

**CENTRAL MAINE POWER COMPANY
RESPONSE TO INDUSTRIAL ENERGY CONSUMER GROUP'S DATA
REQUEST NO. 1
DOCKET No. 2008-255**

October 7, 2008

IECG-01-23

- Q.** On page 50, line 8, Vol. I of the Petition, you estimate the 2012 line losses with and without MPRP. What are current losses on CMP's system? What have line losses averaged in each year from 1990-2008?
- A.** Line losses vary hour to hour. CMP currently does not calculate its actual system losses and has no historical record of its actual system losses. CMP periodically determines its system losses by voltage. The last study was done in 1998. Attached is the 1996 Analysis of System Losses dated August 21, 1998 and completed by Management Applications Consulting.

Response Prepared and Submitted By:

David Conroy
Manager of System Planning

Attachments:

(1) 1996 Analysis of System Losses – Revised dated August 21, 1998

CENTRAL MAINE POWER COMPANY

1996 Analysis of System Losses-Revised

August 21, 1998

Prepared by:



Management Applications Consulting, Inc.
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August 21, 1998

Mr. Brian Cornwall
Central Maine Power Company
Edison Drive
Augusta, ME 04336

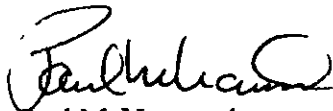
RE: 1996 LOSS ANALYSES-REVISED

Dear Mr. Cornwall:

Transmitted herewith are the revised results of Central Maine Power Company (CMP) 1996 Analysis of System Losses. These results consist of an Annual analysis which develops cumulative expansion factors (loss factors) for both demand (peak) and energy (average) losses by discrete voltage levels. A separate loss analysis was also performed for the winter (Dec., Jan., Feb., Mar.) period and for the non-winter (remaining months) of the 1996 calendar year. These loss results reflect a correction to the reporting of the Company Use in the calculations. Table 1 of the Executive Summary, page 2, summarizes the revised factors provided on Exhibit 7 of each Appendix.

On behalf of MAC, we appreciate the opportunity to assist you in revising the loss analysis contained herein. Should you require any additional information, please let us know.

Sincerely,



Paul M. Normand
Principal

Enclosure

PMN/sls

CENTRAL MAINE POWER COMPANY
1996 ANALYSIS OF SYSTEM LOSSES - REVISED

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CENTRAL MAINE POWER COMPANY

1996 ANALYSIS OF SYSTEM LOSSES - REVISED

1.0 EXECUTIVE SUMMARY

This report presents Central Maine Power Company (CMP) Revised 1996 Analysis of System Losses as performed by Management Applications Consulting, Inc. (MAC). The study developed separate demand (kW) and energy (kWh) loss factors (loss factors) for each voltage level of service in the power system. The loss factor results, as presented herein, can be used by CMP to adjust metered sales data for losses in performing cost-of-service studies, determining voltage discounts, and other analyses which may require a loss adjustment. These loss results reflect a correction to the reporting of the Company Use in the calculations. Table 1 of the Executive Summary, page 2, summarizes the revised factors provided on Exhibit 7 of each Appendix.

The procedures used in the overall study emphasized the use of "in house" resources where possible. To this end, extensive use was made of the Company's peak hour load flow study, transformer loading reports, distribution plant investments based on accounting records and published reports. In addition, the availability of detailed load research data provided an accurate means of estimating losses by using a "top-down" and "bottom-up" procedure. In the "top-down" approach, losses from the high voltage system, through and including distribution substations, were calculated and compared with load flow results, transformer loss estimates, and metered information.

At this point in the analysis, system loads and losses through the distribution substation system are known with reasonable accuracy. However, it is the remaining loads and losses on the primary system, secondary circuits, and services which are generally difficult to estimate. Fortunately, CMP has developed a load research program which provided the foundation for performing a "bottom-up" approach for estimating these distribution losses. Basically, this "bottom-up" approach develops line loadings by first determining loads and losses at each level beginning at a customer's service drop and then going through secondary lines, line transformers, and finally primary lines. These primary system loads and associated losses are then compared with the previously calculated Distribution Substation loadings for reasonableness of results prior to finalizing the loss factors. An overview of the loss study is shown on Figure 1 on the next page.

Exhibits 1 through 7 present the results of the 1996 Loss Analysis for the CMP System. Exhibit 1 summarizes overall system results. Exhibit 7 presents the final loss factors by voltage level based on the 1996 test year data.

Table 1 on Page 2 provides the results from Exhibit 7 for the calendar year and each season.

**Central Maine Power Company
1996 Analysis of System Losses**

TABLE 1-Revised

Voltage Level of Service	<i>Demand (kW)</i>		
	1996 Annual	1 <u>Winter</u>	2 <u>Non-winter</u>
Transmission	1.02494	1.02494	1.02456
Subtransmission	1.04456	1.04456	1.04292
Primary	1.06904	1.06904	1.06815
Secondary	1.09888	1.09888	1.10368

<i>Energy (kWh)</i>			
Transmission Subs	1.00953	1.01121	1.00807
Transmission	1.01243	1.00973	1.01404
Subtransmission	1.02412	1.02139	1.02587
Primary	1.05055	1.04789	1.05128
Secondary	1.09145	1.08629	1.09450

1 Winter month includes December, January, February and March.

2 Non-winter month includes all remaining months.

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1996 Analysis of System Losses**

2.0 INTRODUCTION

This report of the 1996 CMP Analysis of System Losses provides a summary of results, conceptual background or methodology, description of the analyses, and input information related to the study.

2.1 Conduct of Study

Typically, between five to ten percent of the total kWh requirements of an electric utility is lost or unaccounted for in the delivery of power to its customers. However, investments must be made in facilities which support the total load including losses or unaccounted for "load". Revenue requirements associated with load losses are an important concern to utilities and regulators in that customers must equitably share in these cost responsibilities. Loss factors are the mechanism by which customers' metered demand and energy data are mathematically adjusted to the generation level (point of reference) when performing cost and revenue calculations.

Fortunately, an acceptable accounting of losses can be made on an ongoing basis by using available engineering, system, and customer data along with empirical relationships. This loss analysis of demand and energy uses such an approach. A microcomputer LOSS MODEL¹ is utilized as the vehicle to organize the available data, develop the relationships, calculate the losses, and provide an efficient and timely avenue for future updates and sensitivity analyses.

CMP personnel performed most of the data gathering and load research. MAC personnel reviewed the input provided by CMP and checked it for reasonableness, loaded the input data, constructed data bases and transfer files, perform calculations, and checked the reasonableness of the results. A review of the preliminary results provided for additions to the data base and modifications to certain initial assumptions based on available data. Once completed, the loss model was turned over to the Company's staff for further use. Efforts in determining the data required to perform the loss analysis centered on information which was available from existing studies or reports within the Company.

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Central Maine Power Company
1996 Analysis of System Losses

From an overall perspective, our efforts concentrated on three major areas:

1. System information (monthly and annual)
2. High voltage system (load flows)
3. Distribution system (primary and secondary)

2.2 Description of Model

The Loss Model is a customized applications model, constructed using Excel. Documentation consists primarily of the model equations at each cell location. References can also be made to the applicable paragraphs in the Excel manual to support the technical aspects of the model construction. A significant advantage of such a model is that the actual formulas and their corresponding computed values at each cell of the model are immediately available to the analyst.

A brief description of the three (3) major categories of effort for the loss model is as follows:

- Main sheet which contains calculations for all primary and secondary losses, summaries of all conductor and transformer calculations from other sheets discussed below, output reports and supporting results.
- Transformer sheet which contains data input and loss calculations for each distribution substation and high voltage transformer. Separate iron and copper losses are calculated for each transformer by identified type.
- Conductor sheet containing data for each line segment as to circuit loadings, assumptions, and kW and kWh loss calculations. Separation loss calculations are made for each line segment.
- A separate sheet has been provided listing all the macros utilized in the study to assist you in using the model.

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3.0 METHODOLOGY

3.1 Background

The objective of a Loss Study is to provide a reasonable set of energy (average) and demand (peak) loss factors which account for system losses to the transmission and delivery of power to each voltage level over a designated period of time. The focus of this study is to identify the difference between total generation and sales and also provide a mechanism which can equitably allocate these differences to all delivery levels. Several key elements are important in establishing the methodology for calculating and reporting the Company's losses. These elements are:

- Selection of voltage level of services,
- Recognition of lines, transformation, and other equipment/components within voltage levels,
- Identification of customers at various voltage levels,
- Analysis of generation or net power supply input at each level for the test period, and
- Analysis of kWh sales by voltage levels within the test period.

The three major areas of concentration with respect to data gathering and calculations in the loss analysis were as follows:

- I. System information (monthly and annual)
 - MWH generation and MWH sales.
 - Coincident peak and net power supply input from all sources and voltage levels.
 - Customer data from available load research information, adjusted MWH sales, and peak and annual customers in the customer groupings identified in the model.
 - System default values, such as power factor and loading factors by voltage level.

