✓BKK | LYK

MORIHARA LAU & FONG LLP

A LIMITED LIABILITY LAW PARTNERSHIP

November 27, 2006

The Honorable Chairman and Members of the
Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, Room 103
Honolulu, HI 96813
Attention: Michael Azama, Esq.

FILED

2006 NOV 27 P 1:

PUBLIC UTILITIES COMMISSION

Re: Docket No. 03-0371 - In re Public Utilities Commission Regarding Instituting a Proceeding to Investigate Distributed Generation in Hawaii: Proposed Tariff Regarding Standby Rates for Kauai Island Utility Cooperative ("KIUC")

Dear Chairman and Commissioners:

Decision and Order No. 22248, filed on January 27, 2006 in the above-referenced docket ("Decision and Order No. 22248"),[1] on page 42, requires KIUC to establish, by proposed tariff for Commission approval,[2] standby rates based on unbundled costs associated with providing service (i.e., generation, distribution, transmission and ancillary services). Ordering Paragraph 10 (Article III, Part 10) of Decision and Order No. 22248, as modified, also requires KIUC to file such proposed tariff with the Hawaii Public Utilities Commission ("Commission") by November 27, 2006.[3]

---

[1] Decision and Order No. 22248 (page 42) states, among other things, the following:

> All the parties in this docket agree that standby and backup charges should be cost-based. There was no agreement on what those costs are and the record on this subject was not sufficiently developed for the commission to design actual standby rates.
>
> Accordingly, the commission requires each utility to establish, by proposed tariff for commission approval, standby rates based on unbundled costs associated with providing each service (i.e., generation, distribution, transmission and ancillary services). The unbundled rates should represent, identify, and quantify the costs of providing standby services to distributed generation customers.

[2] In Decision and Order No. 22248 (page 43), the Commission also stated the following:

> As part of its review and approval of the standby rates discussed above, the commission will also consider whether there is a benefit to deferring the assignment of any unrecovered costs until a certain percentage of load has been lost to distributed generation applications. In doing so, the commission will encourage deployment of beneficial and economic distributed generation while providing protection to the utility. Once the percentage is reached, the commission can appropriately allocate the charges for unrecovered costs to those whose new generation rendered these costs unrecoverable.

[3] Ordering Paragraph 10 states, in relevant part, that "[t]ariffs required in this Decision and Order shall be filed with the commission within six (6) months from the date of this Decision and Order" (i.e., July 27, 2006). By letter dated July 21, 2006, the Commission approved KIUC's July 18, 2006 request for an

Pursuant to the above, KIUC hereby submits as Exhibit 1 its proposed amended Rider "S" to Tariff No. 1, which contains KIUC's proposed amendments to its existing standby rates and provisions.[4] For ease of reference, we have attached both a clean and "blacklined" version of Exhibit 1 showing the changes made to KIUC's existing Rider "S." To assist in the Commission's review, please also find enclosed as Exhibit 2 hereto KIUC's most recent Cost of Service Study prepared by its consultant, Burns & McDonnell, which was utilized in developing the new unbundled standby rates.[5] In addition, Exhibit 3 hereto provides a spreadsheet showing the unbundled cost components that were utilized in developing the proposed standby rates.

Upon the Commission's review and approval of new unbundled standby rates, KIUC will re-format the entire document consistent with the generally accepted tariff formats approved by the Commission including, without limitation, (1) a revised check list sheet; and (2) the appropriate issuance and effective dates.

If you should have any questions, please do not hesitate to contact the undersigned. Thank you for your consideration.

Very truly yours,

Kent D.

Kent D. Morihara

Enclosures

cc: Consumer Advocate
Mr. William A. Bonnet
Mr. Dean Matsuura
Thomas Williams, Esq.
Cindy Young, Esq.
Mr. Kalvin Kobayashi
Mr. Warren Bollmeier II
Mr. Henry Curtis
Sandra-Ann Y.H. Wong, Esq.
Lani D.H. Nakazawa, Esq.
Mr. Glenn Sato

---

extension of time to submit its proposed tariff (from July 27, 2006 to November 27, 2006) in accordance with Decision and Order No. 22248.

[4] As recognized by the Commission in Decision and Order No. 22248, KIUC has an existing standby charge. In particular, "KIUC's existing Rider S is applicable to customers with a demand of at least 30kW who regularly obtain electrical energy from a capacity source other than one owned by KIUC with a capacity of at least 30kW." Decision and Order 22248, at 41-42. KIUC's existing standby charge is $5.00 per month per kW (kilowatt) of "Standby" demand.

[5] In lieu of developing unbundled standby rates based on KIUC's latest recorded results for the most recently completed fiscal year, it should be noted that the Cost of Service Study attached as Exhibit 2 reflects KIUC's 2003 recorded results of operations, with certain adjustments as described in Exhibit 2. KIUC requests that the Commission accept the use of this Cost of Service Study as the basis for KIUC's revised standby rates.

EXHIBIT 1
CLEAN

RIDER "S"
Standby, Auxiliary, Supplementary or Breakdown Service for Customers with Demands of 30 Kilowatts or More

Availability:

Applicable to and becomes a part of any standard rate schedule of the Company where the customer regularly obtains electrical energy from a capacity source or energy source other than from or through the Company with a capacity of 30 kilowatts (KW) or more. Notwithstanding the above, this Rider will not apply where the customer's own capacity sources are used exclusively for emergency service in case of failure of the normal supply from the Company or where the Company supplies capacity or energy from unit(s) sited on the customer's premises.

Rate:

For such service as defined above, the terms and conditions of the Company's standard applicable rate schedule shall apply except that the billing Demand Charge shall be calculated as described below and there shall be an additional Standby Charge in the amount set forth below.

<u>Determination of Billing Demand Charge</u>:

Notwithstanding anything in this Tariff to the contrary, for customers to which this Rider "S" is applicable, the monthly billing Demand Charge (dollar amount) shall be determined by multiplying the applicable rate schedule billing demand rate ($/KW) by the Rider "S" Monthly Billing Demand (defined below) (KW) instead of the monthly billing demand (KW) defined in the applicable rate schedule.

The Rider "S" Monthly Billing Demand (KW) shall be determined as follows:

1) When the customer's peak metered demand (KW) during the previous 11-month period[1] is greater than the contracted Standby Demand (KW) as defined below, the Rider "S" Monthly Billing Demand (KW) shall be the lower of either:
   - the actual metered demand (KW) during the current billing period, or
   - the highest metered demand (KW) during the previous 11-month period[1] less the contracted Standby Demand (KW); or

2) When the customer's peak metered demand (KW) during the previous 11-month period[1] is less than or equal to the contracted Standby Demand (KW), the Rider "S" Monthly Billing Demand (KW) shall be zero (0) KW.

[1] For those customers for which the Rider "S" is applicable and whom do not have an 11-month billing history, the customer's diversified load, to be calculated by the Company per information provided by the customer on drawings submitted as part of their electrical service application to the Company, will be used as a proxy historic peak metered demand. To the extent insufficient information is provided, the customer shall provide additional information to the Company upon request.

RIDER "S" (Continued)
Standby, Auxiliary, Supplementary or Breakdown Service
For Customers with Demands of 30 Kilowatts or More

Determination of Standby Charge:

The Standby Charge, per respective rate schedule, shall be:

- $35.30/KW: Schedule J
- $31.25/KW: Schedule L
- $37.47/KW: Schedule P

per month per KW of contracted Standby Demand (KW).

The contracted Standby Demand (KW) shall be determined by using the smaller of a) the nameplate rating of the capacity source from which the customer is receiving non-Company provided electrical energy and/or capacity, or b) the customer's highest metered demand (KW) during the previous 11-month period.[1] The nameplate rating shall be based upon an alternating current rating (i.e. $KW_{(ac)}$) and will be specified in writing on the Rider "S" Contract.

The contracted Standby Demand (KW), once established, will decrease only in those instances where a customer is able to demonstrate, to the Company's satisfaction, that their gross load has permanently decreased to a value (KW) less than the existing contracted Standby Demand (KW).

Limitation of Capacity:

The Company shall not be required to supply electricity at a rate greater than the higher of either a) the contract Standby Demand (KW), or b) the 11-month historic metered demand (KW). The circuit breaker and other equipment necessary for the purpose shall be paid for by the customer but will be maintained and operated by the Company.

Parallel Operation:

The operation of the customer's plant in parallel with the Company's system will be permitted as outlined and required by KIUC's Interconnection Policies and Procedures and Interconnection Agreement.

EXHIBIT 1
BLACKLINED

Formatted: Right

RIDER "S"
Standby, Auxiliary, Supplementary or Breakdown Service
for Customers with Demands of 30 Kilowatts or More

Availability:

Applicable to and becomes a part of any standard rate schedule of the Company where the customer regularly obtains electrical energy from a capacity source or energy source other than from or through the Company with a capacity of 30 kilowatts (KW) or more. Notwithstanding the above, this Rider will not apply where the customer's own capacity sources are used exclusively for emergency service in case of failure of the normal supply from the Company or where the Company supplies capacity or energy from unit(s) sited on the customer's premises.

Deleted: T

Rate:

For such service as defined above, the terms and conditions of the Company's standard applicable rate schedule shall apply except that the billing Demand Charge shall be calculated as described below and there shall be an additional Standby Charge in the amount set forth below.

Deleted: d

Deleted: not less than the "Standby" demand

Determination of Billing Demand Charge:

Notwithstanding anything in this Tariff to the contrary, for customers to which this Rider "S" is applicable, the monthly billing Demand Charge (dollar amount) shall be determined by multiplying the applicable rate schedule billing demand rate ($/KW) by the Rider "S" Monthly Billing Demand (defined below) (KW) instead of the monthly billing demand (KW) defined in the applicable rate schedule.

The Rider "S" Monthly Billing Demand (KW) shall be determined as follows:

1) When the customer's peak metered demand (KW) during the previous 11-month period[1] is greater than the contracted Standby Demand (KW) as defined below, the Rider "S" Monthly Billing Demand (KW) shall be the lower of either:
   - the actual metered demand (KW) during the current billing period, or
   - the highest metered demand (KW) during the previous 11-month period[1] less the contracted Standby Demand (KW); or

Formatted: Bullets and Numbering

2) When the customer's peak metered demand (KW) during the previous 11-month period[1] is less than or equal to the contracted Standby Demand (KW), the Rider "S" Monthly Billing Demand (KW) shall be zero (0) KW.

Formatted: Bullets and Numbering

1 For those customers for which the Rider "S" is applicable and whom do not have an 11-month billing history, the customer's diversified load, to be calculated by the Company per information provided by the customer on drawings submitted as part of their electrical service application to the Company, will be used as a proxy historic peak metered demand. To the extent insufficient information is provided, the customer shall provide additional information to the Company upon request.

Formatted: Indent: Left: 0", Hanging: 0.5"

Deleted: Standby Charge:¶
¶
Standby charge shall be $5.00 per month per KW of "Standby" demand.¶
¶
Determination of "Standby" Demand:¶
¶
The customer shall specify in writing the maximum KW "Standby" demand requested, which will be known as the "Standby" demand during the next twelve (12) months and continue thereafter until the Company is otherwise notified in writing. If, at any time, the actual measured demand exceeds the "Standby" demand, the higher demand shall be used and will establish a new "Standby" demand for the subsequent twelve (12) months. At the end of such twelve (12) month period, the "Standby" demand shall continue at the higher amount unless the Company is otherwise notified in writing.

Deleted: ¶
¶
¶
¶
¶
¶
¶
¶
¶
Issued: October 29, 2002 . Effective: November 1, 2002¶
By: Alton Miyamoto, President and Chief Executive Officer . Decision and Order No. 19658 ... [1]

Deleted: Original

Formatted: Right

RIDER "S" (Continued)
Standby, Auxiliary, Supplementary or Breakdown Service
For Customers with Demands of 30 Kilowatts or More

Determination of Standby Charge:

The Standby Charge, per respective rate schedule, shall be:

- $35.30/KW: Schedule J
- $31.25/KW: Schedule L
- $37.47/KW: Schedule P

Formatted: Bullets and Numbering

per month per KW of contracted Standby Demand (KW).

