Westinghouse
Electric Corporation

Distribution and Control

1 Tuscarawas Road
Beaver Pennsylvania 15009
(412) 775 2000

January 17, 1991

Mr. David Brooks
Vanport Township Municipal Authority
285 River Avenue
Beaver, PA 15009

Dear Dave:

As we discussed, I made some rough calculations on potential demand savings that could be achieved by timing your maximum daily pumping so that it would occur on off-peak periods. I made some assumptions that you might not be able to accommodate, such as if one 50HP hi service pump could not keep up with one well pump, you could permit the well pump to be shut down for a short time; if not, the maximum savings may not be obtainable. Also, to reliably achieve the savings, I think timers or a PLC would be required. It might also be necessary for Brighton Township to modify their procedures somewhat.

Under ideal conditions, it appears that annual savings of over $50,000 are possible. Of course, in any month that an emergency occurs that would require two or more well pumps to operate during on-peak hours, the savings would be reduced for that month.

Look over my figures and let me know what you think. If they appear reasonable, Westinghouse would be willing to participate in the planning and implementation, including hardware purchases.

Ed

E.F. Farland, Manager
Works Engineering

cc: Vanport - R. Bumiller

Attachments
6482N/s

ASSUMPTIONS:

° On-peak period is from 10:00AM to 9:00PM.

° Start day (10:00AM) with full reservoirs 2,500,000 Gal.

° One well pump @ 600GPM on continuously through day, two
  pumps as needed from 9:00PM – 9:45AM.

° Consumption @ 94,000GPH (1567GPM) for 18 hours
  (1,692,000GPD over 18 hours).

PROCEDURE:

Run one well pump 10AM to 9:00PM.

Reservoir loss = 1567GPM – 600GPM = 967GPM.
967GPM x 60 = 58,000GPH loss for 11 hours.
58,000 x 11 = 638,000 Gal. loss thru the day.

At 9:00PM reservoir holds approximately 2,500,000 –
638,000 = 1,862,000 Gal. Turn on one additional pump –
at low night time consumption and pumping rate of
72,000GPH, reservoir will be full by morning.

1. On-Peak Demand:

A. Two towers operating

1 well pump	24KW
1 transfer pump	11
2 fans	15
*1 50HP hi service	37
Misc.	5
	92KW

B. One tower operating

1 well pump	24KW
1 fan	7.5
*1 50HP hi service	37
Misc.	5
	73.5KW

*May require cycling well pumps based on clearwell
level since well and high service pump cap. is
approximately equal.

2. Off-Peak Demand:

A. One tower operating

2 well pumps	48KW
1 hi service 50HP	37
1 hi service 100HP	75
1 fan	7.5
Misc.	5

172.5KW

B. Two towers operating

2 well pumps	48KW
1 hi service 50HP	37
1 hi service 100HP	75
2 transfer pumps	22
2 fans	15
Misc.	5

202KW

Minimum demand – 1/3 of off-peak = 187/3 = 67KW
or on-peak = 74KW to 92KW

Present average demand – (W) = 199KW
VTMA = 77KW
276KW

Potential savings (two towers operating)
276KW – 92KW = 184KW
184KW x 18.56 = $3415/mo. x 12 Mo. = $40,980/yr.

With one tower operating:

Additional demand savings:
18.5KW x $18.56 = $343/Mo.

Additional energy savings:
.04 x 18.5KW x 20 hours x 30 days = $450/Mo.

Total additional per Month – $793

Under ideal conditions, total annual savings would be
$50,497.00.

6482N/s