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2. High voltage system

- Conductor information was developed in a database which models the transmission system by voltage level. Each individual line segment was identified, and the transmission line system was represented in the data base.
- Transformer information was similarly developed in a database to model transformation at each voltage level. Substation power, step-up, and auto transformers were individually identified along with any operating data related to loads and losses. Transformer loss characteristics were developed based on manufacturers' test results.
- Capacitors, regulators, and reactors were identified and loss estimates calculated separately.
- Load flow analysis of peak condition was the main source of equipment loadings in the loss calculations. A separate review was also made with the Company's load flow analysis to check the reasonableness of the results.

3. Distribution System

- Primary lines - Line loading and loss characteristics were obtained from *Distribution Engineering*. The loss information developed kW loss per MW of load by Primary Voltage level.
- Line transformers - Losses in line transformers were based on each customer service group's size, as well as the number of customers per transformer. Accounting and load research data provided the foundation with which to model the loadings.
- Secondary network - Typical secondary networks were estimated for conductor sizes, lengths, loadings, and customer penetration.
- Services - Typical services were estimated for each service class of customers identified in the study with respect to type, length, and loading.

The loss analysis was thus performed by constructing the model in segments and subsequently calculating the composite until the constraints of peak demand and energy were met:

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1996 Analysis of System Losses**

- Information as to the physical characteristics and loading of each transformer and conductor segment was obtained and modeled.
- Conductors, transformers, and distribution were grouped by voltage level, and unadjusted losses were calculated.
- The loss factors calculated at each voltage level were determined by "compounding" the per-unit losses. Equivalent sales at the supply point were obtained by dividing sales at a specific level by the compounded loss factor to determine losses by voltage level.
- The resulting demand and energy loss factors were then used to adjust sales to the generation level in order to estimate the difference.
- Reconciliation of actual kW and kWh sales by voltage level using the reported system kW and kWh was accomplished by adjusting the loss factors until the difference was eliminated.

3.2 Analysis and Calculations

This section provides a discussion of the input data, assumptions, and calculations performed in the loss analysis. Specific appendices have been included in order to provide documentation of the input data utilized in the model.

3.2.1 Bulk, Transmission and Subtransmission Lines

The transmission and subtransmission line losses were calculated based on a modeling of unique line segments identified by the Company's load flow configuration. Specific information as to length of line, type of conductor, voltage level, peak load, maximum load, etc., were provided based on CMP records and utilized as data input into the loss model.

Actual MW and MVA line loadings were based on CMP's peak load flow results. Calculations of line losses were performed for each line segment separately and combined by voltage levels for reporting purposes as shown in the Discussion of Results (Section 4.0) of this report. The loss calculations consisted of determining a circuit current value based on MVA line loadings and evaluating the I^2R results for each line segment. The model utilized conductor resistance values based on standard industry ratings adjusted for temperature conditions.

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After system coincident peak hour losses were determined for each line segment, a separate calculation was then made to develop annual average energy losses based on a loss factor approach. Load factors were determined for each voltage level based on system and customer load information. An estimate of the Hoebel coefficient was then used to calculate energy losses for the period analyzed. The results are presented in Section 4.0 of this report.

3.2.2 Transformers

The transformer loss analysis required several steps in order to properly consider the characteristics associated with various transformer types; such as, step-up, auto transformers, distribution substations, and line transformers. In addition, further efforts were required to identify both iron and copper losses within each of these transformer types in order to obtain reasonable peak (kW) and average energy (kWh) losses. While iron losses are essentially constant for each hour, recognition had to be made for hours of operation (where available) and the varying degree of copper losses due to hourly equipment loadings.

Test data was needed which represented no load and full load losses for different types and sizes of transformers. This test data was incorporated into the Loss Model to develop relationships representing copper and iron losses for the transformer loss calculation. These results were then totaled by various groups as identified and discussed in Section 4.0.

3.2.3 Distribution System

The results of the distribution substation loadings and customer load data was combined to estimate distribution system losses. The load data at the substation and customer level, coupled with primary and secondary network information, was sufficient to model the distribution system in adequate detail to calculate losses. Prior results obtained from substation transformers provided a reasonable basis to estimate primary line loadings. This estimate was also based on customer loads and losses less those customers served by distribution substations but requiring no primary line investments.

Primary Lines

Primary line loadings take into consideration the available distribution load along with the actual customer loads including losses. Based on CMP's Distribution Engineering analyses, estimates were made of primary line losses by the different levels of distribution voltage. These estimates consider substations, feeders per

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substation, voltage levels, loadings, total circuit miles, wire size, and single- to three-phase investment estimates. All of these factors were considered and included in the actual demand (kW) and energy (kWh) calculation performed in the study.

Line Transformers

Losses in line transformers were determined based on typical transformer sizes for each customer service group and the number of customers per transformer. Accounting records and load research data provided the necessary database with which to model the loadings. These data also made it possible to determine separate copper and iron losses for CMP's distribution line transformers, based on a table of representative losses for various transformer sizes.

Secondary Network

An analysis of secondary network losses was performed for CMP's loads served through secondary line investments. Estimates of typical conductor sizes, lengths, loadings and customer class penetrations were made to obtain total circuit miles and losses for the secondary network. Customer loads which do not have secondary line requirements were also identified so that a reasonable estimate of losses and circuit miles of investments could be made.

Services and Meters

Services were estimated for each customer reflecting conductor size, length, loadings, and miles of service to obtain demand losses. A separate calculation was also performed using customer maximum demands to obtain kWh losses.

Meter loss estimates were also made for each customer and incorporated into the calculations of kW and kWh losses included in the Summary Results of this report.

**Central Maine Power Company
1996 Analysis of System Losses**

4.0 DISCUSSION OF RESULTS

A brief description of each Exhibit is provided as follows:

Exhibit 1 - Summary of Input Data

Reflects system information used to determine percent losses and any deviations from estimated values.

Exhibit 2 - Summary of Line Information

A summary of MW and MWH load and no load losses for conductor circuit miles by voltage levels. The sum of all calculated losses by voltage level is based on input data information provided in Appendix A. Percent losses are based on a ratio to the total system.

Exhibit 3 - Summary of Transformer Information

This exhibit summarizes transformer losses by various types and voltage levels throughout the system. These results include all transformers listed in Appendix C and line transformers. Load losses reflect the copper portion of transformer losses while iron losses reflect the no load or constant losses. MWH losses are estimated using a calculated loss factor for copper and the test year hours times no load losses for no load.

Exhibit 4 - Summary of Losses Diagram (2 Pages)

This loss diagram represents the inputs and output of power at system peak conditions. Page 1 details information from all points of the power system and what is provided into the distribution system for primary loads. This portion of the summary can be viewed as a "top down" summary into the distributor system.

Page 2 represents a summary of the development of primary line loads and distribution substations based on a "bottom up" approach. Basically, loadings are developed from the customer meter through CMP's investments based on load research and other metered information by voltage level to arrive at MW and MVA requirements during peak load conditions by voltage levels.

Exhibit 5 - Summary of Calculated Demand and Energy Losses

Summary of Calculated Losses represents a tabular summary of MW and MWH load and no load losses by discrete areas of delivery within each voltage level. Losses have been identified and are derived based on summaries obtained from Exhibits 2 and 3 and losses associated with meters, capacitors and regulators.

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Exhibit 6 - Development of Loss Factors, Unadjusted

This exhibit calculates demand and energy losses and loss factors by specific voltage levels based on sales level requirements. The actual results reflect loads by level and summary totals of losses at that level, or up to that level, based on the results as shown in Exhibit 5. Finally, the estimated values at generation are developed and compared to actual generation to obtain any difference.

Exhibit 7 - Development of Loss Factors, Adjusted

The adjusted loss factors are the results of adjusting Exhibit 6 for any difference. All differences between estimated and actual are prorated to each level based on the ratio of each level's total load plus losses to the system total. These new loss factors reflect an adjustment in losses due only to mismatch.