The contracted Standby Demand (KW) shall be determined by using the smaller of a) the nameplate rating of the capacity source from which the customer is receiving non-Company provided electrical energy and/or capacity, or b) the customer's highest metered demand (KW) during the previous 11-month period.[1] The nameplate rating shall be based upon an alternating current rating (i.e. $KW_{(ac)}$) and will be specified in writing on the Rider "S" Contract.

The contracted Standby Demand (KW), once established, will decrease only in those instances where a customer is able to demonstrate, to the Company's satisfaction, that their gross load has permanently decreased to a value (KW) less than the existing contracted Standby Demand (KW).

Limitation of Capacity:

The Company shall not be required to supply electricity at a rate greater than the higher of either a) the contract Standby Demand (KW), or b) the 11-month historic metered demand (KW). The circuit breaker and other equipment necessary for the purpose shall be paid for by the customer but will be maintained and operated by the Company.

Parallel Operation:

The operation of the customer's plant in parallel with the Company's system will be permitted as outlined and required by KIUC's Interconnection Policies and Procedures and Interconnection Agreement.

Deleted: ¶

Deleted: "Standby" demand and may, at its option, limit the capacity of the service connection to conform with the "Standby" demand.

Deleted: when special approval is granted by the Company, in which case the Company shall specify the terms and conditions for such parallel operation

Deleted: ¶

Deleted: ¶

Deleted: ¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
¶
Issued: October 29, 2002 Effective: November 1, 2002¶
By: Alton Miyamoto, President and Chief Executive Officer Decision and Order No. 19658 ... [2]

Page ii: [1] Deleted	kmorihara	11/21/2006 10:17 AM

Page iii: [2] Deleted	kmorihara	11/21/2006 10:24 AM

EXHIBIT 2

Burns & McDonnell
SINCE 1898

November 22, 2006

Mr. Joseph McCawley
Manager, Regulatory and Legislative Affairs
Kaua'i Island Utility Cooperative
4463 Pahe'e Street, Suite 1
Lihue, Hawaii 96766-2032

Kauai Island Utility Cooperative
Report on Retail Cost of Service Analysis
Project Number 36136

Dear Mr. Schmidt:

Burns & McDonnell is pleased to present this Report on the Retail Cost-of-Service Analysis performed on behalf of Kaua'i Island Utility Cooperative (KIUC). The report provides an explanation of the analysis performed to develop the adjusted revenue requirement and the allocated unbundled cost of service by consumer class. It describes in detail the data, assumptions, and methodology used in the study. It also presents the results of the analyses and Burns & McDonnell's recommendations to KIUC as to future actions relating to its cost of service.

The study was completed using KIUC's financial results for the year ended December 31, 2003. These results were adjusted based on information provided by KIUC. The adjusted utility service revenue for KIUC was $104,539,900. The adjusted revenue requirement was allocated to the classifications of consumers on KIUC's system based on detailed billing history data, sample load research data, and certain assumptions formulated by Burns & McDonnell and the KIUC staff.

The following table summarizes the revenue generated by existing rates by class, as compared to the allocated revenue requirements resulting from the cost-of-service analysis. The difference between the two figures for each class represents the rate increase/decrease required to recover the cost of service for each consumer classification. This information should be used by KIUC as a guide for adjusting rates in the future to move toward cost of service.

We appreciate the cooperation and assistance given by KIUC staff members to Burns & McDonnell in the preparation of this report. We will be available to discuss the report with you at your convenience.

Sincerely,

Ted J. Kelly
Principal, Business & Technology Services

9400 Ward Parkway
Kansas City, Missouri 64114-3319
Tel: 816 333-9400
Fax: 816 333-3690
www.burnsmcd.com

SUMMARY COMPARISON OF EXISTING REVENUE AND ADJUSTED REVENUE REQUIREMENT
Kauai Island Utility Cooperative

Rate Class	Existing Rates	Adjusted Revenue Requirement	Dollar Difference	Rate Change Required (Percent)
Residential (D)	$37,402,600	$46,037,354	$8,634,754	23.1%
Employees (D)	206,100	375,241	169,141	82.1%
General L&P (G)	15,761,200	15,430,850	(330,350)	(2.1%)
General L&P (J)	12,638,500	11,580,483	(1,058,017)	(8.4%)
Large Power (L)	13,422,700	9,699,538	(3,723,162)	(27.7%)
Large Power (P)	23,855,100	19,700,835	(4,154,265)	(17.4%)
Street Light (SL)	889,300	407,341	(481,959)	(54.2%)
Irrigation	364,400	1,308,256	943,856	259.0%
	$104,539,900	$104,539,900	$0	0.0%

Report on the

Retail Cost of Service Analysis

for

Kaua'i Island Utility Cooperative, Inc.

November 2006

36136

Kauai Island
Utility Cooperative

Burns & McDonnell
SINCE 1898

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Introduction ES-1
Cost of Service Analysis ES-2
Conclusions and Recommendations ES-6

PART I - INTRODUCTION

KIUC Electric Cooperative I-1
Existing Rate Structure I-2
Method of Analysis I-2
Sources of Data I-3

PART II - COST OF SERVICE ANALYSIS

Overview II-1
Revenue Requirement II-1
- Test Year Results II-1
- Test Year Adjustments II-3
- Revenue Requirement Determination II-4

Functional Assignment (Unbundling) of Costs II-4
- Description of Assignment Codes II-6
- Assignment of Total Plant-In-Service II-6
- Assignment of Adjusted Revenue Requirement II-12

Allocation of Costs II-15
- Consumer Classifications II-16
- Allocation Factors II-16
- Cost Allocation II-22

PART III - CONCLUSIONS AND RECOMMENDATIONS

APPENDIX A - LIST OF BASIC DATA PROVIDED BY KIUC

APPENDIX B - LIST OF KEY STUDY ASSUMPTIONS

LIST OF TABLES

EXECUTIVE SUMMARY

ES-1 Summary by Unbundled Code ES-5
ES-2 Summary of Cost of Service ES-7

PART II - COST OF SERVICE ANALYSIS

II-1 Statement of Income II-2
II-2 Adjusted Statement of Income II-5
II-3 Description of Cost Categories II-7
II-4 Unbundled Codes II-10
II-5 Plant-In-Service II-11
II-6 Summary of Assignments II-13
II-7 Allocation Factors II-18
II-8 Summary by Unbundled Code II-24
II-9 Summary of Cost of Service II-25

PART III – CONCLUSIONS AND RECOMMENDATIONS

III-1 Summary Comparison of Existing Revenue and Adjusted Revenue Requirement III-2

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

INTRODUCTION

Burns & McDonnell was retained by Kaua'i Island Utility Cooperative (KIUC) to provide services in the preparation of an electric cost-of-service study. Our recent experience in completing similar studies for other electric utility clients enabled us to readily address the issues and concerns of the KIUC membership and to efficiently analyze the impacts of these changing conditions on the retail rates and the financial position of the electric cooperative. As part of our agreement with KIUC, Burns and McDonnell completed an electric cost-of-service analysis on behalf of KIUC located on Kaua'i Island, Hawaii.

This report contains a description of the electric cost-of-service analysis performed for KIUC. The primary objectives of this study were as follows:

- To determine the revenue required to meet all operating and capital costs as well as KIUC's financial objectives.
- To assess the adequacy of the revenues provided by the existing retail rates as compared to the revenue requirements.
- To establish a basis with which to unbundle costs associated with providing electricity to each consumer class.
- To establish criteria with which to determine appropriate rates for each consumer class.

In order for KIUC to be responsive to the changing environment in which it operates, it must first have a clear picture of the cost structure under which it currently operates. This cost-of-service analysis and the rate study provide KIUC with a tool with which it can begin to understand these issues and to implement new rates that enhance its competitive position.

KIUC currently bills its consumers based on its rate schedules that have been effective since the system was acquired in 2002. The rate classifications are as follows:

- Residential (D)
- Employees (D)
- General L&P (G)
- General L&P (J)
- Large Power (L)

- Large Power (P)
- Street Light (SL)
- Irrigation

The cost-of-service analysis performed by Burns & McDonnell consisted of the development of an adjusted revenue requirement, the assignment of the various costs and margins which make up the revenue requirement to the electric utility functions (i.e. power supply, distribution), and the further unbundling of these functionalized costs to specific tasks (meter reading, pole inspections, etc.). These functionalized and unbundled costs were then allocated to the various consumer classifications. The resulting class cost of service provided the basis for the development of new electric service rates.

Standard electric utility industry cost-of-service and rate-making procedures were utilized in the completion of this study. KIUC's financial and accounting data, provided as input for the analysis, closely followed the Rural Utilities Service Uniform System of Accounts (RUS USOA) for electric utilities. The RUS USOA captures expenditure data on a functional cost basis where unique accounts are defined within the categories of production, transmission, distribution, and administration. Within each of these categories, separate accounts are established for operating expenses versus maintenance expenses. This organization of accounting data is important in a cost-of-service analysis for the allocation of costs among consumer classes, as well as among the service components of demand, energy, and consumer service.

The adjusted revenue requirement for the year ended 2003 was utilized for the development of the cost-of-service allocation. Part II of this report discusses, in detail, the assignment of the revenue requirement, including margins and operating expenses, to KIUC functional areas. Part II also describes the allocation of the functionalized costs to individual consumer classifications. Results at various stages in the analysis are shown and explained in detail in this section as well.

The information used in the analysis of KIUC's cost of service was provided by KIUC's staff and management. This included various computer generated information and reports, audited financial reports, and other financial and statistical information as well as other documents such as power bills, debt service schedules, and current retail electric rate schedules. Assumptions regarding expected future levels of revenue, sales, and expenses were provided by KIUC.

COST OF SERVICE ANALYSIS

A cost-of-service study analyzes and identifies the revenues required to meet all costs and margins, and details those costs as they are allocated to each consumer classification. The first step in this analysis is to determine overall test year revenue requirements for KIUC. The next step is to functionalize, classify, and allocate the test year costs to each consumer classification in order to determine the cost to serve each rate class. The final step is to compare the revenues generated by current rates to the overall cost and to each class's total cost in order to determine the overall revenue needs of KIUC as well as each class's revenue needs. This study was completed using a proprietary electric utility unbundled cost-of-service model developed by Burns & McDonnell.

First, a statement of operating revenues and expenses was developed in order to determine the revenue requirement for the fiscal year in which any revised rates would be implemented. Since operating revenues and expenses of a utility generally vary on a seasonal basis, use of a 12-month test period was necessary to reflect the impact of all seasons on KIUC's financial results. KIUC management and Burns & McDonnell agreed to base the cost-of-service analysis on the most recently completed fiscal year (FY) prior to the start of this study, which was the twelve-month period ended December 31, 2003. The financial results for FY 2003 were adjusted to reflect expected changes in the costs of operating and maintaining KIUC's system in the future. Additional adjustments were made to reflect the revenue levels required to meet KIUC's financial objectives.

Once the adjusted revenue requirement was developed, the account-level costs were broken out into various functional activities. The functional activities shown are those selected by KIUC for inclusion in the analysis of its unbundled costs.

Following the segmentation of the adjusted revenue requirement to specific activities, the next step was to assign it to the various functional services provided by KIUC to its consumers. In order to perform these assignments, a series of assignment codes were developed. Three general functional service categories were developed: power supply, distribution, and consumer service. Within each of these categories, specific unbundled services were identified.

Prior to completion of the assignment of the adjusted revenue requirement, an analysis of KIUC's plant-in service was required. Part II of this report presents the results of this analysis and the assignment, or the unbundling, of the total adjusted plant-in-service to the functional services. Relative ratios of the amounts of plant-in-service assigned to each functional service were used in the assignment of the adjusted revenue requirement.

KIUC's costs of providing electric utility service, as reflected in the adjusted test year revenue requirement, were assigned through the application of various assignment factors and direct assignments to the utility service functions provided by KIUC as identified in Table II-4. The further assignment of costs between primary and secondary for a particular function were based on the ratios of primary line miles and secondary line miles to total line miles.

Following the assignment of the plant-in-service, and the various components of the adjusted test year revenue requirement to the utility functional services, the functionalized revenue requirement was further allocated to KIUC's consumer classifications. These allocations were based on the impact each class has on the level of each type of cost incurred by KIUC.

