HECO T-13
DOCKET NO. 2008-0083

TESTIMONY OF
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HAWAIIAN ELECTRIC COMPANY, INC.

Subject: A&G Expenses - Employee Benefits
Human Resources Suite Project
Wage and Salary Increase

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Julie K. Price and my business address is 220 South King Street, Honolulu, Hawaii.

Q. By whom are you employed and in what capacity?

A. I am the Manager of Compensation and Benefits for Hawaiian Electric Company, Inc. ("HECO"). My work experience and educational background are shown in HECO-1300.

Q. What are your areas of responsibility in this rate case?

A. I am responsible for covering HECO's 2009 test year estimate of employee benefits expense (account no. 926) which is included in total Administrative and General ("A&G") expenses, discussed by Ms. Patsy Nanbu in HECO T-11. I will also cover the Human Resources ("HR") Suite software project and the wage and salary increase for the test year.

Q. Please describe the expenses included in account no. 926.

A. Generally, this account includes costs related to providing employee benefits to HECO's employees. HECO-WP-1350 summarizes the employee benefits provided to regular employees. Differences in benefits for bargaining unit and non-bargaining unit employees are described later in the applicable sections of my testimony.

EMPLOYEE BENEFITS

Q. What are the accounts and 2009 test year estimate for employee benefits expense?

A. The accounts and the associated 2009 test year estimate for employee benefits unadjusted for the Campbell Industrial Park Generating Station and Transmission

Project (CIP1) is $23,407,000 as follows:

Account No.	Description	2009 Test Yr. Estimate (Thousands)
926000	Employee Pensions and Benefits	$ 21,197
926010	Employee Benefits-Flex Credits	11,173
926020	Employee Benefits Transfer	(8,963)
	Total Employee Benefits Expense	$ 23,407

This unadjusted estimate is referred to as the "base case."

Q. Please describe how employee benefits expense in account 926 will be impacted by the interim increase and the CIP CT1 step scenarios?

A. HECO is requesting a revenue increase to closely match our cost incurrence and cost recovery. The first step is an interim increase which excludes costs associated with CIP CT1. A second step is a rate increase which includes the full cost of CIP CT1. As shown in HECO-1301, page 1, employee benefits expense is $23,282,000 for the interim rate increase and $23,548,000 with CIP CT1. Calculation of these amounts are explained by Ms. Patsy Nanbu in HECO T-11 and shown in HECO-1101 and HECO-WP-1101. The interim increase and CIP CT1 step increase being proposed are discussed by Mr. Robert Alm in HECO T-1 and further discussed by Mr. William Bonnet in HECO T-23.

Q. How will employee benefit costs be explained?

A. Amounts in account no. 926000 and account no. 926010 include a broad range of employee benefit costs. The explanation will break down the costs into general categories to facilitate review. HECO-1301, page 1, provides the amounts by account for these categories for 2003 through 2007 (recorded), 2008 Operational and Maintenance ("O&M") expense budget and 2009 test year estimates.

HECO-1301, page 2, provides explanations of the adjustments made to derive the 2009 test year estimates. HECO-1301, page 3, identifies and briefly explains the significant differences between the 2009 O&M expense budget and the recorded 2007 amounts. Differences are further explained in the applicable sections of my testimony.

Q. What adjustments were made to the 2009 O&M expense budget to derive the 2009 test year estimate for employee benefit costs?

A. Adjustments were made to the 2009 O&M expense budget for employee benefit cost to: 1) remove the costs associated with the non-qualified plans, executive life program, 401K administration and executive incentive compensation to simplify and limit the issues in this case, 2) update pension and postretirement costs received after the budget was completed, 3) reflect the amortization of the regulatory liability resulting from the tracking mechanism stipulated in HECO Docket No. 2006-0386, and 4) revise the estimated number of covered employees. These adjustments will be described in the applicable sections of my testimony.

Q. Please describe the employee benefits transfer of ($8,963,000) in account no. 926020.

A. This is the amount transferred to plant construction or billed to affiliated companies and outside third parties for services rendered. Ms. Patsy Nanbu covers this account in HECO T-11.

<u>ACCOUNT NO. 926000 – EMPLOYEE PENSIONS AND BENEFITS</u>

Q. What categories are included in account no. 926000 – employee pensions and benefits?

A. As shown in HECO-1301, page 1, the breakdown of this account by category is as follows:

Category	Test Yr. 2009 Estimate (Thousands)
Qualified Pension Plan	$ 14,013
Non-Qualified Pension Plan	0
Other Postretirement Benefits	5,000
Long-Term Disability Benefits	544
Other Benefits/Administration	799
Total Non-Labor	$ 20,356
Total Labor	841
Total Employee Pension and Benefits (acct. no. 926000)	$ 21,197

Qualified Pension Plan

Q. What is included in the test year 2009 estimate for this category?

A. The test year 2009 estimate of $14,013,000 as shown in HECO-1301, page 1, includes the estimated net periodic pension cost ("NPPC") of $14,623,000 (see HECO-1302) and ($610,000) which is the amortization of the regulatory liability.

Q. How was the 2009 O&M expense budget adjusted to get the test year 2009 estimate?

A. The 2009 O&M expense budget for the qualified pension plan was adjusted downward by a net decrease of $1,131,000 which includes the following: 1) an increase of $340,000 to reflect the updated 2009 NPPC of $14,623,000 that was provided by Watson Wyatt Worldwide in June 2008, and 2) a decrease of $1,471,000 for the amortization of the regulatory liability resulting from the tracking mechanism. See HECO-1301, page 1, col. h. HECO-1301, page 2, notes 1 and 2 provide further details on these adjustments.

Q. What is the ($610,000) amortization of the regulatory liability?

A. This amortization is due to the pension tracking mechanism approved by the Commission in its Interim Decision and Order No. 23749 issued on October 22, 2007 in HECO's last rate case, Docket No. 2006-0386. The calculation of this amount is provided in HECO-1124. Ms. Patsy Nanbu discusses the accounting and ratemaking treatment of pension costs in HECO T-11.

Q. How does the Company provide pension benefits to its employees?

A. The Company provides pension benefits to its employees by participating in the Retirement Plan for Employees of Hawaiian Electric Industries, Inc. and Participating Subsidiaries ("HEI Retirement Plan"), a qualified defined benefit pension plan.

Q. How is the pension cost determined?

A. Watson Wyatt Worldwide, the plan's independent actuary, determines the pension cost to be recognized by the Company each year in accordance with the provisions of the Statement of Financial Accounting Standards No. 87 ("SFAS 87"). Under SFAS 87, the Company's pension cost is referred to as the net periodic pension cost ("NPPC"). The NPPC is the amount that HECO is required to recognize on its financial statements as the cost of providing pension benefits to its employees for the year, and includes the capitalized and expense amounts.

Q. When will the actual 2009 NPPC be determined?

A. Watson Wyatt Worldwide will determine the actual 2009 NPPC in June 2009 based on employee data as of January 1, 2009.

Q. Is the NPPC included in the Company's revenue requirements for the 2009 test year?

A. Yes. Since adoption of SFAS 87 in 1987, the Company has consistently and

1 properly incorporated the NPPC in the budget for employee benefits and the
2 Commission accepted HECO's treatment of pension costs consistent with
3 SFAS 87 in Decision and Order No. 11317 (Oct. 17, 1991) in Docket No. 6531,
4 Decision and Order No. 11699 (June 30, 1992) in Docket No. 6998, Decision and
5 Order No. 13704 (December 28, 1994) in Docket No. 7700, Decision and Order
6 No. 14412 (December 11, 1995) in Docket No. 7766, and Decision and Order
7 24171 in Docket No. 04-0113. In the Company's last rate case, Docket No. 2006-
8 0386, the Company proposed and the Commission approved on an interim basis
9 the adoption of a pension tracking mechanism in which the SFAS 87 NPPC is
10 incorporated in the ratemaking process. See Interim Decision and Order No.
11 23749 issued on October 22, 2007. The Commission also accepted the treatment
12 of pension costs consistent with SFAS 87 in prior rate cases for HECO's affiliated
13 companies, e.g., Decision and Order No. 18365 in Docket No. 99-0207 (February
14 8, 2001) HELCO's 2000 test year rate case, Interim Decision and Order No.
15 23342 in Docket No. 05-0315 (April 4, 2007) HELCO's 2006 test year rate case,
16 Amended Decision and Order No. 16922 in Docket No. 97-0346 (April 6, 1999)
17 MECO's 1999 test year rate case, and Interim Decision and Order No. 23926 in
18 Docket No. 2006-0387 (December 21, 2007) MECO's 2007 test year rate case.
19 Q. Is the NPPC the amount that HECO is required to contribute to fund its pension
20 obligation?
21 A. No. The NPPC is the accrual cost that HECO needs to recognize for financial
22 reporting purposes under SFAS 87. Minimum funding requirements for qualified
23 pension plans are specified under the Employee Retirement Income Security Act
24 of 1974 ("ERISA"), and maximum tax deductible amounts for federal income tax
25 calculation purposes are specified by the Internal Revenue Code ("IRC").

HECO's minimum contribution funding requirement and maximum tax deductible contribution amounts are also calculated by Watson Wyatt Worldwide and provided in its actuarial valuation of the plan. HECO-WP-1351 provides a copy of the latest available valuation of the plan as of January 1, 2007.

Q. How does the Company fund the plan?

A. The Company funds the plan by making tax deductible contributions into a trust held by the plan's trustee, the Bank of New York. A pension investment committee ("PIC") is the named fiduciary for the plan and is responsible for overseeing the administration of the plan and management of plan assets. HECO-1303 shows the contributions made by the Company to the pension trust and the NPPC since adoption of SFAS 87.

a. Factors Affecting Pension Expense

Q. What factors determine the Company's pension cost?

A. In general, requirements of SFAS 87 determine the Company's pension cost. Factors used are as follows:

1) plan provisions,
2) employee demographics,
3) pension fund performance,
4) actuarial assumptions, and
5) methodology for determination of the value of plan assets.

1) Plan Provisions

Q. How do provisions of the pension plan affect pension cost?

A. The plan provisions determine the amounts that will be paid to employees when they become eligible to retire.

Q. How are pension plan provisions determined?

A. Pension plan provisions for members of the bargaining unit are negotiated

between the Company and the International Brotherhood of Electrical Workers ("IBEW"), Local 1260. A different benefit formula applies to merit employees, but other plan provisions are the same as those for bargaining unit employees. The main provisions of the HEI Retirement Plan are summarized on pages 35-38 of HECO-WP-1351.

2) Employee Demographics

Q. How do employee demographics affect pension cost?

A. Pension benefits are determined by employees' years of service, age at retirement, and wage levels or average salary levels at time of retirement. The length of benefit payments depends on how long the employee lives, whether or not the employee has a surviving spouse at the time of death and how long the surviving spouse lives. Therefore, demographics such as hire dates, birthdates, pay rates, sex and marital status are used to determine benefit levels. The Company provides Watson Wyatt Worldwide with information about employees (age, sex, status, years of service, pay/salary rates) as of January 1 of each year which is used to determine the pension cost for that year.

3) Pension Fund Performance

Q. How does performance of the pension fund affect pension cost?

A. The Company's contributions are accumulated in a trust from which retirement benefits are paid. The expected return on plan assets in the trust offsets cost components of the NPPC. As assets increase due to Company contributions and investment performance, the expected return will also increase and will reduce pension cost. Assets of the trust are managed by professional investment managers. The trustee provides investment information to Watson Wyatt

Worldwide. Assets of the HEI Retirement Plan are commingled for all participating employers to maximize investment opportunities and minimize plan expenses. Assets and liabilities of each participating employer are separated for purposes of determining each participating employer's pension cost.

4) Actuarial Assumptions

Q. Why are actuarial assumptions needed to estimate pension cost?

A. The Company's ultimate cost for the pension plan will not be known until all benefits are paid to all participants and beneficiaries. During the life of the plan, benefits payable are estimated using certain assumptions which take into account probabilities for determining how many and when participants will become eligible for benefits, amount of the benefits expected to be paid, how long benefits will be paid and the current value of future benefits. These assumptions, together with participant data and plan provisions determine the liability of the plan from which pension cost is determined.

Q. What are some of the assumptions used?

A. There are demographic assumptions such as turnover rates, mortality, retirement ages, the number of married participants and economic assumptions such as discount rates, asset return rates and salary increase rates.

Q. How are these assumptions determined?

A. These assumptions are determined by the Company in conjunction with Watson Wyatt Worldwide and approved by the Company's independent auditor. The assumptions used for funding are included in pages 42-44 of HECO-WP-1351. Generally, demographic assumptions are based on the plan's historical experience. Most of the assumptions used for funding are also used for determining the NPPC

with the following exceptions: 1) a discount rate is used for the NPPC instead of the funding interest rate, 2) the maximum benefit and pay limits are indexed for future inflation for the NPPC, and 3) the current liability interest rates do not apply for the NPPC. The discount rate assumption is determined as required under SFAS 87 as a proxy for investment grade corporate bonds yield rates and the rate selected is approved by the Company's independent auditor.

5) Methodology for Determination of the Value of Plan Assets

Q. How is the value of plan assets determined?

A. The asset valuation method is selected by the Company in conjunction with Watson Wyatt Worldwide and approved by the Company's independent auditor. Under the method used by HECO, the difference between the actual market value of assets and the expected market value of assets as of the valuation date is recognized over a five-year period – 0% in the first year and 25% in each of the next four years. The market value of assets as of the valuation date is adjusted for unrecognized gains and losses from the prior four years to determine the market-related value of assets. The market-related value must be between 85% - 115% of the market value. As these gains and losses are reflected in the accumulated gain/loss, they are subject to recognition through the Amortization of Gain/(Loss) component of the NPPC.

b. Components of Pension Expense

Q. What are the components of the NPPC?

A. SFAS 87 specifies six basic components of NPPC. Actual amounts for 2007 and 2008 and 2009 estimated as determined by Watson Wyatt Worldwide are as follows:

	(Thousands)		
	2007 Actual	2008 Actual*	2009 Est.*
1) Service Cost	$ 17,842	$ 18,732	$ 19,631
2) Interest Cost	37,325	38,919	40,377
3) Expected Return	(44,666)	(47,318)	(48,858)
4) Amortization of Transition Obligation	0	0	0
5) Amortization of Prior Service Cost	(464)	(465)	(465)
6) Amortization of (Gain)/Loss	7,674	4,792	3,938
Total NPPC	$ 17,711	$ 14,660	$ 14,623

* See HECO-1302

1) Service Cost

Q. What is the "service cost" component?

A. Service cost is the "actuarial present value" of the pension benefits expected to be earned during the year (with projected pay).

Q. How is the service cost component for the test year determined?

A. The actuary used certain assumptions to estimate the amount of benefits to be earned by an employee during the year that the Company will pay for and determined the present value of these benefits (i.e., the service cost) assuming a discount rate of 6.125% for the test year.

2) Interest Cost

Q. What is "interest cost"?

A. Interest cost is the increase in the present value of the projected benefit obligation due to the passage of one year's time. The projected benefit obligation is an estimate of pension benefits accrued through the valuation date using projected salary levels and based on assumptions outlined in the actuarial valuation. The

present value of the projected benefit obligation is based on an assumed discount rate.

3) Expected Return on Plan Assets

Q. How is the "expected return on plan assets" used in the computation of pension cost for the year?

A. The Company's overall pension costs are reduced by earnings on assets that have been acquired with contributions to the pension fund. The return on plan assets includes the plan's dividend and interest income for the year, plus realized and unrealized appreciation less any depreciation in the market value of its investments and the expenses related to benefits paid, administration and investing the fund.

The test year estimate was based on an 8.5% assumption for the expected return on plan assets. This rate is intended to reflect the average long term rate of earnings expected on investments in the pension fund.

4) Amortization of Transition Obligation

Q. What is the "amortization of transition obligation"?

A. This is the difference between the fair market value of plan assets and the actuarial present value of pension benefits earned at the time of transition to the provisions of SFAS 87. HECO's transition obligation has been fully amortized as of December 31, 2003.

5) Amortization of Prior Service Cost

Q. What is the "amortization of prior service cost"?

A. This is the amortization of a change in the projected benefit obligation due to a plan amendment. Under SFAS 87 increases or decreases in the projected benefit

obligation due to a plan change should be amortized as a component of future pension costs over the average remaining service lives of active employees at the time of the amendment.

6) Amortization of (Gain)/Loss

Q. Please explain the amortization of gains and losses.

A. Gain and losses are changes in the amount of either the projected benefit obligation or the plan assets. These changes result from experience that is different from what is expected and from changes in assumptions.

If accumulated gains and losses are greater than a "corridor" amount, a portion is recognized in the current year (determined as the excess over the corridor amortized over the average remaining service lives of active employees expected to receive benefits under the plan).

Q. Please explain the change in the NPPC from 2007 to 2009.

A. Per the table in section b "Components of Pension Expense" of this testimony, NPPC decreased from 2007's actual $17.7M to 2009's estimate of $14.6M. Increases in service cost and interest cost are due to the aging of the workforce and additional accruals. These increases are offset by higher expected asset return due to higher asset levels and a reduction in the amount of unrecognized gains and losses being amortized from prior years. The net accumulated unrecognized loss was reduced by amortization of the (Gain)/Loss through NPPC as well as obligation-sourced gains attributable to an increase in the discount rate and asset-sourced gains. The lower accumulated loss expected at January 1, 2009 resulted in a lower expected amortization amount for 2009.

1 Non-Qualified Pensions

2 Q. What is the cost for non-qualified pensions?

3 A. The Company participates in the HEI Excess Pay Supplemental Executive
4 Retirement Plan ("Excess Pay SERP"), the HEI Excess Benefit Plan ("Excess
5 Plan"), and the HEI Supplemental Executive Retirement Plan ("HEI SERP"),
6 which are non-qualified pension plans.

7 Q. What are non-qualified pension plans?

8 A. Non-qualified pension plans do not meet requirements of IRC Section 401(a).
9 Participation in the HEI SERP is limited to critical executives as part of their total
10 compensation. The Excess Pay SERP and Excess Plans are designed to restore
11 benefits lost due to limitations placed on qualified plans which include pay limits
12 under IRC Section 401(a)(17) and benefit limits under IRC Section 415.

13 Q. What is the estimated cost for non-qualified pensions for 2009?

14 A. The estimated cost of $345,000 for non-qualified pensions included in the 2009
15 O&M expense budget was updated to $374,000 in June 2008 by Watson Wyatt
16 Worldwide and determined using the same methodology that applies to the
17 qualified pension plan in accordance with SFAS 87.

18 Q. How has HECO treated non-qualified pension plan cost for the 2009 test year?

19 A. A budget adjustment of ($374,000) was made to remove the entire non-qualified
20 pension plan cost to limit the issues in this proceeding. The combined effect of
21 the two budget adjustments reduces the 2009 O&M expenses budget by $345,000,
22 as shown in HECO-1301, page 1, column h. HECO-1301, page 2, note 3 provides
23 further details on these adjustments. Thus, the 2009 test year estimate for non-
24 qualified pension plans is $0. However, the Company's position is that these
25 benefits are part of employees' total compensation and should not be treated

differently for ratemaking purposes due to statutory limits. Therefore, the Company reserves the right to include non-qualified pension cost in its test year estimates in future rate cases.

Other Postretirement Benefits

Q. What is included in the test year 2009 estimate for other postretirement benefits?

A. The 2009 test year estimate for other postretirement benefits is $5,000,000 which includes the estimated net periodic benefits cost ("NPBC") for 2009 of $5,224,000 (see HECO-1304), reduced by $873,000 for the executive life insurance cost and $498,000 for the electric discount provided to retirees to derive $3,853,000 as shown in HECO-1301, page 1, col i, line 5. The amortization of the regulatory asset of $1,302,000 and ($155,000) for the regulatory liability amortization are added to derive the $5,000,000 (line 8).

Q. How was the 2009 O&M expense budget adjusted?

A. The 2009 O&M expense budget was decreased by $1,765,000 consisting of the following budget adjustments: 1) a decrease of $621,000 to reflect the updated 2009 NPBC of $5,224,000 that was provided by Watson Wyatt Worldwide in June 2008, 2) the removal of executive life insurance costs of $873,000 to limit the issues in this proceeding, and 3) a decrease of $271,000 for the amortization of the regulatory liability resulting from the tracking mechanism stipulated in HECO Docket No. 2006-0386. See HECO-1301, page 1, col h. HECO-1301, page 2, notes 4 and 5 provide further details on these adjustments.

Q. Please explain the adjustment of ($873,000) to delete life insurance for senior management.

A. The adjustment of ($873,000) was made to simplify and limit the issues in this

1 proceeding. These costs have been disallowed in prior rate cases. However, the
2 Company reserves the right to propose inclusion of these expenses in its revenue
3 requirements in future rate cases. The amount was calculated by Watson Wyatt
4 Worldwide as part of the NPBC. See HECO-1304.
5 Q. Why is it necessary to make an adjustment for electric service discount provided
6 to retirees?
7 A. This adjustment is necessary because the electric discount is already reflected in
8 the test year in the form of lower revenues and the amount should be deleted from
9 the postretirement benefit cost estimate to avoid duplication. See HECO-WP-301.
10 Q. How was the $498,000 for the electric discount for retirees estimated?
11 A. The electric discount was estimated by taking the average for the three-month
12 period (December 2007-February 2008) multiplied by twelve months. See
13 HECO-WP-1356, Attachment 2, page 20.
14 Q. Please explain the $1,302,000 amortization of the regulatory asset.
15 A. Per the Commission's Decision and Order No. 13659, (November 29, 1994), and
16 letter, dated December 28, 1994, in Docket Nos. 7243 and 7233 (Consolidated),
17 HECO was allowed to adopt SFAS 106 in its entirety and include in its rates the
18 full cost of postretirement benefits other than pensions calculated pursuant to
19 SFAS 106, effective January 1, 1995, and to amortize the regulatory asset
20 established for the deferral of postretirement benefit costs other than pensions for
21 the period January 1, 1993 to December 31, 1994, over an 18-year period
22 beginning January 1, 1995. The total amount being amortized is $23,433,103, or
23 $1,302,000 per year.
24 Q. What is the ($155,000) amortization of the regulatory liability?
25 A. This amortization is due to the Postretirement Benefits Other Than Pensions

("OPEB") tracking mechanism approved by the Commission in its Interim Decision and Order No. 23749 issued on October 22, 2007 in HECO's last rate case in Docket No. 2006-0386. The calculation of this amount is provided in HECO-1125. Ms. Patsy Nanbu discusses the accounting and ratemaking treatment of postretirement benefit costs other than pensions in HECO T-11.

Q. How does HECO provide postretirement benefits other than pensions to its employees?

A. HECO provides postretirement benefits other than pensions by participating in the Postretirement Welfare Benefits Plan for Employees of Hawaiian Electric Company, Inc. and Participating Employers ("HECO Postretirement Plan").

Q. How is the postretirement benefits cost determined?

A. Watson Wyatt Worldwide, the plan's independent actuary, determines the postretirement benefits cost to be recognized by the Company each year in accordance with provisions of the Statement of Financial Accounting Standards No. 106, Employers' Accounting for Postretirement Benefits Other Than Pensions ("SFAS 106"). Calculation of postretirement benefit expense under SFAS 106 is similar to the calculation of NPPC under SFAS 87. Under SFAS 106, the Company's postretirement benefit cost is referred to as the net periodic postretirement benefit cost ("NPBC"). This is the amount that HECO must recognize on its financial statements as the cost of providing other postretirement benefits to its employees for the year and includes capitalized and expense amounts.

Q. When will the actual 2009 NPBC be determined?

A. The actual 2009 NPBC will be determined by Watson Wyatt Worldwide in June, 2009, based on employee data as of January 1, 2009.

Q. Is the NPBC included in the Company's revenue requirements for the 2009 test year?

A. Yes. Since adoption of SFAS 106 in 1995, the Company has consistently and properly incorporated the NPBC in the budget for employee benefits and the Commission accepted HECO's treatment of OPEB costs consistent with SFAS 106 in Decision and Order No. 14412 (December 11, 1995) in Docket No. 7766 and Decision and Order No. 24171 in Docket No. 04-0113. In the Company's last rate case, Docket No. 2006-0386, the Company proposed and the Commission approved on an interim basis the adoption of an OPEB tracking mechanism in which the SFAS 106 NPBC is incorporated in the ratemaking process. See Interim Decision and Order No. 23749 issued on October 22, 2007. The Commission also accepted the treatment of OPEB costs consistent with SFAS 106 in prior rate cases for HECO's affiliated companies, e.g., Decision and Order No. 18365 in Docket No. 99-0207 (February 8, 2001) HELCO's 2000 test year rate case, Interim Decision and Order No. 23342 in Docket No. 05-0315 (April 4, 2007) HELCO's 2006 test year rate case, Amended Decision and Order No. 16922 in Docket No. 97-0346 (April 6, 1999) MECO's 1999 test year rate case, and. Interim Decision and Order No. 23926 in Docket No. 2006-0387 (December 21, 2007) MECO's 2007 test year rate case.

Q. Does HECO fund the postretirement benefits?

A. Yes. As directed by the Commission in Decision and Order No. 13659 in Docket Nos. 7243 and 7233 (Consolidated) HECO funds the entire postretirement benefits cost to the maximum extent possible using tax advantaged funding vehicles.

Q. What are these funding vehicles?

A. In accordance with its funding plan submitted to the Commission on January 3, 1995, in Docket No. 7243, the Company makes contributions to two Voluntary Employees' Beneficiary Association ("VEBA") trusts (bargaining unit and non-bargaining). The Company also makes additional contributions to a special 401(h) account in the existing pension plan trust to provide postretirement medical benefits for non-bargaining unit employees. Assets of these trusts are commingled for all participating employers to maximize investment opportunities and minimize plan expenses. Assets and liabilities of each participating employer are separated for purposes of determining postretirement benefit expenses and funding amounts for each participating employer. Maximum tax deductible contributions to the various funding vehicles are determined by Watson Wyatt Worldwide and included in its actuarial valuation of the plan. HECO-WP-1352 provides a copy of the latest available valuation of the HECO Postretirement Plan as of January 1, 2007.

Q. How are contributions in the trusts invested?

A. Assets are held by the plan's trustee, the Bank of New York. The PIC is the named fiduciary for the plan and is responsible for overseeing the administration of the plan and management of plan assets. HECO-1303 shows the contributions made by the Company to the VEBA trusts and the NPBC since adoption of SFAS 106.

a. Factors Affecting Postretirement Expense

Q. What factors determine the Company's postretirement benefits cost?

A. In general, requirements of SFAS 106 determine the postretirement benefits cost.

1 Factors used to determine the expense are similar to those that determine pension
2 cost, and include the following:

3 1) plan provisions,
4 2) employee demographics,
5 3) postretirement fund performance,
6 4) actuarial assumptions, and
7 5) methodology of determination of the value of plan assets.