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SECTION 5.0

EXHIBITS

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - ANNUAL

CENTRAL MAINE POWER COMPANY ANNUAL

SUMMARY OF COMPANY DATA

ANNUAL PEAK	1,285 MW
ANNUAL GENERATION	7,794,966 MWH
ANNUAL SALES	7,249,935 MWH
UNACCOUNTED MWH	545,031 or 6.99%
SYSTEM LOAD FACTOR	69.1%

SUMMARY OF LOSSES - OUTPUT RESULTS

SERVICE	KV	MW	% TOTAL	MWH	% TOTAL
TRANS	345,230,115	31.3	29.06%	95,568	17.53%
			2.43%	1.23%	
SUBTRANS	69,33,25	22.6	21.04%	81,035	14.87%
			1.76%	1.04%	
PRIMARY	12,4,1	26.0	24.19%	162,059	29.73%
			2.03%	2.08%	
SECNDRY		27.7	25.71%	206,370	37.86%
			2.15%	2.65%	
TOTAL		107.6	100.00%	545,031	100.00%
			8.37%	6.99%	

SUMMARY OF LOSS FACTORS

SERVICE	KV	CUMMULATIVE EXPANSION FACTORS			
		DEMAND		ENERGY	
		d	1/d	d	1/d
TRANS	345,230,115	1.02494	0.98772	1.01243	0.98772
SUBTRANS	69,33,25	1.04456	0.95734	1.02412	0.97645
PRIMARY	12,4,1	1.06904	0.93542	1.05055	0.95188
SECNDRY		1.09888	0.91001	1.09145	0.91622

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - ANNUAL
SUMMARY OF CONDUCTOR INFORMATION

EXHIBIT 2

DESCRIPTION	CIRCUIT MILES	LOADING % RATING	LOAD	MW LOSSES	NO LOAD	TOTAL
--- BULK ---						
TIE LINES	0.0	0.00%	0.000	0.000	0.000	0.000
BULK TRANS	0.0	0.00%	0.000	0.000	0.000	0.000
SUBTOT	0.0		0.000	0.000	0.000	0.000
--- TRANS ---						
TIE LINES	0	0.00%	0.000	0.000	0.000	0.000
TRANS1	0	0.00%	0.000	0.000	0.000	0.000
TRANS2	1,087	35.29%	18,367	1,649	14,488	94,752
SUBTOT	1,087		18,367	1,649	14,488	94,752
--- SUBTRANS ---						
TIE LINES	0	0.00%	0.000	0.000	0.000	0.000
SUBTRANS1	0	0.00%	0.000	0.000	0.000	0.000
SUBTRANS2	1,095	33.46%	16,688	0.654	5,734	50,837
SUBTRANS3	0	0.00%	0.000	0.000	0.000	0.000
SUBTOT	1,095		16,688	0.654	5,734	50,837
PRIMARY LINES	18,208		21,262	2,230	19,585	101,114
SECONDARY LINES	9,135		1,604	0.000	0	5,791
SERVICES	7,052		1,518	0.788	6,884	15,133
TOTAL	18,368		59,440	5,321	46,692	267,627

DESCRIPTION	CIRCUIT MILES	LOADING % RATING	LOAD	MW LOSSES	NO LOAD	TOTAL
--- BULK ---						
TIE LINES	0.0	0.00%	0.000	0.000	0.000	0.000
BULK TRANS	0.0	0.00%	0.000	0.000	0.000	0.000
SUBTOT	0.0		0.000	0.000	0.000	0.000
--- TRANS ---						
TIE LINES	0	0.00%	0.000	0.000	0.000	0.000
TRANS1	0	0.00%	0.000	0.000	0.000	0.000
TRANS2	1,087	35.29%	18,367	1,649	14,488	94,752
SUBTOT	1,087		18,367	1,649	14,488	94,752
--- SUBTRANS ---						
TIE LINES	0	0.00%	0.000	0.000	0.000	0.000
SUBTRANS1	0	0.00%	0.000	0.000	0.000	0.000
SUBTRANS2	1,095	33.46%	16,688	0.654	5,734	50,837
SUBTRANS3	0	0.00%	0.000	0.000	0.000	0.000
SUBTOT	1,095		16,688	0.654	5,734	50,837
PRIMARY LINES	18,208		21,262	2,230	19,585	101,114
SECONDARY LINES	9,135		1,604	0.000	0	5,791
SERVICES	7,052		1,518	0.788	6,884	15,133
TOTAL	18,368		59,440	5,321	46,692	267,627

CENTRAL MAINE POWER COMPANY 1986 LOSS ANALYSIS - ANNUAL

EXHIBIT 3

SUMMARY OF TRANSFORMER INFORMATION

DESCRIPTION	KV CAPACITY VOLTAGE	MVA	NUMBER TRANSFRM	AVERAGE SIZE	LOADING %	MVA LOAD	MW LOSSES		MWH LOSSES		TOTAL
							LOAD	NO LOAD	LOAD	NO LOAD	
BULK STEP-UP	345	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - BULK		0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - TRANS1	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - TRANS2	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 STEP-UP	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 - TRANS2	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS1	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS2	33	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS3	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2 STEP-UP	115	1,015.3	21.0	48.3	61.86%	628	2.432	2.903	10,629	25,497	36,126
TRANS2-SUBTRANS1	69	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2-SUBTRANS2	33	1,849.2	56.0	33.0	45.55%	842	1,120	2,761	4,431	24,249	28,679
TRANS2-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1 STEP-UP	69	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS2 STEP-UP	33	510.0	48.0	10.6	50.27%	256	0.998	1,897	3,947	16,667	20,614
SUBTRANS3 STEP-UP	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1-SUBTRANS2	33	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0

DISTRIBUTION SUBSTATIONS												
DESCRIPTION	KV CAPACITY VOLTAGE	MVA	NUMBER TRANSFRM	AVERAGE SIZE	LOADING %	MVA LOAD	LOAD	NO LOAD	TOTAL	LOAD	NO LOAD	TOTAL
TRANS1-	12	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
TRANS1-	230	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
TRANS1-	230	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
TRANS2-	115	887.6	48	18.5	17.44%	155	0.195	1,347	1,543	800	11,833	12,633
TRANS2-	115	169.2	9	18.8	43.00%	73	0.145	0.330	0.476	598	2,896	3,484
TRANS2-	115	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRANS1-	69	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRANS1-	69	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRANS1-	69	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRANS2-	33	1,663.0	194	8.1	54.13%	846	2.961	3,943	6,905	12,086	34,639	46,725
SUBTRANS2-	33	53.4	16	5.8	32.59%	30	0.078	0.246	0.324	318	2,164	2,482
SUBTRANS2-	33	27.7	6	4.6	17.49%	5	0.007	0.079	0.085	13	693	706
SUBTRANS3-	25	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRANS3-	25	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
SUBTRANS3-	25	0.0	0	0.0	0.00%	0	0.000	0.000	0.000	0	0	0
PRIMARY - PRIMARY		231.0	46	5.0	40.96%	96	0.331	0.639	0.971	1,309	5,617	6,925
LINE TRANSFRMR		4,592.4	209,511	21.9	23.31%	1,070	3.461	20,277	23,758	7,332	178,114	185,446
TOTAL		10,938.8	209,955			11,750	34,423	46,173	41,463	302,368	343,830	

CENTRAL MAINE POWER COMPANY 1986 LOSS ANALYSIS - ANNUAL
SUMMARY of SALES and CALCULATED LOSSES

LOSS # AND LEVEL	MW LOAD	NO LOAD +	LOAD = TOT LOSS	EXP FACTOR	CUM EXP FAC	MWH LOAD	NO LOAD +	LOAD = TOT LOSS	EXP FACTOR	CUM EXP FAC
1 BULK XFMR	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
2 BULK LINES	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
3 TRANS1 XFMR	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
4 TRANS1 LINES	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
5 TRANS2TR1 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
6 TRANS2BLK SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
7 TRANS2 LINES	1,367.7	4.55	19.57	1.017953	1,017953	6,654,092	39,984	110,408	150,393	1,023,1242
8 STR1BLK SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
9 STR1T1 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
10 STR1T2 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
11 SUBTRANS1 LINES	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
12 STR2T1 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
13 STR2T2 SD	808.6	2.76	1.12	1.004822	1,022,861	4,609,395	24,249	4,431	28,679	1,008,2609
14 STR2S1 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
15 SUBTRANS2 LINES	1,054.7	2.55	17.69	1.019564	1,037,434	6,012,366	22,401	49,050	71,451	1,012,0270
16 STR3T1 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
17 STR3T2 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
18 STR3S1 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
19 STR3S2 SD	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
20 SUBTRANS3 LINES	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
DISTRIBUTION SUBST										
TRANS1	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
TRANS2	218.5	1.68	0.34	1.009330	1,027,451	1,266,451	14,729	1,398	16,127	1,012,8986
SUBTR1	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
SUBTR2	846.0	4.27	3.05	1.008721	1,046,481	4,895,822	37,495	12,417	49,912	1,010,2959
SUBTR3	0.0	0.00	0.00	0.000000	0.000000	0	0	0	0	0
WEIGHTED AVERAGE	1,064.5			1.008846	1,042,576	6,162,273				1,010,8329
PRIMARY INTRCHANGE	75.0			1.000000		239,633				1,000000
PRIMARY LINES	1,135.3	2.23	21.26	1.021129	1,061,743	6,387,113	25,202	82,837	108,039	1,072,062
LINE TRANSF	1,018.6	20.28	3.48	1.023861	1,087,099	5,507,887	178,114	7,332	185,446	1,034,8424
SECONDARY	994.8	0.00	1.60	1.001615	1,088,855	5,322,441	0	5,791	5,791	1,001,0892
SERVICES	983.2	0.79	1.52	1.002327	1,091,388	5,316,650	6,884	8,249	15,133	1,002,8544
TOTAL SYSTEM		39.10	69.63				349,059	281,913		630,972