No changes were made to the classifications of consumers for allocating the cost of service. For purposes of setting rates, consumers with similar load and service characteristics (e.g., utility equipment required to serve, size of load, load factor, etc.) should be grouped into the same rate class. It was assumed that the existing classes adequately reflected the different consumer load profiles on KIUC's system and that the consumers were properly classified during the test year.

As mentioned above, in order to develop the allocations of the system revenue requirement, data for KIUC's consumer classes at the individual consumer level for the test year (FY 2003) was acquired from KIUC. Summaries of the data obtained were provided by consumer classifications and included monthly number of consumers, energy usage, and revenue information. Demand information was provided for all demand-metered consumers, regardless of the consumer class and whether or not that class is currently billed based on demand levels. Unmetered street lighting usage was based on estimates prepared by KIUC. The consumption data was summarized by the consumer classifications identified and was used in determining the allocation of costs among the classifications.

The data described above was used to develop a series of allocation factors. The functionalized costs were allocated as energy-related, demand-related, or consumer-related costs.

The KIUC adjusted revenue requirement was allocated to the appropriate consumer classifications using the allocation factors described above. Because not all consumers affect KIUC's costs in the same manner, different allocation factors were used for allocating different types of costs. For example, each classification's share of the production and purchased power energy expense was based upon that classification's energy requirements. Therefore, Allocation Factor A was used to allocate that cost. In a similar manner, all operating costs and investment costs were allocated. The summary of the allocation of the functionalized costs to the various classes is shown in Table ES-1.

Table ES-1

SUMMARY BY UNBUNDLED CODE
Kaua'I Island Utility Cooperative

Description/ Unbundled Code	Total System	Residential (D)	Employees (D)	General L&P (G)	General L&P (J)	Large Power (L)	Large Power (P)	Street Light (SL)	Irrigation	Allocation Code
Power Supply										
kW	$28,848,100	$11,218,186	$96,766	$4,460,905	$3,858,149	$2,807,027	$6,275,920	$0	$131,147	B
kWh	41,192,900	14,243,917	122,865	5,664,084	5,046,239	5,739,318	9,888,050	215,940	272,486	A
ACC	9,959,500	4,051,911	34,951	1,611,240	1,266,845	737,738	1,766,344	25,393	465,078	C
Distribution										
DIS-P	$5,350,400	$2,176,751	$18,776	$865,583	$680,569	$396,324	$948,908	$13,641	$249,847	D
DIS-S	3,630,300	1,595,102	13,759	634,291	498,715	-	695,351	9,996	183,086	E
SSL	316,300	239,036	1,652	41,142	3,489	185	1,218	29,542	37	F
Consumer										
CONS-P	$2,944,300	$2,423,262	$16,747	$417,084	$44,117	$3,723	$24,575	$13,491	$1,300	G
CONS-S	12,298,100	10,089,189	69,726	1,736,520	182,359	15,223	100,471	99,338	5,274	G
Total Cost of Service	$104,539,900	$46,037,354	$375,241	$15,430,850	$11,580,483	$9,699,538	$19,700,835	$407,341	$1,308,256	

Table ES-2 summarizes the total allocated revenue requirement by consumer classification. The results have been broken down into energy-related costs, expressed in dollars and cents per kWh; demand-related costs, expressed in dollars and dollars per coincident kW of system peak demand per month; and consumer-related costs, expressed in dollars per consumer per month. Also, the total cost is expressed in dollars and cents per kWh. Revenue that would be generated by existing rates was compared with the allocated cost of service for each class. The revenue generated by existing rates was calculated from the historical data provided by KIUC, adjusted for assumed load growth.

CONCLUSIONS AND RECOMMENDATIONS

The allocated unbundled cost-of-service analysis completed on behalf of Kauai Electric Cooperative (KIUC) by Burns & McDonnell provides KIUC with an effective assessment of the financial condition of its operations. The allocated cost of service for KIUC's various rate classifications indicated that there were significant variations in the rate increase/decrease required among the consumer classifications.

From the results of the analysis completed by Burns & McDonnell, it is recommended that:

1. KIUC should consider development of a retail electric rate study to determine the impacts, if any, of the findings from this cost-of-service analysis on KIUC's traditional rates. Such a rate study would evaluate the potential implementation of unbundled rates on a class specific basis and consider other rate structure alternatives.

2. The adjusted revenue requirement and allocated unbundled cost-of-service analysis should be re-evaluated regularly, to ensure full cost recovery and proper responses to changing rate pressures in the allocation of cost responsibility among the consumer classes. This effort will be aided by the use of the cost-of-service model developed by Burns & McDonnell on KIUC's behalf. The Cost-of-Service Model Instruction Manual, provided with the model, should provide KIUC with the tools necessary to periodically review and evaluate the cost of service on a class-specific basis.

3. KIUC should continue to position itself to be prepared as changes come through the deregulation of the electric industry. A key step in doing so will be implementing an accounting system to track the costs identified within this report as those which KIUC wished to be able to unbundle to the consumer level. The cost-of-service model allows for collection of this detail.

Table ES-2

SUMMARY OF COST OF SERVICE
Kaua'I Island Utility Cooperative

Description	Total System	Residential (D)	Employees (D)	General L&P (G)	General L&P (J)	Large Power (L)	Large Power (P)	Street Light (SL)	Irrigation
Energy Cost:									
Energy Sales (kWh)	465,858,900	160,611,600	1,385,400	63,867,100	56,900,400	66,091,300	111,495,700	2,434,900	3,072,500
Total Cost	41,192,900	14,243,917	122,865	5,664,084	5,046,239	5,739,318	9,888,050	215,940	272,486
Cents/kWh	8.84	8.87	8.87	8.87	8.87	8.68	8.87	8.87	8.87
Demand Cost:									
Contribution to Peak (kW)	79,500	30,915	267	12,293	10,632	7,736	17,295	N/A	361
Total Cost	47,788,300	19,041,951	164,252	7,572,019	6,304,279	3,941,089	9,686,522	49,030	1,029,159
$/kW-mo	50.09	51.33	51.33	51.33	49.41	42.46	46.67	0.00	237.30
Customer Service:									
Number of Customers	34,273	25,901	179	4,458	378	20	132	3,201	4
Total Cost	15,558,700	12,751,487	88,125	2,194,746	229,965	19,131	126,264	142,371	6,612
$/Customer/Month	37.83	41.03	41.03	41.03	50.70	79.71	79.71	3.71	137.74
Total Cost:									
Dollars	104,539,900	46,037,354	375,241	15,430,850	11,580,483	9,699,538	19,700,835	407,341	1,308,256
Cents/kWh	22.44	28.66	27.09	24.16	20.35	14.68	17.67	16.73	42.58
Comparison of Revenues;									
Revenue Requirement	104,539,900	46,037,354	375,241	15,430,850	11,580,483	9,699,538	19,700,835	407,341	1,308,256
Gen. by Existing Rates	104,539,900	37,402,600	206,100	15,761,200	12,638,500	13,422,700	23,855,100	889,300	364,400
Dollar Difference	0	8,634,754	169,141	(330,350)	(1,058,017)	(3,723,162)	(4,154,265)	(481,959)	943,856
Rate Increase Required	0.0%	23.1%	82.1%	-2.1%	-8.4%	-27.7%	-17.4%	-54.2%	259.0%

4. KIUC develop and implement a load data acquisition program for the electric utility to obtain information regarding the demand and energy consumption characteristics for all of KIUC's retail consumer classifications. In particular, this would include implementation of hourly demand recording equipment on statistically valid samples of residential and small commercial consumer groups not currently monitored.

In the preparation of this report, the information provided to us by KIUC and other sources was used by Burns & McDonnell to make certain assumptions with respect to conditions that may exist in the future. While we believe the assumptions made are reasonable for the purposes of this report, we make no representation that the conditions assumed will, in fact, occur. In addition, while we have no reason to believe that the information provided to us by KIUC and other parties, and on which we have relied, is inaccurate in any material respect, we have not independently verified such information and cannot guarantee its accuracy or completeness. To the extent that actual future conditions differ from those assumed herein or from the information provided to us, the actual results will vary from those projected.

* * * * *

PART I
INTRODUCTION

PART I
INTRODUCTION

Burns & McDonnell was retained by Kaua'i Island Utility Cooperative (KIUC) to provide services in the preparation of an electric cost-of-service study. Our recent experience in completing similar studies for other electric utility clients enabled us to readily address the issues and concerns of the KIUC membership and to efficiently analyze the impacts of these issues on the retail rates and the financial position of the electric cooperative. As part of our agreement with KIUC Burns and McDonnell completed an electric cost-of-service analysis on behalf of KIUC located on Kaua'i Island, Hawaii.

This report contains a description of the electric cost-of-service analysis performed for KIUC. The primary objectives of this study were as follows:

- To determine the revenue required to meet all operating and capital costs as well as KIUC's financial objectives.
- To assess the adequacy of the revenues provided by the existing retail rates as compared to the revenue requirements.
- To establish a basis with which to unbundle costs associated with providing electricity to each consumer class.
- To establish criteria with which to determine appropriate rates for each consumer class.

In order for KIUC to be responsive to the changing environment in which it operates, it must first have a clear picture of the cost structure under which it currently operates. This cost-of-service analysis and the rate study provide KIUC with a tool with which it can begin to understand these issues and to implement new rates that enhance its competitive position.

KAUA'I ISLAND UTILITY COOPERATIVE

KIUC is a utility cooperative located on the island of Kaua'i, Hawaii. The cooperative provides electric generation, transmission and distribution services to approximately 32,400 customers on Kaua'i.

On November 1, 2002, the cooperative acquired substantially all of the assets of Kaua'i Electric (KE), a division of Citizens Communications Company. The aggregate purchase price was approximately $218 million, which includes transaction costs incurred in the acquisition, and was financed by lines of credit from the National Rural Utilities Cooperative Finance Corporation and loans from the U.S. government.

KIUC currently owns and maintains approximately 1,148 miles of distribution lines of which 975 miles are overhead and 173 are underground. The cooperative also owns and maintains its own generation facilities which provide approximately 124 MW of rated generation capacity. These consist of the Port Allen Generation Station, Kapaia Power Station, and the Upper and Lower Waiahi hydro stations.

Operating revenues for the twelve-month period ended December 31, 2003 totaled $96,850,013 of retail sales and more than 431 million kWh. The electric system peak demand for the same twelve-month period was 73.7 MW.

EXISTING RATE STRUCTURE

KIUC currently bills its consumers based on its rate schedules that have been effective since the system was acquired in 2002. The rate classifications are as follows:

- Residential (D)
- Employees (D)
- General L&P (G)
- General L&P (J)
- Large Power (L)
- Large Power (P)
- Street Light (SL)
- Irrigation

METHOD OF ANALYSIS

The cost-of-service analysis performed by Burns & McDonnell consisted of the development of an adjusted revenue requirement, the assignment of the various costs and margins which make up the revenue requirement to the electric utility functions (i.e. power supply, distribution), and the further unbundling of these functionalized costs to specific tasks (meter reading, pole inspections, etc.). These functionalized and unbundled costs were then allocated to the various consumer classifications. The resulting class cost of service provides the basis for the development of new electric service rates.

Standard electric utility industry cost-of-service and rate-making procedures were utilized in the completion of this study. KIUC's financial and accounting data, provided as input for the analysis, closely followed the Rural Utilities Service Uniform System of Accounts (RUS USOA) for electric utilities. The RUS USOA captures expenditure data on a functional cost basis where unique accounts are defined within the categories of production, transmission, distribution, and administration. Within each of these categories, separate accounts are established for operating expenses versus maintenance expenses. This organization of accounting data is important in a cost-of-service analysis for the allocation of costs among consumer classes, as well as among the service components of demand, energy, and consumer service.

The adjusted revenue requirement for the year ended 2003 was utilized for the development of the cost-of-service allocation. Part II of this report discusses in detail the assignment of the revenue requirement, including margins and operating expenses, to KIUC functional areas. Part II also describes the allocation of the functionalized costs to individual consumer classifications. Results at various stages in the analysis are shown and explained in detail in this section as well.

SOURCES OF DATA

The information used in the analysis of KIUC's cost of service was provided by KIUC's staff and management. This included various computer generated information and reports, audited financial reports, and other financial and statistical information as well as other documents such as power bills, debt service schedules, and current retail electric rate schedules. Assumptions regarding expected future levels of revenue, sales, and expenses were provided by KIUC. These assumptions were provided by senior management, and in some cases from KIUC's Equity Management Plan.

