



City of Grand Island

Tuesday, August 19, 2003

Study Session

Item -2

Future Power Supply

Differing fuel costs create a substantial difference in the cost of generation. Platte Generating Station produces electricity with a fuel cost of about \$10/MWh; Burdick Station is fired by natural gas and produces power for a volatile \$80/MWh. In 2002, Grand Island's retail electric rate averaged \$47.30/MWh. To maintain the present rate structure, production from Burdick Station must be limited to peaking service only.

For the past two summers, peak demand has exceeded 150 MW. Platte Generating Station can supply only 100 MW of the demand. The recently completed Combustion Turbine installation will help to control fuel costs. Unlike the Burdick Station steam generation, which must run for extended periods, combustion turbine operation can be restricted to peak load periods only.

Peak demand is growing at a projected rate of 2.29%. Grand Island has generating resources to satisfy peak demands for an extended period of time; this will require extensive operation of the Burdick Station steam generation. The price of energy is determined by our generation mix, which will grow more uneconomical as energy needs grow. Energy sales are increasing 3.2% per year. By 2007 it is expected that the natural gas fired Burdick Station will be needed for every month of the year. To remain competitive, Grand Island needs additional base load capacity in the 2010 to 2012 time frame.

Therefore, the Utilities Department continues to explore a number of options to add low cost, base load, coal fired resources to the current power generation mix. At present, there are three coal plant projects being evaluated in Nebraska; 1) Omaha Public Power (OPPD), a 600 MW plant at Nebraska City. 2)Hastings Utilities and Nebraska Municipal Power Pool (HU/NMPP), a 220 MW plant at Hastings and: 3)Nebraska Public Power District (NPPD), a 400 MW plant at the CHAAP or at a site in the northeast part of the state.

In order to put these options, and associated costs, in perspective, the following information provides general information. It must be stressed that the tabulated figures are rough, round, order of magnitude numbers intended for only general comparison of the capital costs of the various options.

The table also shows a hypothetical addition to Grand Islands Platte Generating Station. A PGS addition would be half the size of the HU/NMPP plant and have higher capital cost. Additionally, higher than average coal costs decrease the competitive viability of the potential addition to Platte Generating Station.

1. Option Comparisons: Project Sponsor: 1) OPPD, Date of Operation: 2009, Cost Per KW: \$1400, GI Share: 30MW, GI Total: \$42,000,000, Annual Cost: \$2,500,000, % of Revenue: 8.3%. 2) HU/NMPP, Date of Operation: 2009+, Cost per KW: \$1600, GI Share: 15MW, GI Total: \$24,000,000, Annual Cost: \$1,400,000, % of Revenue: 4.7%. 3) NPPD, Date of Operation: 2012+, Cost Per KW: \$1400, GI Share: 40MW, GI Total: \$56,000,000, Annual Cost: \$3,300,000, % of Revenue: 11.0% and 4) GI, Date of Operation: 2011, Cost Per KW: \$1700, GI Share: 100MW, GI Total: \$170,000,000, Annual Cost: \$9,900,000, % of Revenue: 33.0%.

This assumes bonded debt at 5% interest, and compares the annual capital debt service obligation to the Electric Department annual revenue.

2. Power Cost Risk:

PGS fuel cost @ \$10 per MWH.

Non-firm purchase power markets in 2003:

May: \$40 per MWh:

June: \$44 per MWh:

July: \$70 per MWh

Cost difference at 1500MWh per day.

May: \$45,000/day, \$1,350,000/month:

June: \$51,000/day, \$1,530,000/month:

July: \$90,000/day, \$2,700,000/month

3. Fuel Cost; Coal 2002, FERC Report 423

1) NPPD: \$8.49 per ton,

2) OPPD: \$10.48 per ton,

3) HU: \$11.80 per ton,

4) GI: \$12.79 per ton

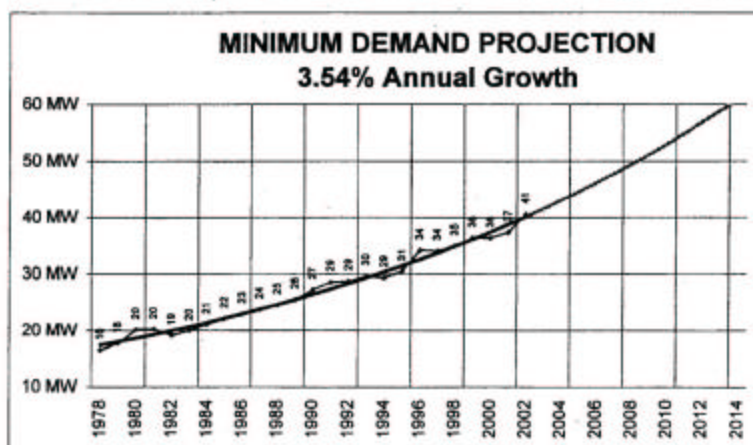
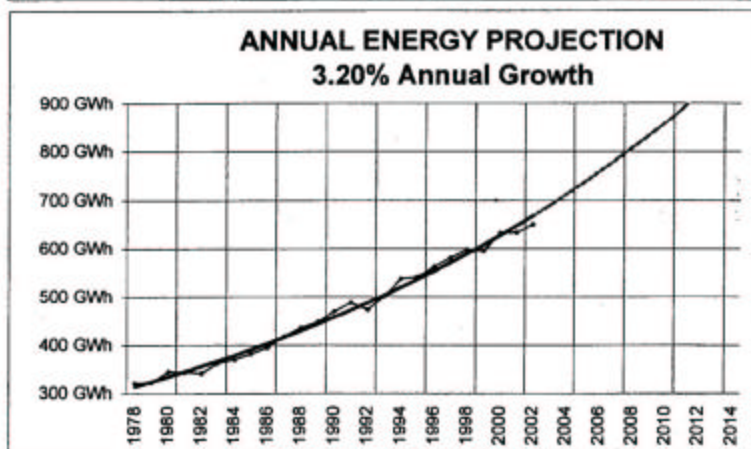
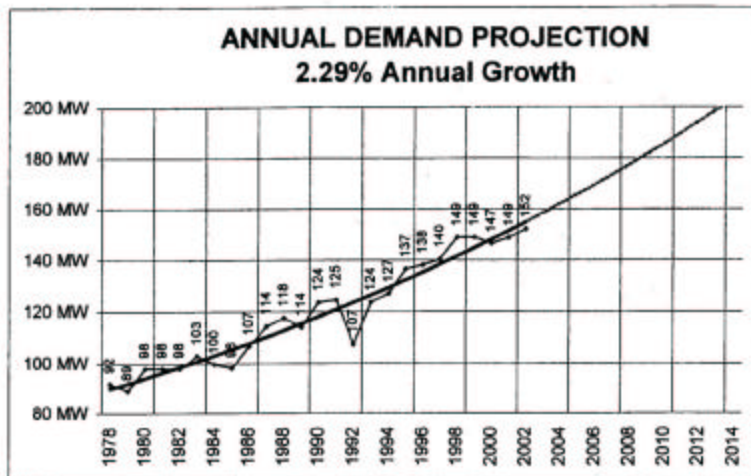
State Weighted Average \$10.00 per ton. GI fuel cost is 28% higher than the State Average at 400,000 tons per year/ \$1,000,000 per year.

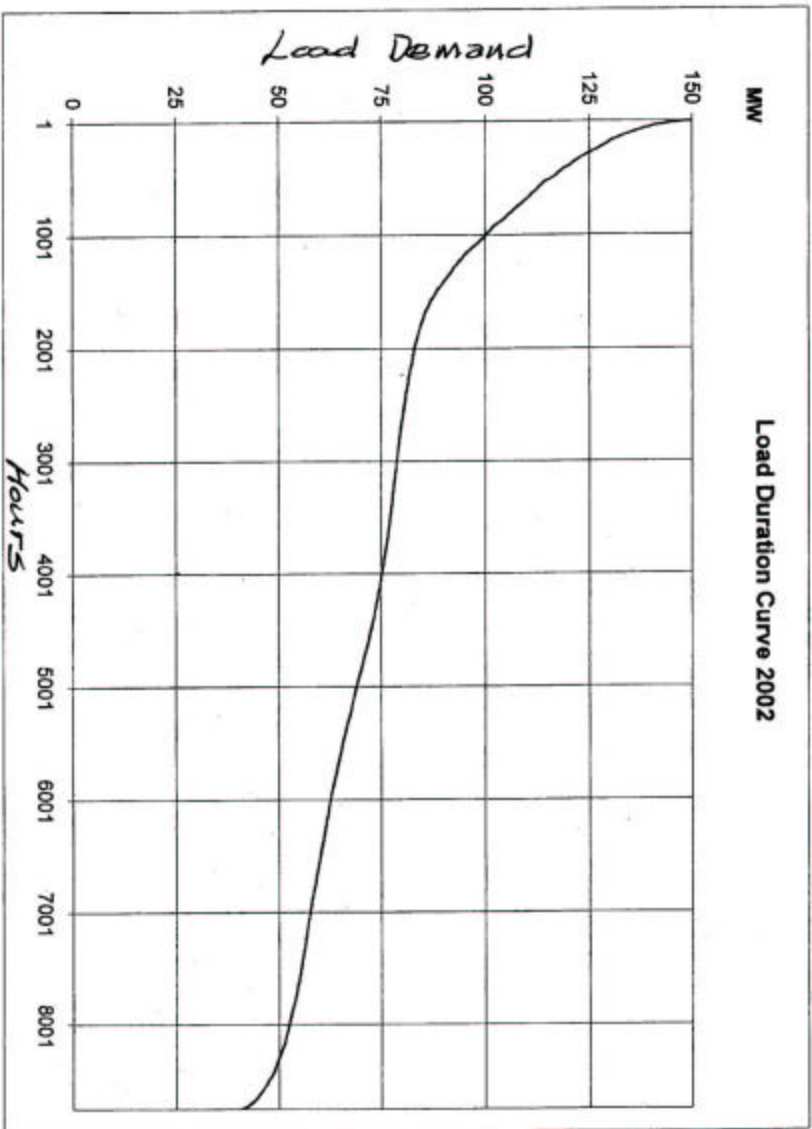
4. Miscellaneous Items to consider: Transmission Service, Debt Structure - a) Capitalize interest during construction, b) Issuance costs, c) Gas Turbine debt paid in 2016.