8 1) Plan Provisions

9 Q. What are the postretirement benefits that HECO provides to its retirees?

10 A. HECO provides the following postretirement benefits to retirees:

11 a) medical/drug insurance,
12 b) partial reimbursement of Medicare Part B premiums,
13 c) vision insurance,
14 d) dental insurance,
15 e) life insurance, and
16 f) electric service discount.

17 Pages 22-25 of HECO-WP-1352 provide a summary of these benefits.

18 Q. How are postretirement benefits determined?

19 A. Benefits for bargaining unit employees are negotiated between the Company and
20 the IBEW, Local 1260, and are included in the Benefit Agreement by and between
21 Hawaiian Electric Company, Inc. and Local 1260 of the IBEW. The Benefit
22 Agreement which has been extended to December 31, 2010 is provided at HECO-
23 WP-1353. The page from the labor agreement that includes the electric discount
24 provision is provided at HECO-WP-1354. Merit employees receive the same
25 postretirement benefits provided to bargaining unit employees.

26 2) Employee Demographics

27 Q. How do employee demographics affect postretirement benefits cost?

28 A. Eligibility for postretirement benefits is determined by eligibility for pension

1 benefits. The length of coverage depends on how long the employee lives and
2 whether or not the employee has a spouse. Therefore, demographics such as hire
3 dates, birthdates and marital status are used to determine coverage. Watson Wyatt
4 Worldwide uses the demographic information provided for the pension plan as of
5 January 1 of each year to determine the postretirement benefit cost for that year.
6 3) Postretirement Fund Performance
7 Q. How does performance of the postretirement investment funds affect
8 postretirement benefit cost?
9 A. The Company's contributions are accumulated in the trusts from which benefits
10 are paid. The expected return on plan assets in the trust offsets cost components
11 of the NPBC. As assets increase due to Company contributions and investment
12 performance, the expected return will also increase and will reduce postretirement
13 benefit cost. Assets of the trusts are managed by professional investment
14 managers. The trustee provides investment information to Watson Wyatt
15 Worldwide.
16 4) Actuarial Assumptions
17 Q. Are actuarial assumptions for determining the NPBC the same as those used to
18 determine the NPPC?
19 A. Yes, the assumptions are generally the same. For example, the same discount rate
20 for estimating the NPPC was used to estimate the NPBC. However, an additional
21 assumption for the medical trend rate is necessary for determining the NPBC.
22 Pages 27-29 of HECO-WP-1352 include the medical trend rate and other
23 assumptions used to estimate the 2009 NPBC. Assumptions are determined by

the Company in conjunction with Watson Wyatt Worldwide and approved by the Company's independent auditor.

Q. What is the assumption for the medical trend rate?

A. This assumption is an estimate of the annual rate of change in the cost of health care benefits. Under SFAS 106, the assumption should consider estimates of health care inflation, changes in health care utilization or delivery patterns, technological advances, and changes in the health care status of plan participants.

5) Methodology for Determination of the Value of Plan Assets

Q. How is the value of plan assets determined?

A. The asset valuation method is the same as that used for the pension plan.

b. Components of Other Postretirement Benefit Expense

Q. What are the components of the Company's NPBC?

A. Components for the NPBC are the same as for the NPPC as previously described. Actual amounts for 2007 and 2008 and 2009 estimated as determined by Watson Wyatt Worldwide are as follows:

	(Thousands)		
	2007 Actual	2008 Actual*	2009 Est*.
1) Service Cost	$ 3,222	$ 3,156	$ 3,096
2) Interest Cost	7,430	7,465	7,739
3) Expected Return	(6,761)	(7,472)	(8,011)
4) Amortization of Transition Obligation	2,400	2,400	2,400
5) Amortization of Prior Service Cost	0	0	0
6) Amortization of (Gain)/Loss	0	0	0
Total NPBC	$ 6,291	$ 5,549	$ 5,224

* See HECO-1304

1 Q. Please explain the change in NPBC from 2007 to 2009.

2 A. Per the above table, NPBC decreased from 2007's actual $6.3M to 2009's
3 estimated $5.2M. The decrease in service cost is due to a combination of the
4 effects of the aging of the workforce, plan design and an increase in the discount
5 rate from 2007 to 2008. Interest cost increases are due to the aging workforce and
6 the impact of increasing the discount rate assumption from 2007 to 2008, and the
7 expected asset return is higher due to higher asset levels.

8 Q. Has HECO made changes to reduce its postretirement benefits cost?

9 A. Yes. HECO significantly reduced postretirement benefits cost as a result of the
10 1998 negotiations with the IBEW by changing plan provisions and placing caps
11 on future Company funded premiums. When premiums reach these caps, retirees
12 are required to contribute the difference between the actual premium rates and the
13 Company's caps in addition to the contributions required based on years of
14 service. In addition, changes made to the medical and drug plans for active
15 employees effective January 1, 2006, January 1, 2007, and January 1, 2008, also
16 apply to retirees. These changes increase retirees' cost sharing for medical and
17 drug costs (see HECO-WP-1353, pages 4-11).

18 Q. Will there be any changes to postretirement benefits for the test year?

19 A. No. The Benefits Agreement with the IBEW was recently extended with no
20 changes to benefits through December 31, 2011. See HECO-WP-1353, page 22.

21 Q. Has the Medicare Modernization Act ("MMA") affected HECO's postretirement
22 benefits?

23 A. Yes. The Medicare Prescription Drug Improvement and Modernization Act of
24 2003 ("MMA") expanded Medicare to include coverage for prescription drugs.
25 Under the Act, employer-sponsored retiree drug plans that provide benefits

1 equivalent to the new Medicare Part D drug coverage are eligible to receive a
2 subsidy of 28 percent of the participants' drug costs between $250 and $5,000 per
3 retiree, if the retiree waives coverage under Medicare Part D beginning in 2006.
4 For 2006 the Company received $29,537 for the Medicare Part D subsidy.
5 Watson Wyatt Worldwide has included an estimate that reduces the Company's
6 postretirement benefits cost due to the MMA in the calculation of the NPBC.
7 Q. How will the Pension Protection Act affect the NPPC and NPBC?
8 A. The Pension Protection Act of 2006 ("PPA"), which was enacted on August 18,
9 2006, made significant changes to rules dealing with minimum funding of
10 qualified pension plans. The PPA does not change the components or method of
11 calculating the NPPC and NPBC. Minimum funding rules of the PPA applicable
12 to pension plans became effective on January 1, 2008.
13 Long-Term Disability Benefits
14 Q. What is the 2009 test year estimate of long-term disability benefits?
15 A. The 2009 test year estimate for this category of employee benefits is $544,000, as
16 shown in HECO-1301, page 1.
17 Q. How was the test year estimate adjusted?
18 A. Benefit costs for LTD and other group insurance premiums are based in part on
19 the estimated number of covered employees for the year. The average number of
20 employees for the test year 2009 as discussed by Ms. Faye Chiogioji in HECO
21 T-15 is 1,621 (see HECO-1503). This average includes regular, temporary and
22 probationary employees and reflects the removal of 6 employees (5 employees
23 whose costs are recovered through the Demand-Side Management adjustment
24 surcharge and 1 employee for the correction made to the Safety, Security &

Facilities Department). Benefit costs for the 2009 test year were based on a 13-month average of 1,599 regular employees. The 13-month average was calculated by using the budgeted number of employees for December 2008 – December 2009 adjusted to remove the 6 employees and temporary employees who do not participate in the Company's LTD and FlexPlan. See HECO-1305.

Q. How was the estimated number of covered employees determined in HECO's last rate case?

A. The estimated number of covered employees in HECO's last rate case was determined using a 12-month average of regular employees. Under this method the average number of covered employees for the 2009 test year would be 1,602.

Q. What costs are included in this category?

A. This category includes costs to provide long-term disability ("LTD") benefits to HECO's employees.

Q. Please describe LTD benefits.

A. LTD benefits are income replacement benefits provided to employees in the event of a non-occupational long-term disability that lasts beyond six months.

Q. How are LTD benefits provided to employees?

A. LTD benefits are provided through an insurance contract with MetLife. Effective January 1, 2003, benefits under the contract are paid on a fully insured basis. Prior to that, the Company paid benefits for the first five years of disability and on a fully insured basis thereafter.

Q. Why was the change made from a partially self-insured basis to a fully insured basis?

A. The decision to change to a fully insured basis was made primarily due to administrative issues. Under the partially self-insured contract with MetLife,

claims for all companies were paid from one bank account which made the tracking and reconciliation of claims paid by the individual companies extremely difficult due to timing differences. While partially self-insured arrangements of this type were once prevalent, these arrangements are now the exception to MetLife's general administrative procedures which limited their ability to provide HECO with the data required for the tracking and reconciliation of claims. Going to a fully insured arrangement with predictable costs was also a factor in making the change.

Q. How was the 2009 test year estimate of $544,000 calculated?

A. HECO-1306 provides the calculation of long-term disability plan expenses. Since LTD monthly premiums are based on covered compensation (employees' base pay), HECO projected the base pay for merit and bargaining unit employees as follows:

Start with the average monthly salaries/wages as of April 1, 2008, increased by 3.5% effective May 1, 2008, and 4.5% effective May 1, 2009, for merit employees and 4.0% effective January 1, 2009, for bargaining unit employees to get the projected average monthly salary/wage for each group which was multiplied by the applicable number of months to get the estimated covered compensation for the test year for each group. The estimated covered compensation was then multiplied by the average number of merit and bargaining unit employees respectively for the test year and the estimated premium rates to derive the estimated 2009 premium. The following additional cost items were also added to the premium: 1) $3,012 for administrative services fees ("ASA") which were estimated by using the fee as of February, 2008 times 12 months, and 2) $30,000 for claim payments from the partially self-insured portion prior to January 1,

2003, which were estimated by using the claims as of February, 2008 times 12 months.

Q. How were premium rates for the test year determined?

A. LTD rates for 2007 were guaranteed not to change by the insurer for 2008. 2009 rates will be determined in August 2008. HECO used rates in effect for 2008 to estimate LTD premiums for the test year since rates have not increased since 2005. See HECO-1307.

Q. Why are premium rates different for bargaining unit and merit employees?

A. The difference is due to the level of benefits. The LTD benefit for bargaining unit employees is 60% of base pay which is limited to the Prevailing Lineman Thereafter rate. The LTD benefit for merit employees is 65% of base pay.

Q. How have LTD costs varied since 2003?

A. Premium rates for LTD were separated for bargaining unit and non-bargaining unit employees in 2005 with the change in benefit levels and have decreased since then. Therefore, the variation in LTD costs since 2003 as shown in HECO-1301, page 1 is the result of decreases in premium rates offset by increases in the number of covered employees and base salaries/wages, and claims incurred from the prior self-insured arrangement.

Q. Does HECO provide other disability benefits to its employees?

A. Yes. In addition to LTD benefits, HECO provides other disability benefits such as workers' compensation and sick leave to employees.

Q. How do LTD benefits coordinate with other disability benefits?

A. The LTD plan is designed to provide a total level of disability income to employees. Therefore, LTD benefits payable by the plan are offset by any other income received by the disabled employee. For example, sick leave, workers'

compensation and social security benefits would be offset against LTD benefits.

Q. What is the reason for offsetting these benefits?

A. These benefits are offset because the plan is designed to encourage employees to return to work and keep disability related costs under control.

Other Benefits/Administration

Q. What is HECO's 2009 test year estimate for the Other Benefits/Administration category of employee benefit costs charged to account no. 926000?

A. The 2009 test year estimate for Other Benefits/Administration is $799,000.

Q. What types of costs are included in this category?

A. This category includes costs related to training and development, health and wellness programs, miscellaneous other benefits, and the administration of pension, postretirement and long-term disability benefits. A breakdown of the 2009 test year costs is as follows:

	TY 2009 Estimate
1) Training & Development	$ 231,000
2) Health and Wellness Programs	75,000
3) Miscellaneous Other Benefits	129,000
4) Administration	360,000
5) On-Cost	4,000
Total (HECO-1301, pg. 1 col. i, line 10)	$ 799,000

Q. What adjustments were made to the costs for other benefits/administration to arrive at HECO's 2009 test year estimate?

A. As shown in HECO-1301, page 1, column h, line 10, a net adjustment of $389,000 was made to this category which includes three adjustments to simplify and limit the issues in this case: $507,000 for the executive life program based on a prior Commission ruling (D&O No. 14412, filed on December 11, 1995 in Docket

No. 7766, HECO's 1995 test year rate case), ($44,000) to delete costs related to 401(k) administration, and ($74,000) for executive incentive compensation, 401(k) and non-qualified plan administrative costs from HEI. However, the Company reserves the right to propose inclusion of these expenses in future rate cases. Executive life costs are in HECO-WP-1356, Attachment 2, page 2 (codes 15D, 15E, 15F, 15G). 401(k) administration costs are in HECO-WP-1356, Attachment 1 and Attachment 2, page 2 (codes 8A, 8C, 9). HEI costs are in HECO-1107. HECO-1301, page 2, note 7 provides further details on these adjustments.

1) Training and Development Programs

Q. What is the 2009 test year estimate for training and development costs?

A. The 2009 test year estimate for these costs is $231,000 which is related to training and development programs that are essential to HECO's ability to attract, retain, engage and maintain a fully qualified workforce. The programs are administered by HECO's Workforce Staffing and Development and Industrial Relations departments. Training costs for the Compensation and Benefits Division (RA-PFB) are also included in account no. 926000, as shown on HECO-1308.

Q. Describe the costs related to the training and development programs.

A. These costs relate to activities such as planning and determining employee development and training needs, development of in-house training programs, delivery of these programs, training materials, apprenticeship program costs and the voluntary educational assistance ("VEA") program.

Q. How was the 2009 test year estimate for training and development programs determined?

A. The 2009 test year estimate was determined by considering the courses to be offered, materials, instructor fees, and facilitator guides. Apprenticeship program costs were estimated using training requirements of current apprentices, the estimated number of new apprentices, instructor fees, books and supplies. VEA program costs were based on 2007 actual costs increased by 10% (the average increase in tuition fees at local universities).

Q. Describe the types of in-house training programs covered in this account.

A. The in-house training programs provide specific job-related competencies or knowledge and/or career and life skills. Examples of program categories include customer relations, supervision, finance, leadership, executive development and civil treatment (Equal Employment Opportunity).

Q. What is the voluntary educational assistance ("VEA") program?

A. This program was initiated to encourage employees to pursue educational programs outside of work hours that directly or indirectly enhance their performance on the job. HECO provides 100% reimbursement upon the successful completion of approved courses taken on the employees' own time. The courses must be offered by an accredited school, college, or university, or any agency or association approved by the Workforce Staffing & Development Department.

Q. How have training and development costs varied since 2003?

A. Actual training and development costs from 2003-2007 and budgeted for 2008 and 2009 are reflected in HECO-1308 along with explanations for the variances and references to workpapers.

2) Health and Wellness Programs

Q. Please describe the type of expenses included in this category.

A. The expenses in this category are related to administration of the Integrated Absence Management ("IAM") program, the employee assistance ("EAP") program and other wellness activities.

Q. What is the 2009 test year estimate for health and wellness programs?

A. The 2009 test year estimate is $75,000. The majority of these costs is for medical consulting of $28,000 and premiums for EAP services in the amount of $34,000.

Q. What is the IAM program?

A. The IAM program was initiated in 2001 to better manage absences. Resources within the Compensation and Benefits Division (workers' compensation administration, the Corporate Health Director, benefits administration) were pooled to manage disability cases and provide information on benefits to disabled employees with the goal of reducing HECO's absence-related costs. The Health and Wellness Division was subsequently formed in 2007 which encompasses the workers' compensation function and wellness activities and moved to the Safety, Security and Facilities Department. Employees report daily absences to an outsourced centralized call center. These absences are reported to supervisors and to the Health and Wellness Division which monitors employee absences and follows up with individual employees to address issues such as return to work and temporary work restrictions. The Health and Wellness Division facilitates the Company's compliance with the Family and Medical Leave Act ("FMLA"), the Americans with Disabilities Act ("ADA"), and the Health Insurance Portability and Accountability Act ("HIPAA").

Q. How was the test year 2009 estimate of $34,000 for the EAP program expenses determined?

A. This estimate was determined using quarterly premiums for January 2007 – September 2007 (3 quarters) and an estimate for October –December 2007 (4th quarter). See HECO-WP-1356, Attachment 5, page 2.

Q. What is the EAP program?

A. The EAP provides employees with access to professional counselors for strictly confidential personal consultations on work-related, personal or mental health problems. Assessment for referral for substance abuse problems and resources to address legal or financial difficulties is also available. Immediate family members of employees are also eligible for these services.

Q. How does the Company benefit from EAP services?

A. Supervisors can make EAP referrals for employees about job performance or workplace behavioral concerns. Group sessions are provided for crisis intervention when critical events such as serious and fatal accidents and similar types of emergencies occur in the workplace. These services help employees to focus on their job and increase productivity by limiting distractions and undue emotional or psychological stress.

Q. How does HECO provide EAP services to its employees?

A. EAP services are provided through a contract with an external organization.

3) Miscellaneous Other Benefits

Q. Please describe the benefit costs included in this category.

A. Miscellaneous Other Benefits include the bus pass, long-term care insurance, adoption reimbursement, child care referral services, contributions in

1 remembrance of deceased employees and retirees, cafeteria maintenance and
2 deferred compensation.
3 Q. What is the test year 2009 estimate for these costs?
4 A. The 2009 test year estimate is $129,000.
5 Q. What are the greatest cost items in this category?
6 A. The greatest cost items are the bus pass program and premiums for long-term care
7 insurance in the amount of $83,000 and $30,000, respectively.
8 Q. How was the 2009 test year estimate determined for these items?
9 A. The estimates were based on the number of employees participating in the
10 programs, the cost of the bus pass, and the long-term care premium rate. See
11 HECO-WP-1356, Attachment 4 (bus pass program) and Attachment 2, page 22
12 (long-term care insurance).
13 Q. Please describe the bus pass program.
14 A. Under the program, employees are encouraged to use public transportation to
15 commute to work by providing them with a bus pass. This alleviates traffic
16 congestion, fuel consumption and parking accommodations.
17 Q. Please describe the long-term care benefit.
18 A. Effective July 1, 2004, HECO provides merit employees with a basic level of long
19 term care benefits through an insurance contract. In general the basic level
20 provides a benefit of $1,000 per month for up to two years towards the cost of
21 confinement in a long-term care facility. Employees also have the option to
22 purchase additional coverage at their cost. Upon retirement or other termination
23 of employment, employees may assume this cost to continue the coverage.

4) Administration

Q. What is included in Administration costs?

A. Administration costs of $360,000 include costs related to expenses for administering the retirement plan including legal and consulting fees, inter-company charges from HEI for plan administration support, computer systems and department costs. HECO-1317 includes a breakdown of these costs by RA with references to applicable workpapers.

5) On-Cost

Q. What is the On-Cost amount in account no. 926000 employee pensions and benefits?

A. On-Cost is the portion of administrative costs transferred to construction projects and is discussed by Ms. Patsy Nanbu in HECO T-11.

Labor

Q. Please explain the labor amount included in account no. 926000?

A. The 2009 test year labor amount of $841,000, as shown in HECO-1301, page 1, is primarily attributable to the administration of the programs included in account 926000, i.e., retirement, postretirement, LTD, training, wellness, and other benefits.

Q. How was the labor cost for the 2009 test year determined?

A. See HECO-WP-1355 for the worksheets used to determine labor hours.

ACCOUNT NO. 926010-EMPLOYEE BENEFITS-FLEX CREDITS

Q. What categories are included in account no. 926010 – employee benefits-flex credits.

A. As shown in HECO-1301, page 1, the breakdown of this account by category is as follows:

Category	Test Yr. 2009 Estimate (Thousands)
Flex Credits Less Prices	$ (1,229)
Group Medical Plan	8,719
Group Dental Plan	1,318
Group Vision Plan	204
Group Life Insurance Plan	1,068
Other/Administration	882
Total Non-Labor	$10,962
Total Labor	211
Total Employee Benefits – Flex Credits (account no. 926010)	$11,173

This account includes costs related to the Company's flexible benefits plan ("FlexPlan"), which consists of premiums for group medical, dental, vision and life insurance programs and other costs related to administration.

Q. How was the 2009 O&M expense budget adjusted for the categories in account no. 926010 to derive the 2009 test year estimates?

A. The O&M expense budget was adjusted to reflect revised estimates based on the average number of covered employees in the FlexPlan of 1,599 as explained in the Long-Term Disability Benefits section of my testimony.

Q. What is the FlexPlan?

A. HECO provides group medical, dental, vision and life insurance benefits to its employees through a flexible benefits plan called "FlexPlan". The plan is designed to meet the requirements of Section 125 of the Internal Revenue Code ("IRC"). Under the provisions of the plan, employees are given an allocation of flex credits each year by the Company. These flex credits are stated in units of

flex "dollars". Employees apply these credits toward the purchase of non-taxable benefits (health and life insurance) by electing from several available plans, each with a stated flex price in units of flex "dollars". To the extent that the employee's flex credits exceed the total of flex prices for health and life insurance purchases, remaining credits can be: 1) used to purchase other optional benefits such as supplemental life insurance, dependent life insurance, and accidental death and dismemberment insurance ("AD&D"), 2) directed to spending accounts for health benefits not covered by insurance and/or dependent care expenses or 3) returned to the employee. If the total of flex prices for the plans elected by the employee exceeds flex credits, the difference is withheld from the employee's pay on a pre-tax basis or after-tax basis. Information provided to employees regarding the FlexPlan is provided in HECO-WP-1350.

Q. Why did HECO adopt the FlexPlan?

A. The plan was adopted in 1989 to provide employees with the flexibility of choosing benefit levels that meet individual needs while helping the Company to control future health plan costs.

Q. How does the FlexPlan help to control future health plan costs?

A. Health plan costs are driven by plan provisions, plan utilization and the cost of services. FlexPlan offers employees an incentive to waive health plan coverage in return for flex credits that can be used to purchase other benefits. For example, employees covered by their spouses' medical plan may elect to waive medical plan coverage with HECO and use their flex credits to purchase additional life insurance, dependent life insurance or put the credits into a spending account to apply towards non-covered medical or child care expenses. This results in lower utilization of health plan benefits which results in lower premium rates.

Q. How is the Company's total cost for the FlexPlan determined?

A. The Company's cost is equal to:

Flex credits (company funded) less Flex prices (employee funded) plus premiums for all plans (company funded).

Flex Credits Less Prices

Q. What is included in this category of employee benefit costs?

A. This category includes the estimated difference between company-funded flex credits and flex prices charged to employees for health and life insurance plans.

Q. How was the 2009 test year estimate determined?

A. The Company provides basic flex credits for health coverage plus additional credits for life insurance coverage. Basic flex credits amount to $67.54 per employee for each of 24 pay periods. Life insurance credits are equal to the premium to provide each bargaining unit employee with coverage of one and one-half times the annual base pay, each merit employee with coverage of two times the annual salary, and senior management employees with coverage of $50,000. The budget estimate for flex credits less prices is shown in HECO-1309 and was determined as follows:

1) The basic flex credit amount of $67.54 per employee per pay period was multiplied by 1,599 (estimated average number of covered employees) and annualized to get $2,591,915 ($67.54 x 1,599 x 24 pay periods). This amount was added to the life insurance credit amount in (2) below.

2) The flex credits for basic group life insurance was estimated by using the average basic group life credit from the January 2008 enrollment which was based on wages and salaries as of October 2007, increased by 3.5% for the

May 1, 2008 merit salary increase and by 3.5% for the November 1, 2007 bargaining unit wage increase to derive the average basic life credit of $367.14 per merit employee, $231.26 per bargaining unit employee and $120.00 per executive multiplied by 735 merit employees, 825 bargaining unit employees, and 40 executives respectively. The results totaled $465,437. See HECO-1309, page 2.

3) The sum of amounts from (1) and (2) above is $3,057,352 which was reduced by $4,286,408 total flex prices resulting in a net price of ($1,229,056). The amount of $4,286,408 total flex prices was estimated by applying the flex price for each plan to the associated projected number of employees for the test year based on the percentage of employees' elections from the January 1, 2008, enrollment. See HECO-1309, page 1.

Q. How is the level of flex credits and prices determined?

A. The difference between flex credits and prices is the employee contributions, which is estimated at ($1,229,045) as shown above. The maximum amount of employee contributions for health plan coverage is negotiated between the Company and the IBEW for bargaining unit employees. See Benefits Agreement in HECO-WP-1353. The same contribution level applies to merit employees. Flex credits and prices are set such that the difference between the employer-provided flex basic credits and flex prices charged to employees for health plans will not exceed the maximum employee contributions. Attached in HECO-1310 is a schedule showing basic flex credits of $67.54 per pay period for each employee and the prices for health plan options. As an example, each employee receives $67.54 in basic flex credits each pay period. Assuming the employee elects the PPP medical plan (family coverage) at a price of $88.49, the vision plan

(family coverage) at a price of $3.00 and the Major Care Dental plan (family coverage) at a price of $6.05, the employee's contribution per pay period will be $30.00 ($67.54-$88.49-$3.00-$6.05), which is the maximum employee contribution as indicated in the Benefit Agreement for January 1, 2008. See HECO-WP-1353, page 19. Employees also receive flex credits for life insurance. Basic credits and life insurance credits are added together and used towards purchasing all options under the FlexPlan. The basic flex credits have been at the same level since 1999, and the basic flex prices for health plan options have been revised annually as the maximum employee contribution amount increases.

Q. Why were the same flex credits and prices in effect for January 1, 2008 used for the test year?

A. Employee contributions for health plans will remain the same through December 31, 2011, per agreement reached on January 23, 2008 with the IBEW. See HECO-WP-1353, page 22.

Q. What does the test year estimate of ($1,229,056) indicate?

A. The negative amount indicates that flex prices of options elected by employees for the test year will exceed flex credits by this amount, which is the estimate of the amount that will be deducted from employees' pay for the test year. See HECO-1301, page 1.