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - ANNUAL

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
DEMAND

EXHIBIT 6

LOSS FACTOR LEVEL	CUSTOMER SALES MW	CALC LOSS TO LEVEL	SALES MW @ GEN	CUM EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	1.00953	0.99056
TRANS LINES	48.3	0.9	49.2	1.01795	0.98236
SUBTRANS SUBS	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS LINES	45.9	1.7	47.6	1.03743	0.96392
PRIM SUBS	0.0	0.0	0.0	0.00000	0.00000
PRIM LINES	92.3	5.7	97.9	1.06174	0.94185
SECONDARY	<u>990.9</u>	<u>90.6</u>	<u>1081.5</u>	1.09139	0.91626
TOTALS	1177.4	98.8	1276.2		

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH	CALC LOSS TO LEVEL	SALES MWH @ GEN	CUM EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0	0	0	0.00000	0.00000
TRANS SUBS	44,963	428	45,391	1.00953	0.99056
TRANS LINES	555,695	12,850	568,545	1.02312	0.97740
SUBTRANS SUBS	0	0	0	0.00000	0.00000
SUBTRANS LINES	576,573	20,145	596,718	1.03494	0.96624
PRIM SUBS	0	0	0	0.00000	0.00000
PRIM LINES	771,187	47,543	818,730	1.06165	0.94193
SECONDARY	<u>5,301,517</u>	<u>545,928</u>	<u>5,847,445</u>	1.10298	0.90664
TOTALS	7,249,935	626,894	7,876,829		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	45,391
TRANS LINES	49.19	568,545
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	47.60	596,718
PRIM SUBS	0.00	0
PRIM LINES	97.95	818,730
SECONDARY	1,081.49	5,847,445
SUBTOTAL	1,276.23	7,876,829
ACTUAL GENERATION	1,285.00	7,794,966
MISSMATCH	(8.77)	81,863
% MISSMATCH	-0.68%	1.05%

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - ANNUAL

DEVELOPMENT of LOSS FACTORS

EXHIBIT 7

ADJUSTED
DEMAND

LOSS FACTOR LEVEL	CUSTOMER SALES MW a	SALES ADJUST b	CALC LOSS TO LEVEL c	SALES MW @ GEN d	CUM EXPANSION FACTORS e	f=1/e
BULK LINES	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS LINES	48.3	0.0	1.2	49.5	1.02494	0.97566
SUBTRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS LINES	45.9	0.0	2.0	47.9	1.04456	0.95734
PRIM SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
PRIM LINES	92.3	0.0	6.4	98.6	1.06904	0.93542
SECONDARY	990.9	0.0	98.0	1088.9	1.09888	0.91001
TOTALS	1177.4	0.0	107.6	1285.0		

DEVELOPMENT of LOSS FACTORS

ADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH a	SALES ADJUST b	CALC LOSS TO LEVEL c	SALES MWH @ GEN d	CUM EXPANSION FACTORS e	f=1/e
BULK LINES	0	0.0	0	0	0.00000	0.00000
TRANS SUBS	44,963	0.0	428	45,391	1.00953	0.99056
TRANS LINES	555,695	0.0	6,907	562,602	1.01243	0.98772
SUBTRANS SUBS	0	0.0	0	0	0.00000	0.00000
SUBTRANS LINES	576,573	0.0	13,907	590,480	1.02412	0.97645
PRIM SUBS	0	0.0	0	0	0.00000	0.00000
PRIM LINES	771,187	0.0	38,985	810,172	1.05055	0.95188
SECONDARY	5,301,517	0.0	484,804	5,786,321	1.09145	0.91622
TOTALS	7,249,935	0.0	545,031	7,794,966		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL

	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	45,391
TRANS LINES	49.53	562,602
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	47.93	590,480
PRIM SUBS	0.00	0
PRIM LINES	98.62	810,172
SECONDARY	1,088.92	5,786,321
	1,285.00	7,794,966
ACTUAL GENERATION	1,285.00	7,794,966
MISSMATCH	0.00	0
% MISSMATCH	0.00%	0.00%

Central Maine Power Company
1996 Analysis of System Losses

SECTION 6.0
APPENDICES

Central Maine Power Company
1996 Analysis of System Losses

Appendix A
Winter Loss Analysis

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - WINTER

CENTRAL MAINE POWER COMPANY WINTER

SUMMARY OF COMPANY DATA

ANNUAL PEAK	1,285 MW
ANNUAL GENERATION	2,694,346 MWH
ANNUAL SALES	2,512,271 MWH
UNACCOUNTED MWH	182,075 or 6.76%
SYSTEM LOAD FACTOR	71.6%

SUMMARY OF LOSSES - OUTPUT RESULTS

SERVICE	KV	MW	% TOTAL	MWH	% TOTAL
TRANS	345,230,115	31.3	29.06%	26,005	14.28%
			2.43%	0.97%	
SUBTRANS	69,33,25	22.6	21.04%	28,467	15.63%
			1.76%	1.06%	
PRIMARY	12,4,1	26.0	24.19%	57,899	31.80%
			2.03%	2.15%	
SECNDRY		27.7	25.71%	69,704	38.28%
			2.15%	2.59%	
TOTAL		107.6	100.00%	182,075	100.00%
			8.37%	6.76%	

SUMMARY OF LOSS FACTORS

SERVICE	KV	CUMMULATIVE EXPANSION FACTORS			
		DEMAND		ENERGY	
		d	1/d	d	1/d
TRANS	345,230,115	1.02494	0.99036	1.00973	0.99036
SUBTRANS	69,33,25	1.04456	0.95734	1.02139	0.97906
PRIMARY	12,4,1	1.06904	0.93542	1.04789	0.95429
SECNDRY		1.09888	0.91001	1.08629	0.92057

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - WINTER

SUMMARY OF CONDUCTOR INFORMATION

EXHIBIT 2

DESCRIPTION	CIRCUIT MILES	LOADING % RATING	MW LOSSES		TOTAL
			LOAD	NO LOAD	
--- BULK ---					
TIE LINES	0.0	0.00%	0.000	0.000	0.000
BULK TRANS	0.0	0.00%	0.000	0.000	0.000
SUBTOT	0.0		0.000	0.000	0.000
--- TRANS ---					
	345 KV TO				
TIE LINES	0	0.00%	0.000	0.000	0.000
TRANS1	230 KV	0.00%	0.000	0.000	0.000
TRANS2	115 KV	35.29%	18.367	1.649	20.017
SUBTOT	1,087		18.367	1.649	20.017
--- SUBTRANS ---					
	25 KV TO				
TIE LINES	0	0.00%	0.000	0.000	0.000
SUBTRANS1	69 KV	0.00%	0.000	0.000	0.000
SUBTRANS2	33 KV	33.46%	16.688	0.654	17.343
SUBTRANS3	25 KV	0.00%	0.000	0.000	0.000
SUBTOT	1,095		16.688	0.654	17.343
PRIMARY LINES					
	18,208		21.262	2.230	23.492
SECONDARY LINES					
	9,135		1.604	0.000	1.604
SERVICES					
	7,052		1.518	0.788	2.306
TOTAL	18,368		59,440	5,321	64,761

DESCRIPTION	LOAD	MW LOSSES		TOTAL
		NO LOAD	TOTAL	
TIE LINES	0	0	0	0
BULK TRANS	0	0	0	0
SUBTOT	0	0	0	0
--- TRANS ---				
TIE LINES	0	0	0	0
TRANS1	0	0	0	0
TRANS2	28,218	4,829	33,047	33,047
SUBTOT	28,218	4,829	33,047	33,047
--- SUBTRANS ---				
TIE LINES	0	0	0	0
SUBTRANS1	0	0	0	0
SUBTRANS2	17,471	1,911	19,383	19,383
SUBTRANS3	0	0	0	0
SUBTOT	17,471	1,911	19,383	19,383
PRIMARY LINES				
	30,732	6,528	37,260	37,260
SECONDARY LINES				
	2,362	0	2,362	2,362
SERVICES				
	2,944	2,295	5,239	5,239
TOTAL	81,727	15,564	97,290	97,290