In the preparation of this report, the information provided to us by KIUC and other sources was used by Burns & McDonnell to make certain assumptions with respect to conditions which may exist in the future. A list of basic data provided by KIUC is presented in Appendix A. A list of several key study assumptions is presented in Appendix B.

* * * * *

PART II
COST OF SERVICE ANALYSIS

PART II
COST OF SERVICE ANALYSIS

OVERVIEW

A cost-of-service study analyzes and identifies the revenues required to meet all costs and margins, and details those costs as they are allocated to each consumer classification. The first step in this analysis is to determine overall test year revenue requirements for KIUC. The next step is to functionalize, classify, and allocate the test year costs to each consumer classification in order to determine the cost to serve each rate class. The final step is to compare the revenues generated by current rates to the overall cost and to each class's total cost in order to determine the overall revenue needs of KIUC, as well as each class's revenue needs. This study was completed using a proprietary electric utility unbundled cost-of-service model developed by Burns & McDonnell.

REVENUE REQUIREMENT

First, a statement of operating revenues and expenses was developed in order to determine the revenue requirement for the fiscal year in which any revised rates would be implemented. Since operating revenues and expenses of a utility generally vary on a seasonal basis, use of a 12-month test period was necessary to reflect the impact of all seasons on KIUC's financial results. KIUC management and Burns & McDonnell agreed to base the cost-of-service analysis on the most recently completed fiscal year prior to the start of this study, which was the twelve-month period ended December 31, 2003. The financial results for FY 2003 were adjusted to reflect expected changes in the costs of operating and maintaining KIUC's system in the future. Additional adjustments were made to reflect the revenue levels required to meet KIUC's financial objectives. These adjustments are discussed in detail below.

Test Year Results

The financial results for FY 2003 are shown in the first column of Table II-1. These figures correspond to those shown in KIUC's 2003 Annual Rural Utilities Service (RUS) Form 7 (Form 7). As shown, revenue from operations was $96,850,013.

Total operating expenses for FY 2003, including cost of power production, purchased power, transmission operations and maintenance, distribution operation and maintenance, consumer accounts and consumer service, sales, and administrative and general expenses, totaled $53,029,397. Purchased power expenses are assumed to become part of power production expenses moving forward based on KIUC's purchase of the Kapaia Power Station.

Table II-1

STATEMENT OF INCOME

Kaua'I Island Utility Cooperative

Item	2003 Year End	Adjustments	Adjusted Test Year
Utility Service Revenues	$96,850,013	$7,689,887	$104,539,900
Other Operating Revenues	2,335,244	(750,044)	1,585,200
Total Operating Revenue	$99,185,257	$6,939,843	$106,125,100
Power Production Expense	$25,238,888	$18,113,717	$43,352,605
Cost of Purchased Power	$15,840,722	($13,905,022)	$1,935,700
Transmission Expense	$546,316	$46,387	$592,703
Distribution Expense - Operation	1,172,329	99,874	1,272,203
Distribution Expense - Maintenance	1,571,446	133,951	1,705,397
Consumer Accounts Expense	1,405,923	119,579	1,525,502
Customer Service and Informational Expense	303,247	25,855	329,102
Sales Expense	292,395	24,905	317,300
Administrative and General Expense	6,658,131	2,648,669	9,306,800
Total Operation & Maintenance Expense	$53,029,397	$7,307,915	$60,337,312
Depreciation and Amortization Expense	$16,686,714	$1,462,286	$18,149,000
Tax Expense	$8,321,729	707,769	9,029,498
Interest on Long-Term Debt	$8,882,188	238,012	9,120,200
Interest on Long-Credit	$0	-	-
Interest Expense-Other	$6,074,566	(6,039,767)	34,799
Other Deductions	62,124	(24)	62,100
Total Expenses	$93,056,718	$3,676,191	$96,732,909
Patronage Capital or Operating Margins	$6,128,539	$3,263,652	$9,392,191
Non Operating Margins - Interest	$136,035	$7,265	$143,300
Allowances for Funds Used During Construction	$31,013	(31,013)	-
Incomes (Loss) from Equity Investments	-	-	-
Non Operating Margins - Other	-	-	-
G&T Capital Credits	-	-	-
Other Capital Credits and Patronage Dividends	$10,533	11,767	22,300
Extraordinary items	-	-	-
Patronage Capital or Margins	$6,306,120	$3,251,671	$9,557,791
RUS TIER	1.71		2.05
Targeted RUS TIER	0.00		0.00
Modified TIER	1.71		2.05
Targeted Modified TIER	0.00		0.00
Operating TIER	1.69		2.03
Targeted Operating TIER	0.00		0.00

After depreciation, interest and tax expenses and other deductions, total expenses were $93,056,718 for the year. The resulting total of patronage capital and operating margins for FY 2003 was $6,306,120.

Test Year Adjustments

Since any rates developed based on the results of this cost-of-service analysis would be implemented for future periods, they must be designed based on conditions which are expected to occur in the same future time frame. The adjustments shown in the second data column of Table II-1 were designed to reflect estimated changes which either have occurred on KIUC's system, or are expected to occur in the near future to meet the objectives and goals identified in the Equity Management Plan. The adjustments shown in Table II-1 are explained below.

Operating Revenue: The adjustment to operating revenue and patronage capital, totaling $7,689,887, was based on a projected increase in energy sales from 2004 to 2008. The period average energy requirements totaled 491,356,600 kWh, including approximately 6 percent for transmission and distribution losses. By 2008 energy requirements are expected to reach 513,285,800 kWh. Assuming losses at approximately 6 percent, 2008 energy sales were projected to be 486,650,100 kWh. Projected growth was based on KIUC's historical growth rates applied to 2003 sales and purchases.

The average revenue per kWh for 2003 for each class was applied to the projected kWh sales for each respective class to estimate the total class revenue. Each class's estimated historical average period revenues were summed in order to project estimated total service revenues of $104,539,900. Adding the adjusted other operating revenues of $1,585,200, the estimated total operating revenue for the test year was estimated to be $106,125,100. This was $6,939,843 more than the 2003 total operating revenue of $99,185,257. The adjustment is shown in the second data column of Table II-1 with the total adjusted amounts shown in the third data column.

Operating Expenses: In addition to the above revenue adjustment, various expense adjustments were made as well. A purchased power cost adjustment was made to reflect the shift of costs from power purchases to power productions. Purchased power expense will become part of power production cost in future years based on KIUC's purchase of the Kapaia Power Station. Adjusted Power Production expenses are $18,113,717 which is 71.7 percent higher than 2003 power production costs. Additional costs associated with serving the projected growth on the system are also reflected in this expense number. The total adjustment to purchased power was ($13,905,022), reducing the projected purchased power cost to $1,935,700, which is 87.7 percent lower than the 2003 power costs.

The remaining adjustments to each operating expense category, as shown in the second column of Table II-1, were made based on the 2004 account level budgets provided by KIUC. Adjustments to operating expenses, other than for power production and purchased power, totaled $3,099,220. As shown in the third column of Table II-1, total adjusted operating expenses were $60,337,312.

An adjustment of $238,012 was made to interest on long-term debt to reflect projected interest payments based on information provided by KIUC. Total adjusted interest on long-term debt is $9,120,200. Taxes were adjusted a total of $707,769 based on the 2004 budget, using the same methodology as discussed previously for operating expenses. An adjustment of ($6,039,767) was made to other deductions, again based on information provided by KIUC from the Equity Management Plan. Total expenses for the year were adjusted by $3,676,191, resulting in total adjusted test year expenses of $96,732,909.

Adjustments of $7,265 to non-operating margins-interest, ($31,013) to allowance for funds used during construction, and $11,767 to other capital credits and patronage dividends were made based on the 2004 budget.

As noted above, total operating revenue and patronage capital for the adjusted test year was $106,125,100. Based on the adjustments described above, the resulting total adjusted test year patronage capital or margins were $9,557,791. Based on adjusted test year interest on long-term debt of $9,120,200, the RUS TIER was projected to be 2.05. These results are shown in Table II-1.

Revenue Requirement Determination

Total operating expense is one component of the revenue requirement. Another factor which must be assessed is the desired level of margins to be generated through the electric utility operations. For this analysis, KIUC desired that the level of net income be set such that the target margin dollar amount for the adjusted test year would be $9,557,800 to meet the goals set in the Equity Management Plan. Subtracting the non-operating portion of patronage capital or margins of $165,600 from this amount, the total required patronage capital or operating margins was $9,392,200. Given the required operating margins and the projected operating expenses of $96,732,909, the total operating revenue and patronage capital required was $106,125,109. With other operating revenues of $1,585,200, the total required utility service revenues were $104,539,909. This represented a decrease of $9, from the adjusted utility service revenues. These results are shown in Table II-2.

FUNCTIONAL ASSIGNMENT (UNBUNDLING) OF COSTS

Once the adjusted test year revenue requirement was determined, the various operation, maintenance and capital costs were assigned to appropriate utility cost functions consistent with generally accepted rate-

Table II-2

ADJUSTED STATEMENT OF INCOME

Kaua'I Island Utility Cooperative

Item	Adjusted Test Year	Adjustments Required to Meet Cost of Service	Adjusted Test Year to Meet Cost of Service
Utility Service Revenues	$104,539,900	$9	$104,539,909
Other Operating Revenues	1,585,200	-	1,585,200
Total Operating Revenue	$106,125,100	$9	$106,125,109
Power Production Expense	$43,352,605		$43,352,605
Cost of Purchased Power	$1,935,700	$0	$1,935,700
Distribution Expense - Operation	1,272,203	-	1,272,203
Distribution Expense - Maintenance	1,705,397	-	1,705,397
Consumer Accounts Expense	1,525,502	-	1,525,502
Customer Service and Informational Expense	329,102	-	329,102
Sales Expense	317,300	-	317,300
Administrative and General Expense	9,306,800	-	9,306,800
Total Operation & Maintenance Expense	$60,337,312	$0	$16,392,004
Depreciation and Amortization Expense	$18,149,000	$0	$18,149,000
Tax Expense - Property & Gross Receipts	9,029,498	-	9,029,498
Interest on Long-Term Debt	9,120,200	-	9,120,200
Interest on Long-Credit	-	-	-
Interest Expense-Other	34,799	-	34,799
Other Deductions	62,100	-	62,100
Total Expenses	$96,732,909	-	$96,732,909
Patronage Capital or Operating Margins	$9,392,191	$9	$9,392,200
Non Operating Margins - Interest	$143,300	-	$143,300
Allowances for Funds Used During Construction	-	-	-
Incomes (Loss) from Equity Investments	-	-	-
Non Operating Margins - Other	-	-	-
G&T Capital Credits	-	-	-
Other Capital Credits and Patronage Dividends	22,300	-	22,300
Extraordinary items	-	-	-
Patronage Capital or Margins	$9,557,791	$9	$9,557,800
RUS TIER	2.05		2.05
Targeted RUS TIER	0.00		0.00
Modified TIER	2.05		2.05
Targeted Modified TIER	0.00		0.00
Operating TIER	2.03		2.03
Targeted Operating TIER	1.90		1.90

making principles. General guidelines contained in cost-of-service manuals of the National Association of Regulatory Commissioners and the American Public Power Association were taken into consideration in the assignment of the various cost items.

Once the adjusted revenue requirement was developed, the account-level costs were broken out into various functional activities, as shown in Table II-3. The functional activities shown are those selected by KIUC staff for inclusion in the analysis of its unbundled costs. Functional activities with dollar amounts shown represent those for which KIUC presently maintains separate identification in its accounting records. All activities with zero amounts represent activities KIUC indicated it does not presently account for separately. KIUC may or may not account for these items in the future. The dollar amounts shown in each account line include all the costs accounted for in the account, less the amounts broken out into other specific functional activities.

