MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT

COST OF SERVICE

REVENUE REQUIREMENT

APPENDIX 3

Other Staff Schedules

THE EMPIRE DISTRICT ELECTRIC COMPANY

CASE NO. ER-2012-0345

Jefferson City, Missouri
November 2012

NP

A Methodology to Calculate Representative Prices for Purchased Energy in the Spot Market

Developed by Energy Department
Missouri Public Service Commission
March 18, 1996

Methodology to Calculate Representative Prices for Purchased Energy in the Spot Market

Developed by Staff of the Missouri Public Service Commission

March 1996

INTRODUCTION

Each electric utility company must decide the order in which it starts and runs its generating units, generally starting with the least expensive unit and adding more expensive units to meet its load. Simultaneously it must decide to purchase power from its neighboring electric utilities if the purchase price is less than its own generation cost. By doing this the electric utility is attempting to economically dispatch to meet its load.

Using computer programs, the commission staff simulates the economic dispatch to determine the fuel expense allowed in customer's rates. This computer simulation requires, as one of the inputs, representative prices of purchased power in the spot market to make economic dispatching decisions in meeting the load. Spot market purchases are those purchases made by the utility from various interconnected utilities without a contract for energy and demand charges.

This paper explains the staff's method for calculating a representation of spot market prices for purchased power. The method uses historical actual data to calculate a representation of a normal, or expected spot market.

OVERVIEW

The simulation makes dispatching decisions for every hour by comparing purchase power prices with generation costs. Generation costs are based on unit heat rates and fuel prices. Purchase power prices are based on the market prices of power available on the spot market. A month of typical spot market prices plotted against hourly load results in a scatter plot (See Figure 1). It appears that generally the higher the load the higher the price. However this is not a good enough relationship to determine prices.

What is needed for the simulation is a representation of purchased power prices. Several ways of representing the actual prices were considered during the development of this methodology. One possible way to represent the prices is to calculate an average price (See Figure 2). It is clear that this representation doesn't allow the simulation to consider the full range of hourly fluctuations in prices. A better representation might be to group the actual prices into similar ranges and use several curves (See Figure 3). But again the straight horizontal lines do not consider the full range of hourly fluctuating prices.

Another possible representation of prices might be a diagonal line passing through the more denser areas of prices and reflecting the fact that generally the higher the load the higher the price (See Figure 4). A more accurate representative line can be calculated from the actual data and results in a linear regression line (See Figure 5). This curve is still only a fair representation of the actual prices.

At this point in the development of representative prices it was decided to use a statistical approach. A frequency plot of the historical prices was done using a price increment of 5 dollars (See Figure 6). This curve was compared to the shape of several distribution curves including a triangular distribution curve (See Figure 7), a lognormal distribution curve (See Figure 8), and a normal distribution curve (See Figure 9).

Electric utilities purchase power at a price derived from the cost of producing the power. With fixed costs based on high initial capital costs, relatively equal plant efficiencies, and slowly rising or steady variable costs based on fuel and labor it make sense that a minimum price for power exists in the spot market. With competition between utilities for sales in the spot market, and installed capacity higher than demand requirements it makes sense that a maximum price for power exists. A better representation of the spot market prices might be a truncated distribution curve.

The frequency curve (Figure 6) of the actual data was then compared to the shape of a truncated lognormal curve (See Figure 10), and a truncated normal distribution curve (See Figure 11). The best fit appears to be the truncated normal distribution curve.

Actual purchase power prices are submitted by the electric utilities to the staff and are used to determine the fuel expense allowed. However, in any hour the utility didn't actually purchase power there won't be a price available to use in the calculations of representative prices. The more hours with no purchase price the more difficult it is to determine a representative price (See Figure 12).

Averaging the existing prices to fill in where no price exists results in the proper number of prices for the simulation, but the results are a flat or stepped curve representation of the spot market price for power. Economically dispatching to average prices would not reflect the many changes in available power prices. Using a distribution curve to represent purchased power prices eliminates the problem of missing actual prices.

Electric utilities may be forced to purchase power at a price which is much higher than usual because of system operating problems, or regional weather related problems causing a short supply of the cheaper spot market power. These occurrences do not reflect the economical purchase power spot market used for dispatching. Looking at the curve in Figure 1 one can see where several prices at the load range of 1700 MW are significantly spaced from the rest of the prices. These same prices plotted against the hour of the day clearly shows the prices at hours 1600, 1700, 1800, and 1900 are significantly outside the group of prices for those hours (See Figure 13).

A plot of the average hourly price calculated with the abnormally high prices and the average hourly price calculated without the abnormally high prices can be found in Figure 14. A more detailed look at the specific hours of 1600, 1700, 1800, and 1900 is shown in Figure 15. A comparison of the differences between the two calculated average prices is shown in Figure 16. These abnormal prices, or outliers if not eliminated would produce results that are not representative of the majority of actual prices.

Statistical calculations are performed on the actual data to produce a distribution curve from which the representative prices can be determined. One function of the calculations is the elimination of actual prices that occur outside the statistical range of the group of prices, outliers. Figure 17 is a plot of the actual maximum and minimum price for each hour and the resulting

maximum and minimum price after the outlier prices are eliminated.

The results of the statistical calculations are used to determine a representative price for every hour which can be used by the simulation to economically dispatch. A comparison of the monthly representative hourly prices and the actual hourly prices is shown in Figure 18.

METHODOLOGY

The data needed for the calculation of the representative prices is received on a monthly basis from the electric utilities. Actual hourly prices are reviewed by the staff and in any hour that there is more than one price, a weighted average price is calculated by totaling the cost and megawatts in that hour.

To simplify the statistical calculations the data is divided into groups. By examining Figure 13 again, a natural division of the data would appear to be by the hour of the day. So the monthly data is divided into 24 groups representing each hour of a day, and the statistical calculations are performed on each of these groups.

Abnormally high prices can occur because a utility may be forced to purchase power at times when it is not economical to do so. Abnormally low prices, although much rarer can also occur. Statistically these abnormal prices are identified as those exceeding the calculated maximum and minimum prices of the expected range of prices. The maximum and minimum prices are determined by a fixed number of standard deviations from the mean. Any price outside of this range is replaced with the maximum or minimum price of the range. The fixed number is referred to here as the outlier target.

Figure 19 shows a generic normal distribution curve with the endpoints of three ranges marked. These ranges were calculated from three different outlier targets, and are used to determine the percent of total area under the curve used for each target. The Staff selected 2.39 to be used as the outlier target, which results in an area used equal to 98% of the total curve, or a confidence interval of 98%. In other words any price in the distribution would have only a 2% chance of falling outside of the area represented by a outlier target of 2.39.

To determine representative spot market prices, the Staff enters actual price parameters to define the range of the distribution into a computer program which calculates a statistical distribution of the prices. The results are a range of prices and the probability of their occurrence represented by a cumulative distribution curve for each of the 24 groups.

The resulting cumulative curves are shifted slightly to reflect the fact that the frequency plot of actual prices is not a perfect normal distribution. Additional prices for each group are calculated by straight line interpolation from the cumulative distribution curves in order to get representative hourly prices for all of the days in the month. The representative prices are assigned to an hour of the month in decreasing order in conjunction with decreasing actual hourly load.

The resulting representative spot market prices are used in the simulation to perform an hourly economic dispatch.

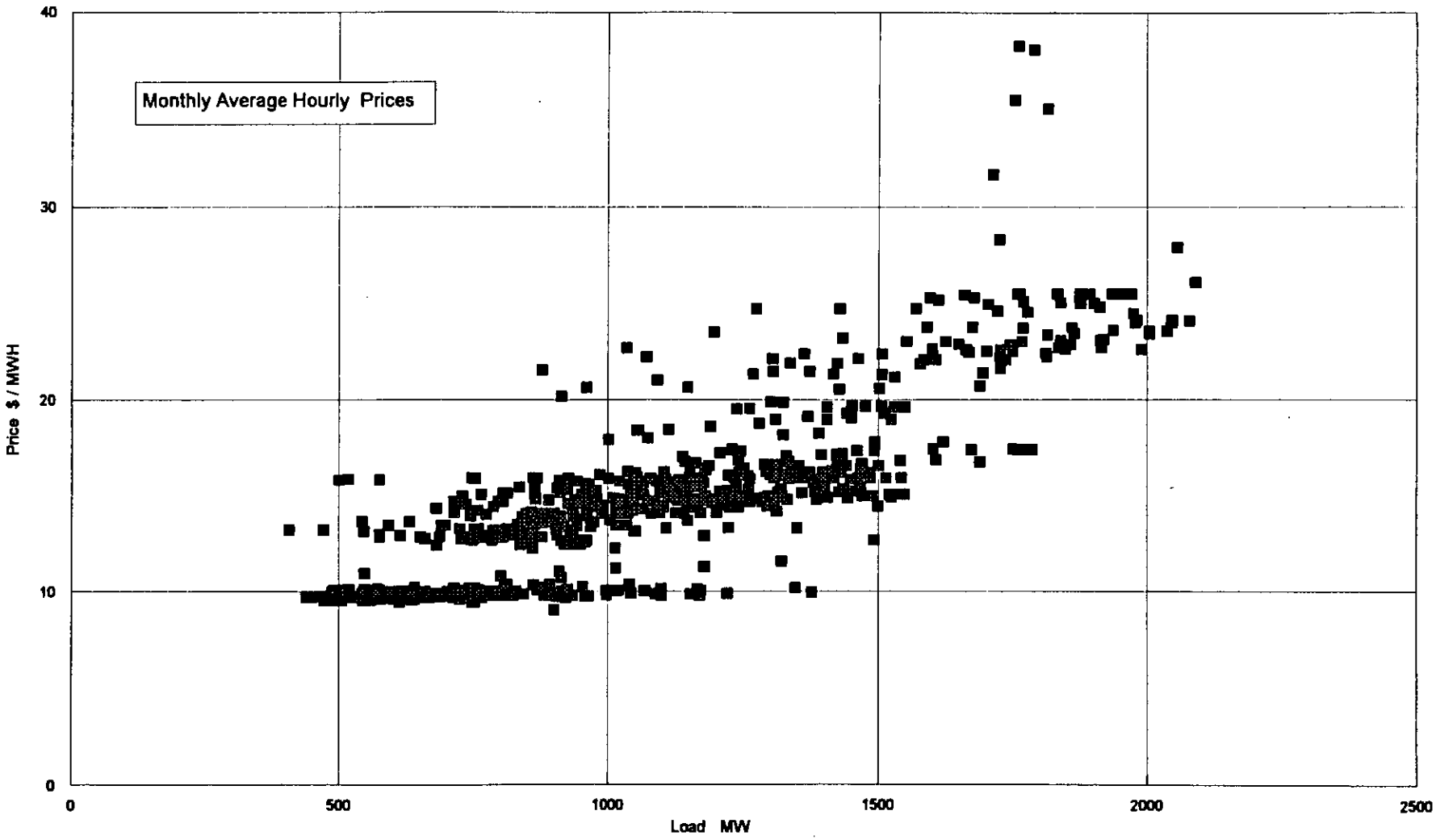
Monthly Average Hourly Prices
Price $ / MWH
Load MW
0
10
20
30
40
0
500
1000
1500
2000
2500