CENTRAL MAINE POWER COMPANY 1966 LOSS ANALYSIS - WINTER

EXHIBIT 3

SUMMARY OF TRANSFORMER INFORMATION

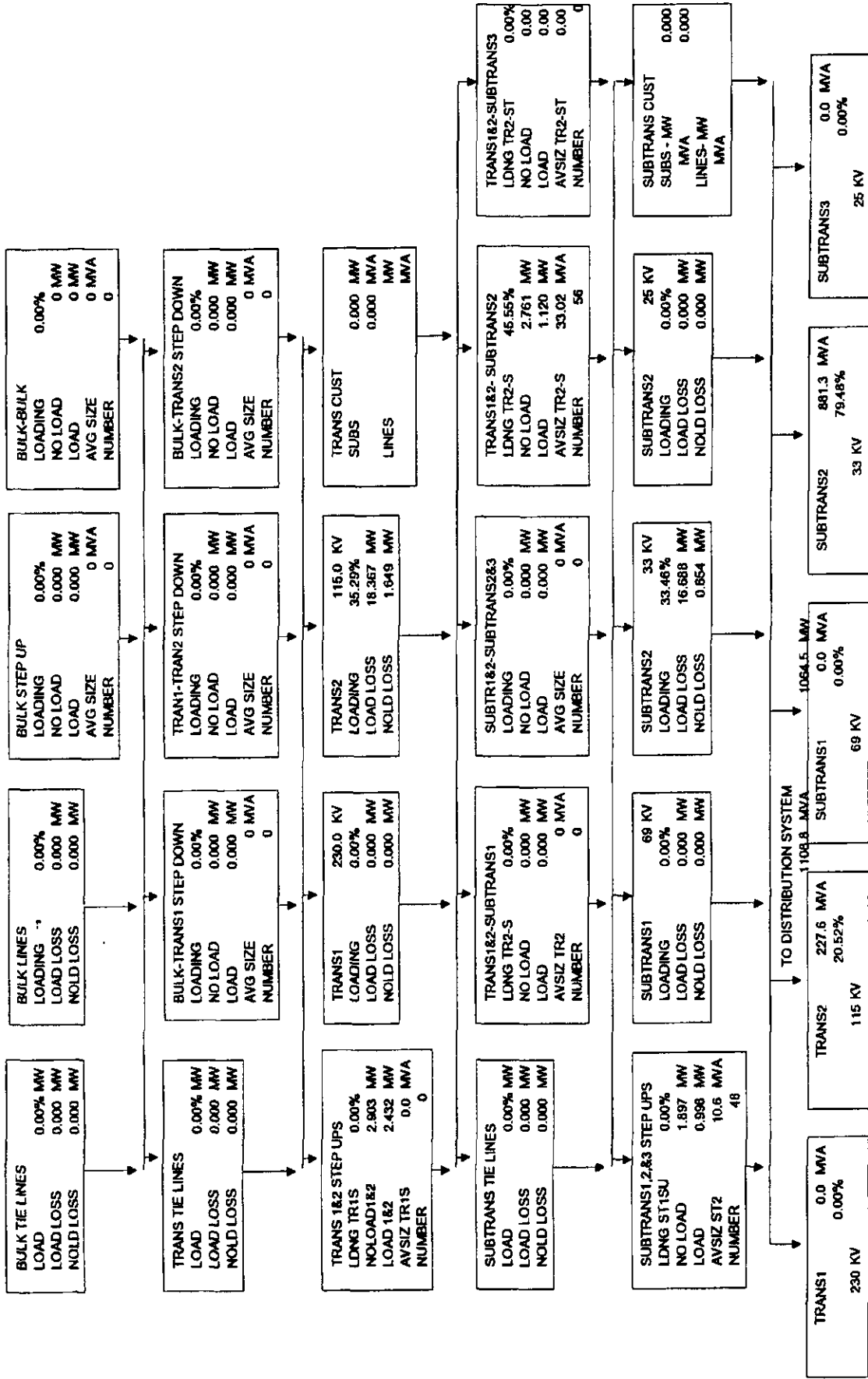
DESCRIPTION	KV CAPACITY VOLTAGE	MVA	NUMBER TRANSFR	AVERAGE SIZE	LOADING %	MVA LOAD	MW LOSSES		MMH LOSSES		TOTAL
							LOAD	NO LOAD	LOAD	NO LOAD	
BULK STEP-UP	345	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - BULK		0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - TRANS1	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - TRANS2	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 STEP-UP	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 - TRANS2	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS1	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS2	33	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS3	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2 STEP-UP	115	1,015.3	21.0	48.3	61.86%	628	2,432	2,903	3,737	8,498	12,238
TRANS2-SUBTRANS1	69	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2-SUBTRANS2	33	1,849.2	58.0	33.0	45.55%	842	1,120	2,761	1,716	8,083	9,799
TRANS2-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN1 STEP-UP	69	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN2 STEP-UP	33	510.0	48.0	10.5	50.27%	256	0.998	1,897	1,529	6,556	7,085
SUBTRAN3 STEP-UP	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN1-SUBTRANS2	33	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN1-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN2-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
DISTRIBUTION SUBSTATIONS											
TRANS1 -	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 -	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 -	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2 -	115	887.6	48	18.5	17.44%	155	0.196	1,347	301	3,944	4,245
TRANS2 -	115	169.2	9	18.8	43.00%	73	0.146	0.330	224	965	1,190
TRANS2 -	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN1-	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN1-	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN1-	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRAN2-	33	1,583.0	184	8.1	54.13%	846	2.961	3,943	4,639	11,546	16,085
SUBTRAN2-	33	93.4	16	5.8	32.59%	30	0.078	0.246	119	721	841
SUBTRAN2-	33	27.7	6	4.6	17.49%	5	0.007	0.079	4	231	235
SUBTRANS-	26	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS-	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS-	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
PRIMARY - PRIMARY		231.0	46	5.0	40.96%	95	0.331	0.639	490	1,872	2,362
LINE TRANSFRMR		4,582.4	208,511	21.9	23.31%	1,070	3.481	20,277	2,732	59,371	62,104
TOTAL		10938.8	209,955				11,750	34,423	15,392	100,789	116,181

CENTRAL MAINE POWER COMPANY 1998 LOSS ANALYSIS - WINTER

DEMAND MODEL - SYSTEM PEAK

1285 MW

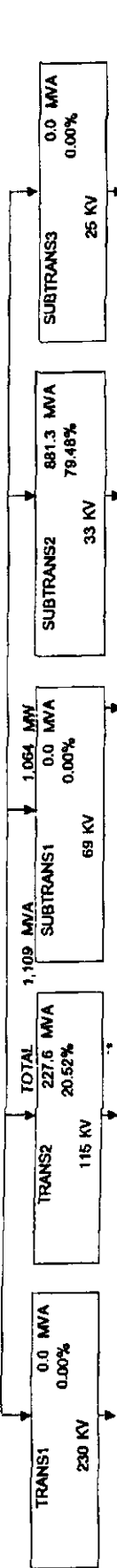
EXHIBIT 4 PAGE 1 of 2



CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - WINTER

EXHIBIT 4 PAGE 2 of 2

FROM HIGH VOLTAGE SYSTEM



VOLTAGE LOAD MVA % SYS TOT NOLD LOSS LOAD LOSS AVG SIZE NUMBER DIVERSITY RATIO	DISTRIBUTION SYSTEM LOAD											
	PRIM1	PRIM2	PRIM3	PRIM1	PRIM2	PRIM3	PRIM1	PRIM2	PRIM3	PRIM1	PRIM2	PRIM3
TRANS1 230 KV 0.0 MVA 0.00%	12	4	0	1	12	4	0	1	12	4	0	1
TRANS2 115 KV 227.6 MVA 20.52%	0	0	0.00%	0	73	0	0.00%	0	0.00%	0	846	0
SUBTRANS1 69 KV 1,109 MVA 106.4 MVA 0.00%	0.00%	0.00%	0.00%	0.00%	6.56%	0.00%	0.00%	0.00%	0.00%	0.00%	76.30%	0.44%
SUBTRANS2 33 KV 881.3 MVA 79.48%	0.00%	0.00%	0.00%	0.330	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.75%	0.079
SUBTRANS3 25 KV 0.0 MVA 0.00%	0.00%	0.00%	0.00%	0.146	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.248	0.007
	0.0	0.0	0.0	16.6	0.0	0.0	0.0	0.0	0.0	0.0	5.8	4.6
	0	0	0	9	0	0	0	0	0	0	16	8
	0.000	0.000	0.000	1.100	0.000	0.000	0.000	0.000	0.000	0.000	1.100	1.100

