<u>Exhibit D</u>

Capital and Operating Cost Impacts

Factored engineer's estimates were developed to estimate the capitals costs for installing the closed cycle circulating water system at Canal Station. A total of four conditions were examined in an attempt to bracket the potential costs associated with installing cooling towers at the Canal plant. The four conditions consist of either natural draft hyperbolic towers or plume abated mechanical draft towers for circulating water rates that match the current flowrates, or the minimum circulating water flow rates that could be used with the existing steam turbines in an attempt to minimize the size of the cooling towers.

The factored estimates were all based on the following major assumptions:

- The cooling towers would be located to the east of Unit 2 on Station property (currently used for laydown) with the required demolition of existing rail spurs as well as other structures. The arrangement would allow for missing the rail spur servicing the ammonia storage tanks and the ammonia storage tanks which are located in the proximity of the location for the cooling towers
- Pile foundations would be required for the hyperbolic cooling towers due to the existing site conditions
- The new circulating water system would be based on reusing the existing equipment to the maximum extent practical by:
 - reusing the existing condensers, (for the minimum circulating water flow rate case this may not be easily achievable due to flows paths within the existing condenser)
 - matching the requirements of the existing condensers in the design of the cooling towers and new circulating water system components,
 - reusing the existing discharge flume and adding new circulating water pumps to supply heated water from the existing discharge flume to the new cooling towers
 - o reusing the existing discharge for blow down,
 - reusing the existing circulating water pumps by constructing a water conveyance from the new cooling towers to the existing circulating water pumps, and
 - reusing the existing unit 2 intake structure with the addition of new makeup water pumps after the intake structure is isolated from the existing circulating water pumps.
- Noise barrier walls located on the property lines to the west, north and east of the new cooling towers would be required
- Chemical feed systems would be required
- For the mechanical cooling tower option a plume abated arrangement tower would be required to minimize potential fogging of the Cape Cod Canal
- Equipment laydown and construction parking will be problematical impacting worker productivity due to the limited space at the Station

It should be noted that validity of these assumptions will have to be determined through detailed study of the plant operation, equipment adequacy and condition, etc.

Total Installed Cost Units 1 and 2

Cooling Tower Type	Matched Circulating Water Flow	Minimum Circulating Water Flow
Natural Draft Hyperbolic Cooling Towers	\$224.5 M	\$183.3 M
Plume Abated Mechanical Draft Cooling Towers	\$217.7 M	\$182.8 M

Operating and maintenance costs consist primarily of the lost capacity of the plant, additional electrical load required to operate the new closed cycle circulating water system, additional chemical costs to treat the circulating water, and maintenance costs for the new equipment.

Matched Circulating Water **Minimum Circulating** Flow Water Flow Natural Mechanical Natural Mechanical Draft draft Draft draft Operating Cost -\$1.7 M 3.1 M \$1.1 M \$2.0 M Additional Load (1) Operating cost -\$1.0 M \$1.0 M \$2.7 M \$2.7 M Lost Power (2) Maintenance cost \$0.3 M \$0.5 M \$0.3 M \$0.5 M (3)

Total Annual Operating and Maintenance Costs Units 1 and 2

Notes:

Total O&M cost

1. Operating costs associated with the additional load are based on the 2007 plant operation statistics using the average anticipated 2009 cost of power

\$3.0 M

2. Operating costs associated with the heat rate penalty are based on the hours of operation the Units operated at or near 100 % capacity in 2007.

\$4.6 M

\$4.1 M

\$5.2 M

3. Maintenance costs include yearly pump maintenance and periodic pump overhauls, yearly fan maintenance for the mechanical draft cooling towers, and yearly cooling tower water basin cleaning and fill maintenance

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