FIGURE 1

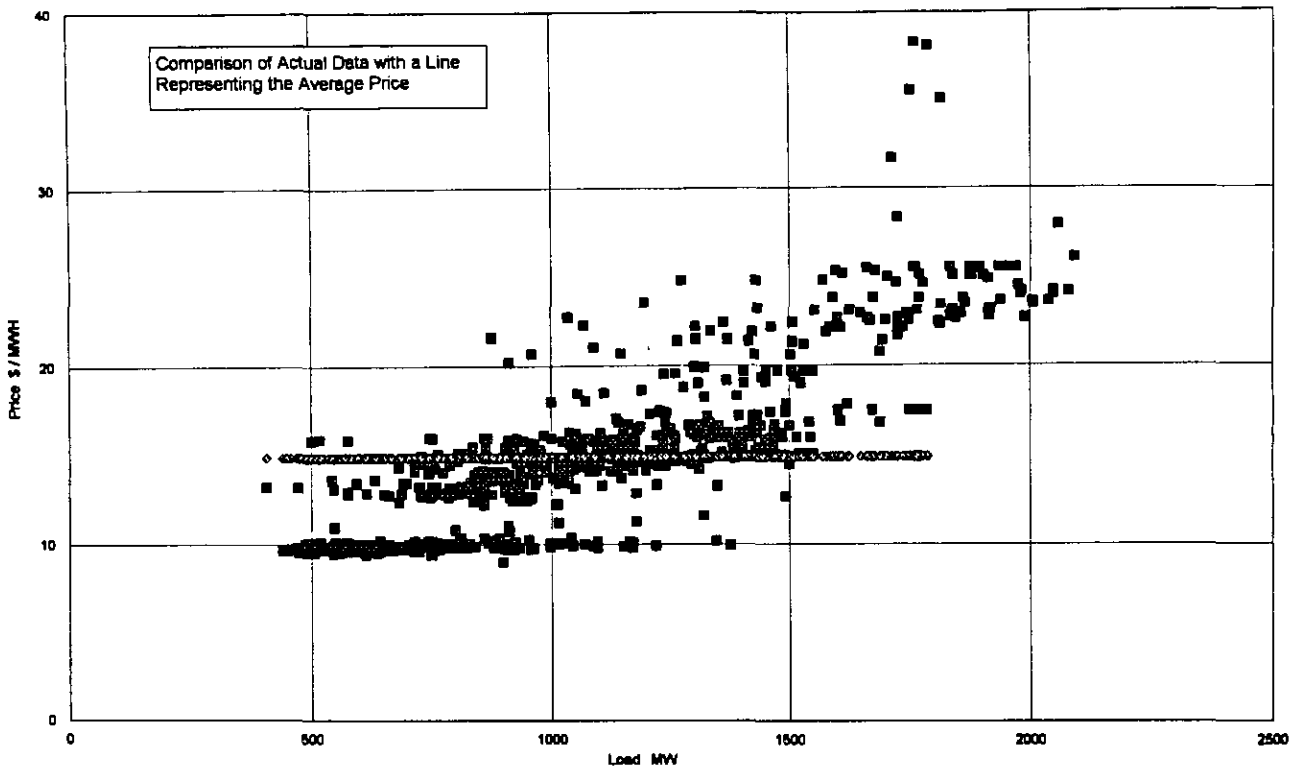

FIGURE 2

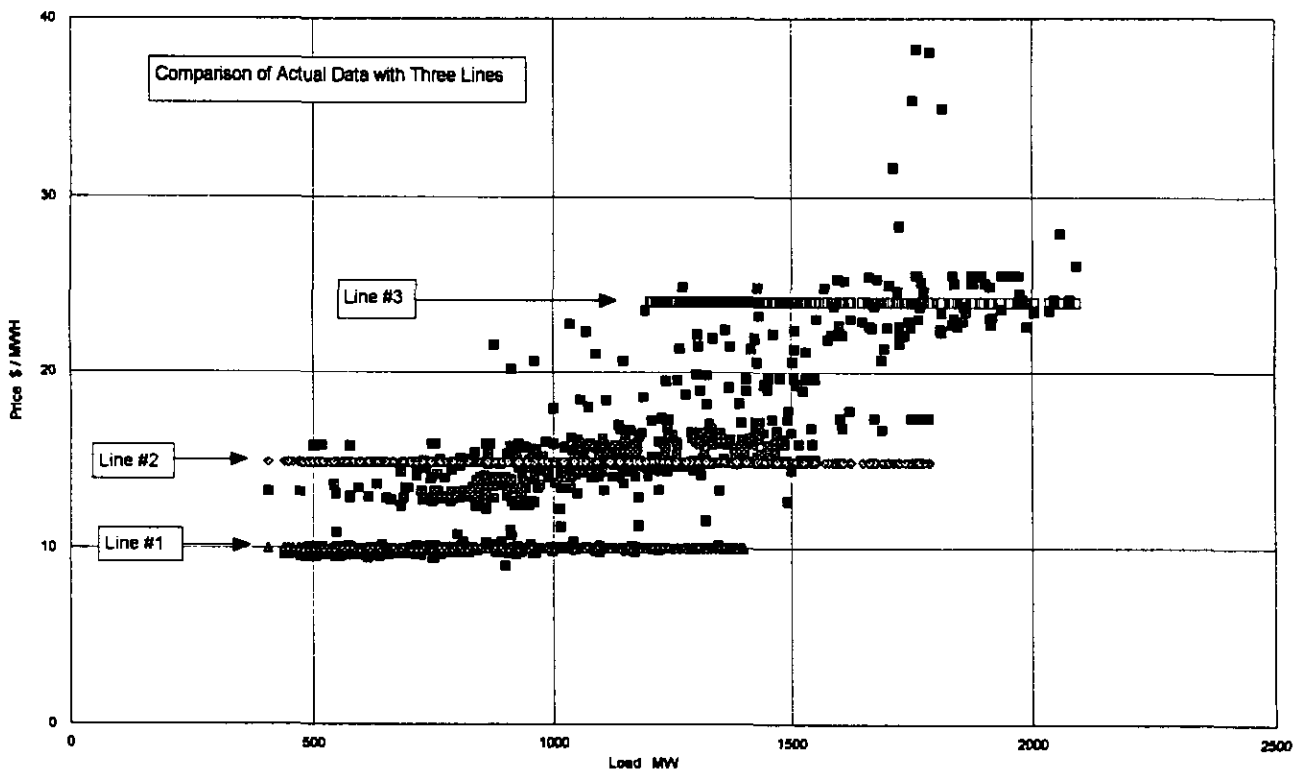

FIGURE 3

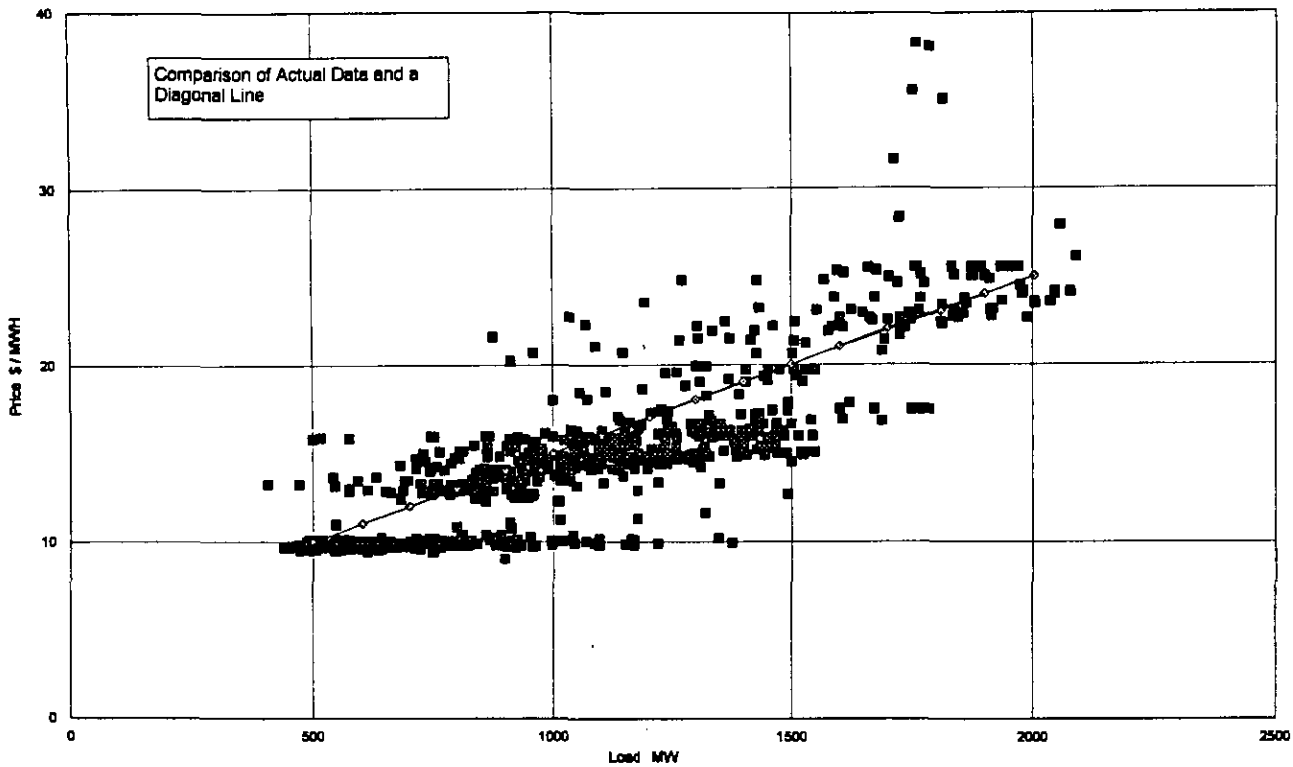

FIGURE 4

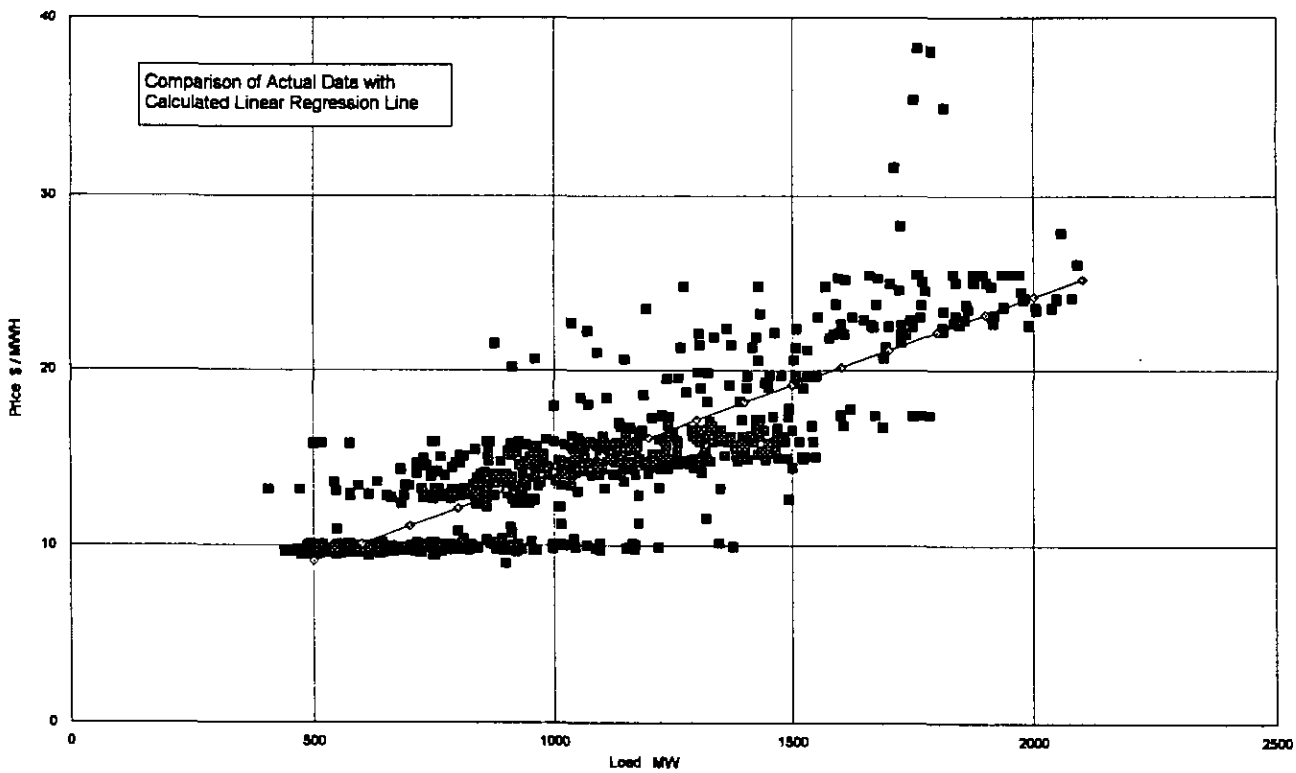

FIGURE 5

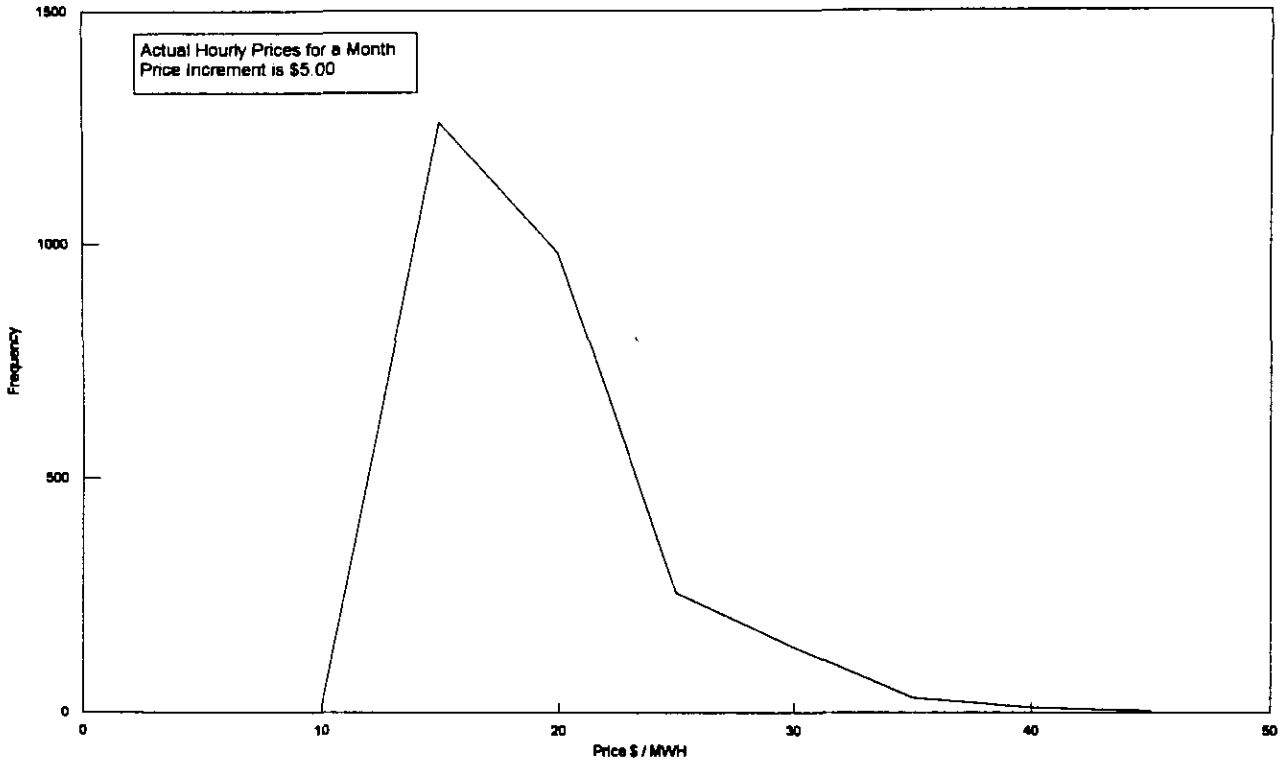

FIGURE 6

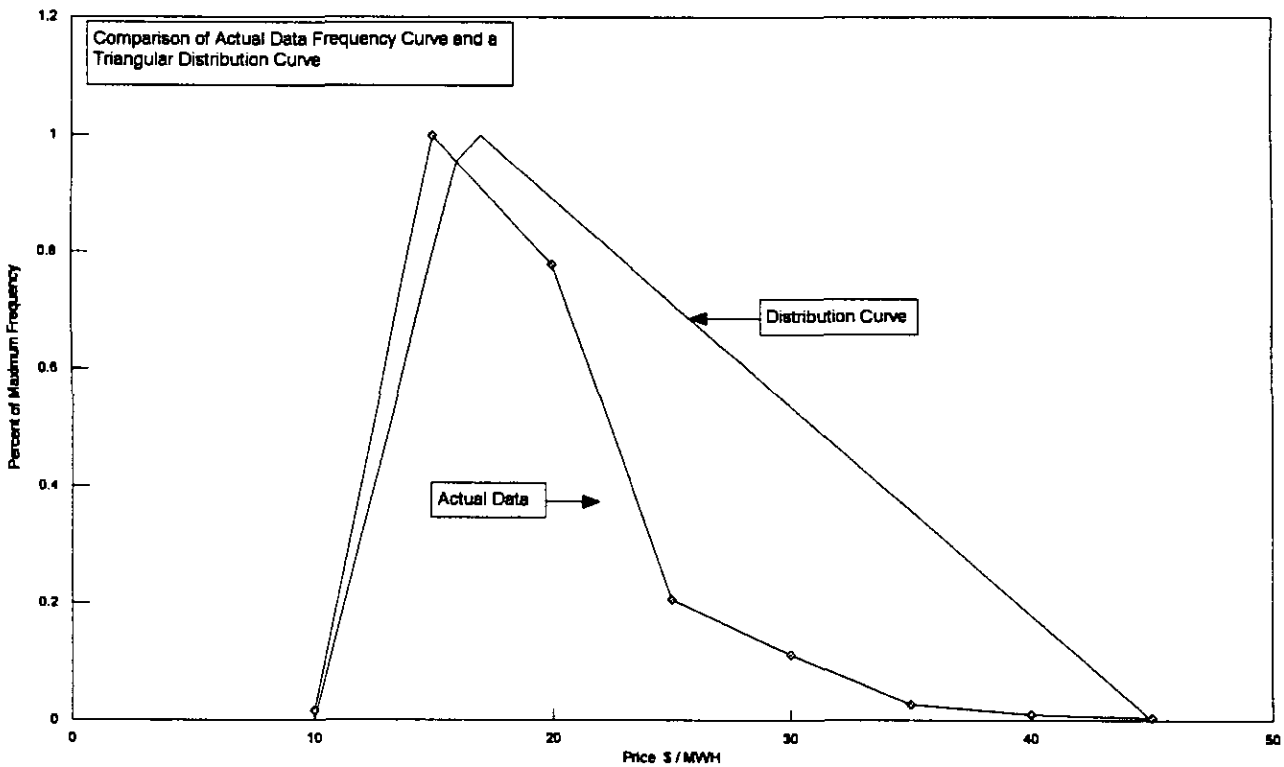

FIGURE 7

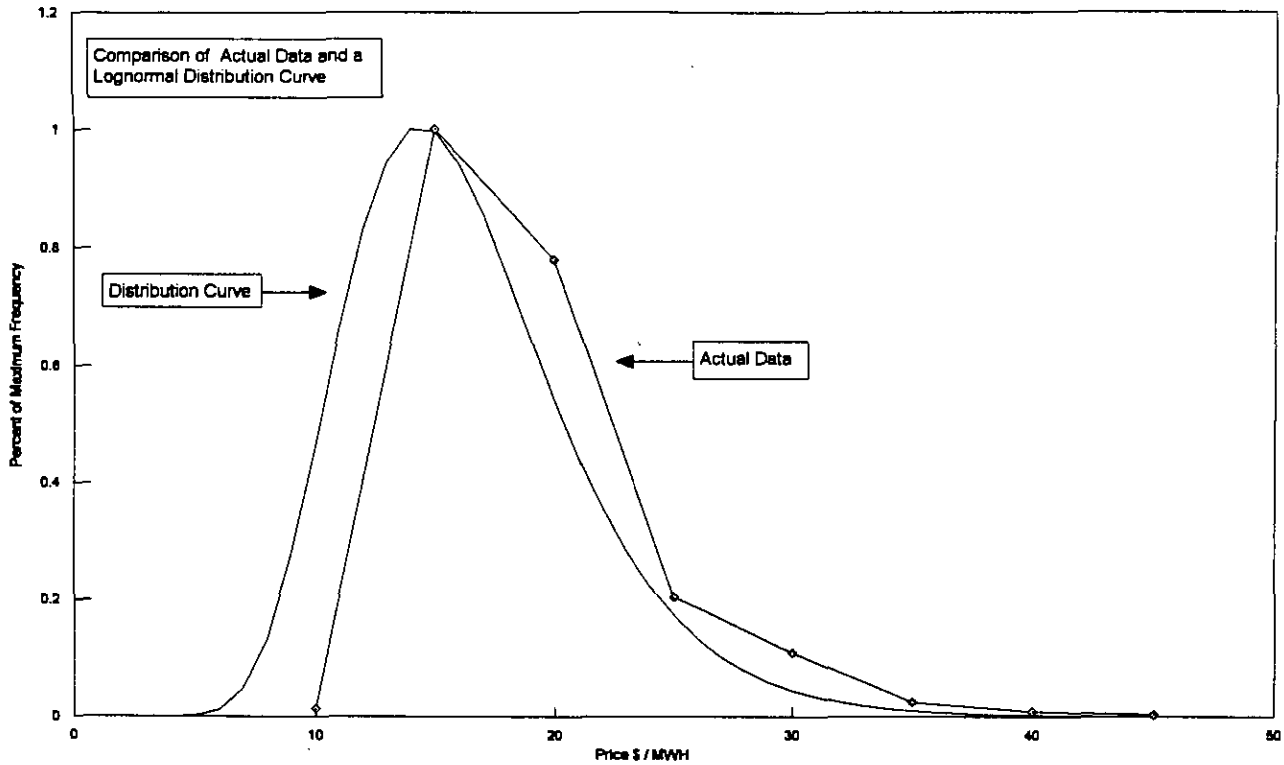

FIGURE 8

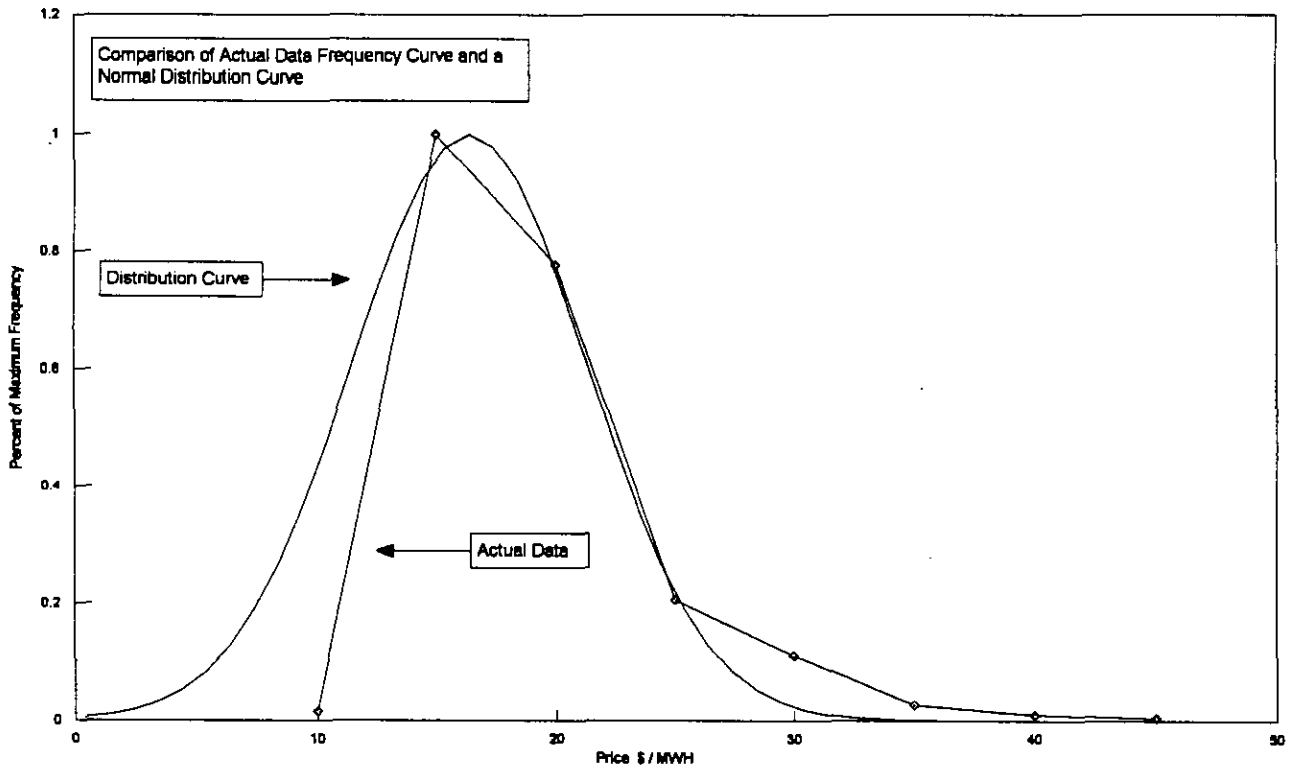

FIGURE 9

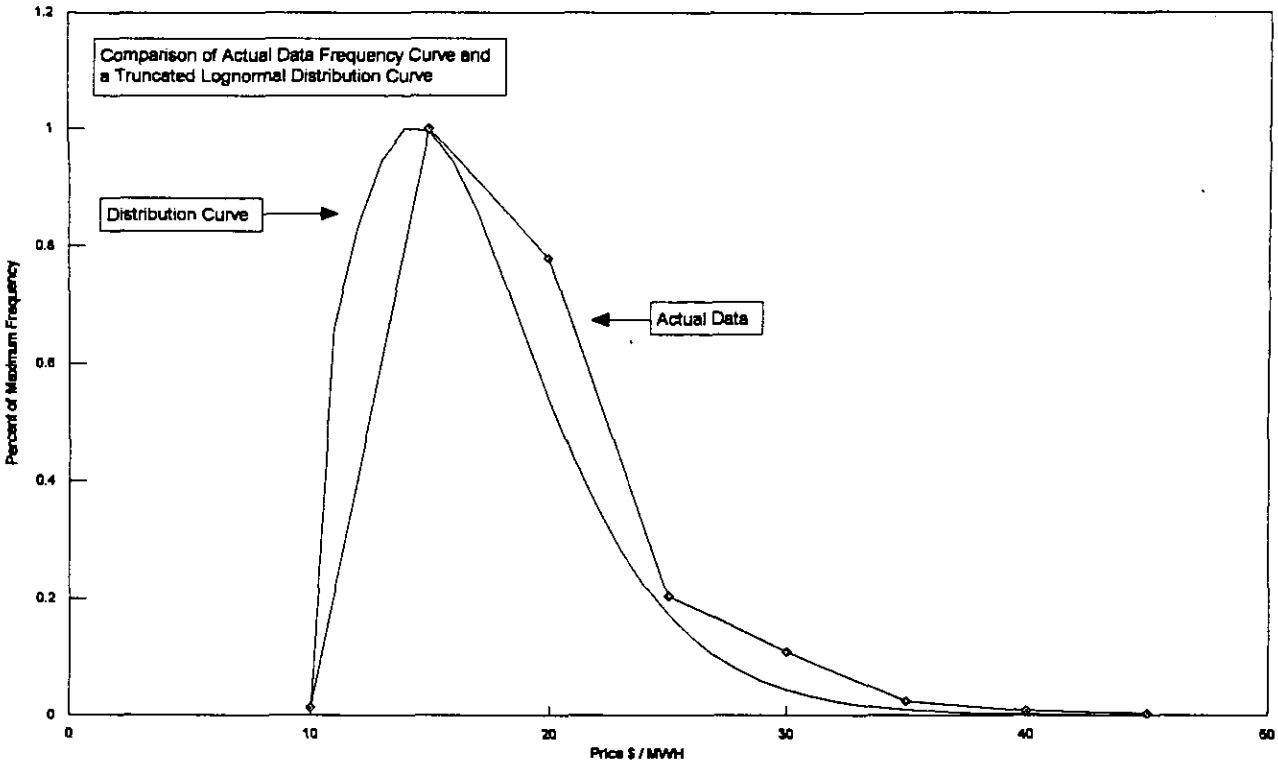

FIGURE 10

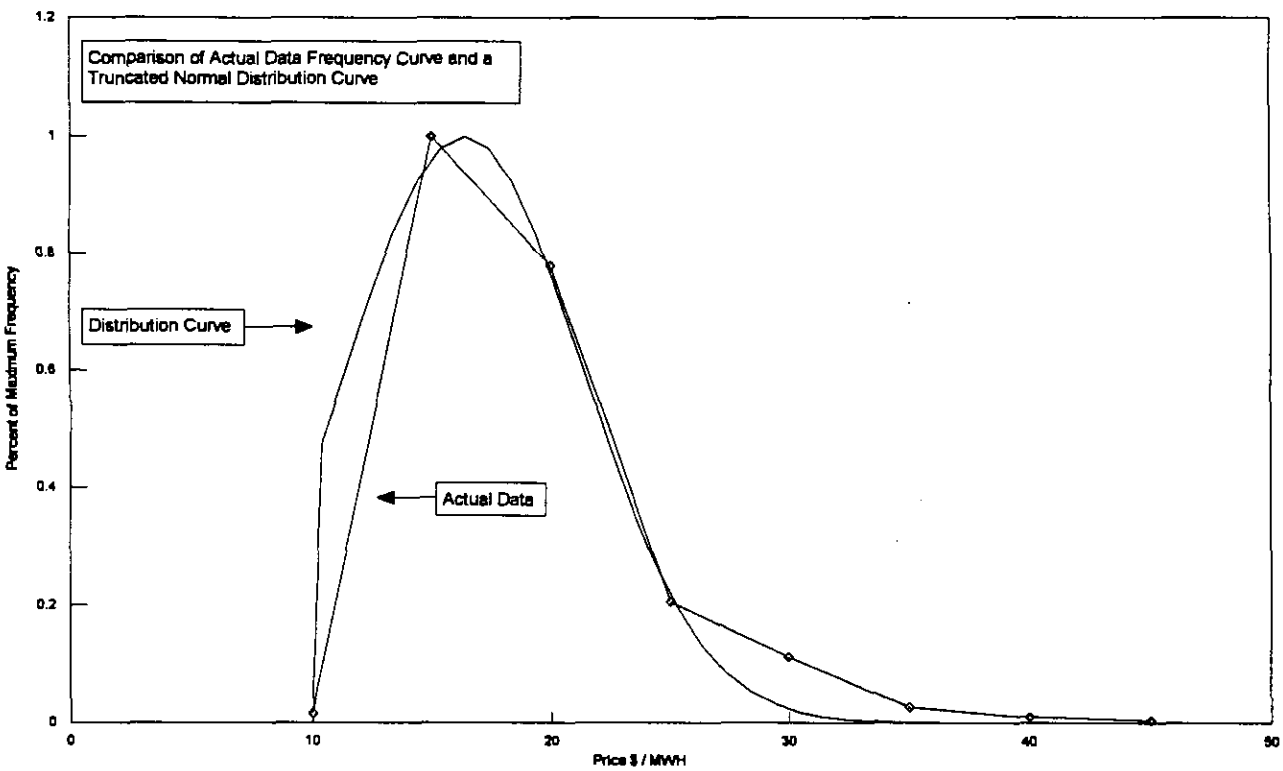

FIGURE 11

[redacted]

Average Hourly Prices by Hour and Day of the Month for One Month

Day of Month	Hour of Day 100	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
1	10.00	10.00	10.00	10.00	10.00	10.00	14.00	15.00	15.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	15.00	15.00	NO DATA	12.00	10.00
2	10.00	10.00	10.00	10.00	10.00	10.00	14.00	15.00	15.00	15.00	16.00	16.00	16.00	17.00	16.00	16.00	16.00	16.00	16.00	15.00	15.00	15.00	12.00	10.00
3	10.00	10.00	10.00	10.00	10.00	10.00	14.00	14.00	13.00	13.00	13.00	14.00	13.00	14.00	16.00	14.00	13.00	15.00	14.00	15.00	15.00	15.00	12.00	10.00
4	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	16.00	14.00	14.00	13.00	14.00	16.00	14.00	14.00	15.00	14.00	15.00	15.00	15.00	12.00	10.00
5	NO DATA	10.00	NO DATA	10.00	10.00	10.00	16.00	16.00	16.00	17.00	16.00	16.00	19.00	22.00	22.00	22.00	19.00	18.00	16.00	15.00	15.00	15.00	12.00	10.00
6	NO DATA	10.00	NO DATA	10.00	10.00	10.00	15.00	16.00	16.00	16.00	16.00	16.00	16.00	16.00	20.00	16.00	16.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	10.00	10.00
7	10.00	10.00	10.00	10.00	10.00	10.00	16.00	16.00	17.00	17.00	17.00	17.00	17.00	NO DATA	NO DATA	NO DATA	NO DATA	36.00	35.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
8	10.00	NO DATA	NO DATA	10.00	10.00	10.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	16.00	15.00	16.00	NO DATA	NO DATA	NO DATA	16.00	16.00	16.00	16.00	15.00	10.00	10.00
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11	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	13.00	13.00	13.00	NO DATA	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	13.00	10.00	10.00
12	10.00	10.00	10.00	10.00	10.00	10.00	13.00	13.00	14.00	14.00	14.00	NO DATA	14.00	15.00	14.00	13.00	14.00	14.00	14.00	15.00	15.00	15.00	10.00	10.00
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15	10.00	10.00	10.00	10.00	10.00	10.00	16.00	16.00	16.00	17.00	16.00	16.00	17.00	NO DATA	16.00	17.00	16.00	17.00	18.00	17.00	17.00	22.00	10.00	10.00
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17	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	19.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	23.00	23.00	NO DATA	NO DATA	22.00	NO DATA	NO DATA
18	NO DATA	13.00	13.00	13.00	13.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	19.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	23.00	23.00	NO DATA	NO DATA	22.00	NO DATA	NO DATA
19	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	19.00	NO DATA	NO DATA	NO DATA	NO DATA	25.00	25.00	25.00	23.00	22.00	NO DATA	22.00	NO DATA	NO DATA
20	13.00	13.00	13.00	NO DATA	13.00	13.00	13.00	13.00	13.00	13.00	25.00	25.00	25.00	23.00	25.00	26.00	26.00	25.00	25.00	25.00	25.00	25.00	15.00	15.00
21	13.00	13.00	13.00	13.00	13.00	13.00	21.00	20.00	22.00	22.00	22.00	NO DATA	NO DATA	NO DATA	25.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	25.00	NO DATA	15.00	15.00
22	13.00	14.00	14.00	14.00	14.00	14.00	19.00	20.00	22.00	22.00	NO DATA	NO DATA	NO DATA	NO DATA	25.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	25.00	22.00	15.00	15.00
23	15.00	14.00	14.00	14.00	14.00	14.00	23.00	23.00	22.00	23.00	23.00	23.00	24.00	23.00	24.00	25.00	25.00	24.00	NO DATA	NO DATA	15.00	NO DATA	NO DATA	NO DATA
24	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	17.00	17.00	18.00	18.00	18.00	17.00	15.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
25	NO DATA	13.00	13.00	13.00	13.00	13.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	15.00	15.00	15.00	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA
26	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	NO DATA	14.00	14.00	14.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	12.00
27	10.00	10.00	10.00	NO DATA	10.00	10.00	15.00	15.00	NO DATA	15.00	15.00	15.00	16.00	16.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	12.00	12.00
28	10.00	10.00	10.00	NO DATA	10.00	10.00	14.00	15.00	NO DATA	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	12.00	12.00
29	10.00	10.00	10.00	NO DATA	10.00	10.00	14.00	15.00	15.00	NO DATA	NO DATA	NO DATA	15.00	15.00	NO DATA	NO DATA	15.00	15.00	15.00	15.00	15.00	15.00	12.00	12.00
30	10.00	10.00	10.00	10.00	10.00	10.00	14.00	14.00	15.00	15.00	15.00	15.00	14.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	12.00	12.00