PRIMARY LINES

LOADING	1135.315 MW
@ SYS PF	1182.620 MVA
NOLD LOSS	21.262 MW
LOAD LOSS	2.230 MW
TOT LOSS	23.492 MW

PRIMPRIM TRANSF

LOADING	94.625 MW
NOLD LOSS	0.639 MW
LOAD LOSS	0.331 MW
AVG SIZE	5.02
NUMBER	46

PRIM CUST LOADS

NO LINES	0.000 MW
CUST SUB	0.000 MVA
NO LINES	0.000 MW
CO. SUB	0.000 MVA
PRIM WITH	92.253 MW
LINES	100.275 MVA

LINE TRANSFORMERS

LOADING	1018.599 MW	MVA	1094.129
NOLD LOSS	20.277 MW	MW	
LOAD LOSS	3.481 MW	MW	
AVG SIZE	21.9	KVA	
NUMBER	209511		

SECONDARY LINES

LOAD	319.826 MW
LOAD LOSS	1.604 MW
NOLD LOSS	0.000 MW
TOT LOSS	1.604 MW

NO SECONDARY LINES LOAD

LOAD	675.015 MW
------	------------

SERVICES

LOAD	993.237 MW
LOAD LOSS	1.518 MW
NOLD LOSS	0.788 MW
TOT LOSS	2.306 MW

CUSTOMER SECONDARY LOAD

LOAD	990.931 MW
------	------------

9226531

EXHIBIT 5

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - WINTER

SUMMARY OF SALES and CALCULATED LOSSES

LOSS # AND LEVEL	MW LOAD	NO LOAD +	LOAD =	TOTLOSS	EXP FACTOR	CUM EXP FAC	MWHLOAD	NOLOAD +	LOAD =	TOTLOSS	EXP FACTOR	CUM EXP FAC
1 BULK XFMR	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0
2 BULK LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
3 TRANS 1 XFMR	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
4 TRANS 1 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
5 TRANS2TR1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
6 TRANS2BLK SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
7 TRANS2 LINES	1,367.7	4.55	19.57	24.12	1.017953	1.017953	2,361,962	13,328	40,414	53,742	1.0232831	1.0232831
8 STR1BLK SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
9 STR1T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
10 SRT1T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
11 SUBTRANS1 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
12 STR2T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
13 STR2T2 SD	808.6	2.76	1.12	3.88	1.004822	1.022861	1,666,674	8,083	1,716	9,799	1.0059143	1.0293350
14 STR2S1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
15 SUBTRANS2 LINES	1,054.7	2.55	17.69	20.24	1.019564	1.037434	2,173,983	7,467	19,000	26,467	1.0123248	1.0350918
16 STR3T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
17 STR3T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
18 STR3S1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
19 STR3S2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
20 SUBTRANS3 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
DISTRIBUTION SUBST												
TRANS1	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
TRANS2	218.5	1.68	0.34	2.02	1.009330	1.027451	450,294	4,910	525	5,435	1.0122170	1.0357845
SUBTR1	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
SUBTR2	846.0	4.27	3.05	7.31	1.008721	1.046481	1,740,337	12,488	4,663	17,161	1.0099590	1.0454003
SUBTR3	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0	0.000000
WEIGHTED AVERAGE	1,064.5				1.008846	1.042576	2,190,631					1.0104223
PRIMARY INTRCHGE	75.0				1.000000		89,732					1.0000000
PRIMARY LINES	1,135.3	2.23	21.26	23.49	1.021129	1.061743	2,270,530	8,401	31,221	39,622	1.0177605	1.0619555
LINE TRANSF	1,018.6	20.28	3.48	23.76	1.023881	1.087099	1,972,125	59,371	2,732	62,104	1.0325146	1.0964846
SECONDARY	994.8	0.00	1.60	1.60	1.001615	1.089855	1,910,022	0	2,362	2,362	1.0012378	1.0978419
SERVICES	983.2	0.79	1.52	2.31	1.002327	1.091388	1,907,660	2,295	2,944	5,239	1.0027538	1.1008652
TOTAL SYSTEM	39.10	69.63	108.73				116,353	105,578	221,931			

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - WINTER

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
DEMAND

EXHIBIT 6

LOSS FACTOR LEVEL	CUSTOMER SALES MW	CALC LOSS TO LEVEL	SALES MW @ GEN	CUM EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	1.00953	0.99056
TRANS LINES	48.3	0.9	49.2	1.01795	0.98236
SUBTRANS SUBS	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS LINES	45.9	1.7	47.6	1.03743	0.96392
PRIM SUBS	0.0	0.0	0.0	0.00000	0.00000
PRIM LINES	92.3	5.7	97.9	1.06174	0.94185
SECONDARY	<u>990.9</u>	<u>90.6</u>	<u>1081.5</u>	1.09139	0.91626
TOTALS	1177.4	98.8	1276.2		

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH	CALC LOSS TO LEVEL	SALES MWH @ GEN	CUM EXPANSION FACTORS	
	a	b	c	d	1/d
BULK LINES	0	0	0	0.00000	0.00000
TRANS SUBS	20,898	234	21,132	1.01121	0.98891
TRANS LINES	152,162	3,543	155,705	1.02328	0.97725
SUBTRANS SUBS	0	0	0	0.00000	0.00000
SUBTRANS LINES	178,007	6,247	184,254	1.03509	0.96610
PRIM SUBS	0	0	0	0.00000	0.00000
PRIM LINES	258,783	16,033	274,816	1.06196	0.94166
SECONDARY	<u>1,902,421</u>	<u>191,888</u>	<u>2,094,309</u>	1.10087	0.90838
TOTALS	2,512,271	217,945	2,730,216		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	21,132
TRANS LINES	49.19	155,705
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	47.60	184,254
PRIM SUBS	0.00	0
PRIM LINES	97.95	274,816
SECONDARY	1,081.49	2,094,309
SUBTOTAL	1,276.23	2,730,216
ACTUAL GENERATION	1,285.00	2,694,346
MISSMATCH	(8.77)	35,870
% MISSMATCH	-0.68%	1.33%

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - WINTER

DEVELOPMENT of LOSS FACTORS
ADJUSTED
DEMAND

EXHIBIT 7

LOSS FACTOR LEVEL	CUSTOMER SALES MW a	SALES ADJUST b	CALC LOSS TO LEVEL c	SALES MW @ GEN d	CUM EXPANSION FACTORS e	f=1/e
BULK LINES	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS LINES	48.3	0.0	1.2	49.5	1.02494	0.97566
SUBTRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS LINES	45.9	0.0	2.0	47.9	1.04456	0.95734
PRIM SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
PRIM LINES	92.3	0.0	6.4	98.6	1.06904	0.93542
SECONDARY	<u>990.9</u>	<u>0.0</u>	<u>98.0</u>	<u>1088.9</u>	1.09888	0.91001
TOTALS	1177.4	0.0	107.6	1285.0		

DEVELOPMENT of LOSS FACTORS
ADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH a	SALES ADJUST b	CALC LOSS TO LEVEL c	SALES MWH @ GEN d	CUM EXPANSION FACTORS e	f=1/e
BULK LINES	0	0.0	0	0	0.00000	0.00000
TRANS SUBS	20,898	0.0	234	21,132	1.01121	0.98891
TRANS LINES	152,162	0.0	1,481	153,643	1.00973	0.99036
SUBTRANS SUBS	0	0.0	0	0	0.00000	0.00000
SUBTRANS LINES	178,007	0.0	3,807	181,814	1.02139	0.97906
PRIM SUBS	0	0.0	0	0	0.00000	0.00000
PRIM LINES	258,783	0.0	12,394	271,177	1.04789	0.95429
SECONDARY	<u>1,902,421</u>	<u>0.0</u>	<u>164,158</u>	<u>2,066,579</u>	1.08629	0.92057
TOTALS	2,512,271	0.0	182,075	2,694,346		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	0.00	21,132
TRANS LINES	49.53	153,643
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	47.93	181,814
PRIM SUBS	0.00	0
PRIM LINES	98.62	271,177
SECONDARY	1,088.92	2,066,579
	1,285.00	2,694,346
ACTUAL GENERATION	1,285.00	2,694,346
MISSMATCH	0.00	0
% MISSMATCH	0.00%	0.00%

Central Maine Power Company
1996 Analysis of System Losses

Appendix B
Non-Winter Analysis

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - SUMMER

CENTRAL MAINE POWER COMPANY SUMMER

SUMMARY OF COMPANY DATA

ANNUAL PEAK	1,255 MW
ANNUAL GENERATION	5,100,621 MWH
ANNUAL SALES	4,737,662 MWH
UNACCOUNTED MWH	362,959 or 7.12%
SYSTEM LOAD FACTOR	69.4%

SUMMARY OF LOSSES - OUTPUT RESULTS

SERVICE	KV	MW	% TOTAL	MWH	% TOTAL
TRANS	345,230,115	29.8	28.76%	69,769	19.22%
			2.37%	1.37%	
SUBTRANS	69,33,25	20.0	19.37%	53,084	14.63%
			1.60%	1.04%	
PRIMARY	12,4,1	24.8	23.95%	100,378	27.66%
			1.97%	1.97%	
SECNDRY		28.9	27.92%	139,728	38.50%
			2.30%	2.74%	
TOTAL		103.5	100.00%	362,959	100.00%
			8.25%	7.12%	

SUMMARY OF LOSS FACTORS

SERVICE	KV	CUMMULATIVE EXPANSION FACTORS			
		DEMAND		ENERGY	
		d	1/d	d	1/d
TRANS	345,230,115	1.02456	0.98616	1.01404	0.98616
SUBTRANS	69,33,25	1.04292	0.95885	1.02587	0.97479
PRIMARY	12,4,1	1.06815	0.93619	1.05128	0.95122
SECNDRY		1.10368	0.90606	1.09450	0.91366

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - SUMMER

SUMMARY OF CONDUCTOR INFORMATION

EXHIBIT 2

DESCRIPTION	CIRCUIT MILES	LOADING % RATING	MW LOSSES		TOTAL
			LOAD	NO LOAD	
--- BULK ---					
345 KV OR GREATER					
TIE LINES	0.0	0.00%	0.000	0.000	0.000
BULK TRANS	0.0	0.00%	0.000	0.000	0.000
SUBTOT	0.0		0.000	0.000	0.000
--- TRANS ---					
115 KV TO 345 KV					
TIE LINES	0	0.00%	0.000	0.000	0.000
TRANS1	0	0.00%	0.000	0.000	0.000
TRANS2	1,087	32.14%	16,436	1,591	18,028
SUBTOT	1,087		16,436	1,591	18,028
--- SUBTRANS ---					
25 KV TO 115 KV					
TIE LINES	0	0.00%	0.000	0.000	0.000
SUBTRANS1	0	0.00%	0.000	0.000	0.000
SUBTRANS2	1,095	33.43%	15,650	0.518	16,168
SUBTRANS3	0	0.00%	0.000	0.000	0.000
SUBTOT	1,095		15,650	0.518	16,168
PRIMARY LINES					
	18,208		17,810	2,169	19,979
SECONDARY LINES					
	9,178		0,711	0,000	0,711
SERVICES					
	7,089		2,346	0,784	3,130
TOTAL	18,449		52,953	5,062	58,015