Dispatching

Ancillary "C Voltage, Imbalance, Spinning Reserves, etc.

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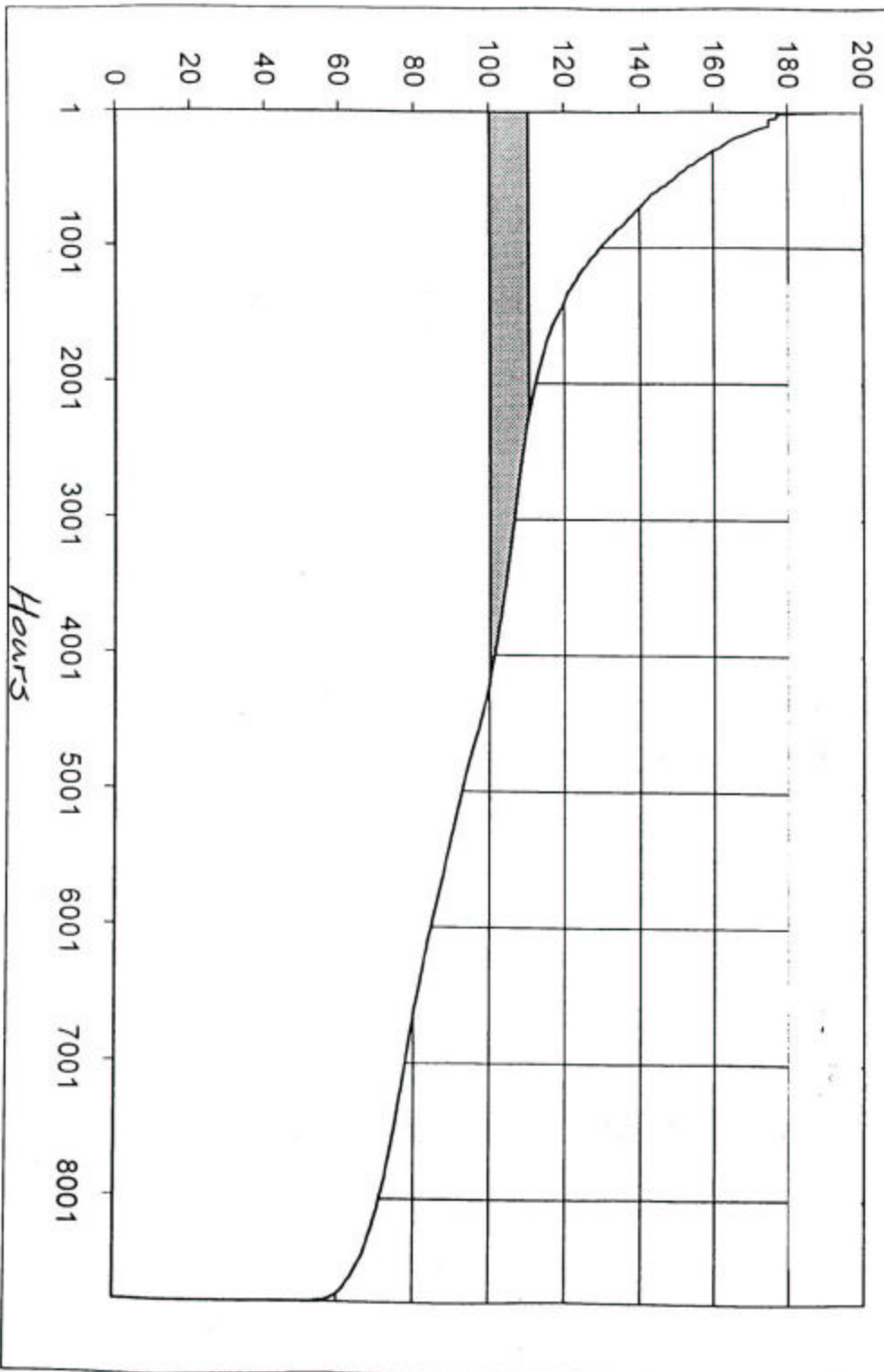




152.3 MW - Peak Demand
655,159 MWh - Sum of Hourly Demands
650,851 MWh - Official from Watt-hour Meters

MW

Load Duration Curve 2010



Hours