Total Number of Average Prices : 524
Total Number of Possible Average Prices : 720

Appendix 3, Schedule ELM-1

FIGURE 12

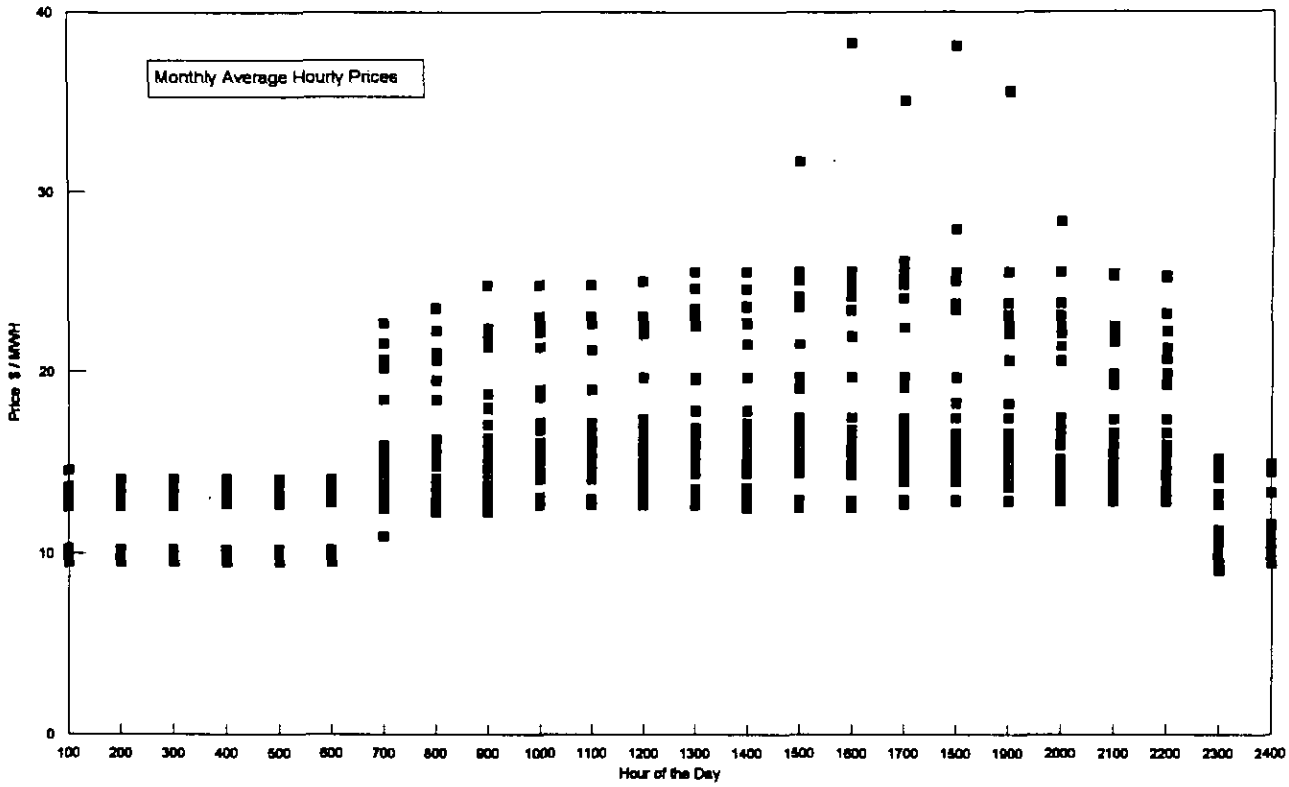

FIGURE13

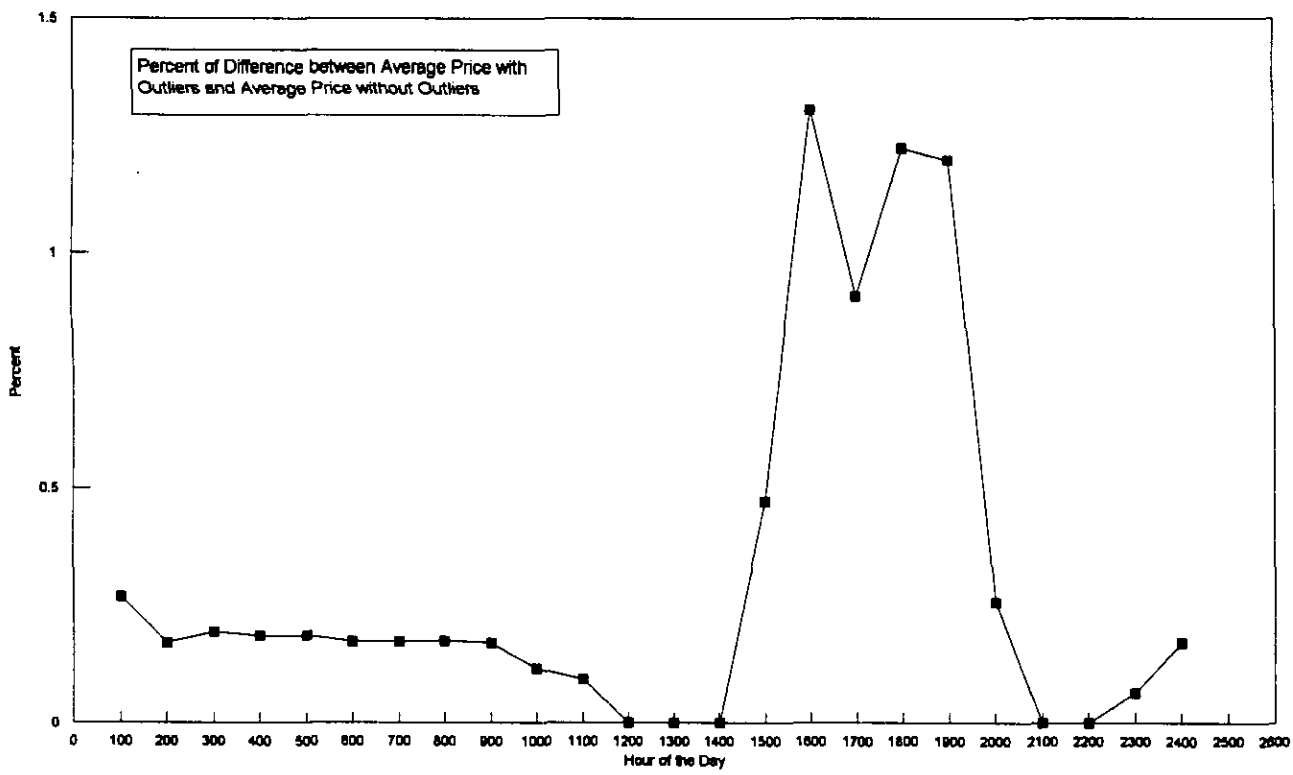

FIGURE 14

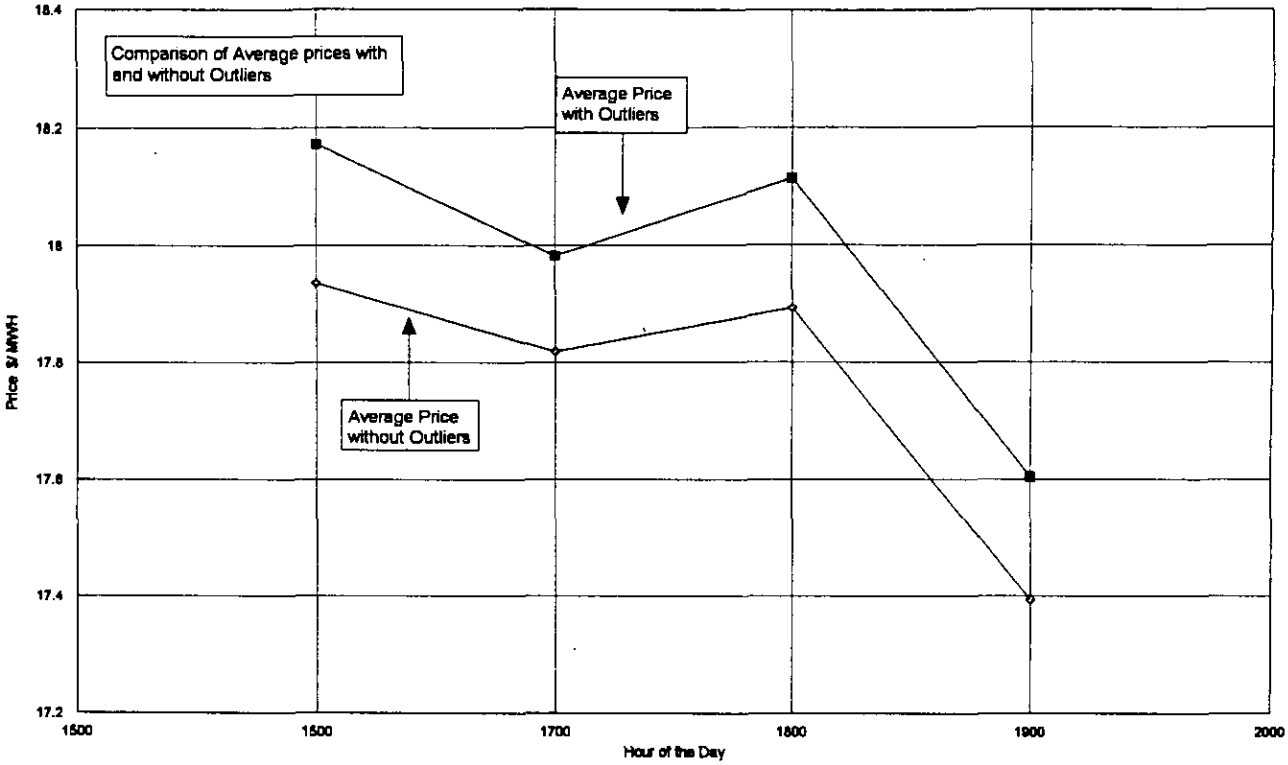

FIGURE 15

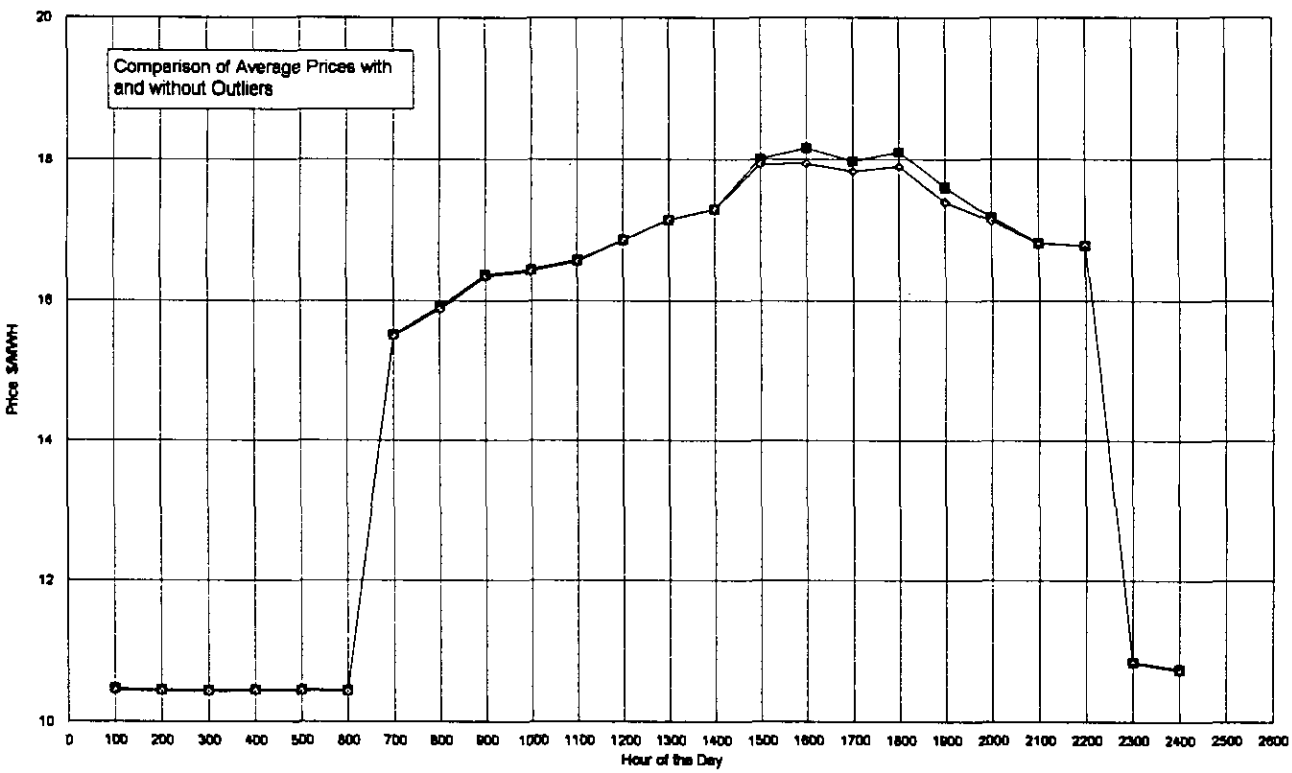

FIGURE 16

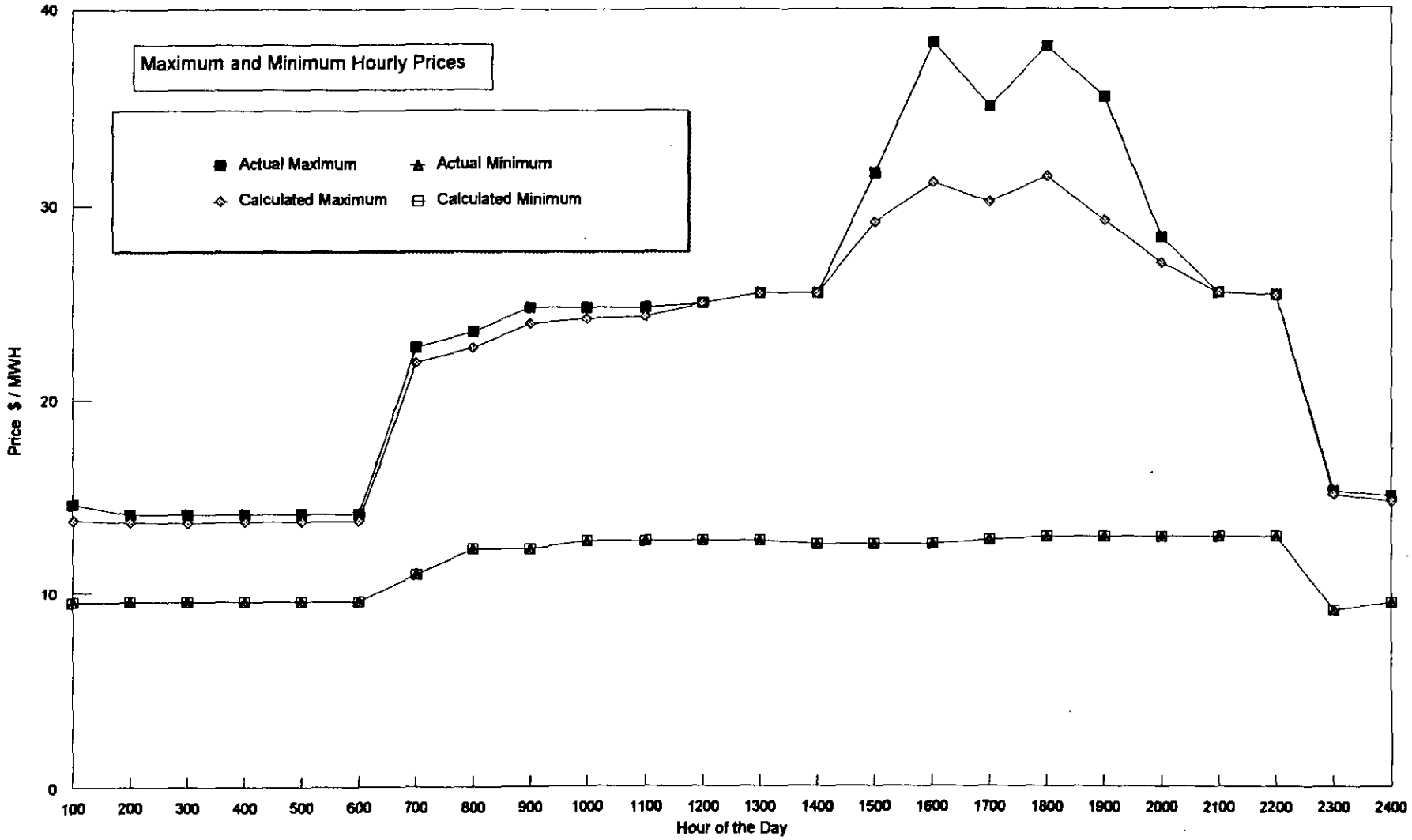
Maximum and Minimum Hourly Prices
Actual Maximum
Actual Minimum
Calculated Maximum
Calculated Minimum
Price $ / MWH
Hour of the Day
0
10
20
30
40
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400

FIGURE 17

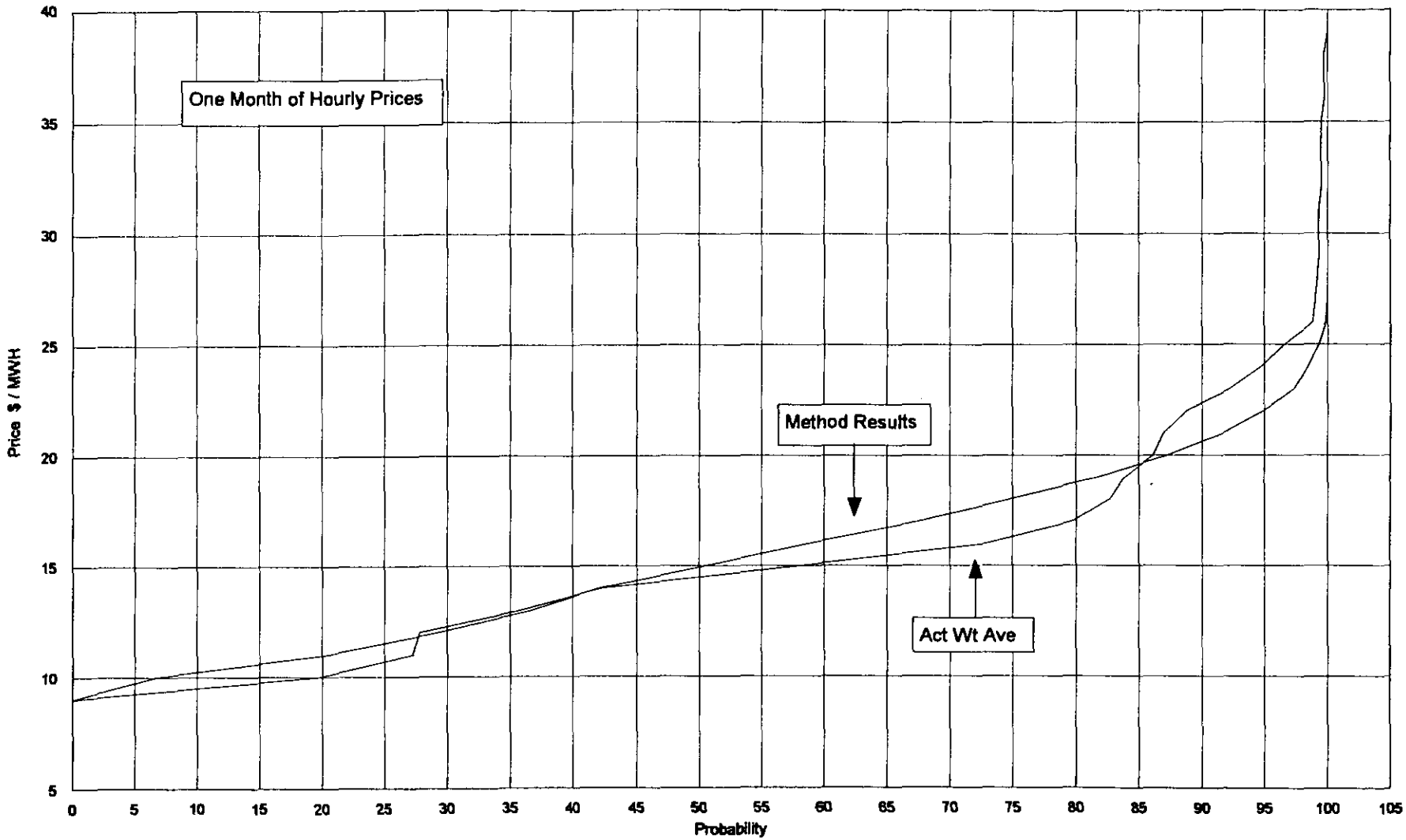
One Month of Hourly Prices
Method Results
Act Wt Ave
Price $ / MWH
Probability
40
35
30
25
20
15
10
5
0
5
10
15
20
25
30
35
40
45
50
55
60
65
70
75
80
85
90
95
100
105