<u>Group Medical/Dental/Vision Plans</u>

Q. What do group medical/dental/vision plan costs represent?

A. These costs represent premiums for medical, dental and vision plans provided under FlexPlan. Medical plans are provided by the Hawaii Medical Service Association ("HMSA") and Kaiser Foundation Health Plan ("Kaiser"). Dental

1 and vision plans are provided by Hawaii Dental Service ("HDS") and Vision
2 Service Plan ("VSP"), respectively.
3 Q. What plan options are included under FlexPlan?
4 A. The following health plan options are available under FlexPlan:
5 1) HMSA Preferred Provider Plan ("PPP") with Vision Plan,
6 2) HMSA Health Plan Hawaii Plus ("HPH") with Vision Plan,
7 3) Kaiser Permanente Group Plan with Vision Plan,
8 4) HDS Major Care Plan,
9 5) Waiver of Medical Coverage, and
10 6) Waiver of Dental Coverage.
11 Q. How were the 2009 test year estimates of $8,719,000 for medical, $1,318,000 for
12 dental and $204,000 for vision plan premiums determined?
13 A. The estimates were determined by taking the estimated average number of
14 covered employees for each plan, multiplied by the estimated applicable premium
15 rate for 2009. The estimated number of employees covered in each plan was
16 determined by pro-rating the elections made by employees for 2008 by plan to the
17 total number of covered employees for the test year (1,599). The calculation
18 worksheets are provided in HECO-1311 (medical), HECO-1312 (dental), and
19 HECO-1313 (vision).
20 Q. What has HECO done to control medical plan costs?
21 A. As a result of negotiations with the IBEW in 2003, medical plan provisions
22 changed effective January 1, 2005, January 1, 2006, January 1, 2007, and
23 January 1, 2008. These changes required increased out-of-pocket contributions by
24 employees and resulted in reduced costs for the Company. From 2003-2008,
25 HECO's average annual increase in premium rates for medical plans ranged from
26 1.03% - 2.7% depending on the plan, which are reasonable compared to average
27 annual increases in community premium rates for the same period of

approximately 7.4% for HMSA. In estimating premium rates for the test year HECO used an inflation factor of 2.5% which was in line with the historical five year average annual increases of 1.03%-2.7%. See HECO-1307.

Group Life Insurance

Q. What costs are included in this category of employee benefits?

A. This category includes premiums for group life (basic and supplemental coverage), dependent life and AD&D insurance coverages as elected by employees under the FlexPlan.

Q. What is the Company's 2009 test year 2009 estimate for group life insurance costs?

A. The 2009 test year estimate for group life insurance premiums is $1,068,000.

Q. How was the test year estimate calculated?

A. Group life insurance coverage for the test year will be based on annual salaries/wages as of October 2008. For the calculation, the average annual salaries/wages as of October 2007 (basis for January 2008 enrollment), was increased by 3.5% for merit and bargaining unit employees to get the average annual salaries/wages as of October 2008. These averages were then multiplied by .5, 1.5 or 2.0 for merit employees and .5 or 1.5 for bargaining unit employees using the January 1, 2008 employee elections, to get the basic coverage for each group which was then multiplied by the estimated number of merit and bargaining unit employees electing each coverage option (based on 2008 enrollment) and the annual premium rate. Supplemental life, dependent life and AD&D premiums were estimated using the same methodology. The same premium rates in effect on January 1, 2008, were used for the test year estimates. The calculation of the

test year estimate is shown in HECO-1314.

Q. In general, what are the reasons for changes in costs for medical, dental, vision and group life insurance premiums since 2003?

A. These premiums vary due to changes in the premium rates as shown in HECO-1307, changes in the number of covered employees, employee elections under FlexPlan, and increases in base salaries and wages (applicable to group life insurance).

Other/Administration

Q. What costs are included in this category?

A. This category includes costs of $882,000 related to the FlexPlan including administration, other group insurance premiums and expenses related to the HR Suite Project as follows:

	TY 2009 Estimate
a. Administration	$260,000
b. Other Group Insurance Premiums	187,000
c. HR Suite Project	441,000
d. On-Cost	(6,000)
Total (HECO-1301, pg. 1, col. i, line 19)	$882,000

a. Administration

Q. What is included in administration costs?

A. These costs are related to expenses for administering the FlexPlan including costs of computer systems, consulting and third party administrative fees and system maintenance costs for the HR Suite. HECO-1317 includes a breakdown of these costs by RA with references to applicable workpapers.

b. Other Group Insurance Premiums

Q. What is included in the Other Group Insurance Premiums category?

A. These are insurance premiums related to employees not participating in the FlexPlan such as temporary employees and employees on probationary, leave of absence, or disability status.

Q. How was this amount estimated?

A. The estimate was based on 2007 costs. See HECO-WP-1356, Attachment 2, page 15.

c. HR Suite Project

Q. Please explain the HR Suite costs.

A. These are costs related to the HR Suite project which is described later in my testimony.

d. On-Cost

Q. What is the On-Cost amount in account no. 926010 employee benefits – flex credits?

A. On-Cost is the portion of administrative costs transferred to construction projects as discussed by Ms. Patsy Nanbu in HECO T-11.

<u>Labor</u>

Q. Please explain the labor amount included in account 926010?

A. The 2009 test year labor amount of $211,000 includes the labor costs for administering the FlexPlan and for the HR Suite project explained below.

Q. How was the labor cost for the 2009 test year determined?

A. See HECO-WP-1355 for the worksheets used to determine labor hours.

Q. Please identify employees involved in preparation of the budgeted labor and non-labor amounts in account no. 926000 and account no. 926010, worksheets and calculations used to document budgeted items.

A. The requested information with support references is in HECO-WP-1355 and HECO-WP-1356.

HUMAN RESOURCES SUITE PROJECT

Q. What is the Human Resources ("HR") Suite Project?

A. The HR Suite Project is a planned computer software development project that involves the purchase, installation and configuration of a new, commercially available, human resources suite system, including purchase, configuration and testing of the software for the new system, purchase and installation of related hardware and operating software, conversion, "cleansing" and formatting of employee and retiree data (i.e., ensuring that the data that is converted is in the standard format), development and testing of interfaces between the new system and other HECO systems, including the new Customer Service System ("CIS") and the Ellipse system associated training for administrators and employees, and post implementation activities. An application was filed with the Commission (Docket No. 2006-0003) on January 3, 2006, on behalf of HECO, Hawaii Electric Light Company, Inc. and Maui Electric Company, Limited, (the "Companies") requesting approval for the purchase and installation of Project P0001010, Human Resources Suite System, to defer certain computer software development costs, to apply an allowance for funds used during construction ("AFUDC") during the deferral period, to amortize the deferred costs (including AFUDC) over a twelve-year period and to include the unamortized deferred costs (including AFUDC) in rate base. This treatment is consistent with HECO's accounting policy for software development costs, as discussed by Ms. Nanbu in HECO T-11.

Q. What is the status of the application?

A. Decision and Order No. 23413 in Docket No. 2006-0003 was issued on May 3, 2007, in which the Commission approved the application for the HR Suite System.

Q. What does the system do?

A. The system will improve the Company's ability to store, maintain, manage and secure employee information necessary to support basic employee functions such as hiring, managing, training, retention, retirement and termination. The system will improve integration and functionality for human resources data and systems, specifically for benefits, human resources, compensation and disability management administration.

Q. What is the status of the project?

A. The project is currently in the Implementation state (Stage 2) which includes the analysis and design of the software, solution confirmation and review of requirements versus application software, and defining data conversion and interface strategies, specifications and plans.

Q. When is the project scheduled to be completed?

A. Current completion date is April, 2009.

Q. What are total costs of the HR Suite project?

A. The current estimated cost of the HR Suite project is $9,462,000 as reported in the Interim Supplemental Report (May 21, 2008) – Amended filed with the Commission on June 27, 2008. The amount includes $371,000 for capital, $5,559,000 for deferred expenses, $3,267,000 for expenses – not reengineering and $265,000 for expenses – reengineering. See HECO-1315, page 1.

Q. How are the costs allocated?

A. Costs are shared among HECO, Hawaii Electric Light Company, Inc. ("HELCO"), Maui Electric Company, Ltd. ("MECO") and Hawaiian Electric Industries Inc. ("HEI") using a weighted average based on a five year period (2001-2005) of productive labor hours by company for the retiree portion and the employee count by company for the active employee portion. Per the Decision and Order No. 23413, the agreed upon allocation is as follows: HECO – 67%, HELCO – 16%, MECO – 15%, HEI – 2%.

Q. What is HECO's portion of the total project costs?

A. HECO's portion of total costs for the HR Suite project is $6,311,000. The amount includes $371,000 for capital, $3,618,000 for deferred expenses, $2,167,000 for expenses – not reengineering and $155,000 reengineering expenses. See HECO-1315, page 2.

Q. How are the HR Suite costs being included in the 2009 test year estimates?

A. Capital costs are included as capital expenditures for the year. Expenses are charged to functional areas to which they relate and are included in account nos. 920, 921 and 926, as shown in HECO-1316. Deferred costs are being amortized beginning in May, 2009 over a twelve year period in account no. 921. The unamortized amount as of December 31, 2009 is included in rate base, as discussed by Ms. Patsy Nanbu in HECO T-11, and shown in HECO-1117. Worksheets for the calculation of the amortized amount including AFUDC are in HECO-WP-1257.

Q. What are the HR Suite costs included in account no. 926010 for the test year?

A. The estimated non-labor HR Suite cost of $441,500 is included in account no. 926010 for the test year, which is for the purchase of software, consulting and training. See HECO-1316 and HECO-WP-1356, Attachment 7.

WAGE AND SALARY INCREASE

Bargaining Unit Wage Increase

Q. How were wage increases determined for bargaining unit positions for the test year?

A. Wage increases for bargaining unit positions are negotiated between the Company and BEW, Local 1260. The Company and the IBEW recently agreed to an extension of the labor agreement until October 31, 2010. Based on provisions of this extension, wages for bargaining unit positions will be increased by 4% effective January 1, 2009. The percentage increase is reasonable based on industry experience and Company position within its competitive market.

Merit Compensation Program

Q. How was the 2009 salary increase budget determined for merit positions?

A. The salary budget for merit positions was based on an assessment of HECO's competitive market, identification of HECO's position within this competitive market, market trends regarding future salary increases and an evaluation of internal "compression" with bargaining unit pay levels.

Q. How were merit salaries increased for the test year?

A. To estimate salaries for the test year, salaries as of December 31, 2008, were increased by 4.0% effective May 1, 2009, plus .30% effective September 1, 2009, and .20% effective December 2009. However, individual salary increases within the approved budget will be granted to employees based on performance, current

1 salary position relative to peers, and current salary relative to the market pay rate
2 for the employee's position.
3 Q. How does HECO's budget of salary increase compare with the salary increase
4 plans at other companies?
5 A. HECO uses survey data reflecting anticipated merit budget movements. While it
6 is not possible to precisely forecast 2009 salary increase amounts industry-wide
7 due to the normal compensation survey timing and data delays, the 4.0% merit
8 increase budget was established based on early indications that 2009 merit
9 budgets will be slightly higher than the 2008 average in HECO's target labor
10 markets. In 2008, the average merit budget for exempt positions nationally is
11 projected to be 3.86%. The 2008 average for utilities nationally was 3.58%.
12 See HECO-WP-1357.
13 Q. What is HECO's competitive market?
14 A. HECO's competitive market includes Mainland and other local utilities, Pearl
15 Harbor, engineering firms and other large diversified local companies.
16 Q. How is HECO positioned within its competitive market?
17 A. HECO's pay is within the targeted market position in the general utility industry.
18 In some instances, particularly where HECO competes for very specialized skills
19 or skills that are in high demand, the Company has been unable to hire its first or
20 second choice candidates resulting in lengthy vacancies impacting business
21 operations.
22 Q. Are HECO's pay levels reasonable when compared to pay levels of similar
23 positions of other local employers?
24 A. Yes. HECO's overall base pay reflects the unique nature of working for a
25 regulated utility that provides services to nearly every resident on the island of

Oahu. When compared to the base pay of general businesses on Oahu, HECO's merit pay is above average. However, when compared to the Company's target labor market HECO's merit pay is within and sometimes below levels required to attract and retain experienced personnel desired for specific types of positions. Merit pay levels reflect the highly technical nature of the required engineering, operations and support positions needed for the utility. The supply of individuals with the specialized skills required to ensure efficient and consistent delivery of electricity is less than the demand both locally and nationally. Industry projections indicate the supply of labor will grow shorter as the population and existing skill holders age out of the workforce.

Q. What are other forms of compensation?

A. Many companies are shifting more of their compensation increases into "at risk" programs whereby base salaries are increased at a conservative rate, while enabling employees to earn additional variable ("at risk") compensation depending on individual or business performance. This serves to restrain base salary increases and the associated benefits and tax-related costs, while providing employees an incentive and opportunity to maintain or increase their "total" compensation (base plus variable). HECO will be reviewing the compensation structure to consider new programs for merit employees subsequent to the test year.

<u>Executive Compensation</u>

Q. Does HECO have a different form of compensation for its executives?

A. Yes. On one hand, HECO's executive compensation is managed similarly to non-executive merit employees, with salary ranges pegged to market salaries in the

general utility industry. However, HECO has an Executive Incentive Compensation Plan ("EICP") and a Long-Term Incentive Plan ("LTIP") which places a portion of the executives' compensation "at risk".

Q. Describe the "at risk" component of HECO's executive compensation program.

A. Generally, 20%-50% of the executive's total compensation depends on successful performance as determined through its EICP and LTIP. If certain objectives are not met, the executive does not receive his or her full competitive level of cash compensation.

Q. Has the cost with respect to this component of executive compensation been included in the test year?

A. No. While HECO's position is that EICP and LTIP costs are necessary business expenses that provide its executives with a competitive level of compensation, the Company has elected to limit the issues in this proceeding by excluding these costs from its test year revenue requirements. The Company reserves the right, however, to propose inclusion of such compensation in its revenue requirements in future rate cases.

SUMMARY

Q. Please summarize HECO's 2009 test year expense for employee benefits.

A. HECO's 2009 test year estimate for employee benefits expense of $23,407,000 includes costs for providing employee benefits to active employees and retirees. Benefits expense is $23,282,000 for the interim increase and $23,548,000 with CIP CT1. Benefits include pensions, other postretirement benefits, long-term disability, health plans, life insurance plans, other miscellaneous benefits, and training and health and wellness activities. Benefits are negotiated with the IBEW

for bargaining unit employees. Merit employees generally receive the same level of benefits with some differences in retirement benefits, long-term disability, group life insurance and long term care.

Pension and postretirement benefits were calculated by HECO's actuary using reasonable assumptions in accordance with provisions of SFAS 87 and SFAS 106, which have been accepted by the Commission for ratemaking purposes in prior rate cases and agreed to on an interim basis in HECO's last rate case. The other major cost category is medical plan costs which have been managed by negotiating increased cost sharing with employees. The 2009 test year expenses also include costs related to the HR Suite project which has been approved by the Commission in a separate docket. Wage and salary increase are within market comparisons.

Q. Why is HECO's total compensation package a necessary business expense?

A. HECO's mission is to provide reliable electrical service to its customers and our employees are critical to fulfilling this mission. Competitive wages and benefits enable HECO to attract and retain a highly qualified workforce.

Q. Does this conclude your testimony?

A. Yes, it does.

HAWAIIAN ELECTRIC COMPANY, INC.

JULIE K. PRICE

EDUCATIONAL BACKGROUND AND EXPERIENCE

Business Address:	Hawaiian Electric Company, Inc. 220 South King Street Honolulu, Hawaii 96813
Current Position:	Manager, Compensation & Benefits
Prior Positions:	1970 – 1989 Manager, Employee Benefits Administrator, Employee Benefits Secretary, Employee Benefits Dillingham Construction Corporation Pleasanton, CA Dillingham Corporation Honolulu, HI
Professional Registration:	Certified Employee Benefits Specialist CEBS, The Wharton School, University of Pennsylvania. Fellow, International Society of Certified Employee Benefits Specialist.
Years of Service:	18
Previous Testimony:	Docket Nos. 7243 and 7233 (Consolidated) - Postretirement Benefits Other Than Pensions-Costs related to these benefits and efforts to control these costs. Docket Nos. 7700, 7766, 04-0113, 2006-0386 – HECO: A&G Expenses-Employee Benefits. Docket Nos. 96-0040, 97-0346, 2006-0387 – MECO: A&G Expenses-Employee Benefits. Docket Nos. 94-0140, 99-0207, 05-0315 – HELCO: A&G Expenses-Employee Benefits.

HAWAIIAN ELECTRIC COMPANY, INC.
ADMINISTRATIVE AND GENERAL EXPENSES - Employee Benefits
($1000s)

Line	Account Description	(a) Recorded 2003	(b) 2004	(c) 2005	(d) 2006	(e) 2007	(f) Budget 2008	(g) Budget 2009	(h) Budget Adj	(i) TY Est 2009
	926000 Employee Pensions and Benefits									
1	Qualified Pension Plan	5,894	-1,547	4,588	14,237	17,711	14,401	14,283	340 (1)	14,623
2	Amortization of Regulatory Liability						3,309	861	-1,471 (2)	-610
3	Total Qualified Pension Plan	5,894	-1,547	4,588	14,237	17,711	17,710	15,144	-1,131	14,013
4	Non-Qualified Pension Plans	355	474	336	333	320	348	345	-345 (3)	0
5	Other Postretirement Benefits*	6,607	5,907	6,667	6,211	5,880	5,339	5,347	-1,494 (4)	3,853
6	Amortization of Regulatory Asset	1,302	1,302	1,302	1,302	1,302	1,302	1,302	0	1,302
7	Amortization of Regulatory Liability						394	116	-271 (5)	-155
8	Total Other Postretirement Benefits	7,909	7,209	7,969	7,513	7,182	7,035	6,765	-1,765	5,000
9	Long-Term Disability Benefits	498	509	532	488	460	506	546	-2 (6)	544
10	Other Benefits/Administration	47	198	527	316	435	461	410	389 (7)	799
11	Subtotals: Non-Labor	14,703	6,843	13,952	22,887	26,108	26,060	23,210	-2,854	20,356
12	Labor	496	555	580	550	621	535	841	0	841
13	Total 926000	15,199	7,398	14,532	23,437	26,729	26,595	24,051	-2,854	21,197
	926010 Employee Benefits-Flex Credits									
14	Flex Credits Less Prices	-744	-829	-841	-942	-1,027	-1,176	-1,234	5 (8)	-1,229
15	Group Medical Plan	6,097	7,005	7,543	7,431	7,871	8,101	8,752	-33 (9)	8,719
16	Group Dental Plan	957	977	1,124	1,175	1,143	1,217	1,323	-5 (10)	1,318
17	Group Vision Plan	192	192	170	179	181	192	204	0	204
18	Group Life Insurance Plan	389	693	824	865	756	987	1,072	-4 (11)	1,068
19	Other/Administration	87	135	192	157	296	893	882	0	882
20	Subtotals: Non-Labor	6,978	8,173	9,012	8,865	9,220	10,214	10,999	-37	10,962
21	Labor	66	71	69	54	90	359	211	0	211
22	Total 926010	7,044	8,244	9,081	8,919	9,310	10,573	11,210	-37	11,173
23	926020 Employee Benefits Transfer	-6,543	-4,446	-6,783	-8,992	-9,893	-11,011	-9,655	692	-8,963
24	Grand Total Charged to O&M	15,700	11,196	16,830	23,364	26,146	26,157	25,606	-2,199	23,407

Less CPI CT-1 Average Cost	-125	HECO-1101
Interim Increase	23,282	"
CPI CT-1 Annualized	266	"
CIP CT1 Step	23,548	"

* Net of electric discount

See notes on next page for explanations of adjustments.

HECO-1301
DOCKET NO. 2008-0083
PAGE 1 OF 3

Notes:

(1) Adjust 2009 budget amount for updated 2009 NPPC estimate from Watson Wyatt Worldwide (HECO-1302), $14,623 - $14,283 = $340.

(2) Adjustment of -$1,471 to derive test year 2009's balance of -$610 ($861 - $1,471 = -$610) as required under the NPPC tracking mechanism.

(3) Two adjustments were made resulting in the net adjustment amount of -$345 as follows:

a. Adjust 2009 budget amount for updated non-qualified plans estimate from Watson Wyatt Worldwide (HECO-1303, p. 3), $374 - $345 = $29.

b. Delete non-qualified plans -$374 to simplify and limit issues in this rate case.

c. $29 - $374 = -$345

(4) Two adjustments were made resulting in a gross adjustment amount of -$1,494 as follows:

a. Adjust 2009 budget amount for updated OPEB estimate from Watson Wyatt Worldwide:

i. Original 2009 budget OPEB (HECO-WP-1356, Attachment 2, p. 2, code 10A ($850) and 10B ($4,995), $850 + $4,995 = $5,845

ii. Updated 2009 OPEB estimate from Watson Wyatt Worldwide (HECO-1303, p. 3), $5,224

iii. $5,224 - $5,845 = -$621

b. Delete executive life program (postretirement) $873 to simplify and limit issues in this rate case.

c. -$621 - $873 = -$1,494

(5) Adjustment of -$271 to derive test year 2009's balance of -$155 ($116 - $271= -$155) as required under the OPEB tracking mechanism.

(6) Adjustment to delete cost for 6 employees (5 DSM, 1 SSF)

(7) Three adjustments were made resulting in a gross adjustment amount of $389 to simplify and limit issues in this rate case.

a. Delete executive life program (active) $507 (HECO-WP-1356, Attachment 2, p.2, codes 15D (-$180), E (-523), F ($128), G ($68)

b. Delete 401K administration -$44 as follows:

i. HECO -WP-1356, Attachment 2, p 2, codes 8A (-$13), C (-$8), 9 (-$16), totaling to -$36 (not foot due to rounding)

ii. HECO-WP-1356, Attachment 1, Account 779 (-$8 [-$7559 shown])

c. Delete HEI EICP, 401K, and non-qualified plans administration -$74 (HECO-1107)

d. $507 - $44 - $74 = $389

(8) Adjustment to delete cost for 6 employees (5 DSM, 1 SSF)

(9) Adjustment to delete cost for 6 employees (5 DSM, 1 SSF)

(10) Adjustment to delete cost for 6 employees (5 DSM, 1 SSF)

(11) Adjustment to delete cost for 6 employees (5 DSM, 1 SSF)

HAWAIIAN ELECTRIC COMPANY, INC.

ADMINISTRATIVE AND GENERAL EXPENSES
Employee Benefits
Significant Variances

Account/Codeblock	(a) 2007 Recorded	(b) 2009 Budget	Ref:	(c) Inc/-Dec	(d) % Inc/Dec	Explanation
926000 Employee Pensions and Benefits						
PFB779PHENENPFZZZZZ901	1,301,839	659,092	A	-642,747	-49	Decrease due to estimate of amortization for pension/OPEB tracking mechanism in 2009.
926010 Empl Benefits - Flex Credits						
PFB778PHENENPFZZZZZ501	9,902	212,474	B	202,572	2,046	Increase due to a credit in 2007 for forfeitures from spending accounts offset by HR Suite software maintenance in 2009
PFB778PHENENPFZZZZZ509	9,960,664	11,538,001	C	1,577,337	16	Increase due to increase in premium and covered employees for group insurance benefits.
PFB778PHENEP0001010501	47,222	432,386	D	385,164	816	Increase in HR Suite project consulting costs.

Ref: HECO-WP-1356, Attachment 2, pages 1-2:
A - Codes 12A, 12B
B - Codes 18A, 18B, 18C
C - Codes 19A-19H

HECO - Qualified Pension
Net Periodic Pension Cost (in thousands)

	2008 Actual
Discount rate	6.125%
Expected return on assets	8.500%
Service Cost	18,732
Interest Cost	38,919
Expected return on Assets	(47,318)
Amortization of Transition	-
Amortization of Prior Service Cost	(465)
Amortization of Gain/Loss	4,792
Net Periodic Pension Cost	14,660

	2009 Estimate
Discount rate	6.125%
Expected return on assets	8.500%
Service Cost	19,631
Interest Cost	40,377
Expected return on Assets	(48,858)
Amortization of Transition	-
Amortization of Prior Service Cost	(465)
Amortization of Gain/Loss	3,938
Net Periodic Pension Cost	14,623

Data
Based on 1/1/2008 employee data and assets

Assumptions
Discount Rate: 6.125%
Long Term Asset Return Rate: 8.500%
Assumed Asset Return Rate for 2008: 8.500%
Contributions:
Pension - 2008: $0
- 2009: $0

Hawaiian Electric Company, Inc.
Pension & OPEB Costs
1987-2009

Line		(a) 1987 Actual	(b) 1988 Actual	(c) 1989 Actual	(d) 1990 Actual	(e) 1991 Actual	(f) 1992 Actual	(g) 1993 Actual	(h) 1994 Actual	(i) 1995 Actual	(j) 1996 Actual
1	Qualified Plan NPPC	9,216,777	8,307,882	9,007,061	9,739,662	10,617,695	11,382,007	10,939,516	10,924,690	6,408,000	8,380,584
2	Non-Qualified Plans [2]	145,541	334,671	198,260	294,658	175,451	103,410	184,174	243,032	299,652	369,814
3	*Total*	*9,362,318*	*8,642,553*	*9,205,321*	*10,034,320*	*10,793,146*	*11,485,417*	*11,123,690*	*11,167,722*	*6,707,652*	*8,750,398*
4	OPEB - FAS 106 NPBC	NA	NA	NA	NA	NA	NA	NA	NA	15,724,612	14,935,627
5	OPEB - Reg Asset Amort [1]									2,751,001	1,301,839
6	Total	NA	NA	NA	NA	NA	NA	NA	NA	18,475,613	16,237,466
7	OPEB - Executive Life Only [3]	NA	NA	NA	NA	NA	NA	NA	NA	609,327	657,180
	Assumptions:										
	Discount Rate	7.50%	8.00%	8.50%	8.50%	8.50%	8.50%	8.50%	7.00%	8.00%	7.00%
	Asset Return Rate	7.50%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	8.00%	9.00%	9.00%
	Medical Trend	NA	NA	NA	NA	NA	NA	NA	NA	7.50%	6.50%
	Dental Trend	NA	NA	NA	NA	NA	NA	NA	NA	6.00%	5.00%
	Vision Trend	NA	NA	NA	NA	NA	NA	NA	NA	5.00%	4.00%
	Pension:										
	Actual Returns for Valuation	13.15%	0.58%	9.35%	0.78%	13.48%	23.51%	11.62%	11.27%	8.96%	11.27%
	Market Related Value Return	3.17%	4.34%	6.32%	3.42%	8.81%	12.06%	27.58%	10.49%	7.60%	13.06%
	Market Value Return	0.55%	6.89%	22.00%	-1.67%	25.93%	4.20%	16.16%	-2.77%	26.47%	13.92%
	OPEB:										
	Actual Returns for Valuation										7.54%
	Market Related Value Return										8.80%
	Market Value Return										11.29%
8	Contrib.To Pension Trust	8,736,278	8,307,882	9,007,061	9,739,662	10,617,695	11,382,007	10,939,516	10,924,690	9,058,124	6,971,824
9	Contrib.To OPEB Trusts	NA	NA	NA	NA	NA	NA	NA	NA	14,270,149	15,580,286

[1] Regulatory asset amortization began in January 1995.
[2] Non-qualified plan expenses removed from test year estimate to simplify and limit the issues in this case.
[3] Executive Life expenses removed from test year estimate to simplify and limit the issues in this case.