Description of Assignment Codes

Following the segmentation of the adjusted revenue requirement to specific activities, the next step was to allocate the revenue requirement to the various functional services provided by KIUC to its consumers. In order to perform these allocations, a series of codes were developed. Three functional service categories were developed: power supply, distribution, and consumer service. Within each of these categories, specific unbundled services were identified. These functional services and the codes used to label each one are shown in Table II-4. In addition to these functional service categories, KIUC requested that Burns & McDonnell develop stand-by rates based on unbundled costs associated with providing generation, distribution, and transmission services. These results are not provided in this report.

Assignment of Total Plant-In-Service

Prior to completion of the assignment of the adjusted revenue requirement, an analysis of KIUC's plant-in service was completed. This was necessary to complete the unbundling of costs. Table II-5 presents the results of this analysis and the assignment, or the unbundling, of the total adjusted plant-in-service to the functional services shown in Table II-4. Relative ratios of the amounts of plant-in-service assigned to each functional service, as shown in Table II-5, were used in the assignment of the adjusted revenue requirement.

Total plant-in-service for KIUC as of the end of the test year was $355,957,872. The breakdown of the plant-in-service by RUS plant account is in Table II-5. No adjustments were made to plant-in-service to reflect any significant capital projects.

The distribution plant accounts were assigned as follows: land and land rights, and structures and improvements were assigned, in a weighted manner, to the respective distribution-primary, distribution-

Table II-3

DESCRIPTION OF COST CATEGORIES
Kaua'I Island Utility Cooperative

Acct #	Account Name	FY2003 Totals	Adjustments	Adjusted FY2003 Totals
	STEAM PRODUCTION OPERATION EXPENSES			
500	Operation Supervision and Engineering	496,730	42,170	538,900
501	Fuel	-	-	-
502	Steam Expenses	628,349	53,451	681,800
505	Electric Expenses	-	-	-
506	Miscellaneous Steam Power Expenses	6,450	550	7,000
507	Rents	-	-	-
	STEAM PRODUCTION MAINTENANCE EXPENSES			
510	Maintenance Supervision and Engineering	143,532	12,268	155,800
511	Maintenance of Structures	122,408	10,492	132,900
512	Maintenance of Boiler Plant	344,676	29,324	374,000
513	Maintenance of Electric Plant	8,773	727	9,500
514	Maintenance of Miscellaneous Steam Plant	-	-	-
	HYDRO PRODUCTION OPERATION EXPENSES			
536	Water for Power	8,523	3,977	12,500
	HYDRO PRODUCTION MAINTENANCE EXPENSES			
543	Maintenance of Reservoirs, Dams, & Waterways	124,018	59,282	183,300
544	Maintenance of Electric Plant	65,074	31,126	96,200
	OTHER PRODUCTION OPERATION EXPENSES			
546	Operation Supervision and Engineering	311,547	149,053	460,600
547	Fuel	17,591,740	15,134,060	32,725,800
548	Generation Expenses	1,047,611	501,189	1,548,800
549	Misc Other Power Generation Expenses	462,100	221,100	683,200
550	Rents	3,208	292	3,500
	OTHER PRODUCTION MAINTENANCE EXPENSES			
551	Maintenance Supervision and Engineering	-7,930	7,930	-
553	Maintenance of Generation and Electric Plant	3,881,096	1,856,704	5,737,800
554	Maintenance of Misc Other Power Gen Plant	-	-	-
	PURCHASED POWER			
555	Purchased Power	15,840,722	-13,905,022	1,935,700
556	System Control and Dispatch	978	22	1,000
	TRANSMISSION OPERATION EXPENSES			
560	Operations Supervision And Engineering	4,260	340	4,600
561	Load Dispatching	-	-	-
562	Station Expenses	48,632	4,168	52,800
563	Overhead Line Expenses	12,663	1,137	13,800
564	Underground Line Expenses	-	-	-
566	Miscellaneous Transmission Expenses	183,772	15,628	199,400
567	Rents	10,301	899	11,200
	TRANSMISSION MAINTENANCE EXPENSES			
568	Maintenance Supervision and Engineering	1,514	86	1,600
569	Maintenance of Structures	-	-	-
570	Maintenance of Station Equipment	135,199	11,401	146,600
571	Maintenance of Overhead Lines	149,936	12,764	162,700
572	Maintenance of Underground Lines	-	-	-
573	Maintenance of Misc Transmission Plant	36	-36	-

Table II-3 | Page 2 of 3

DESCRIPTION OF COST CATEGORIES
Kaua'I Island Utility Cooperative

Acct #	Account Name	FY2003 Totals	Adjustments	Adjusted FY2003 Totals
	DISTRIBUTION OPERATION EXPENSES			
580	Operations Supervision And Engineering	5,511	589	6,100
581	Load Dispatching	-	-	-
582	Station Expenses	129,865	11,035	140,900
583	Overhead Line Expenses	77,808	6,592	84,400
584	Underground Line Expenses	4,821	379	5,200
585	Street Lighting Expenses	-	-	-
586	Meter Expenses	329,028	28,072	357,100
587	Consumer Installations Expenses	-	-	-
588	Miscellaneous Distribution Expenses	576,114	49,086	625,200
589	Rents	49,179	4,121	53,300
	DISTRIBUTION MAINTENANCE EXPENSES			
590	Maintenance Supervision And Engineering	2,857	243	3,100
591	Maintenance of Structures	1,262	38	1,300
592	Maintenance of Station Equipment	263,748	22,552	286,300
593	Maintenance of Overhead Lines	1,002,837	85,263	1,088,100
594	Maintenance of Underground Lines	253,882	21,718	275,600
595	Maintenance of Line Transformers	5,334	566	5,900
596	Maintenance of Street Lighting and Signal System	38,443	3,257	41,700
597	Maintenance of Meters	3,086	314	3,400
598	Maintenance of Miscellaneous Distribution Plant	-	-	-
	CONSUMER ACCOUNTS OPERATION EXPENSES			
901	Supervision	8,694	706	9,400
902	Meter Reading Expenses	283,207	24,093	307,300
903	Consumer Records And Collection Expenses	1,090,030	92,670	1,182,700
904	Uncollectible Accounts	23,990	2,110	26,100
905	Miscellaneous Consumer Accounts Expenses	-	-	-
	CONSUMER SERVICE AND INFORMATIONAL EXPENSES			
907	Supervision	243,252	20,748	264,000
908	Consumer Assistance Expenses	-	-	-
909	Informational and Instructional Advertising Expenses	21,859	1,841	23,700
910	Miscellaneouse Consumer Service and Informational Expenses	38,134	3,266	41,400
	SALES EXPENSES			
911	Supervision	292,395	24,905	317,300
912	Demonstrating and Selling Expenses	-	-	-
913	Advertising Expenses	-	-	-
914	Revenue From Merchandising	-	-	-
915	Member Service Expense and Cost Of Sales	-	-	-
916	Miscellaneous Sales Expenses	-	-	-
	ADMINISTRATIVE AND GENERAL OPERATION EXPENSES			
920	Administrative & General Salaries	2,479,248	576,152	3,055,400
921	Office Supplies And Expense	528,137	122,863	651,000
	Strategic Initatives	-	1,101,100	1,101,100

Table II-3 Page 3 of 3

DESCRIPTION OF COST CATEGORIES
Kaua'I Island Utility Cooperative

Acct #	Account Name	FY2003 Totals	Adjustments	Adjusted FY2003 Totals
922	Administrative Expenses Transferred - Credit	-	-	-
923	Outside Services Employed	339,346	78,854	418,200
924	Property Insurance	313,859	72,841	386,700
925	Injuries And Damages	292,656	68,044	360,700
926	Employee Pensions and Benefits	274,756	63,844	338,600
927	Franchise Requirements	-	-	-
928	Regulatory Commission Expenses	379,973	88,327	468,300
929	Duplicate Charges - Credit	-	-	-
930	General Advertising and Miscellaneous General Expenses	779,023	181,177	960,200
931	Rents	1,167,488	271,312	1,438,800
	ADMINISTRATIVE AND GENERAL MAINTENANCE EXPENSES			
935	Maintenance of General Plant	103,645	24,155	127,800
	DEPRECIATION AND AMORTIZATION			
403	Depreciation	14,493,037	1,462,263	15,955,300
406	Amortization	2,193,677	23	2,193,700
	OTHER EXPENSES			
408.1	Property Taxes	-	-	-
408.2	Payroll Taxes	-	-	-
408.3	Payroll Taxes	-	-	-
408.4	Payroll Taxes	-	-	-
408.6	Gross Receipts Tax	-	-	-
408.7	Taxes, Other	8,321,731	707,769	9,029,500
409	Income Taxes	-	-	-
425	Other Deductions	-	-	-
426	Other Deductions	62,124	-24	62,100
427.3	Interest Charged to Construction - Credit	-	-	-
428	Amortization of Debt Discount and Expense	-	-	-
429	Amortization of Premium on Debt - Credit	-	-	-
430	Interest on Debt to Associated Companies	-	-	-
431	Other Interest (Including on Deposits)	6,074,567	-6,039,767	34,800
	TOTAL OPERATING EXPENSE	84,174,521	3,438,179	87,612,700
	Interest on L-T Debt	8,882,188	238,012	9,120,200
	TOTAL EXPENSES	93,056,709	3,676,191	96,732,900

Table II-4

UNBUNDLED CODES
Kaua'I Island Utility Cooperative

1. Power Supply	
Demand	kW
Energy	kWh
Transmission Access	ACC
2. Distribution	
Distribution - Primary	DIS-P
Distribution - Secondary	DIS-S
Street & Signal Lighting	SSL
3. Consumer	
Consumer Service - Primary	CONS-P
Consumer Service - Secondary	CONS-S