FIGURE 18

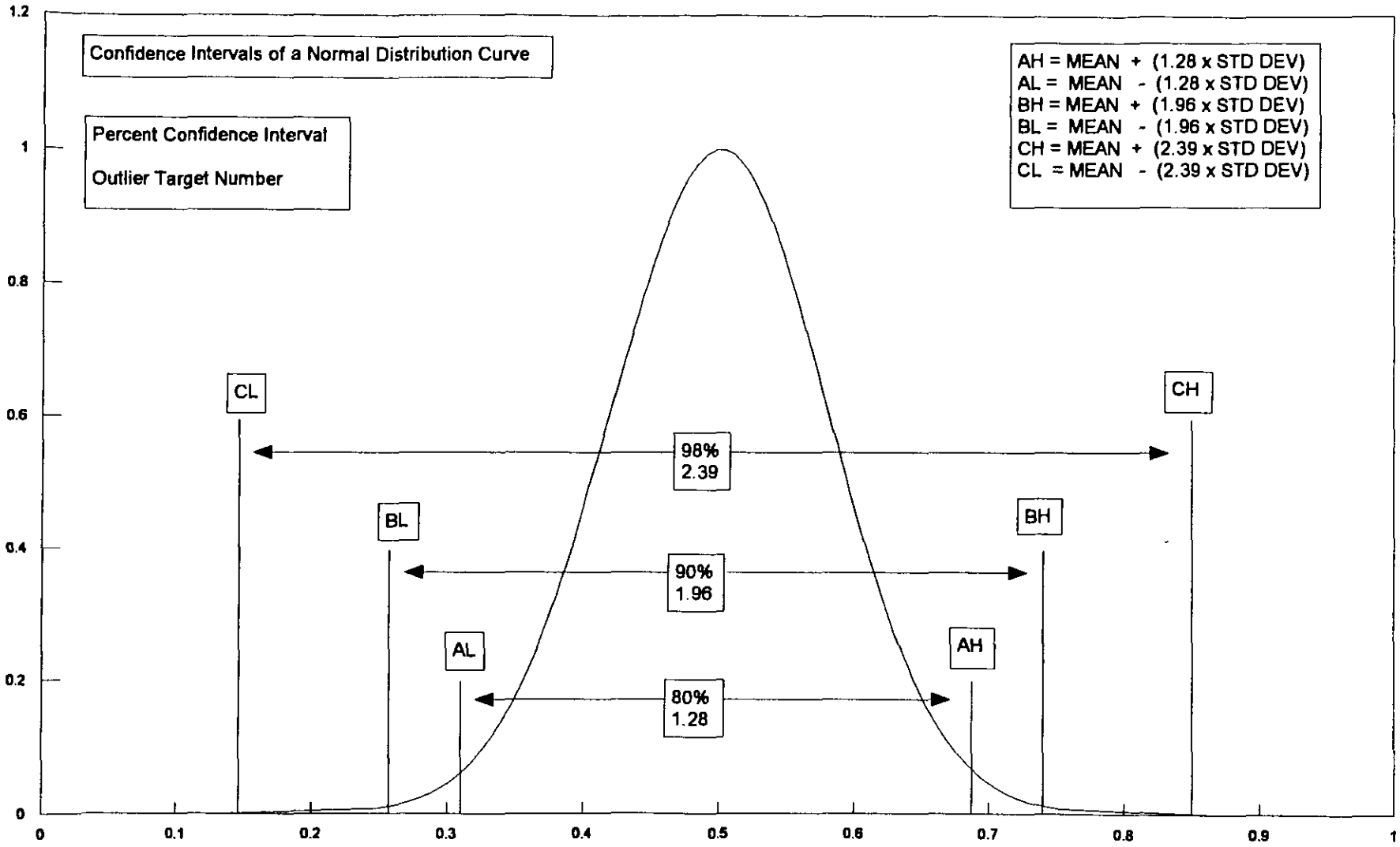
Confidence Intervals of a Normal Distribution Curve
Percent Confidence Interval
Outlier Target Number
AH = MEAN + (1.28 x STD DEV)
AL = MEAN - (1.28 x STD DEV)
BH = MEAN + (1.96 x STD DEV)
BL = MEAN - (1.96 x STD DEV)
CH = MEAN + (2.39 x STD DEV)
CL = MEAN - (2.39 x STD DEV)
CL
CH
98%
2.39
BL
BH
90%
1.96
AL
AH
80%
1.28
1.2
1
0.8
0.6
0.4
0.2
0
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1

FIGURE 19

APPENDIX A

PROCEDURES FOR CALCULATING SPOT MARKET POWER PRICES

FOR USE IN PRODUCTION COST MODEL

1. Load a month of the hourly interchange power price data and the hourly net system loads from the 20.080 data into a LOTUS 123 worksheet. See Figure A-1 and A-2.
2. Transfer all price data for capacity contract purchases and sales to another worksheet. Capacity contracts should be identified by the Electric Utility as such.
3. For the remaining data calculate the hourly weighted average price for each hour of the month. Total cost for an hour divided by the total MWHs of the hour.
4. Create a matrix using the weighted average prices with hour of the day across the top, and day of the month down the left side. See Figure A-3.
5. Eliminate any zeros by making the cell blank.
6. Determine the average value for each of the 24 columns using the LOTUS @AVE Function. Place the results in a row below the matrix. See Figure A-4.
7. Determine the standard deviation for each of the 24 columns using the LOTUS @STD Function. Place the results in the row below the average values. See Figure A-4.
8. Determine the minimum price for each of the 24 columns, using the LOTUS @MIN Function. Place the results in a row below the standard deviation values. See Figure A-4.
9. Determine the maximum price for each of the 24 columns, using the LOTUS @MAX Function. Place the results in a row below the minimum values. See Figure A-4.
10. Calculate the statistical maximum and minimum prices for each column using 2.39 as the outlier target. Place the results in a row below the maximum values. See Figure A-5.

    Maximum price = average price + (2.39 x Standard Deviation)
    Minimum price = average price - (2.39 x Standard Deviation)

11. In each column replace any prices higher than the calculated statistical maximum price for that column with the calculated statistical maximum price for that column. See Figure A-6.
12. In each column replace any prices lower than the calculated statistical minimum price for that column with the calculated statistical minimum price for that column. See Figure A-7.

13. Create @RISK TNORMAL Functions for each of the 24 columns and identify the cell location of the input data. Place the functions in a row below the calculated maximum and minimum price rows. See Figure A-8.

    @RISK FUNCTION IS: @<<RISK>>TNORMAL(AVE,STDDEV,MIN,MAX)

    Input data is the average price, the standard deviation, the minimum price, and the maximum price for each column. Enter the cell location for each in the function.
14. Go into LOTUS Add-in program called @RISK. Identify the Output as the row of @RISK TNORMAL Functions created in step 12. Set the iterations for 2000. Set the Settings for Latin Hypercube Sampling. Run @RISK.
15. Place the resulting statistic reports in a file. End @RISK.
16. Bring the file with the statistical reports into the LOTUS 123 worksheet.
17. Create a matrix using the @RISK outputs with hour of the day across the top, and percentiles down the left side. See Figure A-9.
18. To shift the output prices to reflect an imperfect normal distribution, put the numbers shown below in a column left of the matrix staring with zero at the top. See Figure A-10.

    0.000
    5.556
    11.111
    16.667
    22.222
    27.778
    33.333
    38.889
    44.444
    50.000
    54.545
    59.091
    63.636
    68.182
    72.727
    77.273
    81.818
    86.364
    90.909
    95.455
    100.000

These numbers reflect a shift of the 50 percentile prices to the 45 percentile while maintaining equal increments above and below 50 percentile and keeping the same maximum and minimum prices.

19. Divide each number in the column created in step 17 by the results of: 100/((number of days in the month)- 1). Add one to the results and round each result to the nearest whole number. See Figure A-11.
20. Add whole numbers to the column created in step 18 where needed by adding rows until the total number of rows equal the number of days in the month. See Figure A-12.
21. Create prices for the rows created in step 19 by interpolating between the existing prices in each of the 24 columns. See Figure A-13 and A-14.
22. Sort the hourly system load by hour and in ascending order of MWH. See Figure A-15.
23. Sort the hourly calculated prices by hour and in ascending order of price.
24. Align up the hourly loads in step 21 with the hourly prices in step 22. Sort the results by date and hour. See Figure A-16 and A-17.
25. Calculate the 24 maximum hourly amount of MWs for each hour. Assign this amount of MWs for the hours in the month.

FIGURES

CO NAME	P/S	DATE	HOUR	MW	PRICE	COST
ABC	P	01/01/95	100	10	10.00	100.00
ABC	P	01/01/95	200	15	10.00	150.00
ABC	P	01/01/95	300	10	10.20	102.00
ABC	S	01/01/95	400	15	10.20	153.00
ABC	P	01/01/95	500	20	10.20	204.00
ABC	P	01/01/95	600	25	10.30	257.50
ABC	P	01/01/95	700	20	10.30	206.00
ABC	P	01/01/95	800	25	10.40	260.00
ABC	P	01/01/95	900	30	10.50	315.00
ABC	P	01/01/95	1000	20	10.50	210.00
ABC	P	01/01/95	1100	25	10.60	265.00
ABC	P	01/01/95	1200	20	12.00	240.00
ABC	P	01/01/95	1300	25	12.00	300.00
ABC	P	01/01/95	1400	30	12.00	360.00
ABC	P	01/01/95	1500	35	13.00	455.00
ABC	P	01/01/95	1600	30	14.00	420.00
ABC	P	01/01/95	1700	35	14.00	490.00
KLM	P	01/01/95	100	15	27.50	412.50
KLM	P	01/01/95	200	20	25.00	500.00
KLM	P	01/01/95	300	15	25.75	386.25
KLM	P	01/01/95	400	20	25.75	515.00
KLM	P	01/01/95	500	25	25.50	637.50
KLM	P	01/01/95	600	30	26.00	780.00
KLM	P	01/01/95	700	25	25.75	643.75
KLM	P	01/01/95	800	30	26.25	787.50
KLM	P	01/01/95	900	35	27.00	945.00
KLM	P	01/01/95	1000	25	26.25	656.25
KLM	P	01/01/95	1100	30	27.25	817.50
KLM	P	01/01/95	1200	25	30.00	750.00
KLM	P	01/01/95	1300	30	37.50	1125.00
KLM	P	01/01/95	1400	35	32.50	1137.50
KLM	P	01/01/95	1500	40	35.00	1400.00
KLM	P	01/01/95	1600	35	37.50	1312.50
KLM	P	01/01/95	1700	40	37.50	1500.00
WWW	P	01/01/95	100	20	30.00	600.00
WWW	P	01/01/95	200	25	30.00	750.00
WWW	P	01/01/95	300	20	30.30	606.00
WWW	P	01/01/95	400	25	30.30	757.50
WWW	P	01/01/95	500	30	30.60	918.00
WWW	P	01/01/95	600	35	30.60	1071.00
WWW	P	01/01/95	700	30	30.90	927.00
WWW	P	01/01/95	800	35	31.50	1102.50
WWW	P	01/01/95	900	40	31.80	1272.00
WWW	P	01/01/95	1000	30	31.50	945.00
WWW	P	01/01/95	1100	35	31.80	1113.00
WWW	P	01/01/95	1200	30	39.00	1170.00
WWW	P	01/01/95	1300	35	42.00	1470.00
WWW	S	01/01/95	1400	40	37.50	1500.00
WWW	P	01/01/95	1500	45	40.50	1822.50
WWW	P	01/01/95	1600	40	45.00	1800.00
WWW	P	01/01/95	1700	45	46.50	2092.50
XYZ	P	01/01/95	100	12	22.00	264.00
XYZ	P	01/01/95	200	17	20.00	340.00
XYZ	P	01/01/95	300	12	20.50	246.00
XYZ	P	01/01/95	400	17	20.50	348.50
XYZ	P	01/01/95	500	22	20.50	451.00
XYZ	P	01/01/95	600	27	20.50	553.50
XYZ	P	01/01/95	700	22	20.50	451.00
XYZ	P	01/01/95	800	27	20.60	556.20
XYZ	P	01/01/95	900	32	21.20	678.40
XYZ	P	01/01/95	1000	22	21.20	466.40
XYZ	P	01/01/95	1100	27	21.40	577.80
XYZ	P	01/01/95	1200	22	26.00	572.00
XYZ	P	01/01/95	1300	27	26.00	702.00
XYZ	P	01/01/95	1400	32	30.00	960.00
XYZ	P	01/01/95	1500	37	30.00	1110.00
XYZ	P	01/01/95	1600	32	29.00	928.00
XYZ	P	01/01/95	1700	37	29.00	1073.00

FIGURE A-1

Data for dates 01/03/95 through 01/31/95 have been left off intentionally because of space limitations

SYSTEM HOURLY LOADS

DATE	HOUR	LOAD
01/01/95	100	200
01/01/95	200	204
01/01/95	300	204
01/01/95	400	210
01/01/95	500	212
01/01/95	600	212
01/01/95	700	214
01/01/95	800	215
01/01/95	900	213
01/01/95	1000	217
01/01/95	1100	220
01/01/95	1200	240
01/01/95	1300	260
01/01/95	1400	300
01/01/95	1500	310
01/01/95	1600	290
01/01/95	1700	280
01/01/95	1800	300
01/01/95	1900	310
01/01/95	2000	290
01/01/95	2100	270
01/01/95	2200	260
01/01/95	2300	220
01/01/95	2400	210
01/02/95	100	201
01/02/95	200	205
01/02/95	300	205
01/02/95	400	211
01/02/95	500	213
01/02/95	600	213
01/02/95	700	215
01/02/95	800	216
01/02/95	900	214
01/02/95	1000	218
01/02/95	1100	221
01/02/95	1200	241
01/02/95	1300	261
01/02/95	1400	301
01/02/95	1500	311
01/02/95	1600	291
01/02/95	1700	281
01/02/95	1800	301
01/02/95	1900	311
01/02/95	2000	291
01/02/95	2100	271
01/02/95	2200	261
01/02/95	2300	221
01/02/95	2400	211

FIGURE A-2

WEIGHTED AVERAGES

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	26.16	30.74	26.89	30.49	32.56	32.84	29.90	30.76	27.15	24.88	23.97	22.76	22.59
01/02/95	25.32	23.69	24.66	24.15	23.88	23.83	24.07	24.23	24.55	24.61	24.83	29.55	32.19	30.28	31.95	34.11	34.41	31.27	32.16	28.46	25.86	25.11	23.84	23.66
01/03/95	24.79	23.19	24.12	23.64	23.39	23.36	23.57	23.74	24.06	24.10	24.34	28.88	31.56	29.64	31.36	33.42	33.71	30.73	31.63	27.88	25.32	24.60	23.36	23.19
01/04/95	25.87	24.19	25.18	24.67	24.40	24.36	24.59	24.78	25.09	25.14	25.36	30.14	32.95	30.93	32.65	34.66	35.16	32.04	32.96	29.06	26.41	25.66	24.36	24.19
01/05/95	24.63	23.05	23.98	23.50	23.24	23.21	23.43	23.59	23.90	23.95	24.16	28.73	31.36	29.46	31.10	33.21	33.49	30.49	31.37	27.70	25.17	24.45	23.21	23.04
01/06/95	24.97	23.35	24.30	23.80	23.54	23.50	23.72	23.89	24.21	24.26	24.49	29.09	31.78	29.64	31.50	33.63	33.92	30.89	31.80	28.04	25.48	24.76	23.50	23.33
01/07/95	25.19	23.56	24.54	24.04	23.78	23.73	23.96	24.13	24.44	24.50	24.73	29.39	32.06	30.14	31.81	33.98	34.26	31.17	32.06	28.33	25.74	25.00	23.74	23.56
01/08/95	24.74	23.17	24.09	23.62	23.37	23.34	23.55	23.73	24.04	24.08	24.31	28.88	31.51	29.62	31.26	33.39	33.68	30.67	31.55	27.86	25.31	24.59	23.35	23.18
01/09/95	25.03	23.42	24.35	23.89	23.64	23.62	23.82	24.00	24.33	24.35	24.61	29.18	31.94	29.95	31.65	33.79	34.07	31.11	32.04	28.18	25.59	24.88	23.62	23.46
01/10/95	25.15	23.53	24.49	23.99	23.72	23.68	23.91	24.08	24.39	24.44	24.66	29.32	32.02	30.07	31.74	33.90	34.18	31.13	32.03	28.26	25.68	24.95	23.68	23.51
01/11/95	25.70	24.08	25.04	24.53	24.26	24.22	24.45	24.62	24.94	25.00	25.23	30.01	32.70	30.78	32.46	34.65	34.96	31.78	32.66	28.92	26.27	25.51	24.23	24.04
01/12/95	25.88	24.02	25.01	24.49	24.21	24.16	24.40	24.58	24.88	24.85	25.17	29.98	32.63	43.03	40.80	42.43	34.87	31.88	32.58	28.85	26.21	25.45	24.18	23.98
01/13/95	25.28	23.65	24.60	24.11	23.85	23.83	24.04	24.22	24.55	24.58	24.83	29.45	32.23	30.23	31.93	34.10	34.38	31.37	32.31	28.41	25.83	25.10	23.83	23.68
01/14/95	25.61	23.95	24.93	24.42	24.15	24.10	24.34	24.50	24.82	24.88	25.11	29.86	32.58	30.61	32.30	34.49	34.79	31.65	32.57	28.77	26.14	25.39	24.10	23.92
01/15/95	24.57	22.89	23.82	23.44	23.19	23.16	23.37	23.54	23.85	23.89	24.13	28.65	31.29	29.39	31.03	33.14	33.42	30.44	31.33	27.63	25.11	24.39	23.16	22.99
01/16/95	25.29	23.67	24.64	24.13	23.87	23.83	24.08	24.23	24.54	24.60	24.82	29.52	32.18	30.26	31.94	34.10	34.39	31.28	32.17	28.45	25.85	25.10	23.84	23.66
01/17/95	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.68	25.89	30.78	33.81	31.57	33.31	35.57	35.87	32.85	33.81	29.65	26.95	26.18	24.85	24.66
01/18/95	24.60	23.01	23.95	23.48	23.20	23.16	23.36	23.55	23.86	23.91	24.13	28.88	31.31	29.41	31.05	33.15	33.43	30.43	31.32	27.84	25.12	24.40	23.18	23.00
01/19/95	25.70	24.03	25.01	24.51	24.24	24.20	24.43	24.60	24.93	24.97	25.22	29.94	32.74	30.72	32.44	34.63	34.93	31.84	32.78	28.87	26.24	25.49	24.20	24.03
01/20/95	25.11	23.50	24.44	23.98	23.71	23.68	23.88	24.07	24.39	24.43	24.67	29.29	31.99	30.05	31.73	33.88	34.17	31.13	32.03	28.25	25.68	24.94	23.69	23.52
01/21/95	24.83	23.25	24.18	23.71	23.46	23.43	23.64	23.82	24.13	24.17	24.41	28.98	31.63	29.73	31.40	33.52	33.81	30.79	31.68	27.98	25.41	24.68	23.44	23.27
01/22/95	25.64	24.16	25.16	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/23/95	25.75	24.09	25.08	24.57	24.30	24.27	24.49	24.67	25.00	25.04	25.26	30.01	32.81	30.80	32.52	34.73	35.02	31.93	32.86	28.95	26.31	25.56	24.27	24.10
01/24/95	24.77	23.17	24.12	23.62	23.36	23.32	23.55	23.71	24.02	24.07	24.30	28.66	31.52	29.62	31.26	33.36	33.66	30.64	31.52	27.84	25.30	24.57	23.33	23.16
01/25/95	24.92	23.32	24.26	23.76	23.53	23.50	23.71	23.88	24.20	24.24	24.48	29.06	31.75	29.82	31.49	33.62	33.91	30.90	31.79	28.03	25.48	24.75	23.50	23.33
01/26/95	26.20	24.53	25.53	25.01	24.74	24.69	24.93	25.11	25.43	25.49	25.72	30.59	33.34	31.36	33.10	35.34	35.64	32.41	33.32	29.49	26.79	26.01	24.70	24.52
01/27/95	25.18	23.54	24.50	24.00	23.73	23.69	23.92	24.09	24.40	24.45	24.66	29.34	32.01	30.09	31.75	33.90	34.19	31.11	32.01	28.28	25.70	24.96	23.69	23.52
01/28/95	24.84	23.25	24.19	23.70	23.45	23.41	23.63	23.80	24.11	24.16	24.38	28.96	31.62	29.72	31.38	33.50	33.79	30.76	31.64	27.94	25.39	24.66	23.42	23.25
01/29/95	25.23	23.59	24.54	24.05	23.79	23.76	23.98	24.15	24.46	24.51	24.76	29.37	32.15	30.16	31.85	34.01	34.29	31.29	32.22	28.33	25.75	25.03	23.76	23.59
01/30/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/31/95	25.52	23.89	24.85	24.36	24.10	24.07	24.29	24.46	24.78	24.83	25.07	29.77	32.51	30.55	32.25	34.44	34.73	31.63	32.54	28.72	26.10	25.35	24.06	23.90