Hawaiian Electric Company, Inc.
Pension & OPEB Costs
1987-2009

Line		(k) 1997 Actual	(l) 1998 Actual	(m) 1999 Actual	(n) 2000 Actual	(o) 2001 Actual	(p) 2002 Actual	(q) 2003 Actual	(r) 2004 Actual	(s) 2005 Actual	(t) 2006 Actual
1	Qualified Plan NPPC	7,117,179	1,870,595	(1,073,259)	(19,322,692)	(20,465,117)	(15,655,436)	5,894,495	(1,546,921)	4,587,662	14,236,666
2	Non-Qualified Plans [2]	607,686	357,662	319,919	296,534	206,237	228,915	354,937	474,310	335,962	333,313
3	Total	7,724,865	2,228,257	(753,340)	(19,026,158)	(20,258,880)	(15,426,521)	6,249,432	(1,072,611)	4,923,624	14,569,979
4	OPEB - FAS 106 NPBC	14,393,350	9,284,785	3,574,126	1,761,196	2,106,966	4,262,731	6,905,766	6,233,487	7,033,687	6,620,307
5	OPEB - Reg Asset Amort [1]	1,301,839	1,301,839	1,301,839	1,301,839	1,301,839	1,301,839	1,301,839	1,301,839	1,301,839	1,301,839
6	Total	15,695,189	10,586,624	4,875,965	3,063,035	3,408,805	5,564,570	8,207,605	7,535,326	8,335,526	7,922,146
7	OPEB - Executive Life Only [3]	671,152	540,422	518,685	458,422	551,450	637,414	844,050	855,395	900,225	862,439
	Assumptions:										
	Discount Rate	7.00%	7.00%	6.50%	7.75%	7.50%	7.25%	6.75%	6.25%	6.00%	5.75%
	Asset Return Rate	9.00%	10.00%	10.00%	10.00%	10.00%	10.00%	9.00%	9.00%	9.00%	9.00%
	Medical Trend	6.50%	5.50%	5.00%	6.25%	6.00%	10%-4.75%	9.25%-4.25%	10%-4.25%	10%-5%	10%-5%
	Dental Trend	5.00%	4.00%	3.50%	4.75%	4.50%	4.75%	4.25%	4.25%	5.00%	5.00%
	Vision Trend	4.00%	3.50%	3.00%	4.25%	4.00%	3.75%	3.25%	3.25%	4.00%	4.00%
	Pension:										
	Actual Returns for Valuation	13.49%	15.03%	25.19%	15.03%	13.45%	-14.69%	2.29%	8.67%	8.68%	9.54%
	Market Related Value Return	14.09%	15.23%	28.31%	11.85%	5.04%	-14.52%	22.89%	2.58%	0.69%	5.97%
	Market Value Return	15.23%	16.38%	30.10%	-3.32%	-10.26%	-13.90%	23.30%	10.13%	7.38%	13.32%
	OPEB:										
	Actual Returns for Valuation	8.39%	10.76%	11.82%	19.82%	12.02%	4.52%	-2.16%	-2.68%	2.02%	6.48%
	Market Related Value Return	9.49%	11.66%	21.99%	10.80%	2.42%	-15.85%	24.19%	1.90%	1.65%	6.31%
	Market Value Return	14.04%	13.53%	35.64%	-5.63%	-11.18%	-15.88%	25.27%	10.66%	6.95%	13.22%
8	Contrib. To Pension Trust	5,876,355	2,206,034	0	0	0	0	13,394,248	15,186,494	6,000,000	0
9	Contrib. To OPEB Trusts	15,024,037	10,046,203	4,357,280	2,604,613	2,857,355	4,927,156	7,363,555	6,679,931	7,435,301	7,059,707

[1] Regulatory asset amortization began in January 1995.
[2] Non-qualified plan expenses removed from test year estimate to simplify and limit the issues in this case.
[3] Executive Life expenses removed from test year estimate to simplify and limit the issues in this case.

Hawaiian Electric Company, Inc.
Pension & OPEB Costs
1987-2009

Line		(u) 2007 Actual	(v) 2008 Actual	(w) 2009 Est
1	Qualified Plan NPPC	17,710,729	14,660,243	14,623,000
2	Non-Qualified Plans [2]	320,387	348,106	374,000
3	Total	18,031,116	15,008,349	14,997,000
4	OPEB - FAS 106 NPBC	6,291,386	5,548,953	5,224,000
5	OPEB - Reg Asset Amort [1]	1,301,839	1,301,839	1,301,839
6	Total	7,593,225	6,850,792	6,525,839
7	OPEB - Executive Life Only [3]	835,309	869,715	873,000
	Assumptions:			
	Discount Rate	6.00%	6.125%	6.125%
	Asset Return Rate	8.50%	8.50%	8.50%
	Medical Trend	10%-5%	10%-5%	10%-5%
	Dental Trend	5.00%	5.00%	5.00%
	Vision Trend	4.00%	4.00%	4.00%
	Pension:			
	Actual Returns for Valuation	12.83%		
	Market Related Value Return	12.62%		
	Market Value Return	8.82%		
	OPEB:			
	Actual Returns for Valuation	12.69%		
	Market Related Value Return	12.16%		
	Market Value Return	8.65%		
8	Contrib.To Pension Trust	0	0	0
9	Contrib.To OPEB Trusts	6,757,916	5,981,077	5,652,839

[1] Regulatory asset amortization began in January 1995.
[2] Non-qualified plan expenses removed from test year estimate to simplify and limit the issues in this case.
[3] Executive Life expenses removed from test year estimate to simplify and limit the issues in this case.

HECO - OPEB
Net Periodic Benefit Cost (in thousands)

	2008 Actual
Discount rate	6.125%
Expected return on assets	8.500%

	Total	Elec Dis	Exe Life	Net
Service Cost	3,156	315	56	2,785
Interest Cost	7,465	596	471	6,398
Expected return on Assets	(7,472)	(9)	-	(7,463)
Amortization of Transition	2,400	127	343	1,930
Amortization of Prior Service Cost	-	-	-	-
Amortization of Gain/Loss	-	-	-	-
Net Periodic Pension Cost	5,549	1,029	870	3,650

	2009 Estimate
Discount rate	6.125%
Expected return on assets	8.500%

	Total	Elec Dis	Exe Life	Net
Service Cost	3,096	323	46	2,727
Interest Cost	7,739	624	484	6,631
Expected return on Assets	(8,011)	(9)	-	(8,002)
Amortization of Transition	2,400	127	343	1,930
Amortization of Prior Service Cost	-	-	-	-
Amortization of Gain/Loss	-	-	-	-
Net Periodic Pension Cost	5,224	1,065	873	3,286

Data
Based on 1/1/2008 employee data and assets

Assumptions

Discount Rate: 6.125%	
Long Term Asset Return Rate:	
BU VEBA, 401(h)	8.50%
NBU VEBA	4.75%
Electric discount trust	5.25%

Trend Rates	
Medical	10% to 5%
Dental	5%
Vision	4%

2008 asset return assumed to equal expected return

Average Employee Count Calculation for Benefits Forecast

	Dec-08	Jan-09	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09
HECO-WP-1501 [2]	1578 [1]	1620	1620	1620	1620	1620	1623	1623	1623	1621	1621	1621	1621
Less: Part-Time/Temps													
Cust Svc	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14	-14
Corporate Audit							-4	-4	-4	-2	-2	-2	-2
Technology	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
CorpCom													
WFSD		-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
Total Part-Time/Temps	-15	-17	-17	-17	-17	-17	-21	-21	-21	-19	-19	-19	-19
Employee Count for Benefits	1563	1603	1603	1603	1603	1603	1602	1602	1602	1602	1602	1602	1602
13-month Average - 2009	1599												

[1] Number of employees at 12/31/08 per budget - See HECO-1503, Col G
[2] Excludes 5 DSM employees and 1 employee reduction to Safety, Security & Facilities department

Hawaiian Electric Co., Inc.
CALCULATION OF LONG TERM DISABILITY
2009

A. MERIT

1.	Average Monthly Salary for April 2008		$6,547
	5/1/2008 Adjustment	x	1.035
	(Jan '09 - Apr '09)		$6,776
	5/1/2009 Adjustment	x	1.045
	(May '09 - Dec '09)		$7,081
2.	2009 Covered Compensation		
	Jan '09 - Apr '09		
	$6,776 x 4 mos.		$27,104
	May '09 - Dec '09		
	$7,081 x 8 mos.		$56,648
	Total Covered Compensation		$83,752
3.	Premium Calculation		
	48.42% x 1599 employees	x	774
	Total Covered Compensation for 2009		$64,824,048
	Premium Rate		
	$0.48 per $100		$311,155

B. BU

1.	Average BU Salary for April 2008		$5,253
	1/1/2009 Adjustment	x	1.04
	(Jan '09 - Dec '09)		$5,463
2.	2009 Covered Compensation		
	Jan '09 - Dec '09		
	$5,463 x 12 mos		$65,556
3.	Premium Calculation		
	51.58% x 1599 employees	x	825
	Total Covered Compensation for 2009		$54,083,700
	Premium Rate		
	$0.37 per $100		$200,110

C. Premiums

MERIT A3		$311,155
BU B3		$200,110
Total Premiums		$511,265
ASA Administrative Fees		$3,012
Claims Annualized (incurred as of 2/2008)		$30,000
Total Long Term Disability	**780 PHE NE NPFZZZZZ 509**	**$544,277**

UTILITIES 2008 Active Premium Basis -- 5-Year Average

		2003 Amount	2004 Amount	% Change	2005 Amount	% Change	2006 Amount	% Change	2007 Amount	% Change	2008 Amount	% Change	**5 Year Average**
PPP	Single	195.83	207.65	6.04%	208.46	0.39%	202.74	-2.74%	210.41	3.78%	206.10	-2.048%	**1.03%**
	Single Parent	387.13	405.67	4.79%	417.76	2.98%	407.41	-2.48%	422.22	3.64%	417.03	-1.229%	**1.50%**
	Couple	465.78	488.05	4.78%	502.72	3.01%	490.27	-2.48%	508.10	3.64%	501.90	-1.220%	**1.50%**
	Family	502.54	526.15	4.70%	542.86	3.18%	529.50	-2.46%	548.71	3.63%	542.30	-1.168%	**1.53%**
HPH Plus	Single	220.12	232.15	5.47%	237.19	2.17%	232.89	-1.81%	249.77	7.25%	245.55	-1.690%	**2.21%**
	Single Parent	418.68	437.50	4.50%	456.20	4.27%	449.17	-1.54%	482.46	7.41%	477.20	-1.090%	**2.65%**
	Couple	503.76	526.37	4.49%	548.96	4.29%	540.52	-1.54%	580.58	7.41%	574.30	-1.082%	**2.66%**
	Family	547.10	571.11	4.39%	596.88	4.51%	587.86	-1.51%	631.55	7.43%	625.10	-1.021%	**2.70%**
Kaiser													
	Single	234.14	286.96	22.56%	249.01	-13.22%	258.07	3.64%	253.31	-1.84%	247.78	-2.183%	**1.14%**
	Single Parent	449.55	550.96	22.56%	478.10	-13.22%	495.50	3.64%	486.35	-1.85%	475.71	-2.188%	**1.14%**
	Couple	540.86	662.88	22.56%	575.22	-13.22%	596.14	3.64%	585.15	-1.84%	572.34	-2.189%	**1.14%**
	Family	590.03	723.14	22.56%	627.51	-13.22%	650.34	3.64%	638.34	-1.85%	624.37	-2.188%	**1.14%**
Vision													
	Single	5.85	5.85	0.00%	4.86	-16.92%	5.08	4.53%	5.08	0.00%	5.08	0.00%	**-2.78%**
	2-Party	11.70	11.70	0.00%	9.71	-17.01%	10.15	4.53%	10.15	0.00%	10.15	0.00%	**-2.80%**
	Family	16.97	16.97	0.00%	14.09	-16.97%	14.73	4.54%	14.73	0.00%	14.73	0.00%	**-2.79%**

UTILITIES 2008 Active Premium Basis -- 5-Year Average

		2003 Amount	2004 Amount	% Change	2005 Amount	% Change	2006 Amount	% Change	2007 Amount	% Change	2008 Amount	% Change	**5 Year Average**
Maj-HDS													
	Single	28.69	29.44	2.61%	31.21	6.01%	32.32	3.56%	31.29	-3.19%	31.29	0.00%	**1.75%**
	Couple	57.37	58.86	2.60%	62.39	6.00%	64.63	3.59%	62.56	-3.20%	62.56	0.00%	**1.75%**
	Family	82.11	84.24	2.59%	89.29	5.99%	92.48	3.57%	89.52	-3.20%	89.52	0.00%	**1.74%**
Group Life	Basic	0.149	0.149	0.00%	0.220	47.65%	0.205	-6.82%	0.200	-2.44%	0.200	0.00%	**6.06%**
	Supplemental												
	0-29	0.059	0.059	0.00%	0.059	0.00%	0.064	8.47%	0.064	0.00%	0.064	0.00%	**1.64%**
	30-34	0.066	0.066	0.00%	0.066	0.00%	0.072	9.09%	0.072	0.00%	0.072	0.00%	**1.76%**
	35-39	0.110	0.110	0.00%	0.110	0.00%	0.119	8.18%	0.119	0.00%	0.119	0.00%	**1.59%**
	40-44	0.146	0.146	0.00%	0.146	0.00%	0.159	8.90%	0.159	0.00%	0.159	0.00%	**1.72%**
	45-49	0.212	0.212	0.00%	0.212	0.00%	0.230	8.49%	0.230	0.00%	0.230	0.00%	**1.64%**
	50-54	0.372	0.372	0.00%	0.372	0.00%	0.404	8.60%	0.404	0.00%	0.404	0.00%	**1.66%**
	55-59	0.599	0.599	0.00%	0.599	0.00%	0.651	8.68%	0.651	0.00%	0.651	0.00%	**1.68%**
	60-64	1.013	1.013	0.00%	1.013	0.00%	1.100	8.59%	1.100	0.00%	1.100	0.00%	**1.66%**
	65 & +	1.899	1.899	0.00%	1.899	0.00%	2.062	8.58%	2.062	0.00%	2.062	0.00%	**1.66%**
Dep Life	$10,000	2.230	2.230	0.00%	2.230	0.00%	2.230	0.00%	2.230	0.00%	2.230	0.00%	**0.00%**
	$25,000	5.870	5.870	0.00%	5.870	0.00%	5.870	0.00%	5.870	0.00%	5.870	0.00%	**0.00%**
AD&D	Single	0.035	0.035	0.00%	0.035	0.00%	0.035	0.00%	0.035	0.00%	0.035	0.00%	**0.00%**
	Family	0.058	0.058	0.00%	0.058	0.00%	0.058	0.00%	0.058	0.00%	0.058	0.00%	**0.00%**
LTD	per $100	0.42	0.42	0.00%									
	BU				0.42		0.38	-9.52%	0.37	-2.63%	0.37	0.00%	**-4.14%** *
	NBU				0.59		0.53	-10.17%	0.48	-9.43%	0.48	0.00%	**-6.65%** *

* 3-yr average

Hawaiian Electric Company, Inc.

Training and Development Costs - Account no. 926000
($Thousands)

RA	Activity	Program	Actual 2003	2004	2005	2006	2007	Budget 2008	TY 2009	Notes	Ref: HECO-WP-1356
PF1/PFD	780	Voluntary Education Assistance	45.6	89.8	139.6	104.7	120.0	160.0	135.0	A	Attch 3
	776/788	In-House Training	0.6	100.0	68.3	35.8	42.5	8.5	73.2	B	Attch 3
PPI	786	Apprenticeship	0.2	9.9	16.2	5.2	3.1	44.0	16.4	C	Attch 6
PFB	749/789	External Training (Comp & Benefits Div)	0.3	1.3	11.7	0.9	3.9	1.0	6.3	D	Attch 2, pg 1 (Code 1,2,3) pg 3 (Code 17)
		Total	46.7	201.0	235.8	146.6	169.5	213.5	230.9		

Notes:

A Cost varies based on number of employees involved in the program and cost of tuition and materials.
Program temporarily suspended from May-Dec 2003 due to constraints on O&M expenses.
2008 reflects plans to promote VEA program and includes $40,000 that should have been allocated to account 921 (activity 722) for membership to the Corporate Leadership Council.

B Program curtailed in 2003, 2006, 2007 and 2008 due to constraints on O&M expenses. Escalated activity in 2004 and 2005.
2009 reflects assumption of normal training and development curriculum.

C Cost varies based on number of current apprentices, which step they're in, and number of senior helpers to be indentured as apprentices.

D Training curtailed in 2003, 2006, 2007 and 2008 due to constraints on O&M expenses; 2005 includes expenses for positions subsequently moved to the Safety, Securities and Facilities Dept.
2009 reflects plans to attend Oracle Users Group conference and training registration fees for 2 people to attend WorldAtWork.

Hawaiian Electric Co., Inc.

Projected FlexPlan & Premium Expense

2009

CREDITS		PRICES		Enrollment Participation % as of Jan-08	Projected Enrollment No.	Amount		CR - PR
Basic	$2,591,915							
Life	$465,437							
Total Credits	$3,057,352							
778 PHE NE PNFZZZZZ 900								
		PPP	Single	11.6%	185.5	$303,537		
			S. Parent	2.5%	40.0	$70,550		
			Couple	6.6%	105.5	$207,523		
			Family	20.8%	332.6	$706,363		
		HPH Plus	Single	10.6%	169.5	$277,356		
			S. Parent	3.4%	54.4	$95,949		
			Couple	7.0%	111.9	$220,112		
			Family	19.6%	313.4	$665,586		
		SUBTOTAL HMSA				***$2,546,976***		
		Kaiser	Single	3.7%	59.2	$96,870		
			S. Parent	0.7%	11.2	$19,754		
			Couple	2.4%	38.4	$75,534		
			Family	5.1%	81.5	$173,086		
						$365,244		
		Vision	Single	25.9%	414.1	$27,331		
			Couple	16.0%	255.8	$18,418		
			Family	52.1%	833.1	$59,983		
						$105,732	***$3,017,952***	778 PHE NE NPFZZZZZ 900
		Major Care	Single	25.2%	402.9	$39,742		
			Couple	17.3%	276.6	$33,723		
			Family	54.5%	871.5	$126,542		
		SUBTOTAL DENTAL				***$200,007***		778 PHE NE NPFZZZZZ 900
		Basic Life				$395,268		
		Supplemental Life				$454,164		
		SUBTOTAL LIFE INSURANCE				***$849,432***		778 PHE NE NPFZZZZZ 900
		Dependent Life				***$51,300***		778 PHE NE NPFZZZZZ 900
		AD&D				***$167,717***		778 PHE NE NPFZZZZZ 900
				Total Prices		$4,286,408		
							Total Credits - Prices	($1,229,056)

Hawaiian Electric Co., Inc.

Life Credits

2009

				Merit	Exec	BU	Total
January	2008	Average Life Credit		$354.72	$120.00	$223.44	
2009	Projected Premium Increase		0%	X 1	X 1	X 1	
	Salary/Wage Increase			X 1.0350	X 1.0000	X 1.0350	
2009	Projected Average Life Credit			$367.14	$120.00	$231.26	
Projected Number of Employees *				X 735	X 40	X 825	
		2009 Life Credits		$269,847.90	$4,800.00	$190,789.50	**$465,437**

* does not total 1599 due to rounding

Hawaiian Electric Co., Inc.

Flex Plan Premiums & Prices

2009

Plan Options	Premium Per Month 2008 Medical	Premium Per Month 2009	Medical % Increase	FlexPlan Price per Pay Pd 2008	FlexPlan Price per Pay Pd 2009
Credits				67.54	67.54
PPP					
Single	206.10	211.25	2.500	68.18	68.18
Single Parent	417.03	427.46	2.500	73.49	73.49
Couple	501.90	514.45	2.500	81.96	81.96
Family	542.30	555.86	2.500	88.49	88.49
HPH Plus					
Single	245.55	251.69	2.500	68.18	68.18
Single Parent	477.20	489.13	2.500	73.49	73.49
Couple	574.30	588.66	2.500	81.96	81.96
Family	625.10	640.73	2.500	88.49	88.49
Kaiser					
Single	247.78	253.97	2.500	68.18	68.18
Single Parent	475.71	487.60	2.500	73.49	73.49
Couple	572.34	586.65	2.500	81.96	81.96
Family	624.37	639.98	2.500	88.49	88.49
Vision					
Single	5.08	5.08	0.000	2.75	2.75
Couple	10.15	10.15	0.000	3.00	3.00
Family	14.73	14.73	0.000	3.00	3.00
Major Care					
Single	31.29	31.84	1.750	4.11	4.11
Couple	62.56	63.65	1.750	5.08	5.08
Family	89.52	91.09	1.750	6.05	6.05

Note:

Medical prices based on employee contribution per 2007 Negotiations
No price increase for Vision and Dental

	Single	SingleParent	Couple	Family
Medical	68.18	73.49	81.96	88.49
Vision	2.75	3.00	3.00	3.00
Dental	4.11	6.05	5.08	6.05
Total Prices	75.04	82.54	90.04	97.54
Less Credits	67.54	67.54	67.54	67.54
Employee Cont.	7.50	15.00	22.50	30.00

Hawaiian Electric Co., Inc.

Calculation of Medical Expense

2009

PLAN	COVERAGE	1 % OF PARTICIPATION 1/1/2008	2 PROJECTED PARTICIPATION 2009	3 2009 MONTHLY PREMIUM RATES	4 MONTHLY PREMIUM FOR 2009 PARTICIPATION (2 x 3)	5 2009 ANNUAL PREMIUM
PPP	Single	11.6%	185.5	$211.25	$39,187	$470,244
(HMSA)	S. Parent	2.5%	40.0	$427.46	$17,098	$205,176
	Couple	6.6%	105.5	$514.45	$54,274	$651,288
	Family	20.8%	332.6	$555.86	$184,879	$2,218,548
					$295,438	$3,545,256
HPH Plus	Single	10.6%	169.5	$251.69	$42,661	$511,932
(HMSA)	S. Parent	3.4%	54.4	$489.13	$26,609	$319,308
	Couple	7.0%	111.9	$588.66	$65,871	$790,452
	Family	19.6%	313.4	$640.73	$200,805	$2,409,660
					$335,946	$4,031,352
Kaiser	Single	3.7%	59.2	$253.97	$15,035	$180,420
	S. Parent	0.7%	11.2	$487.60	$5,461	$65,532
	Couple	2.4%	38.4	$586.65	$22,527	$270,324
	Family	5.1%	81.5	$639.98	$52,158	$625,896
					$95,181	$1,142,172
Waive		6.0%	95.9			
		100.0%	1,599		$726,565	$8,718,780

778 PHE NE NPFZZZZZ 509	TOTAL	HMSA	$7,576,608
778 PHE NE NPFZZZZZ 509	TOTAL	Kaiser	$1,142,172

Hawaiian Electric Co., Inc.

Calculation of Dental Expense

2009

		1	2	3	4	5
PLAN	**COVERAGE**	**% OF PARTICIPATION 1/1/2008**	**PROJECTED PARTICIPATION 2009**	**2009 MONTHLY PREMIUM RATES**	**MONTHLY PREMIUM FOR 2009 PARTICIPATION (2 x 3)**	**2009 PROJECTED ANNUAL PREMIUM**
Major Care (HDS)	Single	25.2%	402.9	$31.84	$12,828	$153,936
	2 Party	17.3%	276.6	$63.65	$17,606	$211,272
	Family	54.5%	871.5	$91.09	$79,385	$952,620
					$109,819	$1,317,828
Waive		3.0%	48.0			
		100.0%	1,599		$109,819	$1,317,828

778 PHE NE NPFZZZZZ 509 **TOTAL** **$1,317,828**

Hawaiian Electric Co., Inc.