Table II-5

PLANT-IN-SERVICE

Kaua'I Island Utility Cooperative

Account Number	Item	2004 Balance End of Year	2005 Balance End of Year	2006 Balance End of Year	2007 Balance End of Year	Average 05-07 End-of-Year Balance	kW	kWh	ACC	DIS-P	DIS-S	SSL	CONS-P	CONS-S
360	Land and Land Rights	$256,436	$256,436	$256,436	$256,436	$256,436	$0	$0	$0	$153,861	$51,287	$0	$5,129	$46,158
361	Structures and Improvements	312,683	312,683	312,683	312,683	312,683	-	-	-	187,610	62,537	-	6,254	56,283
362	Station Equipment	9,503,565	11,197,758	11,165,051	11,132,345	10,893,588	-	-	-	10,893,588	-	-	-	-
363	Storage Battery Equipment	-	-	-	-	-	-	-	-	-	-	-	-	-
364	Poles, Towers, and Fixtures	34,277,254	34,117,354	33,957,554	33,797,654	34,037,454	-	-	-	9,665,749	7,352,978	-	9,665,749	7,352,978
365	Overhead Conductors and Devices	32,550,579	33,330,825	33,378,770	33,433,316	33,233,848	-	-	-	9,437,545	7,179,378	-	9,437,545	7,179,378
366	Underground Conduit	4,794,375	5,254,141	5,713,907	6,173,673	5,484,024	-	-	-	175,523	2,566,489	-	175,523	2,566,489
367	Underground Conductor & Devices	14,003,578	13,781,217	13,558,857	13,336,496	13,670,037	-	-	-	437,527	6,397,492	-	437,527	6,397,492
368	Line Transformers	21,701,125	22,034,859	22,368,593	22,702,327	22,201,726	-	-	-	-	-	-	-	22,201,726
369	Services	4,959,853	4,995,686	5,032,818	5,071,151	5,014,668	-	-	-	-	-	-	50,147	4,964,522
370	Meters	7,039,634	7,052,882	7,089,930	7,138,878	7,077,356	-	-	-	-	-	-	70,774	7,006,583
371	Installation on Consumers Premises	-	-	-	-	-	-	-	-	-	-	-	-	-
372	Leased Prop. On Consumers Premises	-	-	-	-	-	-	-	-	-	-	-	-	-
373	Street Lighting	2,501,480	2,229,045	1,956,610	1,684,175	2,092,828	-	-	-	-	-	2,092,828	-	-
	Total Distribution Plant	$131,900,562	$134,562,886	$134,791,210	$135,039,134	$134,274,648	$0	$0	$0	$30,951,403	$23,610,161	$2,092,828	$19,848,647	$57,771,609
389	Land and Land Rights	$216,685	$216,685	$216,685	$216,685	$216,685	$82,526	$0	$47,083	$20,072	$15,311	$1,357	$12,872	$37,464
390	Structures and Improvements	9,496,473	9,496,473	9,496,473	9,496,473	9,496,473	3,616,793	-	2,063,482	879,665	671,021	59,480	564,115	1,641,918
391	Office Furniture & Equipment	4,528,558	4,856,327	5,138,597	5,440,866	4,993,212	1,901,697	-	1,084,972	462,525	352,820	31,274	296,610	863,314
392	Transportation Equipment	2,190,227	2,278,253	2,359,779	2,470,306	2,322,766	884,640	-	504,712	215,159	164,127	14,548	137,978	401,601
393-395	Stores, Tools, Shop, Garage, and Lab Equipment	1,882,015	2,045,515	2,236,515	2,407,515	2,142,265	815,895	-	465,491	198,439	151,372	13,418	127,256	370,393
396	Power - Operated Equipment	211,192	211,192	211,192	211,192	211,192	80,434	-	45,890	19,563	14,923	1,323	12,545	36,515
397	Communication Equipment	1,247,124	1,471,292	1,705,259	1,946,727	1,591,159	606,003	-	345,742	147,390	112,431	9,966	94,519	275,108
398	Miscellaneous Equipment	372,685	638,885	905,085	1,176,285	772,818	294,333	-	167,925	71,587	54,607	4,840	45,907	133,618
399	Other Tangible Property	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total General Plant	$20,144,959	$21,214,622	$22,269,585	$23,366,048	$21,746,570	$8,282,321	$0	$4,725,297	$2,014,400	$1,536,612	$136,207	$1,291,803	$3,759,930
301-303	Intangibles	$73,629	$73,629	$73,629	$73,629	$73,629	$28,042	$0	$15,999	$6,820	$5,203	$461	$4,374	$12,730
350,359	Land and Land Rights, Roads and Trails	576,538	576,538	576,538	576,538	576,538	-	-	576,538	-	-	-	-	-
352	Structures and Improvements	274,702	274,702	274,702	274,702	274,702	-	-	274,702	-	-	-	-	-
353	Station Equipment	18,894,831	20,476,969	22,789,106	24,625,243	21,675,371	-	-	21,675,371	-	-	-	-	-
354,355	Towers and Fixtures and Poles and Fixtures	29,283,500	30,757,343	30,882,187	31,642,031	30,700,765	-	-	30,700,765	-	-	-	-	-
356	Overhead Conductors & Devices	15,971,307	17,277,615	17,726,622	18,000,330	17,330,019	-	-	17,330,019	-	-	-	-	-
357	Underground Conduit	-	-	-	-	-	-	-	-	-	-	-	-	-
358	Underground Conductors & Devices	584,900	2,339,600	2,339,600	2,339,600	2,047,150	-	-	2,047,150	-	-	-	-	-
	Total Transmission Plant	$65,659,407	$71,776,396	$74,662,384	$77,532,073	$72,678,173	$28,042	$0	$72,620,543	$6,820	$5,203	$461	$4,374	$12,730
310-316	Production Plant - Steam	20,811,953	22,518,967	26,072,981	27,814,495	24,301,724	24,301,724	-	-	-	-	-	-	-
320-325	Production Plant - Nuclear	-	-	-	-	-	-	-	-	-	-	-	-	-
330-336	Production Plant - Hydro	671,646	765,446	859,246	1,109,246	838,379	838,379	-	-	-	-	-	-	-
340-346	Production Plant - Other	101,786,761	102,046,171	102,180,582	102,469,992	102,118,377	102,118,377	-	-	-	-	-	-	-
	All Other Utility Plant	-	-	-	-	-	-	-	-	-	-	-	-	-
107	Construction Work in Progress	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total Utility Plant	$340,975,288	$352,884,487	$360,835,989	$367,330,989	$355,957,872	$135,568,843	$0	$77,345,840	$32,972,624	$25,151,976	$2,229,495	$21,144,823	$61,544,270

secondary, consumers-primary, and consumers-secondary functions. Station equipment was assigned to the distribution primary function. Poles, towers, and fixtures, overhead conductors and devices, underground conduit, and underground conductors and devices were assigned to the distribution–primary, distribution–secondary, consumers- primary and consumers-secondary functions. Line transformers were assigned to the consumer–secondary function. Services and meters were assigned to the consumers–primary and consumers–secondary functions. Street lighting was assigned to the street and signal lighting function.

The general plant accounts were assigned in a manner similar to that discussed for the distribution accounts. First, a plant ratio was developed based on the relationships of the distribution, production, and transmission plant assigned to each functional service. This ratio was used to assign the land and land rights, structures and improvements, stores, tools, shop, garage, and lab equipment, power-operated equipment, communications equipment, and miscellaneous equipment plant. The accounts were assigned between the following five functional areas: demand, transmission access, distribution, street and signal lighting, and consumer. The amounts assigned to the distribution and consumer functional services were further split between primary and secondary functions based on the relative line mileage of the primary and secondary systems.

The transmission plant accounts were primarily allocated to the transmission access function. The production plant accounts were allocated to the demand function.

Assignment of Adjusted Revenue Requirement

KIUC's costs of providing electric utility service, as reflected in the adjusted test year revenue requirement, were assigned through the application of various assignment factors and direct assignments to the utility service functions provided by KIUC as identified in Table II-4. The further assignment of costs between primary and secondary for a particular function were based on the ratios of primary line miles and secondary line miles to total line miles.

The assignment of each of the various cost components included in the adjusted test year revenue requirement is described below. Table II-6 shows the breakdown of KIUC's adjusted test year costs for the specific functional activities within the general utility cost categories. The cost areas included were power costs, transmission operations expenses, transmission maintenance expenses, distribution operations expenses, distribution maintenance expenses, consumer accounts operations expenses, sales expenses, administrative and general operations expenses, administrative and general maintenance expenses, depreciation, taxes and other, total interest and operating margins, and other operating revenue.

Table II-6

SUMMARY OF ASSIGNMENTS
Kaua'I Island Utility Cooperative

	FY2003 Totals	Adjustments	Adjusted FY2003 Totals	kW	kWh	ACC	DIS-P	DIS-S	SSL	CONS-P	CONS-S
Power Costs	$41,079,605	$4,208,695	$45,288,300	$10,625,800	$34,661,500	$1,000	$0	$0	$0	$0	$0
Transmission Operations Expenses	259,628	22,172	281,800	-	-	281,800	-	-	-	-	-
Transmission Maintenance Expenses	286,685	24,215	310,900	-	-	310,900	-	-	-	-	-
Distribution Operations Expenses	1,172,326	99,874	1,272,200	-	-	-	575,800	157,600	-	41,400	497,400
Distribution Maintenance Expenses	1,571,449	133,951	1,705,400	-	-	-	606,800	364,900	41,700	317,900	374,100
Consumer Accounts Operations Expenses	1,405,921	119,579	1,525,500	-	-	-	-	-	-	15,000	1,510,500
Consumer Service And Informational Expenses	303,245	25,855	329,100	-	-	-	-	-	-	16,500	312,600
Sales Expenses	292,395	24,905	317,300	-	-	-	-	-	-	15,900	301,400
Administrative And General Operations Expenses	6,554,486	2,624,514	9,179,000	2,176,400	3,064,500	758,200	405,400	275,700	24,000	237,000	2,237,700
Administrative And General Maintenance Expenses	103,645	24,155	127,800	34,500	55,900	10,900	6,100	4,100	400	3,300	12,700
Depreciation	16,686,714	1,462,286	18,149,000	6,912,200	-	3,943,600	1,681,200	1,282,400	113,700	1,078,100	3,137,900
Taxes & Other	14,458,422	(5,332,022)	9,126,400	2,456,000	3,978,500	773,500	436,400	289,400	25,100	231,800	935,700
Total Interest & Op. Margins	15,010,734	3,501,666	18,512,400	7,050,600	-	4,022,500	1,714,800	1,308,100	115,900	1,099,700	3,200,700
Other Op. Revenue	(2,335,244)	750,044	(1,585,200)	(407,400)	(567,500)	(142,900)	(76,100)	(51,900)	(4,500)	(112,300)	(222,600)
Cost of Service	$96,850,011	$7,689,889	$104,539,900	$28,848,100	$41,192,900	$9,959,500	$5,350,400	$3,630,300	$316,300	$2,944,300	$12,298,100

Power supply costs were assigned to the demand, energy, and transmission access functions. Transmission operations and maintenance expenses were allocated to the transmission access function.

Distribution operations expenses associated with operations supervision and engineering were assigned between the distribution and consumer functions. They were further split into the distribution-primary, distribution-secondary, consumers-primary and consumers-secondary functions based on primary and secondary line miles. Overhead line and underground line expenses were assigned to the distribution-primary, distribution-secondary, consumers-primary, and consumers-secondary functions based on primary and secondary line miles. Meter expenses and consumer installation expenses were assigned to the consumers-primary and consumers-secondary functions. Miscellaneous distribution expenses were assigned to the distribution-primary, distribution-secondary, consumers-primary, and consumers-secondary functions. Rent expense was assigned to the distribution-primary, distribution-secondary, consumers-primary, and consumers-secondary functions.

The distribution maintenance expenses were assigned in a manner similar to that described above. Maintenance supervision and engineering expenses as well as maintenance of structures were assigned to both the distribution and consumer functions. Maintenance of station equipment was assigned to the distribution primary function. Maintenance expenses for overhead lines and underground lines were assigned to the distribution primary, distribution secondary, consumers-primary, and consumers-secondary functions based on primary and secondary line miles. Maintenance of line transformers was assigned to the consumers-secondary functions. Maintenance of street lighting and signal systems was assigned to the street & signal lighting function. Maintenance of meters was assigned to the consumers-primary and consumers-secondary functions.

The consumer accounts operations expenses were assigned to the consumer function. Supervision, meter reading expenses, and consumer records and collections expenses where allocated to the consumer-primary and consumer-secondary functions. Uncollectible accounts were assigned directly to the consumer secondary function.

The consumer service and information expenses were assigned to both the consumer primary and consumer secondary functions.

The administrative and general operations expenses were assigned to the five following functions: demand, transmission access, distribution, street and signal lighting, and consumer. Administrative and general salaries, office supplies and expense, strategic initiatives, outside services employed, employees' pensions and benefits and rents where allocated between all the various functions based on the preliminary cost-of-service ratio. Property insurance and injuries and damages where allocated between the same functions listed above but were based on the plant-in-service ratio. Regulatory commission expense as well as general advertising and miscellaneous general expense were allocated to the consumer-primary and consumer-secondary functions.

The administrative and general maintenance expenses were allocated to the demand, transmission access, distribution, street and signal lighting, and consumer functions. These allocations were based on the preliminary cost-of-service ratio.

Depreciation of the distribution, transmission, production and general plant was allocated to the demand, transmission access, distribution, street and signal lighting, and consumer functions. These allocations were based on the preliminary cost-of-service ratio.

Other expenses were assigned as follows. Tax expenses and other deductions were allocated to the demand, transmission access, distribution, street and signal lighting, and consumer functions based on the preliminary cost-of-service ratio. Interest on deposits was allocated to the consumer-primary and consumer-secondary functions. At this point in the analysis two additional ratios were developed, the preliminary cost-of-service ratio and the preliminary non-power supply cost-of-service ratio. These ratios were developed by adding the costs assigned to each of the functional categories and dividing by the total costs. They exclude payroll and gross receipts taxes, required margins, and interest on long-term debt.

Required margins and patronage capital, non-operating margins, and interest on long term debt were assigned based on the plant in service ratio.

Other revenues from miscellaneous services were assigned to the consumer primary and consumer secondary functions. Rent revenue from electric property was assigned based on the plant in service ratio. Other electric revenues were assigned based on the cost-of-service ratio.

ALLOCATION OF COSTS

Following the assignment of the plant-in-service, and the various components of the adjusted test year revenue requirement to the utility functional services, the functionalized revenue requirement was further allocated to KIUC's consumer classifications. The resulting allocated costs were used to measure the equity of the existing rates in recovering the utility's adjusted test year revenue requirement among the classes and to determine what changes to the revenue recovered from each class are warranted.