	MW LOSSES		TOTAL
	LOAD	NO LOAD	
	0	0	0
	0	0	0
	0	0	0
	0	0	0
	47,882	9,316	57,198
	47,882	9,316	57,198
	0	0	0
	0	0	0
	26,464	3,028	29,492
	0	0	0
	26,464	3,028	29,492
	49,961	12,701	62,663
	3,822	0	3,822
	5,212	4,580	9,802
TOTAL	133,341	29,635	162,976

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - SUMMER

EXHIBIT 3

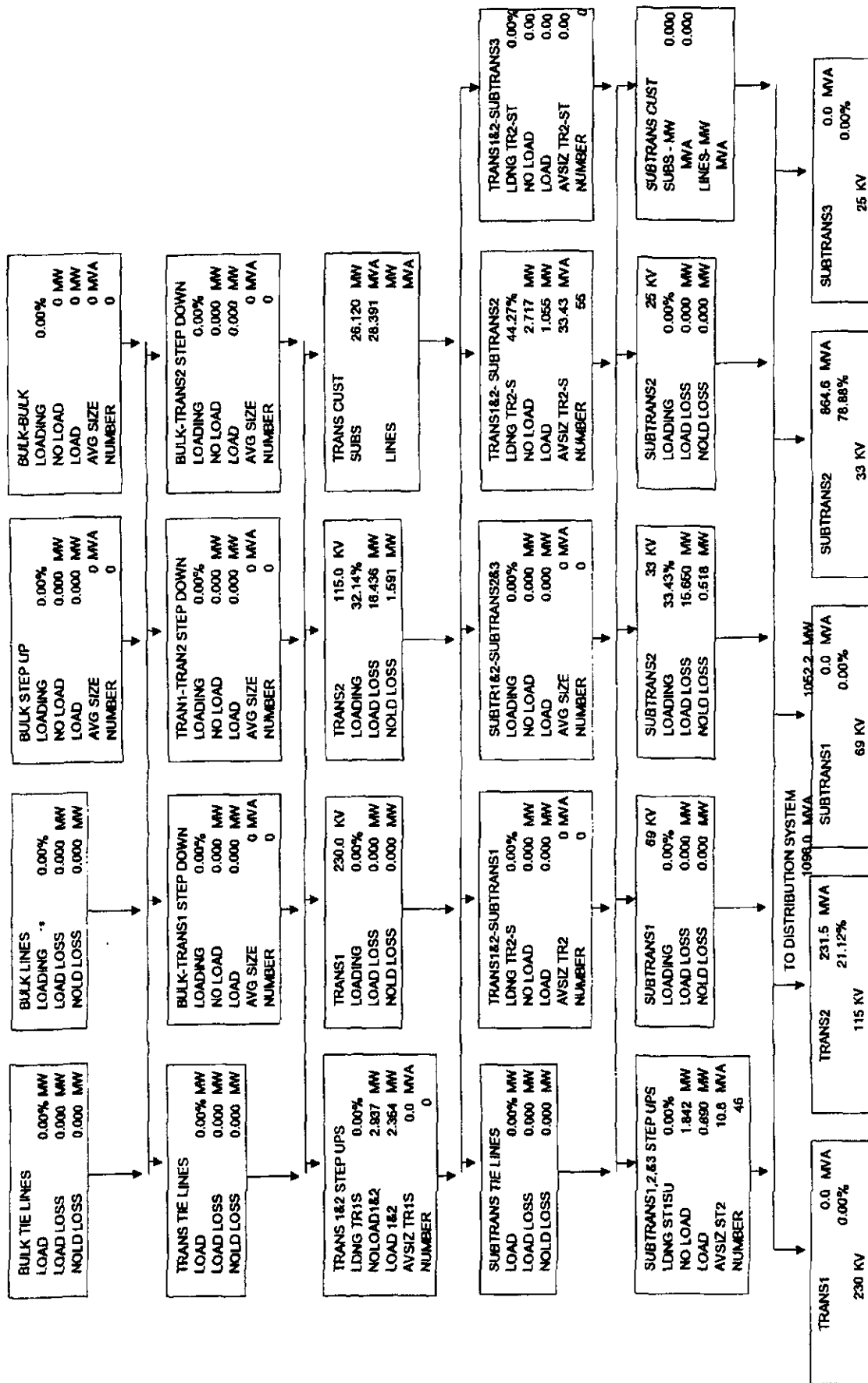
SUMMARY OF TRANSFORMER INFORMATION

DESCRIPTION	KV CAPACITY VOLTAGE	MVA	NUMBER TRANSFORMER	AVERAGE SIZE	LOADING %	MVA LOAD	MW LOSSES		MMH LOSSES		TOTAL
							LOAD	NO LOAD	LOAD	NO LOAD	
BULK STEP-UP	345	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - BULK		0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - TRANS1	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
BULK - TRANS2	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 STEP-UP	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 - TRANS2	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS1	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS2	33	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1-SUBTRANS3	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2 STEP-UP	115	1,025.0	26.0	39.4	58.68%	601	2,354	2,537	6,857	17,201	24,058
TRANS2-SUBTRANS1	69	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2-SUBTRANS2	33	1,838.7	55.0	33.4	44.27%	814	1,055	2,717	2,612	15,912	18,525
TRANS2-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1 STEP-UP	69	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS2 STEP-UP	33	489.0	46.0	10.8	47.74%	238	0.880	1,842	2,206	10,787	12,982
SUBTRANS3 STEP-UP	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1-SUBTRANS2	33	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1-SUBTRANS3	25	0.0	0.0	0.0	0.00%	0	0.000	0.000	0	0	0
DISTRIBUTION SUBSTATIONS											
TRANS1 -	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 -	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS1 -	230	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
TRANS2 -	115	840.3	46	18.3	18.90%	159	0.201	1,204	513	7,061	7,564
TRANS2 -	115	144.0	6	24.0	50.48%	73	0.146	0,238	374	1,382	1,788
TRANS2 -	115	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1 -	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1 -	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS1 -	69	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS2 -	33	1,585.1	188	8.1	52.38%	830	2,704	3,825	6,813	22,400	29,313
SUBTRANS2 -	33	91.4	16	5.7	31.51%	29	0.072	0,271	184	1,588	1,772
SUBTRANS2 -	33	18.7	5	3.7	29.30%	5	0.012	0,060	15	350	365
SUBTRANS3 -	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS3 -	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
SUBTRANS3 -	25	0.0	0	0.0	0.00%	0	0.000	0.000	0	0	0
PRIMARY - PRIMARY		227.0	54	4.2	41.57%	94	0.333	0,651	825	3,810	4,635
LINE TRANSFORMER		4,592.4	209,511	21.9	21.45%	985	4,770	20,291	7,281	118,823	126,104
TOTAL		10861.6	209,961				12,637	34,036	27,780	199,314	227,054

CENTRAL MAINE POWER COMPANY 1998 LOSS ANALYSIS - SUMMER

DEMAND MODEL - SYSTEM PEAK

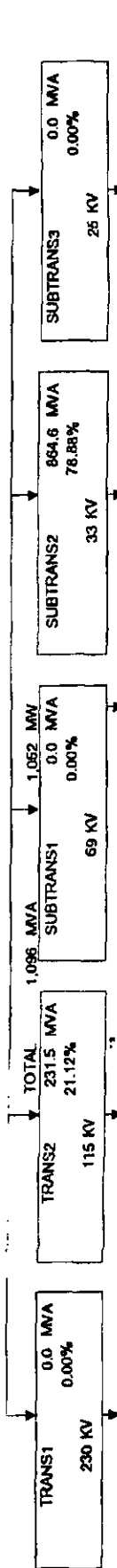
1255 MW



CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - SUMMER

EXHIBIT 4 PAGE 2 of 2

FROM HIGH VOLTAGE SYSTEM



VOLTAGE	DISTRIBUTION SYSTEM LOAD											
	PRIM1	PRIM2	PRIM3	PRIM1	PRIM2	PRIM3	PRIM1	PRIM2	PRIM3	PRIM1	PRIM2	PRIM3
LOAD MVA	12	4	0	1	4	0	1	4	0	1	4	0
%SYS TOT	0.00%	0.00%	0.00%	0.00%	6.63%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
NOLD LOSS	0.000	0.000	0.000	0.000	0.238	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LOAD LOSS	0.000	0.000	0.000	0.000	0.146	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AVG SIZE	0.0	0.0	0.0	0.0	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NUMBER	0	0	0	0	6	0	0	0	0	0	0	0
DIVERSITY RATIO	0.000	0.000	0.000	0.000	1.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PRIM CUST LOADS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CUST SUB	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NO LINES	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CO. SUB	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PRIM WITH LINES	126.428	137.422	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