Calculation of Vision Expense

2009

PLAN	COVERAGE	1 % OF PARTICIPATION 1/1/2008	2 PROJECTED PARTICIPATION 2009	3 2009 MONTHLY PREMIUM RATES	4 MONTHLY PREMIUM FOR 2009 PARTICIPATION (2 x 3)	5 2009 PROJECTED ANNUAL PREMIUM
VISION	Single	25.9%	414.1	$5.08	$2,104	$25,248
(VSP)	Couple	16.0%	255.8	$10.15	$2,596	$31,152
	Family	52.1%	833.1	$14.73	$12,272	$147,264
Waive		6.0%	96.0			
		100.0%	1,599		$16,972	$203,664

778 PHE NE NPFZZZZZ 509 **TOTAL** **$203,664**

Hawaiian Electric Co., Inc.
Summary of Group Life Insurance Premiums
2009

Basic Coverage
Merit = 2 x annual comp
Exec = 2 x annual comp
BU = 1-1/2 x annual comp

	a	b	c	d	e	f	g	h
	Coverage Option	**Coverage**	**2009 Average Annual Compensation ***	**% of Participation 1/1/2008**	**2009 Projected Participation**	**2009 Basic Coverage Amount** (b x c x e)	**Monthly Premium** ($.20/1000 x f)	**2009 Annual Premium** (g x 12)
Basic Life								
BU	1/2 x annual comp	0.5	$63,969	4.68%	74.8	$2,392,441	$478	$5,736
	1-1/2 x annual comp	1.5	$63,969	4.89%	78.2	$7,503,564	$1,501	$18,012
	2-1/2 x annual comp	1.5	$63,969	4.34%	69.4	$6,659,173	$1,332	$15,984
	3-1/5 x annual comp	1.5	$63,969	33.95%	542.9	$52,093,155	$10,419	$125,028
	$50,000	$50,000		3.72%	59.5	$2,975,000	$595	$7,140
					824.8	$71,623,333	$14,325	$171,900
EXEC	Waive	0	$160,263	0.41%	6.6	$0	$0	$0
	1/2 x annual comp	0.5	$160,263	0.07%	1.1	$88,145	$18	$216
	1-1/2 x annual comp	1.5	$160,263	0.83%	13.3	$3,197,247	$639	$7,668
	2-1/2 x annual comp	2	$160,263	0.21%	3.4	$1,089,788	$218	$2,616
	3-1/5 x annual comp	2	$160,263	0.62%	9.9	$3,173,207	$635	$7,620
	$50,000	$50,000		0.27%	4.3	$215,000	$43	$516
					38.6	$7,763,387	$1,553	$18,636
EXEC Max	Max Benefit	$750,000		0.07%	1.1	$825,000	$165	$1,980
					1.1	$825,000	$165	$1,980
MERIT	1/2 x annual comp	0.5	$76,271	7.58%	121.2	$4,622,023	$924	$11,088
	1-1/2 x annual comp	1.5	$76,271	8.40%	134.3	$15,364,793	$3,073	$36,876
	2-1/2 x annual comp	2	$76,271	4.69%	75.0	$11,440,650	$2,288	$27,456
	3-1/5 x annual comp	2	$76,271	20.04%	320.4	$48,874,457	$9,775	$117,300
	$50,000	$50,000		5.23%	83.6	$4,180,000	$836	$10,032
					734.5	$84,481,923	$16,896	$202,752
	2009 Projected Basic Group Life Premiums				1599	$164,693,643	$32,939	$395,268

Basic Life Premiums	**$395,268**
Supplemental Life Premiums	**$454,164**
Dependent Life Premiums	**$51,300**
Accidental Death Premiums	**$167,717**
778 PHE NE NPFZZZZZ 509	**$1,068,449**

* Calculation of 2009 Average Annual Compensation:

	BU	MERIT	EXEC
1/1/2008 Average Annual Compensation	$61,806	$73,692	$154,843
Multiplied by 2009 Projected Increase	3.50%	3.50%	3.50%
2009 Average Annual Compensation	$63,969	$76,271	$160,263

Hawaiian Electric Co., Inc.

Calculation of Group Life Insurance - Supplemental

2009

Total Coverage = 2-1/2 x annual comp

	Basic Coverage	Supplemental Coverage*
Merit	2 x annual comp	1/2 x annual comp
Exec	2 x annual comp	1/2 x annual comp
BU	1-1/2 x annual comp	1 x annual comp

a		b	c	d	e	f	g	h
Supplemental Coverage*	**Age**	**Monthly Rate Per $1000**	**2009 Average Annual Compensation**	**% of Participation 1/1/2008**	**2009 Projected Participation**	**2009 Supplemental Coverage Amount** (a x c x d)	**Monthly Premium** (b/$1000 x f)	**2009 Annual Premium** (g x 12)
1/2 x annual comp								
MERIT	0-29	0.064	$76,271	0.27%	4.3	$163,983	$10	$120
	30-34	0.072	$76,271	0.07%	1.1	$41,949	$3	$36
	35-39	0.119	$76,271	0.28%	4.5	$171,610	$20	$240
	40-44	0.159	$76,271	1.03%	16.5	$629,236	$100	$1,200
	45-49	0.230	$76,271	0.69%	11.0	$419,491	$96	$1,152
	50-54	0.404	$76,271	0.69%	11.0	$419,491	$169	$2,028
	55-59	0.651	$76,271	1.03%	16.5	$629,236	$410	$4,920
	60-64	1.100	$76,271	0.55%	8.8	$335,592	$369	$4,428
	65+	2.062	$76,271	0.07%	1.1	$41,949	$86	$1,032
					74.8	$2,852,537	$1,263	$15,156
EXEC	0-29	0.064	$160,263	0.00%	0.0	$0	$0	$0
	30-34	0.072	$160,263	0.00%	0.0	$0	$0	$0
	35-39	0.119	$160,263	0.00%	0.0	$0	$0	$0
	40-44	0.159	$160,263	0.00%	0.0	$0	$0	$0
	45-49	0.230	$160,263	0.00%	0.0	$0	$0	$0
	50-54	0.404	$160,263	0.00%	0.0	$0	$0	$0
	55-59	0.651	$160,263	0.00%	0.0	$0	$0	$0
	60-64	1.100	$160,263	0.21%	3.4	$272,447	$300	$3,600
	65+	2.062	$160,263	0.00%	0.0	$0	$0	$0
					3.4	$272,447	$300	$3,600
1 x annual comp								
BU	0-29	0.064	$63,969	0.69%	11.0	$703,659	$45	$540
	30-34	0.072	$63,969	0.41%	6.6	$422,195	$30	$360
	35-39	0.119	$63,969	0.27%	4.3	$275,067	$33	$396
	40-44	0.159	$63,969	0.83%	13.3	$850,788	$135	$1,620
	45-49	0.230	$63,969	0.55%	8.8	$562,927	$129	$1,548
	50-54	0.404	$63,969	0.96%	15.4	$985,123	$398	$4,776
	55-59	0.651	$63,969	0.28%	4.5	$287,861	$187	$2,244
	60-64	1.100	$63,969	0.21%	3.4	$217,495	$239	$2,868
	65+	2.062	$63,969	0.14%	2.2	$140,732	$290	$3,480
					69.5	$4,445,847	$1,486	$17,832
Total Supplemental Premium for 2-1/2 x annual comp coverage					148	$7,570,831	$3,049	$36,588

Hawaiian Electric Co., Inc.

Calculation of Group Life Insurance - Supplemental

2009

Total Coverage = 3-1/2 x annual comp

	Basic Coverage	Supplemental Coverage*
Merit	2 x annual comp	1-1/2 x annual comp
Exec	2 x annual comp	1-1/2 x annual comp
BU	1-1/2 x annual comp	2 x annual comp

a		b	c	d	e	f	g	h
Supplemental Coverage*	**Age**	**Monthly Rate Per $1000**	**2009 Average Annual Compensation**	**% of Participation 1/1/2008**	**2009 Projected Participation**	**2009 Supplemental Coverage Amount** (a x c x d)	**Monthly Premium** (b/$1000 x f)	**2009 Annual Premium** (g x 12)
1-1/2 x annual comp								
MERIT	0-29	0.064	$76,271	0.21%	3.4	$388,982	$25	$300
	30-34	0.072	$76,271	0.55%	8.8	$1,006,777	$72	$864
	35-39	0.119	$76,271	2.13%	34.1	$3,901,262	$464	$5,568
	40-44	0.159	$76,271	3.99%	63.8	$7,299,135	$1,161	$13,932
	45-49	0.230	$76,271	5.37%	85.9	$9,827,518	$2,260	$27,120
	50-54	0.404	$76,271	4.06%	64.9	$7,424,982	$3,000	$36,000
	55-59	0.651	$76,271	2.76%	44.1	$5,045,327	$3,285	$39,420
	60-64	1.100	$76,271	0.90%	14.4	$1,647,454	$1,812	$21,744
	65+	2.062	$76,271	0.07%	1.1	$125,847	$259	$3,108
					320.5	$36,667,284	$12,338	$148,056
EXEC	0-29	0.064	$160,263	0.00%	0.0	$0	$0	$0
	30-34	0.072	$160,263	0.00%	0.0	$0	$0	$0
	35-39	0.119	$160,263	0.00%	0.0	$0	$0	$0
	40-44	0.159	$160,263	0.07%	1.1	$264,434	$42	$504
	45-49	0.230	$160,263	0.14%	2.2	$528,868	$122	$1,464
	50-54	0.404	$160,263	0.27%	4.3	$1,033,696	$418	$5,016
	55-59	0.651	$160,263	0.14%	2.2	$528,868	$344	$4,128
	60-64	1.100	$160,263	0.00%	0.0	$0	$0	$0
	65+	2.062	$160,263	0.00%	0.0	$0	$0	$0
					9.8	$2,355,866	$926	$11,112
2 x annual comp								
BU	0-29	0.064	$63,969	0.96%	15.4	$1,970,245	$126	$1,512
	30-34	0.072	$63,969	2.00%	32.0	$4,094,016	$295	$3,540
	35-39	0.119	$63,969	5.10%	81.5	$10,426,947	$1,241	$14,892
	40-44	0.159	$63,969	7.23%	115.6	$14,789,633	$2,352	$28,224
	45-49	0.230	$63,969	8.06%	128.9	$16,491,208	$3,793	$45,516
	50-54	0.404	$63,969	5.58%	89.2	$11,412,070	$4,610	$55,320
	55-59	0.651	$63,969	3.24%	51.8	$6,627,188	$4,314	$51,768
	60-64	1.100	$63,969	1.38%	22.1	$2,827,430	$3,110	$37,320
	65+	2.062	$63,969	0.40%	6.4	$818,803	$1,688	$20,256
					542.9	$69,457,540	$21,529	$258,348
Total Supplemental Premium for 3-1/2 x annual comp coverage					873	$108,480,690	$34,793	$417,516
				BU	612	$73,903,387	$23,015	$276,180
				MERIT	395	$39,519,821	$13,601	$163,212
				EXEC	13	$2,628,313	$1,226	$14,712
Total Supplemental Premium for 2-1/2 & 3-1/2 times annual comp coverage					1020	$116,051,521	$37,842	**$454,104**

Hawaiian Electric Co., Inc.

Calculation of Group Life Insurance - Supplemental
for $50,000 Coverage*
2009

	Age	a Monthly Rate Per $1000	b 2009 Average Supplemental Coverage	c % of Participation 1/1/2008	d 2009 Projected Participation	e 2009 Supplemental Coverage Amount (b x c)	f Monthly Premium (a/$1000 x e)	g 2009 Annual Premium (f x 12)
BU	0-29	0.064	$4,140	0.07%	1.1	$4,554	$0	$0
	30-34	0.072	$4,140	0.00%	0.0	$0	$0	$0
	35-39	0.119	$4,140	0.00%	0.0	$0	$0	$0
	40-44	0.159	$4,140	0.00%	0.0	$0	$0	$0
	45-49	0.230	$4,140	0.00%	0.0	$0	$0	$0
	50-54	0.404	$4,140	0.07%	1.1	$4,554	$2	$24
	55-59	0.651	$4,140	0.07%	1.1	$4,554	$3	$36
	60-64	1.100	$4,140	0.00%	0.0	$0	$0	$0
	65+	2.062	$4,140	0.00%	0.0	$0	$0	$0
					3.3	$13,662	$5	$60
MERIT	0-29	0.064	$0	0.00%	0.0	$0	$0	$0
	30-34	0.072	$0	0.00%	0.0	$0	$0	$0
	35-39	0.119	$0	0.00%	0.0	$0	$0	$0
	40-44	0.159	$0	0.00%	0.0	$0	$0	$0
	45-49	0.230	$0	0.00%	0.0	$0	$0	$0
	50-54	0.404	$0	0.00%	0.0	$0	$0	$0
	55-59	0.651	$0	0.00%	0.0	$0	$0	$0
	60-64	1.100	$0	0.00%	0.0	$0	$0	$0
	65+	2.062	$0	0.00%	0.0	$0	$0	$0
					0.0	$0	$0	$0
Total Supplement Premium for $50,000 coverage					3	$13,662	$5	**$60**

* Employees who elect $50,000 coverage with a portion subject to supplemental rates

Hawaiian Electric Co., Inc.

Calculation of Dependent Life Insurance

2009

Plan	Participation as of Jan-08	No. of Emp Enrolled	Annual Rate	TOTAL
10K	6.60%	106	$26.76	$2,837
25K	43.00%	688	$70.44	$48,463
				$51,300

778 PHE NE NPFZZZZZ 509 **$51,300**

Hawaiian Electric Co., Inc.

Calculation of Accidental Death & Dismemberment

2009

	MERIT	BU	TOTAL
Average Single Coverage [1]	$189,512	$187,069	
Salary/Wage Adjustment [2]	x 1.0350	x 1.0350	
	$196,145	$193,616	
Projected No. of Merit and BU Employees [3]	x 774	x 825	
	$151,816,230	$159,733,200	
Average Merit plus BU Single Coverage			$194,840
Participation			477
Annual Single Rate			x 0.00042
Single Coverage Premium			$39,034
Average Family Coverage [1]	$232,988	$206,240	
Salary/Wage Adjustment [2]	x 1.0350	x 1.0350	
	$241,143	$213,458	
Projected No. of Merit and BU Employees [3]	x 774	x 825	
	$186,644,682	$176,102,850	
Average Merit plus BU Family Coverage			$226,859
Participation			x 815
Annual Family Rate			x 0.000696
Family Coverage Premium			$128,683
		TOTAL	$167,717

778 PHE NE NPFZZZZZ 509 **$167,717**

Note:

[1] Average Single and Family Coverages Amounts based oon 1/1/2008 Enrollment

[2] Salary/Wage cut-off for 1/1/2008 Enrollment is 10/1/2007; therefore, for 2009:

Merit salary = 10/1/2007 salary + 5/1/2008 inrease

BU wage = 10/1/2007 wages + 11/1/2007 increase

[3] No. of Merit Employees 48.42%
No. of BU Employees 51.58%

HR SUITE PROJECT
TOTAL PROJECT (ALL YEARS) COST
By Cost Type, Phase & Stage

(Thousands [1])

Capital Deferred Expense	Cost Type	Phase 1				Project Total
		Stage 1	Stage 2	Stage 3	Total	
Capital	Material	-	328	-	328	328
	Overhead	-	43	-	43	43
	Other	-	-	-	-	-
	Total	-	371	-	371	371
Deferred	Labor	-	665	-	665	665
	Overhead	-	422	-	422	422
	O/S Svc	-	3,147	-	3,147	3,147
	Other	-	1,070	-	1,070	1,070
	AFUDC	-	255	-	255	255
	Total	-	5,559	-	5,559	5,559
Expense - Not Reengineering	Labor	320	352	155	828	828
	Overhead	148	294	101	542	542
	O/S Svc	412	967	481	1,860	1,860
	Other	-	37	-	37	37
	AFUDC	-	-	-	-	-
	Total	880	1,650	737	3,267	3,267
Expense - Reengineering	Labor	-	134	-	134	134
	Overhead	-	92	-	92	92
	O/S Svc	-	39	-	39	39
	Total	-	265	-	265	265
Total	Total	880	7,845	737	9,462	9,462

1. The detail amounts are rounded which may cause differences in the totals.

Source: Interim Supplemental Report (May 21, 2008) - Amended
Dated June 27, 2008, Attachment 2, page 8

HR SUITE PROJECT
HECO's PORTION OF TOTAL (ALL YEARS) COST
By Cost Type, Phase & Stage

(Thousands [1])

Capital Deferred Expense	Cost Type	Phase 1				Project Total
		Stage 1	Stage 2	Stage 3	Total	
Capital	Material	-	328	-	328	328
	Overhead	-	43	-	43	43
	Other	-	-	-	-	-
	Total	-	371	-	371	371
Deferred	Labor	-	386	-	386	386
	Overhead	-	226	-	226	226
	O/S Svc	-	2,097	-	2,097	2,097
	Other	-	704	-	704	704
	AFUDC	-	205	-	205	205
	Total	-	3,618	-	3,618	3,618
Expense - Not Reengineering	Labor	216	220	89	525	525
	Overhead	96	199	56	351	351
	O/S Svc	275	658	321	1,254	1,254
	Other	-	37	-	37	37
	AFUDC	-	-	-	-	-
	Total	587	1,114	466	2,167	2,167
Expense - Reengineering	Labor	-	77	-	77	77
	Overhead	-	53	-	53	53
	O/S Svc	-	25	-	25	25
	Total	-	155	-	155	155
Total	Total	587	5,258	466	6,311	6,311

1. The detail amounts are rounded which may cause differences in the totals.

Source: Interim Supplemental Report (May 21, 2008) - Amended
Dated June 27, 2008, Attachment 2, page 7

HR Suite Project
2009 Test Year

Expense
($ Thousands[1])

Account	Labor/On Cost	Non-Labor	Total
Expense			
920	47	0	47
921	24	0	24
926	241	441	682
Total	312	441	753

1. The detail amounts are rounded which may cause differences in the totals.

Amortization[2]			
921	0	201	201
Total	0	201	201

2. Based on estimated deferred costs as of April 2008 for $6,386,042 amortized over 12 yrs

Hawaiian Electric Company, Inc.
Administrative and General Expenses - Employee Benefits
Breakdown of Administration Costs

RA	Act	Budget	Description	Reference HECO-WP-1356
Account No. 926000				
PFB	776	306	Subscriptions/Publications	Attch 2, pg 1 (code 4)
	776	13,002	Office supplies/printing	Attch 2, pg 1 (code 5)
	779	344	Workshops	Attch 2, pg 2 (code 8)
		13,652	Total Comp & Benefits Dept.	
	776	3,614	CPP parking	Attch 2, pg 1 (code 6)
		3,075	Surveys	Attch 2, pg 1 (code 6)
		45,752	Consulting	Attch 2, pg 1 (code 6A)
		83,600	Consulting	Attch 2, pg 1 (code 6B)
	776	11,116	Pension system maintenance	Attch 2, pg 2 (code 8B)
	778	21,748	Legal	Attch 2, pg 1 (code 7)
P9P	779	172,900	HEI charges	HECO-1107
PEZ	778	4,633	IT chargeback	Attch 1
		360,090	Total account no. 926000	
Account No. 926010				
PFB	778	22,800	Fees - FSA administration	Attch 2, pg 7
		3,283	Consulting	Attch 2, pg 5 (code 18C)
		186,391	HR Suite - software maintenance	Attch 2, pg 8 (code 18B)
PEZ	778	47,184	IT chargeback	Attch 1
		259,658	Total account no. 926010	

HECO T-14
DOCKET NO. 2008-0083

TESTIMONY OF
BRUCE TAMASHIRO

DIRECTOR, CORPORATE AND PROPERTY ACCOUNTING
HAWAIIAN ELECTRIC COMPANY, INC.

Subjects: Miscellaneous Administrative and General Expenses
Research and Development Expenses
Depreciation Expense and Accumulated Depreciation

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Bruce Tamashiro and my business address is 900 Richards Street, Honolulu, Hawaii.

Q. By whom are you employed and in what capacity?

A. I am the Director of Corporate and Property Accounting for Hawaiian Electric Company, Inc. ("HECO" or "Company"). HECO-1400 provides my educational background and work experience.

Q. What is your area of responsibility in this proceeding?

A. I am responsible for presenting the Company's:

1) overall normalized test year 2009 estimates for miscellaneous administrative and general ("A&G") expenses, which include account numbers 928, 9301, 9302, 931 and 932;

2) overall normalized test year 2009 estimates for research and development ("R&D") expenses, which are included in various accounts, but primarily in miscellaneous A&G (account 9302) and in miscellaneous production expenses (account 549); and

3) test year 2009 estimates for depreciation expense and accumulated depreciation.

Q. Who is responsible for presenting the Company's miscellaneous production expenses of NARUC account 549 and other various accounts for which R&D is included?

A. In addition to explaining the R&D expenses in account 9302, my testimony will address the R&D expenses in account 549 and other accounts to which R&D expenses are recorded. Although these accounts do not fall within the A&G block

of accounts, my testimony will explain the 2009 test year expenses for all R&D activities in order to provide the complete scope of HECO's R&D programs in one testimony. (These other accounts also include expenses other than R&D expenses, and will be covered by the witness responsible for the associated block of accounts.) The majority of the R&D expenses are in account 9302 which is in the A&G block of accounts and account 549 which is in the production O&M block of accounts (see the direct testimony of Mr. Dan Giovanni in HECO T-7). Adjustments to the 2009 test year R&D expenses that I discuss in my testimony, other than those R&D costs included in account 9302, will be made in the testimony of the witness responsible for that particular account (e.g., Mr. Giovanni's testimony at HECO T-7 for production R&D expenses adjustments).

MISCELLANEOUS A&G EXPENSES

Q. What are the accounts and test year 2009 estimates for the miscellaneous A&G expenses?

A. As shown in HECO-1401, the miscellaneous A&G accounts and the associated estimates totaling $8,027,000 for the test year 2009, are as follows:

Acct No.	Description	TY 2009 Estimate
928	Regulatory Commission Expenses	$ 440,000
9301	Inst / Goodwill Advertising	36,000
9302	Miscellaneous General Expenses	3,857,000
931	Rent Expense	3,062,000
932	Maintenance of General Plant	1,565,000
	TOTAL	$ 8,960,000

HECO-1402 shows actual costs from 2004 through 2007, the 2008 forecasted costs and 2009 test year estimated costs for these miscellaneous A&G accounts.

Q. What is the nature of the costs charged to these accounts?

A. These accounts capture a variety of costs which are necessary for Company operations, but which are not reflected in other functional accounts. I will discuss each account in detail below.

Account 928 – Regulatory Commission Expenses

Q. What is the Company's test year 2009 estimate for account 928 – regulatory commission expenses?

A. The test year 2009 estimate for account 928 – regulatory commission expenses is $440,000 as shown in HECO-1403.

Q. What is included in account 928 - regulatory commission expenses?

A. Account 928 includes the amortization of external costs that the Company will incur for this rate case, as shown in HECO-1403. External costs consist of outside attorney fees, outside consultant fees, stenographer fees, printing costs and supplies.

Q. How was the test year 2009 estimate determined?

A. The Company estimated the external costs related to the rate case proceeding using both actual and estimated costs of past rate cases. These costs, when incurred, are accumulated in a deferred debit account and amortized to account 928. For the test year 2009 estimate, the Company used an amortization period of two years.

Q. Why did the Company use an amortization period of two years?

A. As Mr. Robert Alm explains in HECO T-1, there are a number of interrelated factors, such as flat sales, the success of demand-side management programs, energy conservation, the high price of fuel oil, higher operations and maintenance costs of an aging infrastructure and capital investment needs, that are putting downward pressure on the Company's financial condition. Without sales growth in times of rising costs, the only way for the Company to achieve a fair return on its

utility property is through regulatory rate relief. If the Company does not receive approval of its proposed revenue step increase that would incorporate the entire investment of the new generating unit ("CIP CT-1") at Campbell Industrial Park in rate base and include an appropriate level of associated O&M expenses in its revenue requirement, it is a virtual certainty that the Company will file an application for a general rate increase in the 2010 test year. Approval of the Company's proposal for a step increase would have a significant positive impact on the Company's financial condition and decrease the chances that it will have to file a 2010 test year rate case. There will be certain substantial recovery needs in 2010, including depreciation on the new CIP CT-1 (which is not included in the 2009 test year) and the installation of the East Oahu Transmission System ("EOTP"). The Company will have to assess the need for rate relief in the 2010 test year when the Company's financial picture for 2010 becomes more definite in 2009. To be conservative, the Company is proposing in this rate case a two-year amortization period for regulatory commission expenses which would be consistent with the timing of the Company's most recent rate cases. Specifically, the Company filed general rate increase applications for test years 2005, 2007 and 2009.

Q. If the amortization period were one year, what would be HECO's test year estimate of regulatory commission expenses?

A. If the amortization period were one year, HECO's test year estimate of regulatory commission expenses would be $880,000.

Q. Has the Company fully amortized its regulatory commission expenses from its 2007 test year rate case, Docket No. 2006-0386?

A. No. The Company has not fully amortized its regulatory commission expenses from its 2007 test year rate case and is currently amortizing these expenses over a three-

year period as agreed in the Stipulated Settlement Letter, dated September 5, 2007, which was accepted by the Hawaii Public Utilities Commission in Interim Decision and Order No. 23749 issued on October 22, 2007.

Q. Are amortization expenses from the 2007 test year rate case included in the test year 2009 estimates?

A. No. In Decision and Order No. 12679 issued October 13, 1993 in East Honolulu Community Services, Inc.'s general rate increase proceeding (Docket No. 7064), the Commission ruled that unrecovered rate case expenses from past proceedings may not be recovered in a subsequent rate case. Therefore, regulatory commission expenses incurred for the 2007 test year rate case were not included in the test year 2009 estimates.

Q. Are internal costs related to this rate case included in account 928?

A. No. HECO's internal costs related to this rate case are not included in the test year 2009 estimates for account 928. Employees involved in rate case work charge their labor and related non-labor costs to the various functional accounts that they normally charge.

<u>Account 9301 – Institutional or Goodwill Advertising</u>

Q. What is the Company's test year 2009 estimate for account 9301 – institutional or goodwill advertising?

A. The Company's test year 2009 estimate for account 9301 – institutional or goodwill advertising is $36,000, as shown in HECO-1401.

Q. What types of expenses are included in this account?

A. Account 9301 includes expenses related to general advertising for community related events, such as the Christmas Electric Light Parade. Additionally, the

account includes costs to set up and take down Christmas decorations at the Company's King Street building during the Christmas season.

Q. How was the test year estimate determined?

A. The test year amounts were determined by estimating the total costs for advertising production, media air time and media buying services for community programs expected to be supported in 2009 and by examining prior year recorded information related to the Christmas decorations at the King Street building.

Q. How does the test year 2009 estimate compare with the amounts recorded in 2007?

A. The test year 2009 estimate is comparable to what was recorded in 2007 as shown in HECO-1402.

Q. Has the Commission approved these types of expenses in past rate cases?

A. Yes. In Interim Decision and Order No. 23749, dated October 22, 2007, in Docket No. 2006-0386, the Commission adopted, on an interim basis, the Parties' Stipulated Settlement Letter which included these types of expenses. Also, the Commission has approved these types of expenses in previous rate cases, including the Company's 2005 test year rate case (Docket No. 04-0113, in Decision and Order No. 24171, issued on May 1, 2008) and the Company's 1995 test year rate case (Docket No. 7766, in Decision and Order No. 14412 issued on December 11, 1995).

<u>Account 9302 – Miscellaneous General Expenses</u>

Q. What is the Company's test year 2009 estimate for account 9302 – miscellaneous general expenses?

A. The test year 2009 estimate for account 9302 – miscellaneous general expenses is $3,857,000. A summary of the costs is located on page 1 of HECO-1404.

Q. What types of costs are included in account 9302 – miscellaneous general expenses?

A. Account 9302 includes the costs for the Company's:

- research and development;
- development and demonstration of new technology;
- community service activities;
- Company memberships dues;
- Ellipse software maintenance fees; and
- Board of Directors' expenses.

I will discuss research and development and development and demonstration of new technology costs in the research and development section of my testimony. The remaining costs are discussed below.

Community Service Activities

Q. What is the Company's test year 2009 estimate for community service activities?

A. The test year 2009 estimate for community service activities is $361,000, after a downward issue simplification adjustment of $7,000, a downward budget adjustment for overstated hours of $8,000 and a budget reclassification adjustment of $182,000, as shown on page 2 of HECO-1404.