Consumer Classifications

KIUC currently utilizes separate rate classifications as discussed in Part I of this report, according to the various rate code classifications provided by KIUC as follows:

- Residential (D)
- Employees (D)
- General L&P (G)
- General L&P (J)
- Large Power (L)
- Large Power (P)
- Street Light (SL)
- Irrigation

No changes were made to the classifications of consumers for allocating the cost of service. For purposes of setting rates, consumers with similar load and service characteristics (e.g., utility equipment required to serve, size of load, load factor, etc.) should be grouped into the same rate class. It was assumed that the existing classes adequately reflected the different consumer load profiles on KIUC's system and that the consumers were properly classified during the test year.

As mentioned above, in order to develop the allocations of the system revenue requirement, data for KIUC's consumer classes at the individual consumer level for the test year (FY 2003) was acquired from KIUC. Summaries of the data obtained were provided by consumer classifications and included monthly number of consumers, energy usage, and revenue information. Demand information was provided for all demand-metered consumers, regardless of the consumer class and whether or not that class is currently billed based on demand levels. Un-metered street lighting usage was based on estimates prepared by KIUC. The consumption data was summarized by the consumer classifications identified and was used in determining the allocation of costs among the classifications.

Allocation Factors

The data described above was used to develop a series of allocation factors. The functionalized costs were allocated as energy-related, demand-related, or consumer-related costs.

Energy Allocation: An energy allocation factor was developed to use in the allocation of all energy related expenses. Based on the consumer energy data discussed above, total energy sales, including calculated street lighting use, for FY 2003 were 431,315 MWh. Total energy requirements (including losses) for FY 2003 were 453,876 MWh. Energy sales were increased to 465,859 MWh to reflect the expected average 2005 - 2007 energy sales. The total energy requirements were then increased to 491,357 MWh to recognize the projected 6 percent system losses.

The adjusted system energy requirements were spread proportionately to each class. System losses were assumed to occur evenly between three stages, from power supply delivery to transmission voltage, from transmission voltage to primary distribution voltage, and from primary distribution voltage to secondary distribution voltage. Therefore, consumer groups receiving service at primary voltage were assumed to not share in secondary distribution system losses. The related energy sales projections were factored only for the appropriate share of the primary level losses. The ratios of the resulting estimated contributions of each class to the adjusted total system energy requirements formed the energy allocation factors. These allocation factors are shown in Table II-7.

Demand Allocation: The allocation of system demand was a more complex issue than the allocation of energy requirements. This was true for two reasons. First, the normal operation of an electric utility does not require maintaining the same amount of demand-related data as it does energy-related data. Therefore, there was less of data from which to work with. The second reason is that there are a variety of methodologies that may be used in allocating the demand costs of an electric utility.

Demand Methodology: The power supply demand-related costs of KIUC were allocated using the annual coincident peak (CP) responsibility method and all other demand-related costs were allocated using the non-coincident peak demand (NCP) method.

KIUC currently has hourly demand recorders installed on a few of its largest customers and demand meters installed on customers in the medium commercial, large commercial, primary metered, and industrial classes. Ideally, hourly load profile information would be available for all of KIUC's customers, from which accurate coincident and non-coincident demand data could be obtained. However, placing hourly load data recorders on every customer's premise would be cost prohibitive for KICU. KIUC could install interval demand recorders on a sample group of customers within each rate classification. If data is compiled from a statistically valid sample of each classification, then load profile results obtained from each sample could be analyzed and applied to entire classes.

Table II-7

ALLOCATION FACTORS
Kaua'I Island Utility Cooperative

Description	Total System	Residential (D)	Employees (D)	General L&P (G)	General L&P (J)	Large Power (L)	Large Power (P)	Street Light (SL)	Irrigation	Allocation Code
Energy Allocations:										
Total Energy Requirement	491,356,600	169,904,100	1,465,555	67,562,257	60,192,484	68,459,660	117,946,503	2,575,776	3,250,266	
	1.000	0.346	0.003	0.138	0.123	0.139	0.240	0.005	0.007	A
Demand Allocations:										
Contribution to Power Supply Billing Peak	79,500	30,915	267	12,293	10,632	7,736	17,295	N/A	361	
Coincident System Peak Alloc. Factor	1.000	0.389	0.003	0.155	0.134	0.097	0.218	0.000	0.005	B
Non-Coincident Maximum System Demand	158,675	64,555	557	25,670	20,183	11,754	28,141	405	7,410	
Transmission NCP Allocation Factor	1.000	0.407	0.004	0.162	0.127	0.074	0.177	0.003	0.047	C
Non-Coincident Maximum Primary Demand	153,185	62,322	538	24,782	19,485	11,347	27,168	391	7,153	
Primary NCP Allocation Factor	1.000	0.407	0.004	0.162	0.127	0.074	0.177	0.003	0.047	D
Non-Coincident Maximum Secondary Demand	139,093	61,116	527	24,303	19,108	N/A	26,642	383	7,015	
Secondary NCP Allocation Factor	1.000	0.439	0.004	0.175	0.137	0.000	0.192	0.003	0.050	E
Customer Allocations:										
Number of Customers	34,273	25,901	179	4,458	378	20	132	3,201	4	
Customer Allocation Factor	1.000	0.756	0.005	0.130	0.011	0.001	0.004	0.093	0.000	F
Relative Weight	0.00	1.00	1.00	1.00	1.25	2.00	2.00	0.04	3.50	
Weighted No. of Customers	31,442	25,901	179	4,458	473	40	264	113	14	
Wtd. Customer Allocation Factor	1.000	0.824	0.006	0.142	0.015	0.001	0.008	0.004	0.000	G

To allocate the demand-related power supply costs to the various consumer classes of KIUC, estimates of each consumer class's contribution to KIUC's power supply billing demand were developed. Similarly, for the non-power-supply demand costs, estimates of each consumer class's non-coincident distribution system peak were required.

Monthly maximum demand data for KIUC's demand-metered consumers was provided by KIUC in detailed billing history files. The billing data for the demand-metered classes contained the monthly, metered maximum demands, as well as the monthly billed demands for each consumer.

Demand Analysis: For KIUC's demand-metered customers, actual billing demand data provided by KIUC was used to determine the class's non-coincident demands. The coincident demand factors and thus contributions to the system peak demand were estimated based on data provided by KIUC.

Load profile data for six customers was provided. Three of the customers' data was in Excel and three of the customers' data was in PDF format. These files included customers assumed to be representative of all non-residential classifications. KIUC also provided identification of the customer number, rate classification, energy sales and billing demand by month since January 2003 for each of these customers. Since the data in the Excel files did not include the period in which the system peak demand was established for 2003 (October 23), Burns & McDonnell looked at the system peak (within the period for which data was available) and determined the contribution to that system peak. Burns & McDonnell also determined the maximum demand occurring during that period from which a coincidence factor was calculated. This coincidence factor was applied to the maximum billing demand for 2003 from the billing data provided to determine the customer's contribution to the system peak demand. The PDF files for the other three customers contain graphs of the load profile for a short period of time. Determination of peak demand was estimated from the graphs. The peak hour from 2003 for the corresponding month was used in estimating the coincident peak demands from the graphs. The resulting coincidence factors were applied to the maximum billing demand for 2003 from the billing data provided to determine the customer's contribution to the system peak demand.

For KIUC's non-demand metered customers, load research data along with assumptions provided by KIUC were utilized to estimate the coincident and non-coincident contributions to the system supply billing demands.

Historical load profile information was available from Burns & McDonnell's files from other similar projects for the following consumer classifications: residential small commercial, large commercial, industrial, and irrigation. This data provided monthly average energy consumption per consumer, average coincident peak demand per consumer, and average non-coincident peak demand per consumer for each classification. The energy and demand data was used to calculate load factors for each of the strata in the sample (both coincident and non-coincident). The data obtained was assumed to be reasonably representative of the load profiles of KIUC's various classes of consumers.

For each rate classification, the number of consumers was stratified based on the strata used in the load research data. Estimated load factors for each classification were developed based on weighted averages of the stratified data. In addition, ranges of load factors were developed based on the maximums and minimums derived from the limited load research data. From this analysis, the following information was determined for each general consumer classification:

- Estimated load factors for peak demand coincident with the power supplier's peak demand
- A range of estimated load factors for peak demand coincident with the power supplier's peak demand
- Estimated load factors for peak demand non-coincident with the levelized power supplier's peak demand
- A range of estimated load factors for peak demand non-coincident with the levelized power supplier's peak demand

The load factors developed for each of the consumer groups represented in the load data reflected the respective contributions to the system billing demands. These load factors provided the basis to estimate the contributions of each of the system's consumer classifications to the demand portion of the overall annual power supply costs.

For the non-demand-metered consumers, the non-coincident and coincident peak demand load factors provided by KIUC and cross checked against those developed in the analysis were applied to the allocated energy requirements, resulting in the estimated contributions to the non-coincident and coincident peak demand of each class.

For street lighting, the number of each type of lamp multiplied by the respective wattage represented the total estimated contribution to peak demand. Non-coincident demands for these classes were estimated based on the wattage of the lamps and the number of lamps for each wattage, as provided by KIUC. The numbers of each type of lamp multiplied by their respective wattage represented the total estimated non-coincident peak demands for the class.

The billing history information for the test year provided by KIUC for its demand-metered consumers was used for determining each class's non-coincident maximum demands.

Demand Allocation Factors: The ratios of each class's contribution to KIUC's levelized billing demands were developed as the factors to be used in allocating power supply demand costs for the levelized billing demand component.

The maximum non-coincident demands for each class and individual consumer were used to formulate additional allocation factors for non-power supply costs. The non-coincident demands for each class served at secondary distribution voltage were summed and the ratios of each class's demand to the total were calculated. These factors provided the means to allocate demand costs related to the secondary distribution system. Since consumers that take service at primary voltage do not benefit from the secondary distribution system, none of the costs of the secondary distribution system were allocated to those consumer classifications.

The non-coincident demands for the secondary service classes were also restated at the primary distribution system level by factoring them for assumed losses from primary to secondary distribution voltages. At that level, the non-coincident demands for the classes and individual consumers that receive service at primary voltage were added. The sum of the non-coincident demands for all classes and consumers at the primary distribution level served as the basis for calculating the allocation factors applicable to demand costs related to the primary distribution system. The demand allocation factors are shown in Table II-7.

Consumer Allocation: Two consumer allocation factors were developed to allocate the costs of consumer service among the classifications. One factor was based on the number of consumers in each class at the end of the test year. The other factor was based upon a relative weighting assumption for each consumer class. Relative weights were determined to reflect differences between the efforts and costs required to provide consumer services to different types or classes of consumers. The relative weight of a residential consumer was assumed to be one (1.0). All other classes were weighted relative to the comparative cost of serving a residential consumer. Any consumer class that was assumed to require more cost in meter reading, billing, communicating, etc., than a residential consumer would be assigned a relative weight greater than 1.0. Likewise, any class that was assumed to require less cost to serve was assigned a weight of less than 1.0. The number of consumers for each classification was multiplied by the relative weight factor to calculate the weighted number of consumers in each class. The ratios of the weighted number of consumers for each class to the total weighted number of consumers for the system represented the weighted consumer allocation factor. These consumer allocation factors are shown in Table II-7.

Summary of Allocation Factors: As has been mentioned, a summary of each of the allocation factors is presented in Table II-7. The allocation codes at the right of the table identify the allocation factors used to allocate the functionalized costs included in KIUC's adjusted test year revenue requirement. Allocation Code A was used to allocate all energy-related costs. It was calculated by dividing each classification's energy requirement, determined as described above, by KIUC's total energy requirements.

Allocation Factors B, C, D, and E were used to allocate the coincident and non-coincident demand-related costs. Allocation Factor B reflected each classification's estimated contribution to KIUC's levelized system power supply peak, determined as described above. This allocation factor was used to distribute power supply demand expenses incurred at the system level. Allocation Factor C provided for the allocation of the non-coincident demand at the transmission level. This allocation factor was developed to distribute non-power supply demand expenses at the transmission level. Allocation Factor D provided for the allocation of the non-coincident primary demand. This allocation factor was used to distribute non-power supply demand expenses incurred at the primary level. Allocation Factor E provided for the allocation of the non-coincident secondary demand. This allocation factor was used to distribute non-power supply demand expenses incurred at the secondary level.