FIGURE A-3

WEIGHTED AVERAGES

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.89	30.49	32.56	32.84	29.90	30.76	27.15	24.68	23.97	22.78	22.59
01/02/95	25.32	23.69	24.66	24.15	23.88	23.83	24.07	24.23	24.55	24.61	24.83	29.55	32.19	30.28	31.95	34.11	34.41	31.27	32.18	28.48	25.86	25.11	23.84	23.66
01/03/95	24.79	23.19	24.12	23.84	23.39	23.36	23.57	23.74	24.06	24.10	24.34	28.88	31.56	29.64	31.30	33.42	33.71	30.73	31.63	27.86	25.32	24.60	23.36	23.19
01/04/95	25.87	24.19	25.18	24.67	24.40	24.36	24.59	24.76	25.09	25.14	25.38	30.14	32.95	30.93	32.65	34.86	35.16	32.04	32.98	29.06	26.41	25.68	24.36	24.19
01/05/95	24.63	23.05	23.98	23.50	23.24	23.21	23.43	23.59	23.90	23.95	24.18	28.73	31.36	29.46	31.10	33.21	33.49	30.49	31.37	27.70	25.17	24.45	23.21	23.04
01/06/95	24.97	23.35	24.30	23.80	23.54	23.50	23.72	23.89	24.21	24.26	24.49	29.09	31.78	29.84	31.50	33.63	33.92	30.89	31.80	28.04	25.48	24.76	23.50	23.33
01/07/95	25.19	23.58	24.54	24.04	23.78	23.73	23.96	24.13	24.44	24.50	24.73	29.39	32.06	30.14	31.81	33.96	34.26	31.17	32.06	28.33	25.74	25.00	23.74	23.56
01/08/95	24.74	23.17	24.09	23.62	23.37	23.34	23.55	23.73	24.04	24.06	24.31	28.88	31.51	29.82	31.28	33.39	33.68	30.67	31.55	27.86	25.31	24.59	23.35	23.18
01/09/95	25.03	23.42	24.35	23.89	23.64	23.62	23.82	24.00	24.33	24.35	24.61	29.16	31.94	29.95	31.65	33.79	34.07	31.11	32.04	28.16	25.59	24.88	23.62	23.46
01/10/95	25.15	23.53	24.49	23.98	23.72	23.68	23.91	24.08	24.39	24.44	24.68	29.32	32.02	30.07	31.74	33.90	34.18	31.13	32.03	28.29	25.68	24.95	23.68	23.51
01/11/95	25.70	24.06	25.04	24.53	24.26	24.22	24.45	24.62	24.94	25.00	25.23	30.01	32.70	30.76	32.46	34.65	34.96	31.78	32.68	28.92	26.27	25.51	24.23	24.04
01/12/95	25.68	24.02	25.01	24.49	24.21	24.16	24.40	24.58	24.88	24.95	25.17	29.98	32.83	43.03	40.60	42.43	34.87	31.68	32.58	28.65	26.21	25.45	24.16	23.98
01/13/95	25.28	23.65	24.60	24.11	23.85	23.83	24.04	24.22	24.55	24.58	24.83	29.45	32.23	30.23	31.93	34.10	34.38	31.37	32.31	28.41	25.83	25.10	23.83	23.66
01/14/95	25.61	23.95	24.93	24.42	24.15	24.10	24.34	24.50	24.82	24.86	25.11	29.86	32.56	30.61	32.30	34.49	34.79	31.65	32.57	28.77	26.14	25.39	24.10	23.92
01/15/95	24.57	22.99	23.82	23.44	23.19	23.16	23.37	23.54	23.85	23.89	24.13	28.65	31.29	29.39	31.03	33.14	33.42	30.44	31.33	27.63	25.11	24.39	23.16	22.99
01/16/95	25.29	23.67	24.64	24.13	23.87	23.83	24.06	24.23	24.54	24.60	24.82	29.52	32.18	30.29	31.94	34.10	34.39	31.28	32.17	28.45	25.85	25.10	23.84	23.66
01/17/95	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.66	25.89	30.78	33.61	31.57	33.31	35.57	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.66
01/18/95	24.60	23.01	23.95	23.46	23.20	23.16	23.38	23.55	23.86	23.91	24.13	28.66	31.31	29.41	31.05	33.15	33.43	30.43	31.32	27.64	25.12	24.40	23.16	23.00
01/19/95	25.70	24.03	25.01	24.51	24.24	24.20	24.43	24.60	24.93	24.97	25.22	29.94	32.74	30.72	32.44	34.63	34.93	31.84	32.76	28.87	26.24	25.49	24.20	24.03
01/20/95	25.11	23.50	24.44	23.98	23.71	23.68	23.89	24.07	24.39	24.43	24.67	29.29	31.99	30.05	31.73	33.66	34.17	31.13	32.03	28.25	25.68	24.94	23.69	23.52
01/21/95	24.83	23.25	24.18	23.71	23.48	23.43	23.64	23.82	24.13	24.17	24.41	28.98	31.63	29.73	31.40	33.52	33.81	30.79	31.68	27.98	25.41	24.68	23.44	23.27
01/22/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.18	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/23/95	25.75	24.09	25.08	24.57	24.30	24.27	24.49	24.67	25.00	25.04	25.28	30.01	32.81	30.80	32.52	34.73	35.02	31.93	32.88	28.95	26.31	25.56	24.27	24.10
01/24/95	24.77	23.17	24.12	23.62	23.38	23.32	23.55	23.71	24.02	24.07	24.30	28.88	31.52	29.62	31.26	33.38	33.68	30.64	31.52	27.84	25.30	24.57	23.33	23.16
01/25/95	24.92	23.32	24.26	23.78	23.53	23.50	23.71	23.88	24.20	24.24	24.48	29.06	31.75	29.82	31.49	33.62	33.91	30.90	31.79	28.03	25.48	24.75	23.50	23.33
01/26/95	26.20	24.53	25.53	25.01	24.74	24.69	24.93	25.11	25.43	25.49	25.72	30.59	33.34	31.36	33.10	35.34	35.64	32.41	33.32	29.49	26.79	26.01	24.70	24.52
01/27/95	25.16	23.54	24.50	24.00	23.73	23.69	23.92	24.09	24.40	24.45	24.68	29.34	32.01	30.09	31.75	33.90	34.19	31.11	32.01	28.28	25.70	24.96	23.69	23.52
01/28/95	24.64	23.25	24.19	23.70	23.45	23.41	23.63	23.80	24.11	24.16	24.38	28.98	31.62	29.72	31.38	33.50	33.78	30.76	31.64	27.84	25.39	24.66	23.42	23.25
01/29/95	25.23	23.59	24.54	24.05	23.79	23.76	23.98	24.15	24.48	24.51	24.76	29.37	32.15	30.16	31.85	34.01	34.29	31.29	32.22	28.33	25.75	25.03	23.76	23.59
01/30/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.18	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/31/95	25.52	23.89	24.85	24.38	24.10	24.07	24.29	24.46	24.79	24.83	25.07	29.77	32.51	30.55	32.25	34.44	34.73	31.63	32.54	28.72	26.10	25.35	24.08	23.90
AVE	25.25	23.62	24.58	24.09	23.82	23.79	24.01	24.18	24.50	24.55	24.78	29.44	32.14	30.60	32.14	34.29	34.33	31.25	32.18	28.39	25.80	25.06	23.79	23.62
STO DEV	0.5158	0.4789	0.5040	0.4884	0.4809	0.4768	0.4844	0.4858	0.4901	0.4956	0.4966	0.6021	0.6453	2.3491	1.6691	1.6320	0.6901	0.6174	0.6346	0.5720	0.5193	0.5025	0.4760	0.4709
MIN	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.89	30.49	32.56	32.84	29.90	30.76	27.15	24.68	23.97	22.78	22.59
MAX	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.66	25.89	30.78	33.61	43.03	40.60	42.43	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.66

FIGURE A-4

WEIGHTED AVERAGES

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.80	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.89	30.49	32.58	32.84	29.90	30.76	27.15	24.68	23.97	22.76	22.59
01/02/95	25.32	23.69	24.68	24.15	23.88	23.83	24.07	24.23	24.55	24.61	24.83	29.55	32.19	30.28	31.95	34.11	34.41	31.27	32.16	28.46	25.86	25.11	23.84	23.68
01/03/95	24.79	23.19	24.12	23.64	23.39	23.36	23.57	23.74	24.08	24.10	24.34	28.88	31.58	29.64	31.30	33.42	33.71	30.73	31.63	27.88	25.32	24.60	23.36	23.19
01/04/95	25.87	24.19	25.18	24.67	24.40	24.36	24.59	24.76	25.09	25.14	25.38	30.14	32.95	30.93	32.65	34.86	35.16	32.04	32.98	29.06	26.41	25.68	24.36	24.19
01/05/95	24.63	23.05	23.98	23.50	23.24	23.21	23.43	23.59	23.90	23.95	24.18	28.73	31.36	29.46	31.10	33.21	33.49	30.49	31.37	27.70	25.17	24.45	23.21	23.04
01/06/95	24.97	23.35	24.30	23.80	23.54	23.50	23.72	23.89	24.21	24.26	24.49	29.09	31.78	29.84	31.50	33.63	33.92	30.89	31.80	28.04	25.48	24.76	23.50	23.33
01/07/95	25.19	23.56	24.54	24.04	23.76	23.73	23.98	24.13	24.44	24.50	24.73	29.39	32.08	30.14	31.81	33.98	34.26	31.17	32.06	28.33	25.74	25.00	23.74	23.56
01/08/95	24.74	23.17	24.09	23.62	23.37	23.34	23.55	23.73	24.04	24.06	24.31	28.88	31.51	29.62	31.28	33.39	33.68	30.67	31.55	27.86	25.31	24.59	23.35	23.18
01/09/95	25.03	23.42	24.35	23.89	23.64	23.62	23.82	24.00	24.33	24.35	24.61	29.18	31.94	29.95	31.65	33.79	34.07	31.11	32.04	28.18	25.59	24.88	23.62	23.46
01/10/95	25.15	23.53	24.49	23.99	23.72	23.68	23.91	24.08	24.39	24.44	24.68	29.32	32.02	30.07	31.74	33.90	34.18	31.13	32.03	28.29	25.68	24.95	23.68	23.51
01/11/95	25.70	24.06	25.04	24.53	24.26	24.22	24.45	24.62	24.94	25.00	25.23	30.01	32.70	30.76	32.46	34.65	34.98	31.78	32.68	28.92	26.27	25.51	24.23	24.04
01/12/95	25.68	24.02	25.01	24.49	24.21	24.16	24.40	24.58	24.88	24.95	25.17	29.98	32.63	43.03	40.60	42.43	34.67	31.68	32.58	28.85	26.21	25.45	24.16	23.98
01/13/95	25.28	23.85	24.80	24.11	23.85	23.83	24.04	24.22	24.55	24.58	24.83	29.45	32.23	30.23	31.93	34.10	34.38	31.37	32.31	28.41	25.83	25.10	23.83	23.68
01/14/95	25.61	23.95	24.93	24.42	24.15	24.10	24.34	24.50	24.82	24.86	25.11	29.88	32.58	30.61	32.30	34.49	34.79	31.65	32.57	28.77	26.14	25.39	24.10	23.92
01/15/95	24.57	22.99	23.92	23.44	23.19	23.16	23.37	23.54	23.85	23.89	24.13	28.65	31.29	29.39	31.03	33.14	33.42	30.44	31.33	27.63	25.11	24.39	23.16	22.99
01/16/95	25.29	23.67	24.64	24.13	23.87	23.83	24.06	24.23	24.54	24.60	24.82	29.52	32.18	30.26	31.94	34.10	34.39	31.28	32.17	28.45	25.85	25.10	23.84	23.68
01/17/95	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.68	25.89	30.78	33.61	31.57	33.31	35.57	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.68
01/18/95	24.60	23.01	23.95	23.46	23.20	23.16	23.38	23.56	23.86	23.91	24.13	28.68	31.31	29.41	31.05	33.15	33.43	30.43	31.32	27.64	25.12	24.40	23.16	23.00
01/19/95	25.70	24.03	25.01	24.51	24.24	24.20	24.43	24.60	24.93	24.97	25.22	29.94	32.74	30.72	32.44	34.63	34.93	31.84	32.78	28.87	26.24	25.49	24.20	24.03
01/20/95	25.11	23.50	24.44	23.96	23.71	23.68	23.89	24.07	24.39	24.43	24.67	29.29	31.99	30.05	31.73	33.88	34.17	31.13	32.03	28.25	25.68	24.94	23.69	23.52
01/21/95	24.83	23.25	24.18	23.71	23.46	23.43	23.64	23.82	24.13	24.17	24.41	28.98	31.63	29.73	31.40	33.52	33.81	30.79	31.68	27.99	25.41	24.68	23.44	23.27
01/22/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/23/95	25.75	24.09	25.08	24.57	24.30	24.27	24.49	24.67	25.00	25.04	25.26	30.01	32.61	30.80	32.52	34.73	35.02	31.93	32.86	28.95	26.31	25.56	24.27	24.10
01/24/95	24.77	23.17	24.12	23.62	23.36	23.32	23.55	23.71	24.02	24.07	24.30	28.68	31.52	29.62	31.28	33.38	33.68	30.84	31.52	27.84	25.30	24.57	23.33	23.16
01/25/95	24.82	23.32	24.26	23.78	23.53	23.50	23.71	23.88	24.20	24.24	24.48	29.06	31.75	29.82	31.49	33.62	33.91	30.90	31.78	28.03	25.48	24.75	23.50	23.33
01/26/95	26.20	24.53	25.53	25.01	24.74	24.69	24.93	25.11	25.43	25.49	25.72	30.59	33.34	31.36	33.10	35.34	35.64	32.41	33.32	29.49	26.79	26.01	24.70	24.52
01/27/95	25.16	23.54	24.50	24.00	23.73	23.69	23.92	24.09	24.40	24.45	24.68	29.34	32.01	30.09	31.75	33.90	34.19	31.11	32.01	28.28	25.70	24.96	23.69	23.52
01/28/95	24.84	23.25	24.19	23.70	23.45	23.41	23.63	23.80	24.11	24.16	24.39	28.98	31.62	29.72	31.38	33.50	33.79	30.78	31.64	27.94	25.39	24.68	23.42	23.25
01/29/95	25.23	23.59	24.54	24.05	23.79	23.78	23.98	24.15	24.46	24.51	24.78	29.37	32.15	30.16	31.85	34.01	34.29	31.29	32.22	28.33	25.75	25.03	23.78	23.59
01/30/95	25.84	24.16	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.18	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/31/95	25.52	23.89	24.85	24.38	24.10	24.07	24.29	24.46	24.79	24.83	25.07	29.77	32.51	30.55	32.25	34.44	34.73	31.63	32.54	28.72	26.10	25.35	24.08	23.90
AVE	25.25	23.62	24.56	24.09	23.82	23.79	24.01	24.18	24.50	24.55	24.78	29.44	32.14	30.60	32.14	34.29	34.33	31.25	32.16	28.39	25.80	25.06	23.79	23.62
STD DEV	0.5158	0.4789	0.5040	0.4864	0.4809	0.4788	0.4844	0.4856	0.4901	0.4958	0.4968	0.6021	0.9453	2.3491	1.6891	1.8320	0.6901	0.6174	0.6348	0.5720	0.5193	0.5025	0.4760	0.4709
MIN	24.15	22.80	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.89	30.49	32.58	32.84	29.90	30.76	27.15	24.68	23.97	22.76	22.59
MAX	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.68	25.89	30.78	33.61	43.03	40.60	42.43	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.68
CALC MIN	24.02	22.46	23.38	22.92	22.67	22.65	22.85	23.02	23.33	23.36	23.59	28.00	30.60	24.98	26.15	30.39	32.68	29.78	30.64	27.02	24.55	23.86	22.65	22.49
CALC MAX	26.48	24.77	25.79	25.25	24.97	24.93	25.17	25.34	25.67	25.73	25.97	30.68	33.68	36.21	36.13	36.19	35.98	32.73	33.68	29.75	27.04	26.26	24.93	24.74

FIGURE A-5

WEIGHTED AVERAGES

These averages are higher than the calculated maximum values

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.46	23.70	26.16	30.74	26.89	30.49	32.56	32.64	29.90	30.76	27.15	24.68	23.97	22.76	22.59
01/02/95	25.32	23.69	24.88	24.15	23.88	23.83	24.07	24.23	24.55	24.61	24.83	29.55	32.19	30.28	31.95	34.11	34.41	31.27	32.16	28.48	25.86	25.11	23.84	23.66
01/03/95	24.76	23.19	24.12	23.64	23.39	23.36	23.57	23.74	24.08	24.10	24.34	28.66	31.56	29.64	31.30	33.42	33.71	30.73	31.63	27.86	25.32	24.60	23.36	23.19
01/04/95	25.67	24.19	25.18	24.67	24.40	24.36	24.59	24.76	25.09	25.14	25.38	30.14	32.95	30.93	32.65	34.86	35.16	32.04	32.96	29.06	26.41	25.66	24.36	24.19
01/05/95	24.63	23.05	23.96	23.50	23.24	23.21	23.43	23.59	23.90	23.95	24.18	28.73	31.36	29.46	31.10	33.21	33.49	30.49	31.37	27.70	25.17	24.45	23.21	23.04
01/06/95	24.97	23.35	24.30	23.80	23.54	23.50	23.72	23.89	24.21	24.26	24.49	29.09	31.76	29.84	31.50	33.63	33.92	30.89	31.80	28.04	25.48	24.76	23.50	23.33
01/07/95	25.19	23.56	24.54	24.04	23.78	23.73	23.96	24.13	24.44	24.50	24.73	29.39	32.06	30.14	31.81	33.96	34.26	31.17	32.06	28.33	25.74	25.00	23.74	23.56
01/08/95	24.74	23.17	24.09	23.62	23.37	23.34	23.55	23.73	24.04	24.08	24.31	28.88	31.51	29.62	31.26	33.39	33.88	30.87	31.55	27.86	25.31	24.59	23.35	23.16
01/09/95	25.03	23.42	24.35	23.89	23.64	23.62	23.82	24.00	24.33	24.35	24.61	29.16	31.94	29.95	31.65	33.79	34.07	31.11	32.04	28.16	25.59	24.88	23.62	23.46
01/10/95	25.15	23.53	24.49	23.99	23.72	23.68	23.91	24.08	24.39	24.44	24.68	29.32	32.02	30.07	31.74	33.90	34.18	31.13	32.03	28.26	25.66	24.95	23.68	23.51
01/11/95	25.70	24.06	25.04	24.53	24.26	24.22	24.45	24.62	24.94	25.00	25.23	30.01	32.70	30.76	32.46	34.65	34.96	31.76	32.68	28.92	26.27	25.51	24.23	24.04
01/12/95	25.86	24.02	25.01	24.49	24.21	24.16	24.40	24.58	24.88	24.95	25.17	29.98	32.63	43.03	40.60	42.43	34.87	31.68	32.58	28.85	26.21	25.45	24.16	23.98
01/13/95	25.28	23.65	24.60	24.11	23.85	23.83	24.04	24.22	24.55	24.58	24.83	29.45	32.23	30.23	31.93	34.10	34.36	31.37	32.31	28.41	25.83	25.10	23.83	23.66
01/14/95	25.81	23.95	24.93	24.42	24.15	24.10	24.34	24.50	24.82	24.88	25.11	29.86	32.58	30.61	32.30	34.49	34.79	31.65	32.57	28.77	26.14	25.39	24.10	23.92
01/15/95	24.57	22.99	23.92	23.44	23.19	23.16	23.37	23.54	23.85	23.89	24.13	28.65	31.29	29.39	31.03	33.14	33.42	30.44	31.33	27.63	25.11	24.39	23.16	22.99
01/16/95	25.28	23.67	24.64	24.13	23.87	23.83	24.06	24.23	24.54	24.60	24.82	29.52	32.18	30.26	31.94	34.10	34.39	31.28	32.17	28.45	25.85	25.10	23.84	23.68
01/17/95	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.68	25.89	30.78	33.61	31.57	33.31	35.57	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.66
01/18/95	24.60	23.01	23.95	23.48	23.20	23.16	23.38	23.55	23.86	23.91	24.13	28.68	31.31	29.41	31.05	33.15	33.43	30.43	31.32	27.64	25.12	24.40	23.16	23.00
01/19/95	25.70	24.03	25.01	24.51	24.24	24.20	24.43	24.60	24.93	24.97	25.22	29.94	32.74	30.72	32.44	34.63	34.93	31.84	32.76	28.87	26.24	25.49	24.20	24.03
01/20/95	25.11	23.50	24.44	23.96	23.71	23.68	23.89	24.07	24.39	24.43	24.67	29.29	31.99	30.05	31.73	33.88	34.17	31.13	32.03	28.25	25.68	24.94	23.69	23.52
01/21/95	24.83	23.25	24.18	23.71	23.46	23.43	23.64	23.82	24.13	24.17	24.41	28.98	31.63	29.73	31.40	33.52	33.81	30.79	31.68	27.98	25.41	24.66	23.44	23.27
01/22/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.90	34.80	35.11	31.69	32.79	29.04	26.39	25.62	24.32	24.14
01/23/95	25.75	24.09	25.08	24.57	24.30	24.27	24.48	24.67	25.00	25.04	25.26	30.01	32.81	30.80	32.52	34.73	35.02	31.93	32.86	28.95	26.31	25.56	24.27	24.10
01/24/95	24.77	23.17	24.12	23.62	23.38	23.32	23.55	23.71	24.02	24.07	24.30	28.88	31.52	29.62	31.29	33.38	33.66	30.84	31.52	27.84	25.30	24.57	23.33	23.16
01/25/95	24.92	23.32	24.26	23.78	23.53	23.50	23.71	23.88	24.20	24.24	24.48	29.06	31.75	29.82	31.48	33.62	33.91	30.90	31.79	28.03	25.48	24.75	23.50	23.33
01/26/95	26.20	24.53	25.53	25.01	24.74	24.69	24.93	25.11	25.43	25.49	25.72	30.59	33.34	31.36	33.10	35.34	35.64	32.41	33.32	29.49	26.79	26.01	24.70	24.52
01/27/95	25.16	23.54	24.50	24.00	23.73	23.69	23.92	24.09	24.40	24.45	24.68	29.34	32.01	30.09	31.75	33.90	34.19	31.11	32.01	28.28	25.70	24.96	23.69	23.52
01/28/95	24.84	23.25	24.19	23.70	23.45	23.41	23.63	23.80	24.11	24.16	24.39	28.98	31.62	29.72	31.38	33.50	33.79	30.76	31.64	27.94	25.39	24.66	23.42	23.25
01/29/95	25.23	23.59	24.54	24.05	23.79	23.76	23.98	24.15	24.48	24.51	24.76	29.37	32.15	30.16	31.85	34.01	34.29	31.29	32.22	28.33	25.75	25.03	23.76	23.59
01/30/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.18	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/31/95	25.52	23.89	24.85	24.36	24.10	24.07	24.29	24.48	24.79	24.83	25.07	29.77	32.51	30.55	32.25	34.44	34.73	31.63	32.54	28.72	26.10	25.35	24.08	23.90
AVE	25.25	23.62	24.58	24.09	23.82	23.79	24.01	24.18	24.50	24.55	24.78	29.44	32.14	30.60	32.14	34.29	34.33	31.25	32.18	28.39	25.80	25.06	23.79	23.62
STD DEV	0.5158	0.4799	0.5040	0.4684	0.4609	0.4768	0.4844	0.4856	0.4901	0.4956	0.4968	0.6021	0.6453	2.3491	1.6691	1.6320	0.6901	0.6174	0.6348	0.5720	0.5193	0.5025	0.4760	0.4709
MIN	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.46	23.70	26.16	30.74	26.89	30.49	32.56	32.64	29.90	30.76	27.15	24.68	23.97	22.76	22.59
MAX	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.68	25.89	30.78	33.61	43.03	40.60	42.43	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.66
CALC MIN	24.02	22.46	23.36	22.92	22.67	22.65	22.85	23.02	23.33	23.38	23.59	28.00	30.60	24.98	28.15	30.39	32.68	29.78	30.64	27.02	24.55	23.86	22.65	22.49
CALC MAX	26.48	24.77	25.79	25.25	24.97	24.93	25.17	25.34	25.67	25.73	25.97	30.88	33.68	36.21	36.13	38.19	35.96	32.73	33.68	29.75	27.04	26.26	24.93	24.74