Q. Why did the Company make the issue simplification adjustment?

A. To reduce the number of issues in this case, HECO has removed from its test year 2009 estimate the expense items that were disallowed by the Commission in Docket Nos. 6531 and 6998, HECO's test year 1990 and 1992 rate cases, respectively. The adjustment is for the cost items related to Aloha United Way ("AUW") and Community Action Group ("CAG") activities.

Q. What is the budget adjustment for overstated hours related to?

A. The adjustment is to correct an overstatement of labor hours in the 2009 budget. The calculation of the total overstatement is shown at note 2 on page 2 of HECO-1404.

Q. What is the budget reclassification adjustment of $182,000?

A. The $182,000 represent two environmental monitoring programs which are part of the community benefits package relating to HECO's 2009 Campbell Industrial Park generating unit (Docket No. 05-0146), which were approved by the Commission in Decision and Order No. 23514, issued June 27, 2007. Since these programs are more representative of environmental compliance programs rather than community service activities, the costs of these environmental monitoring programs are reclassified to other production O&M expenses (account 506), discussed in Mr. Dan Giovanni's testimony (HECO T-7).

Q. What types of costs are included in the community service activities test year 2009 estimate?

A. The test year 2009 estimate includes the costs incurred by HECO in support of community services and activities. Specifically, HECO participates in education programs such as summer internships, school repair and renovation projects, native Hawaiian planting projects, school presentations, and presidential awards. HECO also provides information and assistance to civic groups, businesses and the general public. Examples of community information and activities include the Arbor Day, McGruff programs and the Company's Corporate Sustainability Report. Additionally, through the Company's Speakers' Bureau program, Company employees make presentations to requesting organizations on various subjects

related to the electric utility business. Subject matters include energy management, environmental concerns and electrical safety.

Q. How was the test year 2009 estimate determined?

A. The Company examined prior years' recorded information for recurring community service activities as a basis for determining the test year estimate and estimates of work scope for new community service activities.

Q. How does the test year 2009 estimate compare to the 2007 recorded amount?

A. The test year 2009 estimate is approximately $86,000 greater than the 2007 recorded amount which is approximately $275,000. The increase is attributable to budgeted costs for the continued update, maintenance, printing and distribution of the Company's Corporate Sustainability Report, which commenced in 2008 and will continue to be an annual activity, offset by costs related to AUW and CAG activities recorded in 2007 but excluded in the test year 2009 estimate.

Q. What is the Company's Corporate Sustainability Report?

A. The Company's 2007 Corporate Sustainability Report provides current information on electricity generation, electricity usage and renewable energy in Hawaii. It presents basic information on global warming and potential greenhouse gas regulation and legislation. The report also provides information on the Company's renewable energy efforts, energy efficiency and conservation, sustainability and environmental stewardship and corporate giving. Copies of the booklet were widely distributed to community leaders and elected officials, the State Greenhouse Gas Task Force, Hawaii Energy Policy Forum, large customers, business organizations and other key stakeholders. In keeping with our sustainability goals, the report was printed on 100 percent post-consumer waste paper material certified by the Rainforest Alliance and Forest Stewardship Council, the first such

1 certifications in Hawaii, and meeting American National Standards Institute
2 longevity requirements. A copy of the report can be downloaded from the
3 Company's website at www.heco.com.

4 Company Memberships Dues

5 Q. What is the test year 2009 estimate for Company membership expenses?
6 A. The test year 2009 estimate for Company membership expenses is $263,000, as
7 shown on page 3 of HECO-1404, after a net downward issue simplification
8 adjustment of $118,000, as shown on page 4 of HECO-1404.
9 Q. Why was the issue simplification adjustment made?
10 A. The Company removed from its test year estimate the estimated portion of the
11 Edison Electric Institute ("EEI") dues that relate to government lobbying, as well as
12 legislative advocacy and research, advertising, marketing and public relations. In
13 Interim Decision and Order No. 23749, dated October 22, 2007, in Docket No.
14 2006-0386, the Commission adopted, on an interim basis, the Parties' Stipulated
15 Settlement Letter which excluded the costs of these activities embedded in the
16 Company's EEI dues.
17 Q. How was the simplification adjustment calculated?
18 A. As shown on Notes (2) and (3) on page 4 of HECO-1404, estimated membership
19 dues related to EEI lobbying are based on a percentage provided by EEI on the
20 Company's EEI membership dues invoice, while the estimated membership dues
21 related to legislative advocacy and other types of excluded activities are based on
22 EEI's actual 2006 Schedule of Expenses by NARUC Category, which was
23 confirmed by EEI as comparable to 2007. A copy of EEI's actual 2006 Schedule of
24 Expenses by NARUC Category is included as HECO T-13 Attachment 1 of the
25 Stipulated Settlement Letter, dated September 5, 2007, between HECO, the Division

of Consumer Advocacy and the Department of Defense in HECO's 2007 Test Year Rate Case (Docket No. 2006-0386).

Q. What costs are included in the Company's membership expenses?

A. The Company's membership expenses include the costs of Company memberships in industrial, service, trade and technical organizations. As shown on page 3 of HECO-1404, the largest cost item is $180,000 (after the budget simplification adjustment) for the Company's membership in EEI, the industry's trade organization. The remaining test year estimate amount of $83,000 represents the cost of Company memberships in professional and other types of organizations whose activities relate to the functions performed by Company employees.

Q. How did the Company estimate the test year 2009 EEI dues?

A. The amount of EEI dues is based on actual 2008 invoice information. In accordance with the Commission's previous rate decisions, the amount was then adjusted to exclude the portion of the dues estimated to be in support of government lobbying, legislative advocacy and research, advertising, marketing and public relations. The EEI dues calculation is shown on page 4 of HECO-1404.

Q. How do HECO and its customers benefit from HECO's membership in EEI?

A. Some of the more significant benefits are as follows:

1) EEI membership provides an ongoing forum through which Company personnel share information with their counterparts at other electric utility companies. Among other things, this exchange of information and ideas helps the Company find better overall solutions to its problems at lower costs than would otherwise be the case; and

2) The many ongoing EEI services provide information that helps member companies save costs. For example, there are reports on electrical system and

equipment failures which alert companies to potential problems with particular equipment.

EEI serves as a liaison between the industry and the federal government, which allows the Company to indirectly voice its opinion on matters it would probably not otherwise have a chance to address.

Q. How was the cost of Company memberships in professional and other types of organizations determined?

A. The Company examined prior years' recorded information as a basis for determining the test year estimate.

Q. How does the test year 2009 estimate compare to the 2007 recorded amount?

A. The test year 2009 estimate is approximately $72,000 less than the 2007 recorded amount. The decrease is primarily attributable to costs related to EEI lobbying activities recorded in 2007 but excluded in the test year 2009 estimates, offset by higher costs of existing membership dues.

<u>Ellipse Software Maintenance Fees</u>

Q. What is HECO's test year 2009 estimate of the Ellipse software maintenance fee?

A. HECO's test year 2009 estimate of the Ellipse software maintenance fee allocable to Account 9302 is $117,000 as shown on page 6 of HECO-1404. HECO's share of the Ellipse software maintenance fee is $205,000. (See HECO-1404, page 5).

Q. What costs are included in HECO's test year 2009 estimate of the Ellipse software maintenance fee?

A. The test year 2009 estimate of the Ellipse software maintenance fee includes two components:

1) Annual Ellipse software (Company's core business software) maintenance fees; and

2) Annual BSI software (Company's payroll tax software) maintenance fees.

Q. How were the estimates computed?

A. First, HECO calculated total Ellipse and BSI software maintenance fees ($293,000), based on actual 2007-2008 Ellipse and BSI software maintenance fee invoices, with an escalation factor applied to the costs, as shown on page 5 of HECO-1404. Second, the total estimated fees were allocated to HECO, HELCO and MECO, based on the proportionate number of users at each respective Company, as shown on page 5 at HECO-1404. Third, HECO's share of the software maintenance expense ($205,000) was then allocated to A&G (accounts 921 and 9302), transmission, distribution and production expense accounts, as shown on page 6, HECO-1404.

Q. How does the test year 2009 estimate compare to the 2007 recorded amount?

A. The test year 2009 estimate is approximately $120,000 less than the 2007 recorded amount. The decrease is primarily attributable to 2007 recorded costs reflecting the following: 1) the amortization of a buy-down fee paid to the Company's Ellipse software vendor amounting to approximately $34,000 that was allocated to NARUC account 9302; and 2) $68,000 of costs associated with the Company's UNIX migration project (which is anticipated to be completed in 2008).

<u>Board of Directors' Fees</u>

Q. What is the Company's test year 2009 estimate of Board of Directors' ("BOD") expenses?

A. The Company's 2009 estimate of BOD expenses is $514,000, as shown on page 1 of HECO-1404, after downward budget adjustments of $104,000 to revise intercompany BOD expenses and $3,000 to exclude restricted stock expenses.

Q. Why were the budget adjustments made?

A. The $104,000 budget adjustment was made to decrease the Company's intercompany charges from HEI (HEI labor and supplies), that are directly related to HECO's BOD, based on a revised intercompany BOD estimate. The $3,000 budget adjustment was made to exclude restricted stock expenses to reduce the number of issues in this proceeding. The Company has not waived its right to seek recovery of this cost in future rate cases.

Q. What types of BOD expenses are included in the test year 2009 estimate?

A. Included in this amount are the costs of HECO BOD and investor relations activities. These costs primarily include: 1) $381,000 of Directors' fees; 2) $60,000 of miscellaneous expenses including travel; and 3) $64,000 of HEI charges related to HECO BOD, after a downward budget adjustment of $104,000 mentioned above.

Q. How was the test year 2009 BOD expenses estimate determined?

A. The Directors' fees are based on the current 2007 methodology of determining Directors' compensation, which is a combination of a cash retainer and stock award for each BOD member, including Audit Committee members. Other BOD expenses were determined based on 2007 actual expenses such as traveling expenses. HEI intercompany BOD charges were based on actual 2007 labor and nonlabor expenses incurred by HEI.

Q. How does the test year 2009 BOD expenses estimate compare with the amounts recorded in 2007?

A. The test year 2009 estimate is approximately $37,000 less than the $551,000 of BOD expenses that was recorded in 2007.

<u>Account 931 – Rent Expense</u>

Q. What is the Company's test year 2009 estimate for account 931 – rent expense?

A. The test year 2009 estimate for account 931 – rent expense is $3,062,000, as shown on page 1 of HECO-1405, which includes a budget increase of $36,000. Explanations of the amounts included in the budget adjustment are found on page 2 of HECO-1405.

Q. What is included in the Company's test year 2009 estimate for account 931?

A. Account 931 includes the lease rental expense for office space in Central Pacific Plaza ("CPP"), the King Street building, Pauahi Tower, Waterhouse Building and Honolulu Club, and related common area maintenance expenses, general excise taxes and the annual real property tax credits, where applicable. Additionally, it includes the lease rental expense for the Waiau Viaduct space and an allocated usage cost for the ASB Training Rooms.

The breakdown for the 2009 test year estimate for account 931 is summarized below and is also shown in HECO-1405.

Existing Leases	$ in Thousands
Central Pacific Plaza	$ 1,395
King Street Gross Rent	818
Pauahi Tower 5th Floor	475
Waterhouse Building	174
Honolulu Club	92
ASB Tower Training Rooms	76
Waiau Viaduct	32
TOTAL	$ 3,062

Q. How did HECO determine the 2009 test year estimate for rent expense?

A. The 2009 test year estimate was prepared based on existing and estimated renewed lease rates for office space in CPP, the King Street office building, Pauahi Tower,

Waterhouse Building, and Honolulu Club, as well as the lease for the Waiau Viaduct space. The ASB Tower Training Room allocated usage cost was derived from HEI's allocation calculation.

Q. How does the test year 2009 estimate compare with the 2007 recorded amount?

A. The test year 2009 estimate is approximately $51,000 higher than the 2007 recorded amount primarily due to base rent increases in most of its existing and estimated renewed leases, and partially offset primarily by the ASB Tower 8th floor (terminated in June 2007) and South Street Parking Lot (discontinued use in September 2007) leases which the Company excluded from the test year. HECO employees who were previously located on the ASB Tower 8th floor were relocated to the 4th floor of the King Street office building (see Note (2) of Attachment 1 of HECO's response to CA-IR-299 of the 2007 test year rate case, Docket No. 2006-0386) and employees who parked at the South Street parking lot were relocated to the Ward facility.

<u>Account 932 - Maintenance of General Plant</u>

Q. What is the Company's test year 2009 estimate for account 932 - maintenance of general plant?

A. The test year 2009 estimate for account 932 - maintenance of general plant is $1,565,000, which includes upward budget reclassification adjustments of $88,000 related to recurring maintenance work and $1,072,000 related to non-recurring maintenance work, and a downward normalization adjustment of $188,000, as shown on HECO-1412.

Q. What is the purpose of the budget reclassification adjustments?

A. The $88,000 budget reclassification adjustment represents budgeted labor and nonlabor costs of structural maintenance and repair work on the Company's assets

(e.g., King Street office building) that should be recorded to NARUC account 932. However, these expenses were budgeted to NARUC account 920 (A&G expense – labor) and account 921 (A&G expense – nonlabor). Similarly, the $1,072,000 budget reclassification adjustment represents budgeted labor and nonlabor costs of non-recurring maintenance projects related to the Ward parking facility's ramp that should be recorded to NARUC account 932. These costs were also originally budgeted to NARUC account 920 and 921. See corresponding budget reclassification adjustments in the direct testimony of Ms. Patsy Nanbu (HECO T-11).

Q. Why did the Company make the normalization adjustment?

A. The normalization adjustment was intended to make the test year estimates of non-recurring maintenance projects more representative of the average non-recurring maintenance projects incurred or expected to be incurred in 2008, 2009 and 2010. The normalization adjustment was made by averaging the non-recurring projects in these years.

Q. What types of costs are included in this account?

A. Account 932 includes the costs of maintaining property primarily assigned to the customer accounts, customer services, and administrative and general functions of the Company. Examples of such costs include structural maintenance and repairs to the Company's Ward Avenue employee parking structure, King Street office building, rearranging and changing the location of office furniture and equipment, air conditioning maintenance and repairs, and maintenance contracts on office equipment.

Q. How was the test year estimate determined?

A. The Company determined the routine, ongoing costs incurred in the past to maintain the general plant items and included an average cost of on-going and budgeted non-recurring maintenance projects.

Q. What is the variance in account 932 costs between 2007 recorded and the test year 2009?

A. The variance between 2007 recorded costs and the test year 2009 estimate in account 932 is an increase of $694,000, after certain revisions are made to the 2007 recorded costs, calculated as follows:

	$ in Thousands
2007 Recorded per HECO-1402	$ 454
Add: air conditioning repair work adjustment	90
Add: Ward parking structure roof level repairs adj	327
Revised 2007 Recorded	871
Variance	694
Test Year 2009 Account 932	$ 1,565

Q. What is the purpose of the adjustments to the 2007 recorded costs?

A. The adjustments relate to work which should have been captured in NARUC account 932. Although properly expensed, the costs were captured in NARUC account 921 (A&G expense – nonlabor). The adjustments related to general recurring repair and maintenance work on the Company's air conditioning system and nonrecurring repair work on the Company's Ward parking structure. For comparative purposes only, these costs were added to account 932's 2007 recorded amounts. Similarly, these costs were removed from account 921's 2007 recorded amounts for comparative purposes at Ms. Patsy Nanbu's testimony (HECO T-11).

Q. What is the increase from the revised 2007 recorded amount to the test year 2009 estimate attributed to?

A. The increase from the revised 2007 recorded amount to the test year 2009 estimate is primarily the result of 1) an increase of approximately $559,000 of non-recurring maintenance projects; and 2) an increase of approximately $135,000 of recurring maintenance work. The $559,000 increase in non-recurring maintenance work is primarily attributable to three projects related to repair work on the Company's Ward parking structure ramp (repairs to the ramp walls amounting to $626,000, repairs to the Ewa end of the ramp amounting to $444,000 and repairs to the Diamond Head end of the ramp amounting to $628,000). These three ramp projects account for $1,698,000 or 64% of the total normalized non-recurring maintenance expense estimate: The $135,000 increase in recurring maintenance work is mostly related to air conditioning repair work, primarily at the King Street office building scheduled for 2009.

RESEARCH AND DEVELOPMENT

Q. What are the accounts and test year 2009 estimates for the Company's Research and Development ("R&D") expenses?

A. As shown on page 1 of HECO-1406, the accounts and test year 2009 estimates for the Company's R&D expenses are as follows:

Acct No.	Description	TY 2009 Estimate
9302	Miscellaneous General Expenses	$ 2,603,000
549	Miscellaneous Expenses – Other Production	899,000
Various	Various Operation and A&G Expenses	31,000
	TOTAL	$ 3,533,000

HECO-1406, page 2, shows actual costs from 2004 through 2007, the 2008 forecasted costs and 2009 test year estimated costs for R&D expenses.

Q. Were there any budget adjustments made to the test year estimates?

A. Yes. A $49,000 budget adjustment was made to increase HECO's portion of the EPRI dues allocation and a $26,000 budget reclassification adjustment was made to reclassify certain R&D expenses from account 549 to 9302. These adjustments are discussed in detail later in this testimony.

Q. What is the nature of the costs charged to these accounts?

A. In general, the nature of the costs charged to these accounts relate to R&D activities (e.g., evaluation and implementation of new technologies related to electric utility operations, renewable energy, alternate energy, and emerging technologies) which enable the Company to achieve its objectives of increasing renewable energy and implementing advanced technologies.

Q. What is the primary difference between R&D costs charged to account 9302 (miscellaneous general expenses) versus R&D costs charged to account 549 (miscellaneous expenses – other production) and other various operation and A&G expense accounts?

A. The R&D work efforts in account 9302 versus account 549 and others are different and non-duplicative and reflect different perspectives and/or approaches in achieving the Company's objectives. In general, R&D activities charged to account 9302 generally focus on the Company's long-term R&D opportunities in the areas of advanced technologies, wind integration, customer service and policy issues. Account 9302 also includes the Company's dues for membership in the Electric Power Research Institute ("EPRI"). The long-term R&D activities would include, but would not be limited to, hydrogen energy, fuel cells, advanced energy storage

systems, advanced metering, and other emerging technologies that could have a place in Hawaii's energy mix in the future. Account 9302 also includes renewable energy activities which address evolving state and federal energy policies. Some of the state and federal energy policies are renewable portfolio standards, net energy metering, system benefit charges, protecting the environment, reducing customer rates, energy security, carbon emissions, energy credit trading, tax credits, and other energy policies. The Company is taking steps to be even more proactive in the renewable energy field by looking at the next steps and technologies that will help increase renewable energy on Oahu. Flexibility in the use of these R&D funds is essential as laws, regulations, and policies evolve and change over time, and as a result, projects and their priorities are adjusted accordingly to address and meet these changes. As a result, the costs recorded to this A&G account reflects the wide range of research initiatives that the Company undertakes to address these changes.

In contrast, R&D activities charged to account 549 and various other operation and A&G accounts generally focus on the Company's near-term R&D opportunities which can be directly attributable to the production NARUC account. These activities concentrate on areas where R&D results will have impact on the technology or project that could be implemented by the Company in the near-term. These activities would include, but would not be limited to, technology research, development and demonstration, feasibilities studies, resource data collection, land availability studies, collection and evaluation of information on technology performance, cost, operations, emissions, and other investigations. As is the case with R&D funds in account 9302, the Company requires flexibility in account 549 to direct research expenditures to renewable energy projects and initiatives as the need arises.

Q. Is the manner in which current R&D costs are charged to account 9302 versus account 549 and other various operation and A&G accounts in accordance with NARUC's Uniform System of Accounts?

A. Yes. Under NARUC account 9302, R&D costs not charged to O&M expense accounts on a functional basis, should be charged to miscellaneous general expenses. As previously mentioned, R&D activities charged to account 9302 focus on the Company's long-term R&D opportunities (primarily advanced technologies, customer service and policy issues which cannot be directly attributable to particular functional O&M expense accounts at this time), and the costs of the Company's membership in EPRI. Although it is not always clear to what account a particular R&D project should be assigned, the Company makes its best effort to ensure costs are recorded properly.

Q How do HECO's customers benefit from the R&D activities?

A. HECO's customers benefit from the Company's R&D activities in many different ways. For example, R&D initiatives have been undertaken to explore technology that could provide customer load profile information, which would be used to increase customer offerings, improve customer services and plan and implement conservation and education programs. Also, customers benefit from R&D initiatives that deal with studies and technologies intended to provide a more efficient, reliable and environmentally-sound electrical system.

In addition, all of the residents of Hawaii can benefit from the Company's R&D activities that address global warming and the protection of Hawaii's island ecology while continuing to provide reliable power to customers. There is strong public interest to increase renewable energy development in Hawaii, as evidenced by the actions of the State Legislature to amend the renewable portfolio standards

law in 2004 and 2006, and the recent Hawaii Clean Energy Initiative ("HCEI") announcement by the Governor to partner with the U.S. Department of Energy ("USDOE") to move Hawaii to 70% renewable energy by 2030. Therefore, the Company plans to continue to fund R&D activities that further develop renewable energy in Hawaii.

Account 9302 – Miscellaneous General R&D Expenses

Q. What is the Company's test year 2009 estimate of R&D expenses for account 9302 (miscellaneous general expenses)?

A. As shown in HECO-1404, the Company's test year 2009 estimate of R&D expenses in account 9302 (miscellaneous general expenses) total $2,603,000, and is detailed as follows:

Account 9302 R&D Activities	TY 2009 Estimate
EPRI Dues	$ 1,657,000
Develop & Demonstrate New Technology	424,000
Other Long-Term R&D Strategies	522,000
TOTAL	$ 2,603,000

Q. How does the test year 2009 estimate compare with the 2007 recorded amount?

A. The total R&D costs currently estimated in account 9302 for the 2009 test year is approximately $105,000 greater than the 2007 recorded amount of approximately $2,498,000. Approximately $49,000 of the variance is due to an increase in HECO's allocation of total EPRI dues. The remaining difference is primarily due to new projects and studies budgeted in 2009 (e.g., Oahu Electric System Analysis and U.S. Department of Energy modernization study) and increases in costs of existing projects and studies from actual 2007 (e.g., Advanced Metering Infrastructure ("AMI")), offset by the termination of costs for 2007 projects and studies completed

prior to 2009 (e.g., Broadband over Power Lines decommissioning effort, biofuel feedstock policy, critical peak pricing project, grid code study) and decreases in budgeted costs of existing projects and studies compared to actual 2007 costs (e.g., Maui Electric System Analysis).

Q. In the Company's 2007 test year rate case, did the Company make a commitment to a certain minimum level of R&D spending?

A. Yes. In Exhibit 1, page 16 of the Stipulated Settlement Letter, dated September 5, 2007, which was accepted by the Hawaii Public Utilities Commission for purposes of the Interim Decision and Order No. 23749 issued on October 22, 2007, the Company agreed to spend at least $2,464,000 on a recurring annual basis ($1,608,000 for EPRI dues and $856,000 for non-EPRI R&D) under miscellaneous general R&D expenses. The Company spent approximately $34,000 more in 2007 than what was agreed to in the stipulation.

<u>EPRI membership dues</u>

Q. What is the Company's test year 2009 estimate of EPRI membership dues?

A. The Company's test year 2009 estimate of EPRI membership dues is $1,657,000, after a budget increase of $49,000, as shown on HECO-1406.

Q. How was the test year 2009 estimate for the EPRI membership dues determined?

A. The 2009 EPRI membership dues are based on a multi-year membership agreement between HECO and EPRI. HECO will be in the third year of its five-year agreement with EPRI which expires on December 31, 2011. EPRI membership dues are allocated among HECO, HELCO and MECO based on each Company's total R&D estimate in their most recent respective rate cases, as a percentage of the total Company-wide R&D estimate. The $49,000 budget adjustment is due to the Company updating the R&D estimates used in the allocation calculation.

Q. How do HECO and its customers benefit from the Company's membership in EPRI?

A. The primary benefit for both HECO and its customers results from HECO's access to EPRI information, including computer software, presentations by EPRI personnel and technical experts, technical meetings, conferences, workshops, webcasts, electronic mail or telephone inquiries with EPRI personnel. EPRI spends millions of dollars each year on research that would otherwise be far beyond the capability of any one utility to finance and administer. HECO is also able to leverage local R&D funds with EPRI cost sharing funds to conduct research, development and demonstration projects and studies related to HECO projects, thus addressing specific needs of HECO.

Q. What are some of the specific benefits enjoyed by HECO from its membership in EPRI?

A. HECO has obtained direct benefits through EPRI's participation in HECO-related projects, seminars and presentations both here in Hawaii and in other states. HECO is able to tap the expertise of EPRI researchers in a wide variety of technical areas that provide useful information directly to HECO. In addition, HECO's participation in EPRI-sponsored meetings on the mainland allows HECO's staff and executives to meet and interact with their mainland peers. The development of these personal relationships is used to facilitate the exchange of information with other utilities facing similar issues.

In recent years, for example, EPRI funds have been directed towards HECO-specific projects to optimize power plant maintenance techniques, implement predictive maintenance tools and procedures, equipment evaluation and techniques to enhance the transmission and delivery of electrical energy, assess

power quality technologies that might impact our customers, investigate environmental mitigation strategies for generation equipment, and develop methodologies and systems to assess the impact of intermittent generation technologies on the utility grid. EPRI funds have also been used to evaluate and/or demonstrate alternative energy technologies such as microturbines, broadband over power lines, combined heat and power, photovoltaics, solar thermal energy, in-line hydroelectric systems, biofuels, and wave energy devices. Additionally, EPRI personnel have made presentations to HECO on topics such as plant maintenance, climate change, biofuels, advanced photovoltaics, and power quality.

Apart from the R&D context, HECO is participating in studies being conducted by EPRI regarding compliance with regulations governing cooling water intake structures at certain existing power producing facilities under section 316(b) of the Clean Water Act. These studies are discussed in more detail in the testimony of Mr. Dan Giovanni, HECO T-7.

