in volume from 1.5 million gallons to 302 million gallons.

Q.5. Are there areas of the City that are supplied water from a single raw water source only?

A.5. Yes. The areas of the City supplied by a single raw water source are:

DELAWARE RIVER

Foxchase and the areas north of the Pennypack Creek.

The areas along the Delaware River and east of Kensington Ave., including Fishtown and extending to the Baxter Treatment Plant.

SCHUYLKILL RIVER

The area known as the "Belmont High Service District," bounded by City Line Avenue, the Schuylkill River, Cobbs Creek, and the Belmont Gravity District. This area includes the Overbrook and Wynnefield sections of the City. This area is served only by the Belmont plant through the Belmont High Service Pump Station and cannot be fed by any other high pressure district.

The area east of the Schuylkill River and west of the Wissahickon Creek, including Manayunk and Roxborough. This area is served by

the Roxborough High Service Pump Station and associated tanks.

Q.6. What are the major implications for service to these areas in the event of the unavailability of the sole source?

A.6. For areas provided service totally from one source, the scheduling and implementation of certain maintenance and repair work is more complex in the event of the unavailability of that source.

For example, if at Belmont one of the two basins that constitute the major capacity at the facility is out of service this would have a major impact on the time period the Belmont High Service District could be served if the Schuylkill source were unavailable. At the Belmont facility each one of the two basins constituting the 81 mg capacity is out every two years for a period of 1½ months to be cleaned.

11

In these regions, alternative sources would be required in the event of an outage of more than seven to eight days, since existing storage and transmission capacity is limited.

Q.7. Describe in more detail the conditions under which the maximum usable storage capacities of the reservoirs are not available.

A.7. Water storage is used daily to supply peak consumption rates and maintain a relatively constant pumpage. This daily usage is necessary to maximize water quality and minimize power costs for pumping. Emergencies such as a large main break, fires, or watershed contamination

may also necessitate the need for using stored water. Also storage reservoirs are routinely taken out of service to facilitate maintenance.

Maximum usable storage is rarely available. Under normal operating conditions storage reservoirs are considered full at approximately 95 percent of the overflow level. This is due to the level of accuracy of the instrumentation measuring the level of stored capacity and precaution taken due to the potential damage and loss of water if a reservoir were to overflow.

Q.8. Is the capacity of the water supply system ever limited by either maintenance of facilities or failure of components? If so, describe the frequency of these occurrences and the impact on the water supply system.

A.8. Yes. During the Spring and Fall when water consumption is at a low for the year, scheduled maintenance and inspection of facilities takes place. Work on the water treatment plants, storage reservoirs, transmission mains and pumps is scheduled to minimize the impact on the system. However, an emergency or component failure during this period could require costly operations and yield reduced water service to the consumer. In the event one of the two watersheds supplying the City become unusable during such maintenance, the duration which stored water could supply the effected area would be reduced. This is due to the reduction in storage and the reduction of flexibility of the system to supply effected areas from an alternative source.

Similarly, in the winter months increased main breakage and ice build-up on the Baxter and Queen Lane intakes reduce the systems' capacity.

In the summer months the occurrences of maintenance and component failures is less. However, storage reservoirs are drawn down during peak consumption periods and failures of equipment have a greater impact on the system.

Q.9. Does this complete your testimony?

A.9. Yes it does.