FIGURE A-6

WEIGHTED AVERAGES

These averages have been replaced with the calculated values

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.89	30.49	32.56	32.84	29.90	30.76	27.15	24.68	23.97	22.76	22.59
01/02/95	25.32	23.69	24.66	24.15	23.88	23.83	24.07	24.23	24.55	24.61	24.83	29.55	32.19	30.28	31.95	34.11	34.41	31.27	32.16	28.48	25.86	25.11	23.84	23.66
01/03/95	24.79	23.19	24.12	23.84	23.39	23.36	23.57	23.74	24.06	24.10	24.34	28.88	31.58	29.84	31.30	33.42	33.71	30.73	31.63	27.86	25.32	24.60	23.36	23.19
01/04/95	25.87	24.19	25.18	24.67	24.40	24.36	24.59	24.78	25.09	25.14	25.36	30.14	32.95	30.93	32.65	34.86	35.16	32.04	32.96	29.06	26.41	25.68	24.36	24.19
01/05/95	24.83	23.05	23.98	23.50	23.24	23.21	23.43	23.59	23.90	23.95	24.18	28.73	31.38	29.48	31.10	33.21	33.49	30.49	31.37	27.70	25.17	24.45	23.21	23.04
01/06/95	24.97	23.35	24.30	23.80	23.54	23.50	23.72	23.89	24.21	24.26	24.49	29.09	31.78	29.84	31.50	33.63	33.92	30.69	31.60	28.04	25.46	24.76	23.50	23.33
01/07/95	25.19	23.58	24.54	24.04	23.78	23.73	23.98	24.13	24.44	24.50	24.73	29.39	32.06	30.14	31.81	33.98	34.26	31.17	32.06	28.33	25.74	25.00	23.74	23.56
01/08/95	24.74	23.17	24.09	23.62	23.37	23.34	23.55	23.73	24.04	24.08	24.31	28.88	31.51	29.62	31.28	33.39	33.68	30.67	31.55	27.86	25.31	24.59	23.35	23.18
01/09/95	25.03	23.42	24.35	23.89	23.64	23.62	23.82	24.00	24.33	24.35	24.61	29.16	31.94	29.95	31.65	33.79	34.07	31.11	32.04	28.16	25.59	24.88	23.62	23.46
01/10/95	25.15	23.53	24.49	23.99	23.72	23.68	23.91	24.08	24.39	24.44	24.68	29.32	32.02	30.07	31.74	33.90	34.18	31.13	32.03	28.26	25.68	24.95	23.68	23.51
01/11/95	25.70	24.08	25.04	24.53	24.28	24.22	24.45	24.62	24.94	25.00	25.23	30.01	32.70	30.76	32.46	34.65	34.96	31.78	32.66	28.92	26.27	25.51	24.23	24.04
01/12/95	25.68	24.02	25.01	24.49	24.21	24.18	24.40	24.56	24.88	24.95	25.17	29.96	32.63	36.21	36.13	36.19	34.87	31.68	32.56	28.85	26.21	25.45	24.16	23.98
01/13/95	25.26	23.65	24.60	24.11	23.85	23.83	24.04	24.22	24.55	24.58	24.83	29.45	32.23	30.23	31.93	34.10	34.36	31.37	32.31	28.41	25.83	25.10	23.83	23.68
01/14/95	25.61	23.95	24.93	24.42	24.15	24.10	24.34	24.50	24.82	24.88	25.11	29.86	32.56	30.81	32.30	34.49	34.79	31.65	32.57	28.77	26.14	25.39	24.10	23.92
01/15/95	24.57	22.99	23.92	23.44	23.19	23.18	23.37	23.54	23.85	23.89	24.13	28.85	31.29	29.39	31.03	33.14	33.42	30.44	31.33	27.63	25.11	24.39	23.18	22.99
01/16/95	25.29	23.67	24.64	24.13	23.87	23.83	24.06	24.23	24.54	24.60	24.82	29.52	32.18	30.26	31.94	34.10	34.39	31.28	32.17	28.45	25.85	25.10	23.84	23.66
01/17/95	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.66	25.89	30.76	33.61	31.57	33.31	35.57	35.87	32.65	33.61	29.85	26.95	26.18	24.85	24.66
01/18/95	24.60	23.01	23.95	23.46	23.20	23.16	23.38	23.55	23.86	23.91	24.13	28.68	31.31	29.41	31.05	33.15	33.43	30.43	31.32	27.64	25.12	24.40	23.16	23.00
01/19/95	25.70	24.03	25.01	24.51	24.24	24.20	24.43	24.60	24.93	24.97	25.22	29.94	32.74	30.72	32.44	34.63	34.93	31.84	32.78	28.87	26.24	25.49	24.20	24.03
01/20/95	25.11	23.50	24.44	23.96	23.71	23.68	23.89	24.07	24.39	24.43	24.67	29.29	31.99	30.05	31.73	33.88	34.17	31.13	32.03	28.25	25.68	24.94	23.69	23.52
01/21/95	24.83	23.25	24.18	23.71	23.48	23.43	23.64	23.82	24.13	24.17	24.41	28.98	31.83	29.73	31.40	33.52	33.81	30.79	31.68	27.98	25.41	24.68	23.44	23.27
01/22/95	25.84	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/23/95	25.75	24.09	25.08	24.57	24.30	24.27	24.49	24.67	25.00	25.04	25.28	30.01	32.81	30.80	32.52	34.73	35.02	31.93	32.86	28.95	26.31	25.58	24.27	24.10
01/24/95	24.77	23.17	24.12	23.62	23.38	23.32	23.55	23.71	24.02	24.07	24.30	28.88	31.52	29.82	31.28	33.38	33.66	30.84	31.52	27.84	25.30	24.57	23.33	23.18
01/25/95	24.92	23.32	24.26	23.78	23.53	23.50	23.71	23.88	24.20	24.24	24.48	29.06	31.75	29.82	31.49	33.62	33.91	30.90	31.79	28.03	25.48	24.75	23.50	23.33
01/26/95	26.20	24.53	25.53	25.01	24.74	24.69	24.93	25.11	25.43	25.49	25.72	30.59	33.34	31.36	33.10	35.34	35.64	32.41	33.32	29.49	26.79	26.01	24.70	24.52
01/27/95	25.16	23.54	24.50	24.00	23.73	23.69	23.92	24.09	24.40	24.45	24.68	29.34	32.01	30.09	31.75	33.90	34.19	31.11	32.01	28.28	25.70	24.96	23.69	23.52
01/28/95	24.84	23.25	24.19	23.70	23.45	23.41	23.63	23.80	24.11	24.16	24.39	28.98	31.62	29.72	31.38	33.50	33.79	30.76	31.64	27.94	25.39	24.66	23.42	23.25
01/29/95	25.23	23.59	24.54	24.05	23.78	23.76	23.98	24.15	24.48	24.51	24.76	29.37	32.15	30.16	31.85	34.01	34.29	31.29	32.22	28.33	25.75	25.03	23.76	23.59
01/30/95	25.64	24.18	25.18	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.18	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/31/95	25.52	23.89	24.85	24.36	24.10	24.07	24.29	24.48	24.79	24.83	25.07	29.77	32.51	30.55	32.25	34.44	34.73	31.63	32.54	28.72	26.10	25.35	24.08	23.90
AVE	25.25	23.62	24.58	24.09	23.82	23.79	24.01	24.18	24.50	24.55	24.78	29.44	32.14	30.60	32.14	34.29	34.33	31.25	32.16	28.39	25.80	25.06	23.79	23.62
STD DEV	0.5156	0.4799	0.5040	0.4684	0.4809	0.4768	0.4844	0.4856	0.4901	0.4956	0.4968	0.6021	0.6453	2.3491	1.6691	1.6320	0.6901	0.6174	0.6346	0.5720	0.5193	0.5025	0.4760	0.4709
MIN	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.89	30.49	32.56	32.84	29.90	30.76	27.15	24.68	23.97	22.76	22.59
MAX	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.66	25.89	30.76	33.61	36.21	36.13	36.19	35.87	32.65	33.61	29.85	26.95	26.18	24.85	24.66
CALC MIN	24.02	22.48	23.38	22.92	22.67	22.65	22.85	23.02	23.33	23.36	23.59	28.00	30.60	24.96	28.15	30.39	32.68	29.78	30.64	27.02	24.55	23.86	22.65	22.49
CALC MAX	26.48	24.77	25.79	25.25	24.97	24.93	25.17	25.34	25.67	25.73	25.97	30.56	33.66	36.21	36.13	36.19	35.98	32.73	33.68	29.75	27.04	26.26	24.93	24.74

FIGURE A-7

Appendix 3, Schedule ELM-1

WEIGHTED AVERAGES

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.69	30.49	32.56	32.84	29.90	30.76	27.15	24.68	23.97	22.76	22.59
01/02/95	25.32	23.69	24.86	24.15	23.88	23.83	24.07	24.23	24.55	24.61	24.83	29.55	32.19	30.28	31.95	34.11	34.41	31.27	32.16	28.48	25.86	25.11	23.84	23.68
01/03/95	24.79	23.19	24.12	23.64	23.39	23.36	23.57	23.74	24.06	24.10	24.34	28.88	31.56	29.84	31.30	33.42	33.71	30.73	31.63	27.86	25.32	24.60	23.36	23.19
01/04/95	25.87	24.19	25.18	24.67	24.40	24.36	24.59	24.78	25.09	25.14	25.36	30.14	32.95	30.93	32.65	34.86	35.16	32.04	32.98	29.06	26.41	25.66	24.36	24.19
01/05/95	24.63	23.05	23.98	23.50	23.24	23.21	23.43	23.59	23.90	23.95	24.18	28.73	31.38	29.46	31.10	33.21	33.49	30.49	31.37	27.70	25.17	24.45	23.21	23.04
01/06/95	24.97	23.35	24.30	23.80	23.54	23.50	23.72	23.89	24.21	24.26	24.49	29.09	31.78	29.84	31.50	33.63	33.92	30.89	31.80	28.04	25.46	24.78	23.50	23.33
01/07/95	25.19	23.58	24.54	24.04	23.78	23.73	23.96	24.13	24.44	24.50	24.73	29.39	32.06	30.14	31.81	33.96	34.26	31.17	32.06	28.33	25.74	25.00	23.74	23.56
01/08/95	24.74	23.17	24.09	23.62	23.37	23.34	23.55	23.73	24.04	24.08	24.31	28.88	31.51	29.62	31.28	33.39	33.68	30.67	31.55	27.86	25.31	24.59	23.35	23.18
01/09/95	25.03	23.42	24.35	23.89	23.64	23.62	23.82	24.00	24.33	24.35	24.61	29.18	31.94	29.95	31.65	33.79	34.07	31.11	32.04	28.18	25.59	24.88	23.62	23.46
01/10/95	25.15	23.53	24.49	23.99	23.72	23.68	23.91	24.08	24.39	24.44	24.68	29.32	32.02	30.07	31.74	33.90	34.18	31.13	32.03	28.26	25.68	24.95	23.68	23.51
01/11/95	25.70	24.06	25.04	24.53	24.26	24.22	24.45	24.62	24.94	25.00	25.23	30.01	32.70	30.76	32.46	34.65	34.96	31.76	32.68	28.92	26.27	25.51	24.23	24.04
01/12/95	25.68	24.02	25.01	24.49	24.21	24.16	24.40	24.56	24.88	24.95	25.17	29.98	32.83	30.21	32.13	34.19	34.67	31.68	32.58	28.85	26.21	25.45	24.16	23.98
01/13/95	25.28	23.85	24.80	24.11	23.85	23.83	24.04	24.22	24.55	24.58	24.83	29.45	32.23	30.23	31.93	34.10	34.36	31.37	32.31	28.41	25.83	25.10	23.83	23.68
01/14/95	25.61	23.95	24.93	24.42	24.15	24.10	24.34	24.50	24.82	24.88	25.11	29.66	32.56	30.61	32.30	34.49	34.79	31.65	32.57	28.77	26.14	25.39	24.10	23.92
01/15/95	24.57	22.99	23.92	23.44	23.19	23.16	23.37	23.54	23.85	23.89	24.13	28.85	31.29	29.39	31.03	33.14	33.42	30.44	31.33	27.63	25.11	24.39	23.16	22.99
01/16/95	25.29	23.67	24.64	24.13	23.87	23.83	24.06	24.23	24.54	24.60	24.82	29.52	32.18	30.26	31.94	34.10	34.39	31.26	32.17	28.45	25.85	25.10	23.84	23.66
01/17/95	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.66	25.89	30.78	33.61	31.57	33.31	35.57	35.87	32.65	33.61	29.65	26.95	26.18	24.85	24.66
01/18/95	24.60	23.01	23.95	23.46	23.20	23.16	23.36	23.55	23.86	23.91	24.13	28.66	31.31	29.41	31.05	33.15	33.43	30.43	31.32	27.64	25.12	24.40	23.18	23.00
01/19/95	25.70	24.03	25.01	24.51	24.24	24.20	24.43	24.60	24.93	24.97	25.22	29.94	32.74	30.72	32.44	34.63	34.93	31.64	32.76	28.87	26.24	25.49	24.20	24.03
01/20/95	25.11	23.50	24.44	23.96	23.71	23.68	23.89	24.07	24.39	24.43	24.67	29.29	31.99	30.05	31.73	33.68	34.17	31.13	32.03	28.25	25.68	24.94	23.69	23.52
01/21/95	24.83	23.25	24.18	23.71	23.46	23.43	23.64	23.82	24.13	24.17	24.41	28.98	31.83	29.73	31.40	33.52	33.81	30.79	31.68	27.96	25.41	24.68	23.44	23.27
01/22/95	25.64	24.18	25.18	24.85	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.60	34.80	35.11	31.89	32.79	29.04	26.39	25.62	24.32	24.14
01/23/95	25.75	24.09	25.06	24.57	24.30	24.27	24.49	24.67	25.00	25.04	25.28	30.01	32.61	30.80	32.52	34.73	35.02	31.93	32.86	28.95	26.31	25.56	24.27	24.10
01/24/95	24.77	23.17	24.12	23.62	23.38	23.32	23.55	23.71	24.02	24.07	24.30	28.88	31.52	29.62	31.26	33.38	33.66	30.64	31.52	27.84	25.30	24.57	23.33	23.18
01/25/95	24.92	23.32	24.28	23.78	23.53	23.50	23.71	23.88	24.20	24.24	24.48	29.06	31.75	29.82	31.49	33.62	33.91	30.90	31.79	28.03	25.48	24.75	23.50	23.33
01/26/95	26.20	24.53	25.53	25.01	24.74	24.69	24.93	25.11	25.43	25.49	25.72	30.59	33.34	31.36	33.10	35.34	35.64	32.41	33.32	29.49	26.79	26.01	24.70	24.52
01/27/95	25.16	23.54	24.50	24.00	23.73	23.69	23.92	24.09	24.40	24.45	24.68	29.34	32.01	30.09	31.75	33.90	34.19	31.11	32.01	28.26	25.70	24.96	23.69	23.52
01/28/95	24.84	23.25	24.19	23.70	23.45	23.41	23.63	23.80	24.11	24.16	24.39	28.98	31.62	29.72	31.36	33.50	33.79	30.76	31.64	27.94	25.39	24.66	23.42	23.25
01/29/95	25.23	23.59	24.54	24.05	23.78	23.78	23.98	24.15	24.48	24.51	24.78	29.37	32.15	30.16	31.85	34.01	34.29	31.29	32.22	28.33	25.75	25.03	23.78	23.59
01/30/95	25.84	24.18	25.16	24.65	24.37	24.32	24.56	24.73	25.04	25.11	25.33	30.16	32.84	30.90	32.60	34.80	35.11	31.88	32.79	29.04	26.39	25.62	24.32	24.14
01/31/95	25.52	23.69	24.65	24.36	24.10	24.07	24.29	24.46	24.79	24.85	25.07	29.77	32.51	30.55	32.25	34.44	34.73	31.63	32.54	28.72	26.10	25.35	24.06	23.90
AVE	25.25	23.62	24.56	24.09	23.82	23.79	24.01	24.18	24.50	24.55	24.78	29.44	32.14	30.60	32.14	34.29	34.33	31.25	32.18	28.39	25.80	25.06	23.79	23.62
STD DEV	0.5158	0.4799	0.5040	0.4884	0.4809	0.4768	0.4844	0.4856	0.4901	0.4956	0.4958	0.6021	0.6453	2.3491	1.6891	1.8320	0.6901	0.8174	0.6346	0.5720	0.5183	0.5025	0.4760	0.4709
MIN	24.15	22.60	23.51	23.04	22.79	22.75	22.97	23.13	23.43	23.48	23.70	28.16	30.74	28.69	30.49	32.56	32.84	29.90	30.76	27.15	24.68	23.97	22.76	22.59
MAX	26.42	24.70	25.72	25.18	24.90	24.85	25.09	25.27	25.59	25.66	25.89	30.78	33.61	36.21	36.13	36.19	35.87	32.85	33.61	29.65	26.95	26.18	24.85	24.66
CALC MIN	24.02	22.46	23.36	22.92	22.67	22.65	22.85	23.02	23.33	23.36	23.59	28.00	30.60	24.98	26.15	30.39	32.68	29.76	30.64	27.02	24.55	23.86	22.85	22.49
CALC MAX	26.48	24.77	25.79	25.25	24.97	24.93	25.17	25.34	25.67	25.73	25.97	30.88	33.68	36.21	36.13	36.19	35.96	32.73	33.68	29.75	27.04	26.26	24.93	24.74
@RISK	26.13185	24.44106	25.44295	24.91784	24.64089	24.5954	24.83283	25.005	25.33017	25.38959	25.62484	30.46467	33.24758	34.90333	35.15141	37.22006	35.50129	32.30811	33.24619	29.3537	26.67539	25.91011	24.59441	24.41382

FIGURE A-6

Appendix 3, Schedule ELM-1

OUTPUT of @RISK Calculations

Percentile %	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
0	24.15348	22.60166	23.51557	23.04034	22.79163	22.75242	22.96696	23.1348	23.43628	23.48329	23.70377	28.16837	30.75042	28.88938	30.49593
5	24.46777	22.89525	23.82105	23.34374	23.09234	23.05819	23.2714	23.44035	23.74967	23.79375	24.02219	28.53196	31.15703	29.1636	30.75565
10	24.62519	23.04355	23.97441	23.49401	23.24091	23.20609	23.42208	23.59037	23.90213	23.94594	24.17617	28.7161	31.35867	29.42498	30.9875
15	24.73947	23.15041	24.08593	23.60354	23.34776	23.31221	23.53049	23.69941	24.01171	24.05681	24.28783	28.85063	31.50315	29.67124	31.19951
20	24.83373	23.23784	24.17727	23.6922	23.43554	23.39956	23.6188	23.78787	24.10122	24.1476	24.37791	28.96006	31.62114	29.90847	31.39638
25	24.91551	23.31392	24.2571	23.76995	23.51167	23.47583	23.69533	23.86507	24.17896	24.22585	24.45765	29.05457	31.72333	30.13777	31.58465
30	24.9893	23.38245	24.32975	23.83987	23.5809	23.54448	23.76523	23.93472	24.24988	24.29716	24.52863	29.14121	31.81673	30.36368	31.76488
35	25.05849	23.44695	24.39746	23.90567	23.64581	23.60808	23.83012	23.99991	24.31585	24.36388	24.59532	29.22199	31.90341	30.58895	31.94121
40	25.12461	23.50832	24.46154	23.96757	23.70715	23.66907	23.89181	24.06232	24.37837	24.42694	24.65936	29.29829	31.9857	30.81144	32.11519
45	25.18812	23.56753	24.52372	24.02814	23.76631	23.72818	23.95202	24.12218	24.43896	24.48871	24.72061	29.37334	32.06591	31.03693	32.28881
50	25.25106	23.62616	24.58497	24.08816	23.82528	23.78685	24.01149	24.18181	24.49867	24.54903	24.78143	29.4461	32.1448	31.26743	32.46562
55	25.31396	23.68505	24.64705	24.14745	23.88396	23.8447	24.07006	24.24077	24.55903	24.60948	24.84203	29.52001	32.2236	31.50305	32.64362
60	25.3785	23.74415	24.70933	24.20844	23.94382	23.90428	24.13056	24.30132	24.61963	24.67118	24.90363	29.59435	32.3038	31.74821	32.82909
65	25.44411	23.80568	24.77385	24.2704	24.00493	23.96482	24.19225	24.36335	24.68255	24.73432	24.96707	29.67139	32.3866	32.00721	33.02314
70	25.51371	23.87042	24.84156	24.33634	24.0699	24.02928	24.25756	24.42876	24.74853	24.80124	25.03398	29.75242	32.47422	32.28559	33.22986
75	25.58881	23.93994	24.91465	24.40705	24.13963	24.09803	24.32741	24.49893	24.81917	24.87307	25.1058	29.83949	32.56799	32.58823	33.45383
80	25.67157	24.01639	24.99518	24.48499	24.2165	24.17469	24.40504	24.57645	24.89725	24.95198	25.18584	29.93555	32.67062	32.93164	33.7052
85	25.76616	24.10456	25.08849	24.57517	24.30434	24.26227	24.49382	24.66534	24.98796	25.04265	25.27674	30.04518	32.79021	33.32781	33.99907
90	25.88392	24.21294	25.20197	24.68531	24.41395	24.37004	24.60379	24.77528	25.09806	25.15498	25.38942	30.18194	32.93675	33.82863	34.36584
95	26.04986	24.36633	25.36236	24.84139	24.56575	24.52084	24.7574	24.92976	25.25424	25.31108	25.54649	30.37223	33.14421	34.54213	34.88731
100	26.42078	24.69506	25.72112	25.181	24.89484	24.84946	25.09273	25.25859	25.59079	25.65042	25.88612	30.7821	33.6086	36.18057	36.12933

Data for hours 1600 through 2400 have been left off intentionally because of space limitations