Q. What is the value of research conducted by EPRI?

A. Typically, the cost to non-EPRI members for reports on results of EPRI research range anywhere from thousands to tens of thousands of dollars per report. EPRI produces hundreds of reports, technical papers, and other products each year. A license to non-EPRI members for EPRI software can cost tens of thousands of dollars. An EPRI member company pays no additional fees for EPRI reports or rights to software if the member subscribes to the associated program under its membership. Some examples of recent EPRI technical reports received at no additional cost under this current membership are related to material energy management, transmission discharge measurements, need for control of degradation of buried pipes, dissimilar metal pipe welding evaluation, and combustion turbine

experience. In addition, EPRI funds for HECO-related projects have directly benefited the Company by increasing its knowledge base and experience in advanced technologies.

Q. Please summarize the benefits derived from HECO's membership in EPRI.

A. HECO has been able to greatly maximize its R&D dollars through its membership in EPRI. As an EPRI member, HECO is eligible to receive results of R&D funded by other EPRI members. These results would not be available to HECO without a membership in EPRI.

Develop and Demonstrate New Technology

Q. What is the Company's test year 2009 estimate for R&D to develop and demonstrate new technology?

A. The test year 2009 estimate for R&D to develop and demonstrate new technology is $424,000. Advanced metering infrastructure ("AMI") is a component of an on-going R&D project, which makes up approximately $414,000 of the Company's test year estimate, while other miscellaneous R&D-related activities to develop and demonstrate new technology make up the remaining test year 2009 balance.

Q. What types of expenses are included in the Company's test year estimate for developing and demonstrating new technology?

A. In general, included are expenses to recommend, implement, demonstrate, monitor and evaluate new technologies. The test year 2009 estimate for the R&D project primarily includes vendor and consultant fees amounting to $291,000 and lease rents amounting to $123,000. The lease rents are the operation and maintenance monthly fees for the fixed-radio AMI network used in the R&D project.

Q. How was the test year estimate determined?

A. The Company based its vendor and consultant fee estimates on prior vendor

proposals and cost budget estimates of the scope of work for existing consulting services in the test year. The lease rent estimates are based on unit pricing of four Tower Gateway Base Stations ("TGBs") in the test year. The lease price per TGB is based on the Sensus Pilot AMI Program agreement filed as HECO T-13, Attachment 1 (CONFIDENTIAL) of the Company's response to CA-IR-182 of the 2007 test year rate case (Docket No. 2006-0386).

Q. What is the Company's R&D study?

A. The Company's R&D study is described in detail in HECO T-13, pages 12-15, of the Company's 2007 test year rate case (Docket No. 2006-0386). In summary, the R&D study is the next step in the Company's 2005 R&D study, "New Communications Technology for Advanced Meter and Customer Detection Outage Study" which was completed in 2006. The R&D study is a gated process of development and demonstration, intended to address the AMI project objectives identified in HECO T-13, pages 12-15, of the Company's 2007 test year rate case (Docket No. 2006-0386), through multiple phases of pilot utility applications of the Sensus FlexNet two-way communication advanced metering solutions for automated meter reading, dynamic pricing and demand response utility applications.

Q. What is the current status of the R&D study?

A. The R&D study commenced with the execution of the AMI Pilot Program Agreement with Sensus dated August 1, 2006 (see Attachment 1 of HECO's response to CA-IR-182, revised 6/12/07, Docket No. 2006-0386). The R&D study, through its multiple phases of pilot utility applications, will continue over multiple years extending beyond 2009. Below is a summary and status of the project objectives:

- Select a viable two-way advanced metering communications solution(s) to pilot in the Company's service area. (Status: Accomplished. The Company selected Sensus FlexNet AMI technology.)
- Demonstrate, through a pilot of the chosen Sensus FlexNet AMI solution, the utility applications benefits of automated meter reading, dynamic pricing (i.e., peak time rebate), time of use, load research and demand load control. (Status: On-going.)
- Research and demonstrate the interoperability of the deployment of Advanced Metering communication technologies within HECO's service territory in support of utility applications. (Status: Discontinued. HECO has determined that the Sensus FlexNet AMI technology will meet the coverage objectives for its service territory. It is anticipated that engineering studies will validate HECO's pilot results for MECO and HELCO to the extent that the AMI system requirements are similar for all three companies.)
- Evaluate and demonstrate the Meter Data Management System ("MDMS") integration efforts required to interface with the existing/future Customer Information System ("CIS") and Outage Management System ("OMS") and the Sensus FlexNet AMI system. (Starting in June 2008 and running through 2009.)
- Produce an AMI Pilot Project Evaluation report to document findings and results. (Status: On-going. HECO is in the process of finalizing the pilot performance report which is expected to be completed by the August 2008 timeframe.)
- Assess the technical feasibility of a future scalable, commercial deployment of the selected AMI solution in support of the Energy Policy Act of 2005 and the

Energy Independence and Security Act ("EISA") of 2007. (Status: On-going. Will continue through the 2009.)

- Demonstrate and validate the ability of the AMI meters to reliably collect and transmit accurate time-based energy consumption information to the Company's billing system in support of HECO's Dynamic Pricing Pilot ("DPP") program. (New objective. See HECO's application in Docket No. 2008-0074, page 5. Anticipated to start in early 2009 and continue for twelve months.)
- Evaluate and demonstrate Smart Grid applications leveraging the Sensus FlexNet communications technology. Because of the success of the technical trial evaluation of the Cooper Power Systems faulted circuit indicator ("FCI") devices which use the Sensus FlexNet communications technology, the Company intends to expand and extend the trial to more thoroughly evaluate a wider scale deployment over a diverse geographic area of HECO's service territory. (New objective. HECO is considering an expanded deployment of the FCI devices to provide a more comprehensive demonstration and evaluation of the potential benefits case for Smart Grid services using the Sensus FlexNet communications technology. Will continue through the 2009.)

Q. In summary, how will HECO and its customers benefit from the AMI project?

A. The AMI component of the R&D study is a series of technical trials and business use cases (e.g., automated meter reading, dynamic pricing, load research, and demand load control) that will provide HECO first hand knowledge and experience and Company-specific performance data to enable HECO to identify the trade-offs and operational savings potential of advanced metering if such a technology were to be deployed full scale across HECO, MECO and HELCO's service areas. The R&D study will also provide data on technical adequacy, reliability and flexibility

of viable solutions to address issues related to a full-scale deployment of AMI. Further, the R&D study will provide data to manage outages more efficiently as well as customer satisfaction benefits that could potentially be achieved with a full deployment and integration of advanced metering with billing, demand response and outage management systems.

Q. Are these R&D expenses separate from the AMI expenses noted in Mr. Robert Young's testimony at HECO T-8?

A. Yes. Although the expenses relate to the same overall AMI strategy, the AMI expenses discussed at HECO T-8 are different and properly separated from the R&D expenses recorded in this testimony. The AMI expenses recorded in HECO T-8 relate to the test year expenses expected to be incurred for the commercial deployment of the AMI project and therefore are properly recorded to its functional expense account, whereas the AMI-related R&D expenses recorded in this testimony relate to the research and development aspects of the AMI project, and are properly recorded in account 9302. Please refer to the testimony of Mr. Robert Young at HECO T-8 for more information on the commercial deployment of the AMI project.

<u>Other Long-Term R&D Strategies</u>

Q. What is the Company's test year 2009 estimate for long-term research and development strategies?

A. The Company's test year 2009 estimate, as shown on HECO-1406, for other long-term R&D strategies is $522,000, after an upward budget reclassification adjustment of $26,000. The funds in this strategy will be used for:

Description of R&D Activity	TY 2009 Estimate
Maui Electric System Analysis Phase 2	$ 75,000
Oahu Electric System Analysis	352,000
Biofuel Agriculture Crop Research Phase 3	50,000
Other R&D related activities	45,000
TOTAL	$ 522,000

Q. What was the purpose of the $26,000 upward budget reclassification adjustment?

A. The adjustment reclassifies certain other R&D related activities related to long-term R&D initiatives from NARUC 549 to NARUC 9302. See corresponding budget reclassification adjustment in the direct testimony and HECO-736 exhibit of Mr. Dan Giovanni (HECO T-7).

Maui Electric System Analysis Phase 2

Q. Please provide a summary of the Maui Electric System Analysis.

A. The Company's Maui Electric System Analysis is described in detail in HECO T-13, pages 9-12, of the Company's 2007 Test Year Rate Case (Docket No. 2006-0386). The primary objective of this study is to address potential issues with future wind farms (and other renewable resources). The proposed effort is to characterize the current challenges of integrating intermittent renewable energy (e.g., wind energy) into the electrical grid, evaluate the impact of currently planned renewable expansion scenarios on MECO's grid operation, and formulate controls, storage and interconnection recommendations to help achieve renewable energy targets.

Q. What is the status of the Maui Electric System Analysis?

A. As stated in the Company's response to CA-IR-453 in HECO's 2007 test year rate case, the commencement of the Maui Electric System Analysis was delayed primarily due to negotiations with General Electric ("GE"). However, in late 2007,

the Company signed an agreement (see HECO-WP-1406) with the University of Hawaii's Hawaii Natural Energy Institute ("HNEI"), which has a separate agreement with GE for this study on Maui. Phase 1 of the project commenced in late 2007 and is being led by MECO. Numerous team meetings (among MECO, HECO, HNEI and GE personnel) have been held on Maui and project discussions have also occurred through email and telephone. HECO and MECO have provided information to GE to populate the simulation model and anticipate that the review, comment and approval of the results will occur in the summer of 2008. The completion of Phase 1 of the Maui Electric System Analysis is expected in late 2008. HECO anticipates Phase 2 to commence in late 2008 and finish in 2009.

Q. Are there updates to how the Maui Electric System Analysis is being funded?

A. Yes. The Company is expected to spend approximately $419,000 ($344,000 for Phase 1 and $75,000 for Phase 2) for the Maui Electric System Analysis as follows. Phase 1 costs are detailed as follows:

1. Data consolidation and preliminary model feasibility analysis	$ 89,000
2. Data evaluation, manipulation and completion	47,000
3. System model development	95,000
4. Baseline model validation	83,000
5. Scenario development	30,000
Total Phase 1 costs	$ 344,000

A more detailed discussion of Phase 1 of the Maui Electrical System Analysis is provided in HECO-1407, which is a copy of Exhibit MECO-101 in Docket No. 2008-0021. The USDOE is providing $60,000 of cost share funding and the HNEI is providing $20,000 in-kind cost share for coordination and management throughout the project in 2008 and 2009. As previously mentioned in HECO T-13,

page 11, of the Company's 2007 test year rate case (Docket No. 2006-0386), MECO's cost-share in this project is in-kind as the technical lead, coordinating and collaborating with GE, HNEI and HECO engineers in the various work activities.

Q. How was the test year 2009 estimate for the Maui Electric System Analysis determined?

A. The $75,000 test year 2009 estimate for Phase 2 of the Maui Electric System Analysis was determined based on costs incurred for certain tasks of Phase 1 and planned Phase 2 tasks and objectives. Phase 2 tasks and objectives will consist of developing and running different scenarios (e.g., meeting RPS levels, Hawaii Clean Energy Initiative renewable levels, etc.) using the Phase 1 model with new scenario data. The Company will be negotiating an agreement with its consultants for Phase 2.

Oahu Electric System Analysis

Q. What is the Oahu Electric System Analysis?

A. Similar to the Maui Electric Analysis, the Oahu Electric System Analysis is an R&D project to characterize, evaluate and formulate controls, storage and interconnection recommendations with the objective of increasing the Company's renewable energy portfolio. The study will be performed on the Company's electric system on the island of Oahu.

Q. Why is the Oahu Electric System Analysis needed?

A. The Oahu Electrical System Analysis is needed to address the challenges of integrating renewable energy resources to the Company's electrical grid on Oahu. With the recent negotiations for a commercial wind farm on the north shore of Oahu, possible additional wind farm(s) resulting from the Company's Request for Proposals for Renewable Energy Projects (Docket No. 2007-0331), and interest by

large wind farm developers on neighboring islands to transport this energy to Oahu via undersea cables, the Company will be faced with challenges of integrating these potential wind farms and other renewable energy projects on the HECO grid.

Q. Why can't the Company use the results of the Maui Electric System Analysis in lieu of this project?

A. The Company will benefit from the wealth of information acquired from the results of the Maui Electric System Analysis and will apply this knowledge to the Oahu Electric System Analysis. However, HECO will need to tailor the Oahu study according to the unique characteristics of HECO's electric system. For example, the type, number, size and mix of the Company's electrical generating facilities are very different than its subsidiary utilities on the Big Island and Maui. HECO has predominantly steam boiler units (baseload and cycling units) and two combustion turbines (peaking units), while HELCO and MECO have a mix of steam boilers, diesel generators, and combustion turbines. Therefore, HELCO and MECO have generating units (diesel and combustion turbines) that can respond more quickly to fluctuating wind energy production, as opposed to HECO's steam boiler units that cannot respond as quickly. HECO's generation mix also includes Independent Power Producers that utilize coal-fired steam boiler, oil-fired combustion turbine with steam recovery, and waste-to-energy generation which further differentiates the Oahu system from its neighbor island systems.

The Company will, however, benefit from the Maui Electric System Analysis since the same consultants will be utilized for the Oahu Electric System Analysis. The consultant will have already gone through similar study steps such as model development for the Big Island and Maui studies, thus reducing the consultant's learning curve and formulating a more effective and efficient study.

Q. What is the objective of the Oahu Electric System Analysis?

A. The primary objective of this study is to address integrating future wind farms (and other intermittent renewable resources) on the HECO grid. It will assess the challenges of integrating intermittent renewable energy into the electrical grid, evaluate the impact of currently planned renewable expansion scenarios on the Company's grid operation, and formulate controls, storage and interconnection recommendations to help achieve the renewable energy targets for the island.

Q. What is the general scope of work for the Oahu Electric System Analysis?

A. The general scope of work will evaluate:

- The impact of wind capacity, as planned by other wind developers, and associated energy storage projects on the HECO grid;
- The utilization of energy storage system technologies to address the effect of wind variability on grid frequency; and
- The impact of significant distributed renewable energy (photovoltaic) resources.

Q. What is the cost of the Oahu Electric System Analysis?

A. The Company has requested a price quotation from the consultant for this effort, but to date, has not received an estimate. The current test year 2009 estimate of $352,000 is primarily based on the Company's estimated Phase 1 costs of the Maui Electric System Analysis that I described earlier in my testimony.

Q. Can the Company expect cost sharing from HNEI and USDOE for this project?

A. Early communication with HNEI personnel indicate that HNEI and USDOE cost sharing will be available and could be as high as 50%. However, HECO will not know the actual cost share until an agreement with HNEI is finalized.

Q. What is the schedule for the Oahu Electric System Analysis?

A. It is anticipated that the Oahu Electric System Analysis will commence in late 2008 with the bulk of the work being conducted in 2009 due to resource limitations of the consultant. The consultant's prime researchers are working to complete the Big Island Energy Roadmap study for USDOE and are also working on the Maui Electrical System Analysis.

Biofuel Agriculture Crop Research Phase 3

Q. What is the status of the biofuels agriculture crop research project?

A HECO is working with the Hawaiian Agriculture Research Center ("HARC") on a biofuels agriculture crop research project. HARC is conducting research and is coordinating the work of the University of Hawaii at Manoa's College of Tropical Agriculture and Human Resources ("CTAHR") and University of Hawaii at Hilo's College of Agriculture, Forestry and Natural Resources Management ("CAFNRM"). HECO executed an agreement with HARC in 2007 and has leveraged EPRI monies to co-fund this research. With EPRI's cost-matching of $53,000 and HECO's participation, Phase 1 of the biofuel agriculture crop research project costs was $103,000 in 2007. This EPRI agreement was amended in 2008 (Phase 2) with a similar HECO grant award and EPRI co-share totaling $100,000. (HECO's confidential agreement with HARC, including amendment for Phase 2 work, is submitted as HECO-WP-1407.) HECO's response to LOL-IR-34 and 39 in Docket No. 2007-0346 provides additional background on the biofuel agriculture crop research effort.

Q. What are HECO's plans in 2009 for biofuels agriculture crop research?

A. HECO plans to provide a third installment of seed funding to HARC in 2009 (Phase 3) with EPRI cost-sharing. HECO will provide $50,000 (test year 2009 estimate)

and EPRI will provide another $50,000 towards this effort, similar to what was done in the past.

Q. What are the study results to date of the biofuels agriculture crop research project?

A. HARC, the University of Hawaii at Manoa, and the University of Hawaii at Hilo are each responsible for separate projects in the research effort. A summary, as of April 30, 2008, of each project is as follows (see HECO-WP-1408 for progress report):

<u>HARC</u>

- Established test plots of *Moringa oleifera* on Molokai in a low-elevation site in Hoolehua.
  - Planted in approximately 1.2 acres over 650 moringa seedlings and approximately 150 jatropha seedlings.
  - Installed an irrigation system using individual emitters to control the flow of water to each tree and minimize competition from weeds and grasses.
  - Planted seedlings from a small nursery that had been established with moringa and jatropha materials.
- The second site (Kalae, Molokai) has about 75 moringa trees and 30 jatropha seedlings already in the ground (approximately six months old) or awaiting transplant.
- The project will enter Phase 2 this summer with soil testing and fertilization regime introduction to determine nutrient utilization for each species at the Hoolehua site.
- Growth and overall tree performance will be monitored prior to, during, and following the fertilization trial.

UH-Manoa (CTAHR)

- Developing a method to produce identical jatropha trees to increase uniformity of growth and yield in the field. The major accomplishments toward this goal were the hiring of a plant scientist and locating a suitable test plant.
- All available literature on jatropha tissue culture has been evaluated and a selection made as to the procedure with the greatest promise.
- Leaf tissue from the jatropha tree at Pearl City Urban Garden Center has been taken to check the sterilization protocol and test the selected tissue culture media.

UH-Hilo (CAFNRM)

- Worked with the Waters of Life Charter School ("WOLS") whose screen houses are provided free and were to be used to grow out the 10,000 seedlings of oil palm. WOLS fell into financial difficulties in December 2007. Worked with the Department of Education to resolve the use of the screen houses.
- The seeds of different oil palm hybrids were ordered in November 2007.

Other R&D Related Activities

Q. What is included in other R&D related activities?

A. Included in other R&D related activities are miscellaneous activities that relate to R&D, primarily labor and overheads related to a USDOE modernization study. HNEI, in cooperation with General Electric, Hawaiian Electric Company, Inc., Maui Electric Company, and other private entities, will explore the management of distribution system resources for improved service quality and reliability, transmission congestion relief, and grid support functions. HECO's labor is an in-kind contribution to the study and was determined based on the anticipated work that will occur in 2009 (primarily Phase 1 and 2 of the study).

1 Account 549 – Miscellaneous R&D Expenses – Other Production

2 Q. What is the Company's test year 2009 estimate of R&D expenses for account 549
3 (miscellaneous expenses – other production)?

4 A. As shown on HECO-1406, the Company's test year 2009 estimate of R&D
5 expenses in account 549 (miscellaneous expenses – other production) total
6 $899,000, after a downward budget reclassification adjustment of $26,000.

Production R&D Activities	TY 2009 Estimate
Biofuel Co-Firing Project	$ 649,000
Technology Division labor and related costs	132,000
Renewable Energy Recurring Activities	34,000
Other	84,000
TOTAL	$ 899,000

13 Q. What was the purpose of the $26,000 downward budget reclassification adjustment?

14 A. As mentioned in the NARUC account 9302 section of this testimony, the
15 adjustment moves the costs of certain activities related to long-term R&D initiatives
16 from account 549 to account 9302 in order to properly assign the R&D activities to
17 the proper NARUC account. The corresponding downward budget reclassification
18 adjustment is reflected in exhibit HECO-736 of Mr. Dan Giovanni's testimony
19 (HECO T-7).

20 Q. How does the test year 2009 estimate compare to the actual 2007 recorded other
21 production R&D expenses?

22 A. The test year 2009 estimate is approximately $302,000 greater than the 2007
23 recorded amount of approximately $597,000, primarily due to the Biofuel Co-Firing
24 Project.

1 Biofuel Co-Firing Project

2 Q. Has HECO been actively investigating the use of biofuels at its generating facilities?

3 A. Yes. HECO, along with MECO and HELCO, are engaged in a broad multi-phased
4 technology assessment and demonstration program that includes: (1) biofuels
5 screening (investigation of supply, availability, pricing, and properties of biofuels);
6 (2) evaluation of generating unit performance and emissions; (3) investigation of
7 key operational, environmental, and regulatory issues faced by the electric utility;
8 and (4) demonstration of biofuel usage in utility power generating units. Maui
9 Electric Company, Ltd., Integrated Resource Plan, 2007-2026, filed April 30, 2007,
10 Docket No. 04-0077 at pages 7-11, and 12-8 to 12-10.

11 Q. What is HECO's Biofuel Co-Firing Project?

12 A. The Biofuel Co-Firing Project is part of a multi-year R&D program to examine
13 biofuels for stationary power generation consisting of the following phases:
14 Phase 1 – Biofuels resource assessment (completed);
15 Phase 2 – Combustion testing (completed);
16 Phase 3 – Generating unit assessment and infrastructure and operational assessment
17 (completed); and
18 Phase 4 – Utility-scale demonstration (2009 – Biofuel Co-Firing Project).
19 The HECO T-6 August 2007 Supplement dated September 6, 2007, Attachment 5,
20 and HECO-629 of HECO's 2007 test year rate case (Docket No. 2006-0386)
21 provide background and more information on the biofuels initiatives.

22 Q. Why is biofuel testing in the Company's steam boiler important?

23 A. For the Company to transition its generating units from fossil fuels to indigenous
24 biofuels, it must conduct tests on its existing generating units to ensure that the
25 Company understands the benefits and impacts of using biofuel blends or neat

biofuels (100% biofuel) in its units. It must investigate a number of issues including combustion efficiency, emissions, storage and handling, operations and other issues associated with the use of biofuels. The use of biofuels in existing HECO electrical generating assets has the advantages of not requiring new site acquisition, continued use of existing infrastructure, and reducing carbon output. Additionally, this testing will provide technical data on the impacts of switching from fossil fuel to biofuel blends or neat biofuels.

Q. Does the State have policies that favor the development and use of biofuels?

A. Yes. The State has policies favoring the development and use of biofuels.

- Act 159, passed by the 2007 Hawaii State Legislature, encourages further production and use of biofuels in Hawaii, establishes that biofuel processing facilities in Hawaii are a permitted use in designated agricultural districts and establishes a program with the Hawaii Department of Agriculture to encourage the production in Hawaii of energy feedstock (i.e., raw materials for biofuels). Act 159 was signed by the Governor on June 8, 2007 and became effective upon its approval.
- Act 253, passed by the 2007 Hawaii State Legislature requires the Department of Business, Economic Development, and Tourism ("DBEDT") of the State of Hawaii to develop and prepare a bioenergy master plan that will set the course for the coordination and implementation of policies and procedures to develop a bioenergy industry in Hawaii. The primary objective of the bioenergy master plan is to develop a Hawaii renewable biofuels program to manage the State's transition to energy self-sufficiency based in part on biofuels for power generation and transportation and to address the following:

- strategic partnerships for the research, development, testing, and deployment of renewable biofuels technologies and production of biomass crops;
- evaluation of Hawaii's potential to rely on biofuels as a significant renewable energy resource, biofuels demonstration projects, including infrastructure for production, storage, and transportation of biofuels;
- promotion of Hawaii's renewable biofuels resources to potential partners and investors for development in Hawaii as well as for export purposes;
- a plan or roadmap to implement commercially viable biofuels development;
- specific objectives and timelines; water resources; land resources; distribution infrastructure for both marine and land; labor resources and issues; technology to develop bioenergy feedstock and biofuels; permitting; financial incentives and barriers and other funding; business partnering; policy requirements necessary for implementation of the master plan; and
- identification and analysis of the impacts of transitioning to a bioenergy economy while considering applicable environmental concerns

Act 253 was signed by the Governor on July 5, 2007 and became effective upon its approval.

- Act 145, passed by the 2008 Hawaii State Legislature which permits the use of lands in agricultural land use districts to be used for agricultural-energy facilities provided that the primary activity of the agricultural-energy enterprise is agricultural activity. Act 145 was signed by the Governor on June 5, 2008 and became effective the same day.

- Act 90, passed by the 2008 Hawaii State Legislature which amends the definition of "renewable energy producer" to include growers and producers of plant or animal materials used primarily for the production of biofuels or other fuels, so that they will be eligible for direct leases of public land. Act 90 was signed by the Governor on May 21, 2008 and became effective the same day.

Q. Please summarize the current status of the Biofuel Co-Firing Project.

A. The Company has gone through a selection process to determine which steam boiler will be tested. The Company narrowed the selection to one of four tangentially-fired steam boilers on the system based on various criteria such as space availability for biofuel fuel storage and delivery, infrastructure availability (e.g., pump size and pressure rating), minimum modifications, and timing of the next planned maintenance outage. HECO is targeting biofuel testing on Kahe steam boiler #3 for late September 2009 after the scheduled (mid-year 2009) overhaul of this unit. A test plan, detailed schedule, and budget are being developed.

Q. Does the Company have an agreement with EPRI on this research project?

A. Yes. HECO has an existing EPRI agreement for a steam boiler testing project (see HECO-WP-1409 for the EPRI agreement and amendments). This agreement will be amended with EPRI to reflect changing the fuel from biodiesel to biofuel and revising funding levels to current project estimates. The amended agreement with EPRI is expected be finalized in 2009. The major tasks are explained below.

<u>Task 1 – Fuel Compatibility Evaluation</u>

Fuel property and viscosity analyses are being conducted to evaluate the compatibility of biofuel-low sulfur fuel oil ("LSFO") blends with existing fuel delivery and handling systems at the host site. Fuel analyses and viscosity-temperature tests of neat LSFO, neat biofuels (i.e., crude palm oil, refined, bleached

and de-odorized palm oil, palm fatty-acid distillate), and a series of these biofuel-LSFO blends (e.g., possible range of 5% to 90% biofuel) will be conducted to characterize fuel properties and flow behaviors (i.e., viscosity vs. temperature). Data from these tests will help HECO select the biofuel to be tested and develop co-firing test plans, including the identification of test limitations and potential equipment modification requirements. This task will be completed in 2008.

Task 2 – Biofuel Co-Firing Test Plan

Information from Task 1 will be used to identify required equipment modifications and support development of the test matrix for the test plan. The test plan will identify the fuel blends and volume requirements, fuel delivery/mixing procedures, co-firing system design, boiler operating test points, performance and emissions data, testing protocol and instrumentation, and data reduction methodologies. Environmental issues and permit requirements will also be assessed. The envisioned testing may include, but not be limited to, measurements of combustion stability, flame stability, boiler performance, fuel system performance, and emissions. This task is projected to begin after Task 1 is completed and associated data is reviewed and analyzed in late 2008 and continue through 2009.