PRIM PRIM TRANSF	94.375	MW
LOADING	0.651	MW
NOLD LOSS	0.333	MW
LOAD LOSS	4.20	MW
AVG SIZE	54	NUMBER

LINE TRANSFORMERS	897.918	MW	MVA
LOADING	20.291	MW	1010.065
NOLD LOSS	4.770	MW	
LOAD LOSS	21.8	KVA	
AVG SIZE	209611	NUMBER	

SECONDARY LINES	171.853	MW
LOAD	0.711	MW
LOAD LOSS	0.000	MW
NOLD LOSS	0.711	MW
TOT LOSS	0.711	MW

SERVICES	872.146	MW
LOAD	2.346	MW
LOAD LOSS	0.784	MW
NOLD LOSS	3.130	MW
TOT LOSS	869.016	MW

CUSTOMER SECONDARY LOAD	869.016	MW
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NO SECONDARY LINES	701.004	MW
LOAD		

9226531

EXHIBIT 5

CENTRAL MAINE POWER COMPANY 1986 LOSS ANALYSIS - SUMMER
SUMMARY of SALES and CALCULATED LOSSES

LOSS # AND LEVEL	MW LOAD	NO LOAD +	LOAD =	TOT LOSS	EXP FACTOR	CUM EXP FAC	MWH LOAD	NO LOAD +	LOAD =	TOT LOSS	EXP FACTOR	CUM EXP FAC
1 BULK XFMR	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0
2 BULK LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
3 TRANS1 XFMR	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
4 TRANS1 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
5 TRANS2TR1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
6 TRANS2BLK SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
7 TRANS2 LINES	1,421.7	4.53	26.11	30.64	1.022025	1.022025	4,224,039	26,517	65,793	92,310	1.0223417	1.0223417
8 STR1BLK SD												
9 STR1T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
10 SRT1T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
11 SUBTRANS1 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
12 STR2T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
13 STR2T2 SD	781.5	2.72	1.06	3.77	1.004850	1.025982	2,869,516	15,912	2,612	18,525	1.0064976	1.0289845
14 STR2S1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
15 SUBTRANS2 LINES	1,010.2	2.36	16.54	18.90	1.019066	1.040338	3,709,237	13,814	28,669	42,483	1.0115881	1.0342687
16 STR3T1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
17 STR3T2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
18 STR3S1 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
19 STR3S2 SD	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
20 SUBTRANS3 LINES	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
DISTRIBUTION SUBST												
TRANS1	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
TRANS2	222.2	1.44	0.35	1.79	1.008116	1.030319	830,242	8,443	887	9,331	1.0113662	1.0339519
SUBTR1	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
SUBTR2	830.0	4.16	2.79	6.94	1.008437	1.049115	3,094,813	24,337	7,112	31,450	1.0102664	1.0448869
SUBTR3	0.0	0.00	0.00	0.00	0.000000	0.000000	0	0	0	0	0.000000	0.000000
WEIGHTED AVERAGE	1,052.2				1.008369	1.045145	3,925,055				1.0104988	1.0425760
PRIMARY INTRCHNGE	0.0				0.000000		149,901				1.0000000	
PRIMARY LINES	1,045.3	2.17	17.81	19.98	1.019486	1.065511	4,118,525	16,511	50,787	67,298	1.0166118	1.0598950
LINE TRANSF	897.9	20.29	4.77	25.06	1.028711	1.098103	3,538,823	118,823	7,281	126,104	1.0369513	1.0990595
SECONDARY	872.9	0.00	0.71	0.71	1.000815	1.096996	3,412,719	0	3,822	3,822	1.0011212	1.1002918
SERVICES	872.1	0.78	2.35	3.13	1.003602	1.100847	3,408,897	4,590	5,212	9,802	1.0028836	1.1034646
TOTAL SYSTEM		38.45	72.48	110.92				228,949	172,175	401,124		

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - SUMMER

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
DEMAND

EXHIBIT 6

LOSS FACTOR LEVEL	CUSTOMER SALES MW a	CALC LOSS TO LEVEL b	SALES MW @ GEN c	CUM EXPANSION FACTORS d	1/d
BULK LINES	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	26.1	0.2	26.4	1.00953	0.99056
TRANS LINES	60.3	1.3	61.6	1.02202	0.97845
SUBTRANS SUBS	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS LINES	69.7	2.8	72.5	1.04034	0.96123
PRIM SUBS	0.0	0.0	0.0	0.00000	0.00000
PRIM LINES	126.4	8.3	134.7	1.06551	0.93852
SECONDARY	<u>869.0</u>	<u>87.7</u>	<u>956.7</u>	1.10095	0.90831
TOTALS	1151.5	100.4	1251.9		

DEVELOPMENT of LOSS FACTORS
UNADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH a	CALC LOSS TO LEVEL b	SALES MWH @ GEN c	CUM EXPANSION FACTORS d	1/d
BULK LINES	0	0	0	0.00000	0.00000
TRANS SUBS	141,930	1,145	143,075	1.00807	0.99200
TRANS LINES	285,667	6,382	292,049	1.02234	0.97815
SUBTRANS SUBS	0	0	0	0.00000	0.00000
SUBTRANS LINES	398,566	13,658	412,224	1.03427	0.96667
PRIM SUBS	0	0	0	0.00000	0.00000
PRIM LINES	512,404	30,690	543,094	1.05989	0.94349
SECONDARY	<u>3,399,095</u>	<u>351,686</u>	<u>3,750,781</u>	1.10346	0.90624
TOTALS	4,737,662	403,562	5,141,224		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	26.37	143,075
TRANS LINES	61.58	292,049
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	72.49	412,224
PRIM SUBS	0.00	0
PRIM LINES	134.71	543,094
SECONDARY	956.74	3,750,781
SUBTOTAL	1,251.89	5,141,224
ACTUAL GENERATION	1,255.00	5,100,621
MISSMATCH	(3.11)	40,603
% MISSMATCH	-0.25%	0.80%

CENTRAL MAINE POWER COMPANY 1996 LOSS ANALYSIS - SUMMER

DEVELOPMENT of LOSS FACTORS
ADJUSTED
DEMAND

EXHIBIT 7

LOSS FACTOR LEVEL	CUSTOMER SALES MW	SALES ADJUST	CALC LOSS TO LEVEL	SALES MW @ GEN	CUM EXPANSION FACTORS	
	a	b	c	d	e	f=1/e
BULK LINES	0.0	0.0	0.0	0.0	0.00000	0.00000
TRANS SUBS	26.1	0.0	0.3	26.4	1.01203	0.98811
TRANS LINES	60.3	0.0	1.5	61.7	1.02456	0.97603
SUBTRANS SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
SUBTRANS LINES	69.7	0.0	3.0	72.7	1.04292	0.95885
PRIM SUBS	0.0	0.0	0.0	0.0	0.00000	0.00000
PRIM LINES	126.4	0.0	8.6	135.0	1.06815	0.93619
SECONDARY	<u>869.0</u>	<u>0.0</u>	<u>90.1</u>	<u>959.1</u>	1.10368	0.90606
TOTALS	1151.5	0.0	103.5	1255.0		

DEVELOPMENT of LOSS FACTORS
ADJUSTED
ENERGY

LOSS FACTOR LEVEL	CUSTOMER SALES MWH	SALES ADJUST	CALC LOSS TO LEVEL	SALES MWH @ GEN	CUM EXPANSION FACTORS	
	a	b	c	d	e	f=1/e
BULK LINES	0	0.0	0	0	0.00000	0.00000
TRANS SUBS	141,930	0.0	1,145	143,075	1.00807	0.99200
TRANS LINES	285,667	0.0	4,010	289,677	1.01404	0.98616
SUBTRANS SUBS	0	0.0	0	0	0.00000	0.00000
SUBTRANS LINES	398,566	0.0	10,310	408,876	1.02587	0.97479
PRIM SUBS	0	0.0	0	0	0.00000	0.00000
PRIM LINES	512,404	0.0	26,279	538,683	1.05128	0.95122
SECONDARY	<u>3,399,095</u>	<u>0.0</u>	<u>321,216</u>	<u>3,720,311</u>	1.09450	0.91366
TOTALS	4,737,662	0.0	362,959	5,100,621		

ESTIMATED VALUES AT GENERATION

LOSS FACTOR AT VOLTAGE LEVEL	MW	MWH
BULK LINES	0.00	0
TRANS SUBS	26.43	143,075
TRANS LINES	61.73	289,677
SUBTRANS SUBS	0.00	0
SUBTRANS LINES	72.67	408,876
PRIM SUBS	0.00	0
PRIM LINES	135.04	538,683
SECONDARY	959.12	3,720,311
	1,255.00	5,100,621
ACTUAL GENERATION	1,255.00	5,100,621
MISSMATCH	0.00	0
% MISSMATCH	0.00%	0.00%