FIGURE A-9

OUTPUT of @RISK Calculations

NEW Percentile %	Percentile %	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
0.000	0	24.15348	22.60166	23.51557	23.04034	22.79163	22.75242	22.96696	23.1348	23.43628	23.48329	23.70377	28.16837	30.75042	28.88938	30.49593
5.556	5	24.46777	22.89525	23.82105	23.34374	23.09234	23.05819	23.2714	23.44035	23.74967	23.79375	24.02219	28.53196	31.15703	29.1636	30.75565
11.111	10	24.62519	23.04355	23.97441	23.49401	23.24091	23.20609	23.42208	23.59037	23.90213	23.94594	24.17617	28.7161	31.35867	29.42498	30.9875
16.667	15	24.73947	23.15041	24.08593	23.60354	23.34776	23.31221	23.53049	23.69941	24.01171	24.05681	24.28783	28.85063	31.50315	29.67124	31.19951
22.222	20	24.83373	23.23784	24.17727	23.6922	23.43554	23.39956	23.6188	23.78787	24.10122	24.1476	24.37791	28.96006	31.62114	29.90847	31.39638
27.778	25	24.91551	23.31392	24.2571	23.76995	23.51167	23.47583	23.69533	23.86507	24.17896	24.22585	24.45765	29.05457	31.72333	30.13777	31.58465
33.333	30	24.9893	23.38245	24.32975	23.83987	23.5809	23.54448	23.76523	23.93472	24.24988	24.29716	24.52863	29.14121	31.81673	30.36368	31.76488
38.889	35	25.05849	23.44695	24.39746	23.90567	23.64581	23.60808	23.83012	23.99991	24.31585	24.36388	24.59532	29.22199	31.90341	30.58895	31.94121
44.444	40	25.12461	23.50832	24.46154	23.96757	23.70715	23.66907	23.89181	24.06232	24.37837	24.42694	24.65936	29.29829	31.9857	30.81144	32.11519
50.000	45	25.18812	23.56753	24.52372	24.02814	23.76631	23.72818	23.95202	24.12218	24.43896	24.48871	24.72061	29.37334	32.06591	31.03693	32.28881
54.545	50	25.25106	23.62616	24.58497	24.08816	23.82528	23.78685	24.01149	24.18181	24.49867	24.54903	24.78143	29.4461	32.1448	31.26743	32.46562
59.091	55	25.31396	23.68505	24.64705	24.14745	23.88396	23.8447	24.07006	24.24077	24.55903	24.60948	24.84203	29.52001	32.2236	31.50305	32.64362
63.636	60	25.3785	23.74415	24.70933	24.20844	23.94382	23.90428	24.13056	24.30132	24.61963	24.67118	24.90363	29.59435	32.3038	31.74821	32.82909
68.182	65	25.44411	23.80568	24.77385	24.2704	24.00493	23.96482	24.19225	24.36335	24.68255	24.73432	24.96707	29.67139	32.3866	32.00721	33.02314
72.727	70	25.51371	23.87042	24.84156	24.33634	24.0699	24.02928	24.25756	24.42876	24.74853	24.80124	25.03398	29.75242	32.47422	32.28559	33.22986
77.273	75	25.58881	23.93994	24.91465	24.40705	24.13963	24.09803	24.32741	24.49893	24.81917	24.87307	25.1058	29.83949	32.56799	32.58823	33.45383
81.818	80	25.67157	24.01639	24.99518	24.48499	24.2165	24.17469	24.40504	24.57645	24.89725	24.95198	25.18584	29.93555	32.67062	32.93164	33.7052
86.364	85	25.76616	24.10456	25.08849	24.57517	24.30434	24.26227	24.49382	24.66534	24.98796	25.04265	25.27674	30.04518	32.79021	33.32781	33.99907
90.909	90	25.88392	24.21294	25.20197	24.68531	24.41395	24.37004	24.60379	24.77528	25.09806	25.15498	25.38942	30.18194	32.93675	33.82863	34.36584
95.455	95	26.04986	24.36633	25.36236	24.84139	24.56575	24.52084	24.7574	24.92976	25.25424	25.31108	25.54649	30.37223	33.14421	34.54213	34.88731
100.000	100	26.42078	24.69506	25.72112	25.181	24.89484	24.84946	25.09273	25.25859	25.59079	25.65042	25.88612	30.7821	33.6086	36.18057	36.12933

Data for hours 1600 through 2400 have been left off intentionally because of space limitations

FIGURE A-10

1
OUTPUT of @RISK Calculations

Day	NEW Percentile %	Percentile %	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
1	0.000	0	24.15348	22.60166	23.51557	23.04034	22.79163	22.75242	22.96696	23.1348	23.43628	23.48329	23.70377	28.16837	30.75042	28.88938	30.49593
3	5.556	5	24.46777	22.89525	23.82105	23.34374	23.09234	23.05819	23.2714	23.44035	23.74987	23.79375	24.02219	28.53196	31.15703	29.1636	30.75565
4	11.111	10	24.62519	23.04355	23.97441	23.49401	23.24091	23.20609	23.42208	23.59037	23.90213	23.94594	24.17617	28.7161	31.35867	29.42498	30.9875
6	16.667	15	24.73947	23.15041	24.08593	23.60354	23.34776	23.31221	23.53049	23.69941	24.01171	24.05681	24.28783	28.85063	31.50315	29.67124	31.19951
8	22.222	20	24.83373	23.23784	24.17727	23.6922	23.43554	23.39956	23.6188	23.78787	24.10122	24.1476	24.37791	28.96006	31.62114	29.90847	31.39638
9	27.778	25	24.91551	23.31392	24.2571	23.76995	23.51167	23.47583	23.69533	23.86507	24.17896	24.22585	24.45765	29.05457	31.72333	30.13777	31.58465
11	33.333	30	24.9893	23.38245	24.32975	23.83987	23.5809	23.54448	23.76523	23.93472	24.24988	24.29716	24.52863	29.14121	31.81673	30.36368	31.76488
13	38.889	35	25.05849	23.44695	24.39746	23.90567	23.64581	23.60808	23.83012	23.99991	24.31585	24.36388	24.59532	29.22199	31.90341	30.58895	31.94121
14	44.444	40	25.12461	23.50832	24.46154	23.96757	23.70715	23.66907	23.89181	24.06232	24.37837	24.42694	24.65936	29.29829	31.9857	30.81144	32.11519
16	50.000	45	25.18812	23.56753	24.52372	24.02814	23.76631	23.72818	23.95202	24.12218	24.43896	24.48871	24.72081	29.37334	32.06591	31.03693	32.28881
17	54.545	50	25.25106	23.62616	24.58497	24.08816	23.82528	23.78685	24.01149	24.18181	24.49867	24.54903	24.78143	29.4461	32.1448	31.26743	32.46562
19	59.091	55	25.31396	23.68505	24.64705	24.14745	23.88396	23.8447	24.07006	24.24077	24.55903	24.60948	24.84203	29.52001	32.2236	31.50305	32.64362
20	63.636	60	25.3785	23.74415	24.70933	24.20844	23.94382	23.90428	24.13056	24.30132	24.61963	24.67118	24.90363	29.59435	32.3038	31.74821	32.82909
21	68.182	65	25.44411	23.80568	24.77385	24.2704	24.00493	23.96482	24.19225	24.36335	24.68255	24.73432	24.96707	29.67139	32.3866	32.00721	33.02314
23	72.727	70	25.51371	23.87042	24.84156	24.33634	24.0699	24.02928	24.25756	24.42876	24.74853	24.80124	25.03398	29.75242	32.47422	32.28559	33.22986
24	77.273	75	25.58881	23.93994	24.91465	24.40705	24.13963	24.09803	24.32741	24.49893	24.81917	24.87307	25.1058	29.83949	32.56799	32.58823	33.45383
26	81.818	80	25.67157	24.01639	24.99518	24.48499	24.2165	24.17469	24.40504	24.57645	24.89725	24.95198	25.18584	29.93555	32.67062	32.93164	33.7052
27	86.364	85	25.76616	24.10456	25.08849	24.57517	24.30434	24.26227	24.49382	24.66534	24.98796	25.04265	25.27674	30.04518	32.79021	33.32781	33.99907
28	90.909	90	25.88392	24.21294	25.20197	24.68531	24.41395	24.37004	24.60379	24.77528	25.09806	25.15498	25.38942	30.18194	32.93675	33.82863	34.36584
30	95.455	95	26.04986	24.36633	25.36236	24.64139	24.56575	24.52084	24.7574	24.92976	25.25424	25.31106	25.54649	30.37223	33.14421	34.54213	34.88731
31	100.000	100	26.42078	24.69508	25.72112	25.181	24.89484	24.84948	25.09273	25.25859	25.59079	25.65042	25.88612	30.7821	33.6086	36.18057	36.12933

Data for hours 1600 through 2400 have been left off intentionally because of space limitations

FIGURE A-11

OUTPUT of @RISK Calculations

NEW Day	NEW Percentile %	Percentile %	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
1	0.000	0	24.15348	22.60166	23.51557	23.04034	22.79163	22.75242	22.96696	23.1348	23.43628	23.48329	23.70377	28.16837	30.75042	28.88938	30.49593
2																	
3	5.556	5	24.46777	22.89525	23.82105	23.34374	23.09234	23.05819	23.2714	23.44035	23.74967	23.79375	24.02219	28.53196	31.15703	29.1636	30.75565
4	11.111	10	24.62519	23.04355	23.97441	23.49401	23.24091	23.20609	23.42208	23.59037	23.90213	23.94594	24.17617	28.7161	31.35867	29.42498	30.9875
5																	
6	16.667	15	24.73947	23.15041	24.08593	23.60354	23.34776	23.31221	23.53049	23.69941	24.01171	24.05681	24.28783	28.85063	31.50315	29.67124	31.19951
7																	
8	22.222	20	24.83373	23.23784	24.17727	23.6922	23.43554	23.39956	23.6188	23.78787	24.10122	24.1476	24.37791	28.96006	31.62114	29.90847	31.39638
9	27.778	25	24.91551	23.31392	24.2571	23.76995	23.51167	23.47583	23.69533	23.86507	24.17896	24.22585	24.45765	29.05457	31.72333	30.13777	31.58465
10																	
11	33.333	30	24.9893	23.38245	24.32975	23.83987	23.5809	23.54448	23.76523	23.93472	24.24988	24.29716	24.52863	29.14121	31.81673	30.36368	31.76488
12																	
13	38.889	35	25.05849	23.44695	24.39746	23.90567	23.64581	23.60808	23.83012	23.99991	24.31585	24.36388	24.59532	29.22199	31.90341	30.58895	31.94121
14	44.444	40	25.12461	23.50832	24.46154	23.96757	23.70715	23.66907	23.89181	24.06232	24.37837	24.42694	24.65936	29.29829	31.9857	30.81144	32.11519
15																	
16	50.000	45	25.18812	23.56753	24.52372	24.02814	23.76631	23.72818	23.95202	24.12218	24.43896	24.48871	24.72061	29.37334	32.06591	31.03693	32.28881
17	54.545	50	25.25106	23.62616	24.58497	24.08816	23.82528	23.78685	24.01149	24.18181	24.49887	24.54903	24.78143	29.4461	32.1448	31.26743	32.46562
18																	
19	59.091	55	25.31396	23.68505	24.64705	24.14745	23.88398	23.8447	24.07006	24.24077	24.55903	24.60948	24.84203	29.52001	32.2238	31.50305	32.64362
20	63.636	60	25.3785	23.74415	24.70933	24.20844	23.94382	23.90428	24.13056	24.30132	24.61963	24.67118	24.90363	29.59435	32.3038	31.74821	32.82909
21	68.182	65	25.44411	23.80568	24.77385	24.2704	24.00493	23.96482	24.19225	24.36335	24.68255	24.73432	24.96707	29.67139	32.3866	32.00721	33.02314
22																	
23	72.727	70	25.51371	23.87042	24.84156	24.33634	24.0699	24.02928	24.25756	24.42876	24.74853	24.80124	25.03398	29.75242	32.47422	32.28559	33.22986
24	77.273	75	25.58881	23.93994	24.91465	24.40705	24.13963	24.09803	24.32741	24.49893	24.81917	24.87307	25.1058	29.83949	32.56799	32.58823	33.45383
25																	
26	81.818	80	25.67157	24.01639	24.99518	24.48499	24.2165	24.17469	24.40504	24.57645	24.89725	24.95198	25.18584	29.93555	32.67062	32.93164	33.7052
27	86.364	85	25.76616	24.10456	25.08849	24.57517	24.30434	24.26227	24.49362	24.66534	24.98796	25.04265	25.27674	30.04518	32.79021	33.32781	33.99907
28	90.909	90	25.88392	24.21294	25.20197	24.68531	24.41395	24.37004	24.60379	24.77528	25.09806	25.15498	25.38942	30.18194	32.93675	33.82863	34.36584
29																	
30	95.455	95	26.04986	24.36633	25.36236	24.84139	24.56575	24.52084	24.7574	24.92976	25.25424	25.31108	25.54649	30.37223	33.14421	34.54213	34.88731
31	100.000	100	26.42078	24.69506	25.72112	25.181	24.89484	24.84946	25.09273	25.25859	25.59079	25.65042	25.88612	30.7821	33.6086	36.18057	38.12933

Data for hours 1600 through 2400 have been left off intentionally because of space limitations

FIGURE A-12

OUTPUT of @RISK Calculations

This row of prices is the result of interpolating between the prices in the row above and the row below

NEW Day	NEW Percentile %	Percentile %	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500
1	0.000	0	24.15348	22.60166	23.51557	23.04034	22.79163	22.75242	22.96696	23.1348	23.43628	23.48329	23.70377	28.16837	30.75042	28.88938	30.49593
2			24.31063	22.74846	23.66831	23.19204	22.94199	22.90531	23.11918	23.28758	23.59298	23.63852	23.86298	28.35017	30.95373	29.02649	30.62579
3	5.556	5	24.46777	22.89525	23.82105	23.34374	23.09234	23.05819	23.2714	23.44035	23.74967	23.79375	24.02219	28.53196	31.15703	29.1636	30.75565
4	11.111	10	24.62519	23.04355	23.97441	23.49401	23.24091	23.20609	23.42208	23.59037	23.90213	23.94594	24.17617	28.7161	31.35867	29.42498	30.9875
5			24.68233	23.09698	24.03017	23.54878	23.29434	23.25915	23.47629	23.64489	23.95692	24.00138	24.232	28.78337	31.43091	29.54811	31.09351
6	16.667	15	24.73947	23.15041	24.08593	23.60354	23.34776	23.31221	23.53049	23.69941	24.01171	24.05681	24.28783	28.85063	31.50315	29.67124	31.19951
7			24.7866	23.19413	24.1316	23.64787	23.39165	23.35589	23.57465	23.74364	24.05647	24.10221	24.33287	28.90535	31.56215	29.78986	31.29795
8	22.222	20	24.83373	23.23784	24.17727	23.6922	23.43554	23.39956	23.6188	23.78787	24.10122	24.1478	24.37791	28.96006	31.62114	29.90847	31.39638
9	27.778	25	24.91551	23.31392	24.2571	23.76995	23.51167	23.47583	23.69533	23.86507	24.17896	24.22585	24.45765	29.05457	31.72333	30.13777	31.58465
10			24.95241	23.34819	24.29343	23.80491	23.54629	23.51016	23.73028	23.8999	24.21442	24.26151	24.49314	29.09789	31.77003	30.25073	31.67477
11	33.333	30	24.9893	23.38245	24.32975	23.83987	23.5809	23.54448	23.76523	23.93472	24.24988	24.29716	24.52863	29.14121	31.81873	30.36368	31.76488
12			25.0239	23.4147	24.36361	23.87277	23.61336	23.57628	23.79768	23.96732	24.28287	24.33052	24.56198	29.1816	31.86007	30.47632	31.85305
13	38.889	35	25.05649	23.44695	24.39746	23.90567	23.64581	23.60808	23.83012	23.99991	24.31585	24.36388	24.59532	29.22199	31.90341	30.58895	31.94121
14	44.444	40	25.12461	23.50832	24.46154	23.96757	23.70715	23.66907	23.89181	24.06232	24.37837	24.42694	24.65936	29.29829	31.9857	30.81144	32.11519
15			25.15637	23.53793	24.49263	23.99786	23.73673	23.69863	23.92192	24.09225	24.40867	24.45783	24.68999	29.33582	32.02581	30.92419	32.202
16	50.000	45	25.18812	23.56753	24.52372	24.02814	23.76631	23.72818	23.95202	24.12218	24.43896	24.48871	24.72061	29.37334	32.06591	31.03693	32.28881
17	54.545	50	25.25106	23.62816	24.58497	24.08816	23.82528	23.78685	24.01149	24.18181	24.49867	24.54903	24.78143	29.4461	32.1448	31.26743	32.46562
18			25.28251	23.65561	24.61601	24.11781	23.85462	23.81578	24.04078	24.21129	24.52885	24.57926	24.81173	29.48306	32.1842	31.38524	32.55462
19	59.091	55	25.31396	23.68505	24.64705	24.14745	23.88396	23.8447	24.07006	24.24077	24.55903	24.60948	24.84203	29.52001	32.2236	31.50305	32.64362
20	63.636	60	25.3785	23.74415	24.70933	24.20844	23.94382	23.90428	24.13056	24.30132	24.61963	24.67118	24.90363	29.59435	32.3038	31.74821	32.82909
21	68.182	65	25.44411	23.80568	24.77385	24.2704	24.00493	23.96482	24.19225	24.36335	24.68255	24.73432	24.96707	29.67139	32.3866	32.00721	33.02314
22			25.47891	23.83805	24.80771	24.30337	24.03742	23.99705	24.22491	24.39606	24.71554	24.76778	25.00053	29.71191	32.43041	32.1464	33.1265
23	72.727	70	25.51371	23.87042	24.84156	24.33634	24.0699	24.02928	24.25756	24.42876	24.74853	24.80124	25.03398	29.75242	32.47422	32.28559	33.22986
24	77.273	75	25.58881	23.93994	24.91465	24.40705	24.13963	24.09803	24.32741	24.49893	24.81917	24.87307	25.1058	29.83949	32.56799	32.58823	33.45383
25			25.63019	23.97817	24.95492	24.44602	24.17807	24.13636	24.36623	24.53769	24.85821	24.91253	25.14582	29.88752	32.61931	32.75994	33.57952
26	81.818	80	25.67157	24.01639	24.99518	24.48499	24.2165	24.17469	24.40504	24.57645	24.89725	24.95198	25.18584	29.93555	32.67062	32.93164	33.7052
27	86.364	85	25.76616	24.10456	25.08849	24.57517	24.30434	24.26227	24.49382	24.66534	24.98796	25.04265	25.27674	30.04518	32.79021	33.32781	33.99907
28	90.909	90	25.88392	24.21294	25.20197	24.68531	24.41395	24.37004	24.60379	24.77528	25.09806	25.15498	25.38942	30.18194	32.93675	33.82863	34.36584
29			25.96689	24.28964	25.28217	24.76335	24.46985	24.44544	24.6806	24.85252	25.17615	25.23303	25.46796	30.27709	33.04048	34.18538	34.62658
30	95.455	95	26.04986	24.36633	25.36238	24.84139	24.56575	24.52084	24.7574	24.92976	25.25424	25.31108	25.54649	30.37223	33.14421	34.54213	34.88731
31	100.000	100	28.42078	24.69506	25.72112	25.181	24.89484	24.84948	25.09273	25.25859	25.59079	25.65042	25.88612	30.7821	33.6086	36.18057	36.12933

Data for hours 1600 through 2400 have been left off intentionally because of space limitations

FIGURE A-13

FINAL CALCULATED PRICES

Day	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
1	24.15	22.60	23.52	23.04	22.79	22.75	22.97	23.13	23.44	23.48	23.70	28.17	30.75	28.69	30.50	32.56	32.84	29.90	30.78	27.16	24.68	23.97	22.76	22.60
2	24.31	22.75	23.67	23.19	22.94	22.91	23.12	23.28	23.59	23.64	23.86	28.35	30.95	29.03	30.63	32.70	33.06	30.10	30.97	27.33	24.84	24.13	22.91	22.74
3	24.47	22.90	23.82	23.34	23.09	23.06	23.27	23.44	23.75	23.79	24.02	28.53	31.16	29.16	30.76	32.84	33.28	30.31	31.18	27.51	25.00	24.29	23.06	22.89
4	24.63	23.04	23.97	23.49	23.24	23.21	23.42	23.59	23.90	23.95	24.18	28.72	31.36	29.42	30.99	33.08	33.49	30.50	31.38	27.69	25.17	24.45	23.21	23.04
5	24.88	23.10	24.03	23.55	23.29	23.26	23.48	23.84	23.98	24.00	24.23	28.78	31.43	29.55	31.08	33.19	33.57	30.57	31.46	27.75	25.22	24.50	23.26	23.10
6	24.74	23.15	24.09	23.60	23.35	23.31	23.53	23.70	24.01	24.06	24.29	28.65	31.50	29.67	31.20	33.30	33.65	30.64	31.53	27.82	25.28	24.56	23.32	23.15
7	24.79	23.19	24.13	23.65	23.39	23.36	23.57	23.74	24.08	24.10	24.33	28.91	31.56	29.79	31.30	33.40	33.71	30.70	31.59	27.87	25.33	24.60	23.36	23.19
8	24.83	23.24	24.18	23.69	23.44	23.40	23.62	23.79	24.10	24.15	24.38	28.98	31.62	29.91	31.40	33.50	33.77	30.75	31.64	27.92	25.38	24.65	23.40	23.23
9	24.92	23.31	24.26	23.77	23.51	23.48	23.70	23.87	24.18	24.23	24.48	29.05	31.72	30.14	31.58	33.69	33.88	30.85	31.74	28.01	25.45	24.73	23.48	23.31
10	24.85	23.35	24.29	23.80	23.55	23.51	23.73	23.90	24.21	24.26	24.49	29.10	31.77	30.25	31.67	33.78	33.93	30.90	31.79	28.05	25.50	24.77	23.51	23.34
11	24.99	23.39	24.33	23.84	23.58	23.54	23.77	23.93	24.25	24.30	24.53	29.14	31.82	30.38	31.78	33.87	33.98	30.94	31.84	28.10	25.53	24.80	23.55	23.38
12	25.02	23.41	24.36	23.87	23.61	23.58	23.80	23.97	24.28	24.33	24.56	29.18	31.86	30.48	31.85	33.96	34.03	30.98	31.86	28.13	25.57	24.84	23.58	23.41
13	25.06	23.45	24.40	23.91	23.65	23.61	23.83	24.00	24.32	24.36	24.60	29.22	31.90	30.59	31.94	34.05	34.07	31.02	31.92	28.17	25.60	24.87	23.61	23.44
14	25.12	23.51	24.46	23.97	23.71	23.67	23.89	24.06	24.38	24.43	24.66	29.30	31.99	30.81	32.12	34.22	34.16	31.10	32.00	28.25	25.67	24.93	23.67	23.50
15	25.16	23.54	24.49	24.00	23.74	23.70	23.92	24.09	24.41	24.46	24.69	29.34	32.03	30.92	32.20	34.31	34.20	31.14	32.04	28.28	25.70	24.97	23.70	23.53
16	25.19	23.57	24.52	24.03	23.77	23.73	23.95	24.12	24.44	24.49	24.72	29.37	32.07	31.04	32.29	34.40	34.25	31.16	32.08	28.32	25.73	25.00	23.73	23.56
17	25.25	23.63	24.58	24.09	23.83	23.79	24.01	24.18	24.50	24.55	24.78	29.45	32.14	31.27	32.47	34.57	34.33	31.26	32.18	28.39	25.80	25.06	23.79	23.62
18	25.28	23.66	24.62	24.12	23.85	23.82	24.04	24.21	24.53	24.58	24.81	29.48	32.18	31.39	32.55	34.68	34.37	31.29	32.20	28.42	25.83	25.09	23.82	23.65
19	25.31	23.69	24.65	24.15	23.88	23.84	24.07	24.24	24.56	24.61	24.84	29.52	32.22	31.50	32.64	34.75	34.41	31.33	32.24	28.46	25.86	25.12	23.85	23.67
20	25.36	23.74	24.71	24.21	23.94	23.90	24.13	24.30	24.62	24.67	24.90	29.59	32.30	31.75	32.83	34.93	34.50	31.41	32.32	28.53	25.92	25.18	23.91	23.73
21	25.44	23.81	24.77	24.27	24.00	23.96	24.19	24.36	24.68	24.73	24.97	29.67	32.39	32.01	33.02	35.12	34.59	31.49	32.40	28.60	25.99	25.25	23.97	23.79
22	25.48	23.84	24.81	24.30	24.04	24.00	24.22	24.40	24.72	24.77	25.00	29.71	32.43	32.15	33.13	35.22	34.64	31.53	32.44	28.64	26.03	25.28	24.00	23.82
23	25.51	23.87	24.84	24.34	24.07	24.03	24.26	24.43	24.75	24.80	25.03	29.75	32.47	32.29	33.23	35.33	34.66	31.57	32.48	28.68	26.06	25.31	24.03	23.86
24	25.59	23.94	24.91	24.41	24.14	24.10	24.33	24.50	24.82	24.87	25.11	29.84	32.57	32.59	33.45	35.55	34.76	31.66	32.58	28.76	26.14	25.38	24.10	23.92
25	25.63	23.98	24.95	24.45	24.18	24.14	24.37	24.54	24.86	24.91	25.15	29.89	32.62	32.76	33.56	35.67	34.84	31.71	32.63	28.81	26.18	25.43	24.14	23.96
26	25.67	24.02	25.00	24.48	24.22	24.17	24.41	24.58	24.90	24.95	25.19	29.94	32.67	32.93	33.71	35.80	34.89	31.78	32.68	28.85	26.22	25.47	24.18	24.00
27	25.77	24.10	25.09	24.56	24.30	24.26	24.49	24.67	24.99	25.04	25.26	30.05	32.79	33.33	34.00	36.09	35.02	31.87	32.80	28.98	26.31	25.56	24.26	24.09
28	25.86	24.21	25.20	24.69	24.41	24.37	24.60	24.78	25.10	25.15	25.39	30.18	32.94	33.83	34.37	36.45	35.17	32.01	32.94	29.09	26.43	25.67	24.37	24.19
29	25.97	24.29	25.28	24.76	24.49	24.45	24.68	24.85	25.18	25.23	25.47	30.28	33.04	34.19	34.63	36.70	35.28	32.11	33.04	29.17	26.51	25.75	24.45	24.27
30	26.05	24.37	25.36	24.84	24.57	24.52	24.76	24.93	25.25	25.31	25.55	30.37	33.14	34.54	34.89	36.96	35.39	32.21	33.15	29.26	26.59	25.83	24.52	24.34
31	26.42	24.70	25.72	25.18	24.89	24.85	25.09	25.26	25.59	25.85	25.89	30.78	33.61	36.18	36.13	38.18	35.87	32.85	33.60	29.65	26.94	26.18	24.84	24.66