The first consumer allocation factor, Allocation Code F was developed as indicated above to use in the allocation of consumer service costs. A second consumer allocation factor, Allocation code G, was developed based on the ratios of the 'non-weighted' number of consumers in each class (excluding the lighting consumers) to the total number of consumers.

Cost Allocation

The KIUC adjusted revenue requirement, which was assigned to the various utility cost functions in Table II-6, was allocated to the appropriate consumer classifications using the allocation factors described above. Because not all consumers affect KIUC's costs in the same manner, different allocation factors were used for allocating different types of costs. For example, each classification's share of the production and purchased power energy expense was based upon that classification's energy requirements. Therefore, Allocation Factor A was used to allocate that cost. In a similar manner, all operating costs and investment costs were allocated. The summary of the allocation of the functionalized costs to the various classes is shown in Table II-8.

Table II-9 summarizes the total allocated revenue requirement by consumer classification. The results have been broken down into energy-related costs, expressed in $ per kWh; demand-related costs expressed in dollars and dollars per coincident kW of system peak demand per month; and consumer-related costs expressed in dollars per consumer per month. Also, the total cost is expressed in $ per kWh. Revenue that would be generated by existing rates was compared with the allocated cost of service for each class. The revenue generated by existing rates was calculated from the historical data provided by KIUC, adjusted for the assumed load growth.

Table II-8

SUMMARY BY UNBUNDLED CODE
Kaua'I Island Utility Cooperative

Description/ Unbundled Code	Total System	Residential (D)	Employees (D)	General L&P (G)	General L&P (J)	Large Power (L)	Large Power (P)	Street Light (SL)	Irrigation	Allocation Code
Power Supply										
kW	$28,848,100	$11,218,186	$96,766	$4,460,905	$3,858,149	$2,807,027	$6,275,920	$0	$131,147	B
kWh	41,192,900	14,243,917	122,865	5,664,084	5,046,239	5,739,318	9,888,050	215,940	272,486	A
ACC	9,959,500	4,051,911	34,951	1,611,240	1,266,845	737,738	1,766,344	25,393	465,078	C
Distribution										
DIS-P	$5,350,400	$2,176,751	$18,776	$865,583	$680,569	$396,324	$948,908	$13,641	$249,847	D
DIS-S	3,630,300	1,595,102	13,759	634,291	498,715	-	695,351	9,996	183,086	E
SSL	316,300	239,036	1,652	41,142	3,489	185	1,218	29,542	37	F
Consumer										
CONS-P	$2,944,300	$2,423,262	$16,747	$417,084	$44,117	$3,723	$24,575	$13,491	$1,300	G
CONS-S	12,298,100	10,089,189	69,726	1,736,520	182,359	15,223	100,471	99,338	5,274	G
Total Cost of Service	$104,539,900	$46,037,354	$375,241	$15,430,850	$11,580,483	$9,699,538	$19,700,835	$407,341	$1,308,256	

Table II-9

SUMMARY OF COST OF SERVICE
Kaua'I Island Utility Cooperative

Description	Total System	Residential (D)	Employees (D)	General L&P (G)	General L&P (J)	Large Power (L)	Large Power (P)	Street Light (SL)	Irrigation
Energy Cost:									
Energy Sales (kWh)	465,858,900	160,611,600	1,385,400	63,867,100	56,900,400	66,091,300	111,495,700	2,434,900	3,072,500
Total Cost	41,192,900	14,243,917	122,865	5,664,084	5,046,239	5,739,318	9,888,050	215,940	272,486
Cents/kWh	8.84	8.87	8.87	8.87	8.87	8.68	8.87	8.87	8.87
Demand Cost:									
Contribution to Peak (kW)	79,500	30,915	267	12,293	10,632	7,736	17,295	N/A	361
Total Cost	47,788,300	19,041,951	164,252	7,572,019	6,304,279	3,941,089	9,686,522	49,030	1,029,159
$/kW-mo	50.09	51.33	51.33	51.33	49.41	42.46	46.67	0.00	237.30
Customer Service:									
Number of Customers	34,273	25,901	179	4,458	378	20	132	3,201	4
Total Cost	15,558,700	12,751,487	88,125	2,194,746	229,965	19,131	126,264	142,371	6,612
$/Customer/Month	37.83	41.03	41.03	41.03	50.70	79.71	79.71	3.71	137.74
Total Cost:									
Dollars	104,539,900	46,037,354	375,241	15,430,850	11,580,483	9,699,538	19,700,835	407,341	1,308,256
Cents/kWh	22.44	28.66	27.09	24.16	20.35	14.68	17.67	16.73	42.58
Comparison of Revenues;									
Revenue Requirement	104,539,900	46,037,354	375,241	15,430,850	11,580,483	9,699,538	19,700,835	407,341	1,308,256
Gen. by Existing Rates	104,539,900	37,402,600	206,100	15,761,200	12,638,500	13,422,700	23,855,100	889,300	364,400
Dollar Difference	0	8,634,754	169,141	(330,350)	(1,058,017)	(3,723,162)	(4,154,265)	(481,959)	943,856
Rate Increase Required	0.0%	23.1%	82.1%	-2.1%	-8.4%	-27.7%	-17.4%	-54.2%	259.0%

PART III
CONCLUSIONS AND RECOMMENDATIONS

PART III
CONCLUSIONS AND RECOMMENDATIONS

The allocated unbundled cost-of-service analysis completed on behalf of Kaua'i Electric Cooperative by Burns & McDonnell provides KIUC with an effective assessment of the financial condition of its operations. The allocated cost of service for KIUC's various rate classifications indicated that there were significant variations in the rate increase/decrease among the consumer classifications to meet the allocated cost of service. Table III-1 on the following page summarizes the revenue generated by existing rates, by class, as compared to the allocated revenue requirements resulting from the cost-of-service analysis. The difference between the two figures for each class represents the rate increase/decrease required to recover the cost of service for each consumer classification. This information should be used as a guide for adjusting rates to move towards a cost of service rate structure without any cross-class subsidizing.

From the results of the analysis completed by Burns & McDonnell, it is recommended that:

1. KIUC should consider adjusting rates to move toward cost of service for the various rate classes currently served. KIUC should also evaluate the potential implementation of unbundled rates on a class specific basis and consider other rate structure alternatives.

2. The adjusted revenue requirement and allocated unbundled cost-of-service analysis should be re-evaluated regularly, to ensure full cost recovery and proper responses to changing rate pressures in the allocation of cost responsibility among the consumer classes. This effort will be aided by the use of the cost-of-service model developed by Burns & McDonnell on KIUC's behalf.

3. KIUC should develop and implement a load data acquisition program for the electric utility to obtain information regarding the demand and energy consumption characteristics for all of KIUC's retail consumer classifications. In particular, this would include implementation of hourly demand recording equipment on statistically valid samples of residential and small commercial consumer groups not currently monitored.

Table III-1

SUMMARY COMPARISON OF EXISTING REVENUE AND ADJUSTED REVENUE REQUIREMENT
Kauai Island Utility Cooperative

Rate Class	Existing Rates	Adjusted Revenue Requirement	Dollar Difference	Rate Change Required (Percent)
Residential (D)	$37,402,600	$46,037,354	$8,634,754	23.1%
Employees (D)	206,100	375,241	169,141	82.1%
General L&P (G)	15,761,200	15,430,850	(330,350)	(2.1%)
General L&P (J)	12,638,500	11,580,483	(1,058,017)	(8.4%)
Large Power (L)	13,422,700	9,699,538	(3,723,162)	(27.7%)
Large Power (P)	23,855,100	19,700,835	(4,154,265)	(17.4%)
Street Light (SL)	889,300	407,341	(481,959)	(54.2%)
Irrigation	364,400	1,308,256	943,856	259.0%
	$104,539,900	$104,539,900	$0	0.0%

In the preparation of this report, the information provided to us by KIUC and other sources was used by Burns & McDonnell to make certain assumptions with respect to conditions that may exist in the future. While we believe the assumptions made are reasonable for the purposes of this report, we make no representation that the conditions assumed will, in fact, occur. In addition, while we have no reason to believe that the information provided to us by KIUC and other parties, and on which we have relied, is inaccurate in any material respect, we have not independently verified such information and cannot guarantee its accuracy or completeness. To the extent that actual future conditions differ from those assumed herein or from the information provided to us, the actual results will vary from those projected.

* * * * *

APPENDIX A

APPENDIX A
LIST OF BASIC DATA PROVIDED BY KIUC

- June 1, 2004 Version of KIUC Equity Management Plan
- KIUC 2003 Audit Prepared by KMH, LLP
- KIUC Integrated Resource Plan Prepared by LCG in 2003
- KIUC Tariffs issued October 29, 2002
- KIUC Form 7 and Form 12 for Period Ended 12/31/2003
- KIUC 2003 Annual Report to the PUC
- KIUC Trial Balances 12/31/2002 and 12/31/2003
- KIUC 2004 Capital Budget Summary
- KIUC 2004 R00 Budget
- KIUC Plant-In-Service 12/31/2002 and 12/31/2003
- KIUC Five Year Construction Program 12/29/2003
- JUYC Accumulated Depreciation Summary 12/31/2003
- Miles of Pole Lines 12/31/2003
- ERAC Fuel Prices KIUC 1/996 – 7/2004
- KIUC (Citizens) Generation Summary 2003, 2002, 2001, 2000
- Production Summary 2003, 2002, 2001
- 2003 KIUC Load Shape
- 10 Year Sales Forecast from Equity Management Plan Dated 6/1/2004
- ERAC Residential Rate 01/01/1990 to 07/01/2004
- KIUC kWh and Dollar Sales 12/31/2003
- KIUC Number of Meters and Consumers 12/31/2003
- KIUC kWh and Dollar Sales by Class 12/31/2003
- Fuel and Purchased Power Rate Adjustment by month for 2003
- KIUC 2003 Production Reports
- Large Customers Power Purchase Agreements
- Electronic Files:
    - 2003 Billing Data
        - Irrigation Sales
        - Large Commercial
        - Large Power (L)

        - Large Power (P)
        - Residential
        - Small Commercial
        - Street Lighting
    - Load Profile Data
        - 2003 Member Information for Cost of Service Study
        - Summary of Customer Data
        - King Auto Center
        - Mahelona Hospital
        - Sueoka Store Monitoring
    - 2002 and 2003 ERAC Adjustments by Rate Class
    - 2003 Audited Operating Revenue Reconciliation
    - 2004 Revenue Budget Version 0
    - 2004 – 2012 Summary GT / LM2500 Cycle
    - Adjusting Trial Balance – 2003
    - ERAC Fuel Prices – KIUC – KPP
    - ERAC Residential Rate
    - Forecast Comparison
    - KIUC Equity Management Plan – Commodity Forecast Updated 04-12-04
    - KIUC Equity Management Plan – Base Line
    - KIUC Equity Management Plan – Scenario 10
    - Production O&M Forecast
    - Unbilled Revenue

* * * * *

APPENDIX B

APPENDIX B
LIST OF KEY STUDY ASSUMPTIONS

The assumptions listed below were utilized in the cost-of-service and rate design study. These assumptions were provided by Bill Schmidt, Mike Yamane, and Alton Miyamoto from KIUC.

- What rate schedule are irrigation customers billed on?
    - Each of these customers is billed based on individual negotiated contract rates which are approved by the Hawaii Public Utility Commission.
- What customer class weight assumptions should be used?
    - 1.0 for Residential (D) and General L&P (G); 1.25 for General L&P (J); 2.0 for Large Power (L and P); and 3.5 for Irrigation. Street Lights (SL) was determined based on number of lights per account [1/(3,201 lights/113 customers)=0.035]

* * * * *

EXHIBIT 3

Kauai Island Utility Cooperative

	General L&P (J)	Large Power (L)	Large Power (P)
SUMMARY BY UNBUNDLED COSTS			
Generation	$3,858,149	$2,807,027	$6,275,920
Transmission	$1,266,845	$737,738	$1,766,344
Distribution: Primary	$680,569	$396,324	$948,908
Distribution: Secondary	$498,715	$0	$695,351
Cost of Service	$6,304,279	$3,941,089	$9,686,522
Non-coincident billing peaks (kw)	178,600	126,100	258,500
RATES			
Proposed Standby Charge ($/kw)	$35.30	$31.25	$37.47