FIGURE A-14

Data for hours 0300 through 2400 have been left off intentionally because of space limitations

SYSTEM HOURLY LOADS

DATE	HOUR	LOAD
01/01/95	100	200
01/02/95	100	201
01/03/95	100	202
01/04/95	100	204
01/05/95	100	205
01/06/95	100	206
01/07/95	100	207
01/08/95	100	208
01/09/95	100	210
01/10/95	100	211
01/11/95	100	213
01/12/95	100	214
01/13/95	100	215
01/14/95	100	216
01/15/95	100	217
01/16/95	100	218
01/17/95	100	220
01/18/95	100	221
01/19/95	100	222
01/20/95	100	223
01/21/95	100	224
01/22/95	100	226
01/23/95	100	227
01/24/95	100	229
01/25/95	100	230
01/26/95	100	231
01/27/95	100	232
01/28/95	100	233
01/29/95	100	234
01/30/95	100	235
01/31/95	100	237
01/01/95	200	204
01/02/95	200	205
01/03/95	200	206
01/04/95	200	208
01/05/95	200	209
01/06/95	200	210
01/07/95	200	211
01/08/95	200	212
01/09/95	200	214
01/10/95	200	215
01/11/95	200	217
01/12/95	200	218
01/13/95	200	219
01/14/95	200	220
01/15/95	200	221
01/16/95	200	222
01/17/95	200	224
01/16/95	200	225
01/19/95	200	226
01/20/95	200	227
01/21/95	200	228
01/22/95	200	230
01/23/95	200	231
01/24/95	200	233
01/25/95	200	234
01/26/95	200	235
01/27/95	200	236
01/28/95	200	237
01/29/95	200	238
01/30/95	200	239
01/31/95	200	241

FIGURE A-15

Data for hours 0300 through 2400 have been left off intentionally because of space limitations

SYSTEM HOURLY LOADS

DATE	HOUR	LOAD	PRICE
01/01/95	100	200	24.15
01/02/95	100	201	24.31
01/03/95	100	202	24.47
01/04/95	100	204	24.63
01/05/95	100	205	24.68
01/06/95	100	206	24.74
01/07/95	100	207	24.79
01/08/95	100	208	24.83
01/09/95	100	210	24.92
01/10/95	100	211	24.95
01/11/95	100	213	24.99
01/12/95	100	214	25.02
01/13/95	100	215	25.06
01/14/95	100	216	25.12
01/15/95	100	217	25.16
01/16/95	100	218	25.19
01/17/95	100	220	25.25
01/18/95	100	221	25.28
01/19/95	100	222	25.31
01/20/95	100	223	25.38
01/21/95	100	224	25.44
01/22/95	100	226	25.48
01/23/95	100	227	25.51
01/24/95	100	229	25.59
01/25/95	100	230	25.63
01/26/95	100	231	25.67
01/27/95	100	232	25.77
01/28/95	100	233	25.88
01/29/95	100	234	25.97
01/30/95	100	235	26.05
01/31/95	100	237	26.42
01/01/95	200	204	22.60
01/02/95	200	205	22.75
01/03/95	200	206	22.90
01/04/95	200	208	23.04
01/05/95	200	209	23.10
01/06/95	200	210	23.15
01/07/95	200	211	23.19
01/08/95	200	212	23.24
01/09/95	200	214	23.31
01/10/95	200	215	23.35
01/11/95	200	217	23.38
01/12/95	200	218	23.41
01/13/95	200	219	23.45
01/14/95	200	220	23.51
01/15/95	200	221	23.54
01/16/95	200	222	23.57
01/17/95	200	224	23.63
01/18/95	200	225	23.66
01/19/95	200	226	23.69
01/20/95	200	227	23.74
01/21/95	200	228	23.81
01/22/95	200	230	23.84
01/23/95	200	231	23.87
01/24/95	200	233	23.94
01/25/95	200	234	23.98
01/26/95	200	235	24.02
01/27/95	200	236	24.10
01/28/95	200	237	24.21
01/29/95	200	238	24.29
01/30/95	200	239	24.37
01/31/95	200	241	24.70

FIGURE A-16

FINAL PRICE MATRIX

	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
01/01/95	24.15	22.60	23.52	23.04	22.79	22.75	22.97	23.13	23.44	23.48	23.70	28.17	30.75	28.89	30.50	32.56	32.64	29.90	30.76	27.16	24.68	23.97	22.76	22.60
01/02/95	24.31	22.75	23.67	23.19	22.94	22.91	23.12	23.29	23.59	23.64	23.68	28.35	30.95	29.03	30.63	32.70	33.06	30.10	30.97	27.33	24.84	24.13	22.91	22.74
01/03/95	24.47	22.90	23.82	23.34	23.09	23.06	23.27	23.44	23.75	23.79	24.02	29.53	31.16	29.18	30.76	32.84	33.26	30.31	31.18	27.51	25.00	24.29	23.06	22.89
01/04/95	24.63	23.04	23.97	23.49	23.24	23.21	23.42	23.59	23.90	23.95	24.16	28.72	31.36	29.42	30.99	33.08	33.49	30.50	31.38	27.89	25.17	24.45	23.21	23.04
01/05/95	24.66	23.10	24.03	23.55	23.29	23.26	23.48	23.64	23.96	24.00	24.23	28.78	31.43	29.55	31.09	33.19	33.57	30.57	31.46	27.75	25.22	24.50	23.26	23.10
01/06/95	24.74	23.15	24.09	23.60	23.35	23.31	23.53	23.70	24.01	24.06	24.29	28.85	31.50	29.67	31.20	33.30	33.65	30.64	31.53	27.82	25.28	24.56	23.32	23.15
01/07/95	24.79	23.19	24.13	23.65	23.39	23.36	23.57	23.74	24.06	24.10	24.33	28.91	31.56	29.79	31.30	33.40	33.71	30.70	31.59	27.87	25.33	24.60	23.36	23.19
01/08/95	24.83	23.24	24.18	23.69	23.44	23.40	23.62	23.79	24.10	24.15	24.38	28.96	31.62	29.91	31.40	33.50	33.77	30.75	31.64	27.92	25.36	24.65	23.40	23.23
01/09/95	24.92	23.31	24.26	23.77	23.51	23.48	23.70	23.87	24.18	24.23	24.46	29.05	31.72	30.14	31.56	33.69	33.88	30.85	31.74	28.01	25.46	24.73	23.48	23.31
01/10/95	24.95	23.35	24.29	23.80	23.55	23.51	23.73	23.90	24.21	24.26	24.49	29.10	31.77	30.25	31.67	33.78	33.93	30.90	31.79	28.05	25.50	24.77	23.51	23.34
01/11/95	24.99	23.38	24.33	23.84	23.58	23.54	23.77	23.93	24.25	24.30	24.53	29.14	31.82	30.36	31.76	33.87	33.96	30.94	31.84	28.10	25.53	24.80	23.55	23.38
01/12/95	25.02	23.41	24.36	23.87	23.61	23.58	23.80	23.97	24.28	24.33	24.56	29.18	31.88	30.48	31.85	33.96	34.03	30.98	31.88	28.13	25.57	24.84	23.58	23.41
01/13/95	25.06	23.45	24.40	23.91	23.65	23.61	23.83	24.00	24.32	24.36	24.60	29.22	31.90	30.59	31.94	34.05	34.07	31.02	31.92	28.17	25.60	24.87	23.61	23.44
01/14/95	25.12	23.51	24.46	23.97	23.71	23.67	23.88	24.06	24.38	24.43	24.66	29.30	31.99	30.81	32.12	34.22	34.18	31.10	32.00	28.25	25.67	24.93	23.67	23.50
01/15/95	25.16	23.54	24.49	24.00	23.74	23.70	23.92	24.09	24.41	24.46	24.69	29.34	32.03	30.92	32.20	34.31	34.20	31.14	32.04	28.28	25.70	24.97	23.70	23.53
01/16/95	25.19	23.57	24.52	24.03	23.77	23.73	23.95	24.12	24.44	24.49	24.72	29.37	32.07	31.04	32.29	34.40	34.25	31.18	32.08	28.32	25.73	25.00	23.73	23.56
01/17/95	25.25	23.63	24.58	24.09	23.83	23.79	24.01	24.16	24.50	24.55	24.78	29.45	32.14	31.27	32.47	34.57	34.33	31.26	32.16	28.39	25.80	25.06	23.79	23.62
01/18/95	25.28	23.66	24.62	24.12	23.85	23.82	24.04	24.21	24.53	24.58	24.81	29.48	32.18	31.30	32.55	34.68	34.37	31.29	32.20	28.42	25.83	25.09	23.82	23.65
01/19/95	25.31	23.69	24.65	24.15	23.88	23.84	24.07	24.24	24.56	24.61	24.84	29.52	32.22	31.50	32.64	34.75	34.41	31.33	32.24	28.46	25.86	25.12	23.85	23.67
01/20/95	25.36	23.74	24.71	24.21	23.94	23.90	24.13	24.30	24.62	24.67	24.90	29.59	32.30	31.75	32.83	34.93	34.50	31.41	32.32	28.53	25.92	25.18	23.91	23.73
01/21/95	25.44	23.81	24.77	24.27	24.00	23.96	24.19	24.36	24.68	24.73	24.97	29.67	32.39	32.01	33.02	35.12	34.59	31.49	32.40	28.60	25.99	25.25	23.97	23.79
01/22/95	25.48	23.84	24.81	24.30	24.04	24.00	24.22	24.40	24.72	24.77	25.00	29.71	32.43	32.15	33.13	35.22	34.64	31.53	32.44	28.64	26.03	25.28	24.00	23.82
01/23/95	25.51	23.87	24.84	24.34	24.07	24.03	24.26	24.43	24.75	24.80	25.03	29.75	32.47	32.29	33.23	35.33	34.68	31.57	32.48	28.68	26.06	25.31	24.03	23.86
01/24/95	25.58	23.94	24.91	24.41	24.14	24.10	24.33	24.50	24.82	24.87	25.11	29.84	32.57	32.59	33.45	35.55	34.78	31.66	33.58	28.78	26.14	25.39	24.10	23.92
01/25/95	25.63	23.98	24.95	24.45	24.18	24.14	24.37	24.54	24.86	24.91	25.15	29.89	32.62	32.76	33.58	35.67	34.84	31.71	32.83	28.81	26.18	25.43	24.14	23.96
01/26/95	25.67	24.02	25.00	24.48	24.22	24.17	24.41	24.58	24.90	24.95	25.19	29.94	32.67	32.93	33.71	35.80	34.89	31.76	32.86	28.85	26.22	25.47	24.18	24.00
01/27/95	25.77	24.10	25.09	24.56	24.30	24.26	24.49	24.67	24.99	25.04	25.28	30.05	32.79	33.33	34.00	36.09	35.02	31.87	32.80	28.96	26.31	25.56	24.26	24.09
01/28/95	25.86	24.21	25.20	24.69	24.41	24.37	24.60	24.78	25.10	25.15	25.39	30.18	32.94	33.83	34.37	36.45	35.17	32.01	32.94	29.09	26.43	25.67	24.37	24.19
01/29/95	25.97	24.29	25.28	24.76	24.49	24.45	24.68	24.85	25.18	25.23	25.47	30.28	33.04	34.19	34.63	36.70	35.28	32.11	33.04	29.17	26.51	25.75	24.45	24.27
01/30/95	26.05	24.37	25.36	24.84	24.57	24.52	24.76	24.93	25.25	25.31	25.55	30.37	33.14	34.54	34.89	36.96	35.39	32.21	33.15	29.28	26.59	25.83	24.52	24.34
01/31/95	26.42	24.70	25.72	25.16	24.89	24.85	25.09	25.26	25.59	25.65	25.89	30.76	33.61	36.18	36.13	36.18	35.87	32.65	33.60	29.65	26.94	26.18	24.84	24.66

FIGURE A-17

APPENDIX 3,
SCHEDULE HEW-1

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

APPENDIX 3,
SCHEDULE JAR-1

HAS BEEN DEEMED

HIGHLY CONFIDENTIAL

IN ITS ENTIRETY

The Empire District Electric Company
Staff Recommended Annual Depreciation Rates

Account Number	Account Description	Recommended Whole Life Rate (%)	Recommended Net Salvage	Reccomended Depreciation Rate (%)
	STEAM PRODUCTION PLANT			
	Riverton 7&8			
311	Structures and Improvements	3.51%	-5.00%	3.69%
312	Boiler Plant Equipment	2.94%	-5.00%	3.09%
314	Turbogenerator Units	2.28%	-5.00%	2.39%
315	Accessory Electric Equipment	1.75%	-5.00%	1.84%
316	Miscellaneous Power Plant Equipment	5.02%	-5.00%	5.27%
	Asbury 1&2			
311	Structures and Improvements	2.68%	-5.00%	2.81%
312	Boiler Plant Equipment	5.03%	-5.00%	5.28%
314	Turbogenerator Units	2.70%	-5.00%	2.84%
315	Accessory Electric Equipment	3.14%	-5.00%	3.30%
316	Miscellaneous Power Plant Equipment	3.76%	-5.00%	3.95%
	Iatan 1			
311	Structures and Improvements	1.99%	-5.00%	2.09%
312	Boiler Plant Equipment	3.02%	-5.00%	3.17%
314	Turbogenerator Units	2.32%	-5.00%	2.44%
315	Accessory Electric Equipment	3.89%	-5.00%	4.08%
316	Miscellaneous Power Plant Equipment	3.11%	-5.00%	3.27%
	Iatan 2			
311	Structures and Improvements	2.00%	-5.00%	2.10%
312	Boiler Plant Equipment	2.00%	-5.00%	2.10%
314	Turbogenerator Units	2.00%	-5.00%	2.10%
315	Accessory Electric Equipment	2.00%	-5.00%	2.10%
316	Miscellaneous Power Plant Equipment	2.00%	-5.00%	2.10%
	Iatan Common			
311	Structures and Improvements	2.00%	-5.00%	2.10%
312	Boiler Plant Equipment	2.00%	-5.00%	2.10%
314	Turbogenerator Units	2.00%	-5.00%	2.10%
315	Accessory Electric Equipment	2.00%	-5.00%	2.10%
316	Miscellaneous Power Plant Equipment	2.00%	-5.00%	2.10%
	Plum Point			
311	Structures and Improvements	2.00%	-5.00%	2.10%
312	Boiler Plant Equipment	2.00%	-5.00%	2.10%
314	Turbogenerator Units	2.00%	-5.00%	2.10%
315	Accessory Electric Equipment	2.00%	-5.00%	2.10%
316	Miscellaneous Power Plant Equipment	2.00%	-5.00%	2.10%

The Empire District Electric Company
Staff Recommended Annual Depreciation Rates

Account Number	Account Description	Recommended Whole Life Rate (%)	Recommended Net Salvage	Reccomended Depreciation Rate (%)
	HYDRAULIC PRODUCTION PLANT			
331	Structures and Improvements	1.91%	-5.00%	2.01%
332	Reservoirs, Dams and Waterways	0.93%	-5.00%	0.98%
333	Waterwheels, Turbines and Generators	2.84%	-5.00%	2.98%
334	Accessory Electric Equipment	1.87%	-5.00%	1.96%
335	Miscellaneous Power Plant Equipment	3.36%	-5.00%	3.53%
	OTHER PRODUCTION PLANT			
	Riverton 9,10,11&12			
341	Structures and Improvements	1.67%	-2.00%	1.70%
342	Fuel Holders, Producers and Access.	2.00%	-2.00%	2.04%
343	Prime Movers	2.11%	4.00%	2.03%
344	Generators	2.00%	4.00%	1.92%
345	Accessory Electric Equipment	1.91%	-2.00%	1.95%
346	Miscellaneous Power Plant Equipment	2.00%	-2.00%	2.04%
	Energy Center 1&2			
341	Structures and Improvements	2.15%	-2.00%	2.19%
342	Fuel Holders, Producers and Access.	2.97%	-2.00%	3.03%
343	Prime Movers	2.43%	4.00%	2.33%
344	Generators	2.17%	4.00%	2.08%
345	Accessory Electric Equipment	1.12%	-2.00%	1.14%
346	Miscellaneous Power Plant Equipment	2.70%	-2.00%	2.75%
	Energy Center 3&4 (FT8)			
341	Structures and Improvements	2.00%	-2.00%	2.04%
342	Fuel Holders, Producers and Access.	2.00%	-2.00%	2.04%
343	Prime Movers	2.06%	4.00%	1.98%
344	Generators	2.01%	4.00%	1.93%
345	Accessory Electric Equipment	2.01%	-2.00%	2.05%
346	Miscellaneous Power Plant Equipment	2.00%	-2.00%	2.04%
	Stateline CT			
341	Structures and Improvements	4.20%	-2.00%	4.28%
342	Fuel Holders, Producers and Access.	2.27%	-2.00%	2.32%
343	Prime Movers	3.67%	4.00%	3.52%
344	Generators	2.72%	4.00%	2.61%
345	Accessory Electric Equipment	2.36%	-2.00%	2.41%
346	Miscellaneous Power Plant Equipment	3.80%	-2.00%	3.88%
	Stateline CC			
341	Structures and Improvements	2.07%	-2.00%	2.11%
342	Fuel Holders, Producers and Access.	4.52%	-2.00%	4.61%
343	Prime Movers	2.11%	4.00%	2.03%
344	Generators	2.54%	4.00%	2.44%
345	Accessory Electric Equipment	2.15%	-2.00%	2.19%
346	Miscellaneous Power Plant Equipment	2.04%	-2.00%	2.08%

The Empire District Electric Company
Staff Recommended Annual Depreciation Rates

Account Number	Account Description	Recommended Whole Life Rate (%)	Recommended Net Salvage	Reccomended Depreciation Rate (%)
	TRANSMISSION PLANT			
352	Structures & Improvements	1.82%	-15.00%	2.09%
353	Station Equipment	2.00%	-10.00%	2.20%
354	Towers & Fixtures	1.54%	-25.00%	1.92%
355	Poles & Fixtures	1.67%	-100.00%	3.33%
356	Overhead Conductors	1.54%	-40.00%	2.15%
	DISTRIBUTION PLANT			
361	Structures & Improvements	1.67%	-25.00%	2.08%
362	Station Equipment	2.22%	15.00%	1.89%
364	Poles, Towers & Fixtures	2.17%	-100.00%	4.35%
365	Overhead Conductors	1.89%	-100.00%	3.77%
366	Underground Conduit	2.70%	-45.00%	3.92%
367	Underground Conductors	3.13%	-15.00%	3.59%
368	Transformers	2.22%	-25.00%	2.78%
369	Services	2.50%	-100.00%	5.00%
370	Meters	2.27%	0.00%	2.27%
371	Meter Installations	4.00%	-45.00%	5.80%
373	Street Lighting	2.08%	-50.00%	3.13%
	GENERAL PLANT			
390	Structures & Improvements	2.50%	-10.00%	2.75%
391.1	Office Furniture and Equipment	5.00%	0.00%	5.00%
391.2	Computer Equipment	10.00%	0.00%	10.00%
392	Transportation Equipment	8.33%	15.00%	7.08%
393	Stores Equipment	3.33%	5.00%	3.17%
394	Tools, Shop & Garage Equipment	5.00%	10.00%	4.50%
395	Laboratory Equipment	2.63%	0.00%	2.63%
396	Power Operated Equipment	6.67%	5.00%	6.33%
397	Communication Equipment	4.00%	0.00%	4.00%
398	Miscellaneous Equipment	4.55%	0.00%	4.55%