Task 3 – Procurement and Installation

Task 3 includes the procurement of biofuel, and procurement and installation of fuel system equipment, boiler-related components, sensor and emissions analyzers, and data acquisition system. Information from the test plan developed in Task 2 will be used to guide the procurement and installation tasks. This task is planned to begin in late 2008 and continue through the early 2009 time period.

Task 4 – Shakedown and Testing

In Task 4, successful shakedown of equipment and subsystem operations will be followed by co-firing testing and data collection according to the test plan developed in Task 2. This task will be performed in the third quarter of 2009.

Task 5 – Test Data Reduction and Analysis

Task 5 includes the analysis of collected data, formulation of conclusions, and preparation of the final report on co-firing tests. This task will begin after Task 4 is completed in late 2009.

Q. What is the HECO budget for the Biofuel Co-Firing Project through EPRI?

A. This multi-year project, originally started in 2007, will culminate in the field testing planned in 2009 subject to approvals. The Company has a Supplemental Project Agreement with EPRI for this project, (see HECO-WP-1409), with existing and planned funding as follows (note, as mentioned earlier, the Supplemental Project Agreement will be amended to include the 2009 planned funding below):

Year		HECO
2007	$	100,000
2008		143,250
2009		649,000
Total	$	892,250

The Company has received over $200,000 cost sharing from EPRI to date. The Company will seek additional cost-sharing from EPRI in 2009 in the amount of the Company's contribution.

Q. What types of expenses are included in the test year 2009 estimate?

A. Various types of expenses are anticipated for tasks prior to, during, and after the testing. Expenses are expected for activities such as fuel analyses and fuel

compatibility evaluation, outside services for initial test design, set-up and test runs, site surveys, instrumentation, fuel receipt operations, and demobilization and post-test clean-up.

Q. How was the test year 2009 estimate determined?

A. The Biofuel Co-Firing Project estimate for test year 2009 was based on production engineering estimates. A consultant is under contract to help develop a detailed test plan, schedule and updated budget. This effort will continually be updated as new information is obtained and final bids are received in 2009.

Q. Does the Biofuel Co-Firing Project require capital assets?

A. Yes. The Biofuel Co-Firing Project will require the installation of transfer pumps, a fuel blending system, piping, instrumentations and controls to burn biofuel in Kahe Unit #3. The estimated costs of these capital assets amount to approximately $2.2 million and is expected to be installed in 2009 (budgeted as a 2009 plant addition in Ms. Lorie Nagata's testimony at HECO-WP-1701).

Q. Why aren't the costs of these assets expensed as R&D costs?

A. Although these capital additions are being acquired and installed specially for this R&D project, subsequent to the completion of the R&D project, these assets will be used in the normal course of the Company's daily operations. This treatment is consistent with accounting guidelines under Statement of Financial Accounting Standards No. 2, "Accounting for Research and Development Costs." Therefore, these assets will be capitalized in accordance with the Company's policy of accounting for capital projects.

Q. What major approvals are needed for the Biofuel Co-Firing Project?

A. HECO will need to obtain approvals from the Department of Health to test the biofuels and biofuel blends. With respect to cost recovery for the biofuel used

during testing, HECO plans to issue a request for proposal ("RFP") for the test biofuel in 2008. Once there is a contract, HECO will file an application with the Commission for approval of the contract and to recover the full cost of the test fuel through the ECAC.

Renewable Energy Recurring Activities

Q. What types of activities and expenses are included in the 2009 test year estimate of $34,000 for renewable energy recurring activities?

A. The renewable energy recurring activities are comprised of expenses to cover general research and development activities related to renewable energy and alternate energy organization memberships, publications and reports, travel to renewable energy and alternate energy conferences, seminars and training, office supplies and materials and initiatives in alternative energy and emerging technologies (e.g., university assistance in PV evaluations).

Other Production R&D Activities

Q. What is included in other production R&D activities?

A. Other production R&D activities which amount to a test year 2009 estimate of $84,000 is primarily comprised of $32,000 for a fuel cell facility license with HNEI and $34,000 of information technology cost allocation, with the remaining $18,000 related to R&D labor and labor-related costs of various departments of the Company. The Company's information technology cost allocation methodology is discussed in the direct testimony of Ms. Patsy Nanbu HECO T-11.

Q. What is the fuel cell facility license with HNEI?

A. The Company has a fuel cell facility license ("License") with HNEI to allow HNEI to use approximately 4,000 square feet of warehouse space at the Company's Ward Avenue facilities for the operation of a fuel cell test facility. The fuel cell test

facility is used to conduct research, development and testing of fuel cells, fuel cell systems, and alternate fuels. The Company's License with HNEI is month-to-month at a monthly base rent of ten dollars per month. The $32,000 represents the reasonable market rental rate for a comparable-sized facility in the area and is recorded to production O&M as approved by the Commission in Decision and Order No. 19398, filed June 3, 2002 in Docket No. 01-0480. The corresponding credit to the market rental rate is recorded in other operating revenues and is discussed in the direct testimony of Mr. Peter Young (HECO T-22).

Various Accounts – Various Operation and A&G R&D Expenses

Q. What is the Company's test year 2009 estimate of R&D expenses for various other operation and A&G expense accounts?

A. As shown on HECO-1406, the Company's test year 2009 estimate of R&D expenses for various other operation and A&G expense accounts is $31,000, primarily consisting of labor and labor-related overhead related to various R&D activities.

Q. How does the test year 2009 estimate compare with the 2007 recorded amounts?

A. The test year 2009 estimate is approximately $140,000 less than the 2007 recorded amount. The decrease is primarily due to approximately $147,000 of energy delivery R&D projects incurred in 2007, whereas there were no energy delivery R&D projects budgeted in the test year 2009, as funds were primarily budgeted for the Biofuel Co-Firing Project. The Biofuel Co-Firing Project derives to NARUC account 549 (miscellaneous expenses – other production), while the costs of energy delivery R&D projects derive to NARUC account 588, (miscellaneous distribution operations).

1 DEPRECIATION

2 Q. What items will you cover in your depreciation testimony?

3 A. My depreciation testimony will address two items. First, I will discuss depreciation
4 expense, which is an operating expense deducted from operating income in the
5 calculation of net operating income for the test year. Second, I will discuss
6 accumulated depreciation, which is the cumulative total of depreciation recorded
7 with adjustments for retired assets. Accumulated depreciation is deducted from the
8 original cost of plant-in-service to determine the depreciated plant-in-service
9 amount used to calculate rate base.

10 Depreciation Expense

11 Q. What is the Company's test year 2009 estimate for depreciation expense?

12 A. The test year 2009 estimate for depreciation expense is $83,183,000, as shown in
13 HECO-1408.

14 Q. How was the test year 2009 depreciation expense calculated?

15 A. Depreciation expense was calculated by determining the test year depreciation
16 accrual and then adjusting this amount for certain items.

17 Q. What adjustments were made to the depreciation accrual amount to determine
18 depreciation expense?

19 A. Depreciation accrued on vehicles, amortization of Contributions in Aid of
20 Construction ("CIAC"), amortization of federal investment tax credit and
21 amortization of the net regulatory asset related to Statement of Financial Accounting
22 Standards No. 109, which is discussed by Mr. Lon Okada in HECO T-16, were
23 subtracted from the resulting depreciation accrual, as shown in HECO-1408. The
24 net amount after these four adjustments represents the test year 2009 depreciation
25 expense.

Q. Why is the annual vehicle depreciation accrual subtracted from the total depreciation accrual to derive the amount of depreciation expense included in operating expense?

A. The annual vehicle depreciation accrual is excluded because it is actually reflected in capital or operations and maintenance ("O&M") costs. Because of the clearing process used in the accounting for projects and work for which the vehicles are used, vehicle depreciation is appropriately reflected in either the O&M expenses for particular O&M projects or in the subsequent depreciation expense of the assets resulting from the capital projects to which the vehicle depreciation is charged. Thus, it is necessary to exclude the vehicle depreciation accrual from the total depreciation accrual to avoid double-counting the expense.

Q. Why is the amortization of CIAC subtracted from the depreciation accrual?

A. The amortization of CIAC is subtracted from the depreciation accrual because CIAC represents funds provided by customers, rather than investors, and is therefore appropriate to exclude that portion of depreciation related to CIAC.

Q. Please describe the method used to derive the test year 2009 depreciation accrual.

A. HECO's depreciation accrual was calculated using depreciation rates as calculated utilizing the straight-line remaining life method and use of the vintage amortization accounting procedure for selected plant accounts.

Q. Were the depreciation rates and use of the vintage amortization accounting procedure for selected plant accounts approved by the Commission?

A. Yes. On March 1, 2004, HECO and the Consumer Advocate filed a Settlement Agreement for purposes of simplifying and expediting the proceeding with respect to HECO's request for Commission approval to change its depreciation rates and approval of a procedure change to vintage amortization accounting for certain

accounts. On September 3, 2004, the Commission issued Decision and Order No. 21331 in Docket No. 02-0391 which approved this Settlement Agreement.

Q. How are the depreciation rates applied in computing the test year 2009 depreciation expense?

A. The plant account balances that are subject to depreciation and vintage amortization accounting are separated. Depreciation rates are used to derive the composite book depreciation and amortization rates which are applied to each functional group's depreciable plant balance in computing the test year 2009 depreciation expense.

Composite rates were determined by calculating each group's depreciation accrual for 2008 and dividing it by the group's depreciable asset balance as of January 1, 2008. The 2008 depreciation accrual for each group was calculated by multiplying the depreciation rates for each account in the group by its respective depreciable asset balance as of January 1, 2008. See HECO-WP-1405.

Q. What are the "functional account groups"?

A. The functional account groups are made to segregate the utility plant along functional lines of use, as provided in the National Association of Regulatory Utility Commissioners' ("NARUC") Uniform System of Accounts and as subscribed to by the Hawaii Public Utilities Commission. The five functional groups are:

1) Production;
2) Transmission;
3) Distribution;
4) General; and
5) Vehicles.

Q. What was the next step in calculating the depreciation accrual?

A. The Company calculated the test year depreciation accrual by multiplying the composite book depreciation and amortization rate for each functional account group by the beginning-of-the-year test year 2009 depreciable base for each respective functional group. See HECO-WP-1401.

Q. How does the test year 2009 depreciation accrual compare with the actual amounts recorded in recent year?

A. As shown in HECO-1411, 2009 depreciation accrual as a percentage of plant is comparable to previous years (2005 to 2008). Although the depreciation accrual for the test year 2009 is higher than in previous years, the depreciable plant base is also higher resulting in a comparable percentage.

<u>Accumulated Depreciation</u>

Q. What is the Company's test year 2009 estimate for accumulated depreciation?

A. The test year 2009 estimate for accumulated depreciation is $1,313,247,000 as shown in HECO-1409.

Q. How were the beginning and ending 2009 accumulated depreciation balances calculated?

A. The January 1, 2009 balance was calculated as follows:

1) Recorded accumulated depreciation balance at January 1, 2008;
2) Plus estimated depreciation accrual for 2008;
3) Plus estimated salvage value received for 2008 plant retirements;
4) Less estimated 2008 plant retirements; and
5) Less estimated cost of removal for 2008 plant retirements.

The December 31, 2009 balance was calculated in the same manner starting with an estimated beginning-of-the-year balance and utilizing 2009 estimates for the depreciation accrual, plant retirements and related salvage and cost of removal.

Q. How were the estimated plant retirements for 2008 and the test year 2009 calculated?

A. Retirements were estimated for 2008 and the test year 2009 by examining the historical ratio of actual retirements per functional group to plant balances for the last five years (2003-2007). The Company then calculated a five-year simple average ratio to determine the estimated retirements for 2008 and the test year 2009. 2008 and 2009 estimated retirements include retirement of vintage year amortizable plant balances.

Q. How were the cost of removal and salvage for plant retirements estimated for 2008 and the test year 2009?

A. The Company examined the historical ratio of actual cost of removal and salvage to plant retirements for the last five years (2003-2007). The Company calculated a five-year simple average ratio. This ratio was then multiplied by the estimated amount of retirements excluding retirement of vintage year amortizable plant balances for each year to determine the estimated amount of cost of removal and salvage. These calculations are shown on HECO-WP-1403.

Q. Please describe the reclassification of cost of removal for financial reporting purposes.

A. Based on guidance received from the Securities and Exchange Commission staff in February 2004, beginning with financial statements for the year ended December 31, 2003, HECO began to reclassify, as a regulatory liability, the estimated portion of the depreciation expense calculation designed to recover future net salvage.

Q. What are the Company's estimated 2008 and test year 2009 balances for its regulatory liability for cost of removal accrual included in accumulated depreciation?

A. The amounts of the estimated reclassification from accumulated depreciation to regulatory liability for financial statement purposes are $24,398,000 and $25,192,000, for 2008 and 2009, respectively. These calculations are shown on HECO-WP-1404.

Q. What impact does this reclassification have on rate base?

A. The reclassification has no effect on rate base since both the accumulated depreciation and the regulatory liability are net against total plant-in-service. Refer to Mr. Darren Doi's testimony at HECO T-18 and exhibit HECO-1802 for the plant-in-service summary.

SUMMARY

Q. Please summarize your testimony.

A. The test year 2009 normalized expenses and revenues which the Company has demonstrated to be fair and reasonable in this docket include the following:

Description	$ in Thousands
Miscellaneous A&G Expenses	$ 8,960
Research and Development Expenses:	
Misc A&G R&D (included Misc A&G Exp above)	2,603
Misc Other Production R&D (NARUC 549)	899
Other various R&D (Various NARUC)	31
Depreciation Expense	83,183

The Company's normalized 2009 test year estimates for the Miscellaneous Administrative and General Expense amounting to $8,960,000 (which includes

1 miscellaneous A&G R&D of $2,603,000) shown above cover a variety of expenses
2 associated with the cost of doing business. The inclusion of these types of costs,
3 including production R&D and other R&D costs which are included in various
4 other witness testimonies in the 2009 test year estimates, are consistent with prior
5 Commission decisions.
6 Q. Does this conclude your testimony?
7 A. Yes, it does.

BRUCE TAMASHIRO

EDUCATIONAL BACKGROUND AND EXPERIENCE

Present employer:	Hawaiian Electric Company, Inc. 900 Richards Street Honolulu, HI 96813
Current position:	Director, Corporate and Property Accounting
Previous position:	Senior Financial Analyst July 2001 - October 2004
Years of service:	7 years
Other experience:	Senior Auditor, KPMG LLP January 1994 – July 2001
Certification:	Certified Public Accountant (not in public practice) State of Hawaii
Education:	Bachelor of Business Administration in Accounting University of Hawaii at Manoa

Hawaiian Electric Company, Inc.
Miscellaneous Administrative and General Expenses
Test Year 2009 ($ in Thousands)

Line	Account	Notes	[A] 2009 Budget	[B] Budget Adj	[C] Norm	[A]+[B]+[C] 2009 Test Year Estimate
	928 Regulatory Commission Expense:					
1	Non-Labor	(1)	760		(320)	440
2	Total 928		760	-	(320)	440
	9301 Institutional/Goodwill Advertising Expense					
3	Labor		14	-	-	14
4	Non-Labor		22	-	-	22
5	Total 9301		36	-	-	36
	9302 Miscellaneous General Expenses					
6	Labor	(2)	316	(101)	-	215
7	Non-Labor	(3)	3,888	(246)	-	3,642
8	Total 9302		4,204	(347)	-	3,857
	931 Rents Expense					
9	Non-Labor	(4)	3,026	36	-	3,062
10	Total 931		3,026	36	-	3,062
	932 Administrative and General Maintenance					
11	Labor	(5)	195	52	-	247
12	Non-Labor	(5)	398	1,108	(188)	1,318
13	Total 932		593	1,160	(188)	1,565
	Total Misc Administrative and General Expenses		8,619	849	(508)	8,960

Note: Numbers may not total exactly due to rounding.

Note (1): Budget adjustment to normalize 2009 rate case expenses over 2 year period (see HECO-1403).

Note (2): Budget adjustment to remove costs for 1) Aloha United Way and Community Action Group activities amounting to $7K, 2) overstatement of budgeted labor hours amounting to $8K, and 3) labor related to the air and fish environmental monitoring programs amounting to $86K. See HECO-1404, page 2 for details of these budget adjustments.

Note (3): Budget adjustment to 1) reclassify nonlabor costs related to the air and fish environmental monitoring programs amounting to $96K (See HECO-1404 page 2), 2) remove portion of EEI dues attributed to government lobbying and other activities amounting to $118K (See HECO-1404 page 4), 3) decrease intercompany BOD fees of $104K (See HECO T-14 page 13), 4) exclude restricted stock expenses of $3K (See HECO T-14 page 13), 5) increase R&D estimate by $26K (See HECO T-14 page 31) and 6) increase R&D estimate by $49K due to revised EPRI dues allocation (See HECO-1406).

Note (4): Budget adjustment to increase Central Pacific Plaza's Suite 1250/1270 lease rents and ASB Tower Training Room allocated charges, by $21,000 and $15,000, respectively. See HECO-1405 for details of these budget adjustments.

Note (5): Budget adjustments to increase Administrative and General Maintenance due to reclassifications of recurring maintenance work amounting to $88K and non-recurring maintenance projects amounting to $1.072K, offset by a normalization adjustment for non-recurring maintenance expense projects amounting to $188K (see HECO-1412).

Hawaiian Electric Company, Inc.
Miscellaneous Administrative and General Expenses
2004 to Test Year 2009 Estimate ($ in Thousands)

		[A]	[B]	[C]	[D]	[E]	[F]	
		Recorded						
Line	Account	2004	2005	2006	2007	Forecast 2008	Test Year Estimate 2009	2007 vs. 2009
1	928 Regulatory Commission Expense	-	61	258	512	317	440	-14%
2	9301 Institutional/Goodwill Advertising Expense	76	73	65	36	34	36	0%
3	9302 Miscellaneous General Expenses	2,803	2,841	732	3,523	4,126	3,857	9%
4	931 Rents Expense	1,544	2,202	2,691	3,011	2,916	3,062	2%
5	932 Administrative and General Maintenance	505	524	444	454	868	1,565	245%
	Total	4,928	5,702	4,190	7,536	8,261	8,960	

Note: Numbers may not total exactly due to rounding.

Hawaiian Electric Company, Inc.
Account 928 - Regulatory Commission Expenses
Test Year 2009 Estimate ($ in Thousands)

2009 Budget				$	760
Estimated 2009 TY Regulatory Commission Expenses:					
Legal fees	$	540			
Consultant - Regulatory Support		189			
Consultant - Return on equity		64			
Consultant - Financial Integrity		64			
Printing services		10			
Other		14			
Total 2009 rate case expenses		880	[a]		
Amortization period in years - Note (1)		2	[b]		
Annual amortization of 2009 rate case expenses	$	440	[a]/[b]		
Normalization adjustment					(320)
Total 2009 Test Year Regulatory Commission Expenses				$	440

Note: Numbers may not total exactly due to rounding.

Note (1): The 2009 test year regulatory commission expenses will be amortized over a 2-year period based on the Company's anticipated timing of rate case filings between the current test year 2009 rate case filing compared to its next rate case filing for an anticipated 2011 test year. The 2-year period is based on the Company obtaining approval for a step-increase in its rates as discussed in R. Alm's direct testimony at HECO T-1. If the Company does not obtain approval for a step-increase in its rates, then the amortization period would be 1-year, resulting in a test year 2009 Regulatory Commission Expense estimate of $880,000.

Hawaiian Electric Company, Inc.
Account 9302 - Miscellaneous General Expenses
Test Year 2009 Estimate ($ in Thousands)

Research and Development	$	2,603
Community Service Activities		361
Company Membership Dues		263
Ellipse Software Maintenance Fees		117
Board of Directors' Expenses		514
Total 2009 Test Year Miscellaneous General Expenses	$	3,857

Note: Numbers may not total exactly due to rounding.

Hawaiian Electric Company, Inc.
Community Service Activities
Test Year 2009 Estimate ($ in Thousands)

Total Community Service Activities	$	558
Adjustments:		
Aloha United Way & Community Action Group - Note (1)		(7)
Budget input error - Note (2)		(8)
Reclassification of environmental monitoring programs - Note (3)		(182)
Total 2009 Test Year Community Service Activities	$	361

Note: Numbers may not total exactly due to rounding.

Note (1): Costs of activities related to the Aloha United Way and Community Action Group activities are excluded as a simplification adjustment due to the Commission's disallowance of these costs in the Company's test year 1990 and 1992 rate cases (Dockets 6531 and 6998, respectively).

Note (2): The labor budget for Community Service Activities is overstated by 192 hours. Therefore, the labor budget will be revised to exclude the overstated hours. Calculated as follows:

Total labor hours (192 hours) x standard labor rate of Teacher/Coach ($34.70)	$	6,662
Total labor hours (192 hours) x nonproductive wages rate ($5/hr)		960
Total adjustment	$	7,622

Note (3): Costs represent two environmental monitoring programs which are part of the community benefits package relating to HECO's 2009 Campbell Industrial Park generating unit - an Air Quality Monitoring program and a Fish Monitoring program (Docket No. 05-0146). These environmental programs were approved in D&O No. 23514. The costs of these projects are more representative of environmental compliance type of programs, rather than community service activities, for the purposes of this rate case. Refer to D. Giovanni's testimony at HECO T-7 (Production O&M) for inclusion of these costs in the TY 2009 rate case.

Hawaiian Electric Company, Inc.
Company Membership Expenses
Test Year 2009 Estimate ($ in Thousands)

Adjusted EEI Membership Dues			$	180
Other Dues:				
Chamber of Commerce of Hawaii	$	26		
Western Energy Institute		22		
Land Use Research Foundation		17		
Hawaii Employers Council		13		
Better Business Bureau		3		
Western Labor & Management Public Affairs Committee		2		
Total Other Membership Dues				83
Total 2009 Test Year Company Membership Dues			$	263

Note: Numbers may not total exactly due to rounding.

Hawaiian Electric Company, Inc.
Estimated EEI Dues
Test Year 2009 Estimate

Membership Dues	Total 2008 EEI Invoice - HECO and subs	Note (1) HECO's Share 66%	Note (2) Legislative Advocacy and Other 40%	Note (3) Lobbying 40%	TY 2009
Regular Activities of EEI	$ 405,096	$ 267,585	$ (107,034)		$ 160,551
Industry Issues	40,512	26,760		$ (10,704)	16,056
Mutual Assistance Program	5,000	3,303			3,303
Total	$ 450,608	$ 297,647	$ (107,034)	$ (10,704)	$ 179,909

Note: Amounts may not add due to rounding.

Note (1): HECO's share is calculated as follows (revenues per HECO's 2007 Annual Report). The methodology of using total revenues as a basis to allocate the EEI dues is consistent with previous rate cases:

HECO-only 2007 Revenues	$ 1,385,137
HECO-consolidated 2007 Revenues	$ 2,096,958
% of HECO's Revenues to Total	66%

Note (2): Amount represents EEI's estimated amount spent on legislative advocay, legislative policy research advertising, marketing and public relations activities. Amount is based on a 40% estimate which is based on EEI's 2006 actual expenses per HECO T-13, Attachment 1, Page 1 of 2, of the Company's Stipulated Settlement Letter in HECO 2007 Test Year Rate Case dated September 5, 2007. Note, per John Schlenker, EEI Controller, 40% is reasonable for 2007.

Note (3): Amount represents EEI's 2008 estimate of amounts to be spent on issues related to influencing legislation. Obtained % per the 2008 EEI invoice.

Hawaiian Electric Company, Inc.
Ellipse Maintenance Fees
Test Year 2009 Estimate

	Note (1)								
Month	Software Maintenance Fee	Amend 22	Amend 23	Amend 30	Amend 33	Estimate - Amend 34	BSI	Total (HECO/ HELCO/ MECO)	2009 Est Percent Increase
Jan-09	$ 18,312	$ 1,853	$ 1,142	$ 301	$ 378	$ 750	$ 1,356	$ 24,092	
Feb-09	18,312	1,853	1,142	301	378	750	1,356	24,092	
Mar-09	18,312	1,853	1,142	301	378	750	1,356	24,092	
Apr-09	18,312	1,853	1,142	301	378	750	1,356	24,092	
May-09	18,312	1,853	1,142	301	378	750	1,356	24,092	
Jun-09	18,769	1,900	1,170	308	388	751	1,390	24,676	2.5%
Jul-09	18,769	1,900	1,170	308	388	751	1,390	24,676	
Aug-09	18,769	1,900	1,170	308	388	751	1,390	24,676	
Sep-09	18,769	1,900	1,170	308	388	751	1,390	24,676	
Oct-09	18,769	1,900	1,170	308	388	751	1,390	24,676	
Nov-09	18,769	1,900	1,170	308	388	751	1,390	24,676	
Dec-09	18,769	1,900	1,170	308	388	751	1,390	24,676	
Total Ellipse Maintenance Fees								$ 293,193	
HECO's % Share (Based on total users of HECO/HELCO/MECO)								70%	
Total Test Year 2009 Estimated HECO's Share of Ellipse Maintenance Fees								$ 205,235	

Note: Numbers may not total exactly due to rounding.

Note (1): Amounts are based on actual invoices paid for the 2007-2008 year and escalated 2.5% on an annual basis beginning June of each year. Amendment 34 is a proposed amendment for the projected additional maintenance costs beginning in 2008.

Hawaiian Electric Company, Inc.
Allocation of Ellipse Software Maintenance Fees
Test Year 2009 Estimate

		% Alloc	% Alloc	% Alloc	% Alloc	Result Alloc	Allocated Amount		NARUC Acct
HECO's portion of Ellipse software maintenance fees per HECO-1404, pg. 5							$ 205,235		
Work Management Amortization		0.1836							
	Capital Expenditures		0.559						
212	212 Constr Proj - Prod			0.072		0.007390	1,517		514
320	320 Manage Trans Construction Proj			0.214		0.021963	4,508		566
420	420 Manage Distri Construction Proj			0.714		0.073280	15,040		598
	Production		0.248						
	Prod Operation			0.475					
245	245 Monitor Plt Oper Perf - Boiler				0.546	0.011809	2,424		502
246	246 Monitor Plt Oper Perf - Turbo Gen				0.454	0.009819	2,015		505
	Prod Maint			0.525					
258	258 Maint Blr Plt & Rel Equip - Predictive				0.625	0.014940	3,066		512
261	261 Maint Stm Turbo Gen & Rel Equip Predictive				0.375	0.008964	1,840		513
	Transmission and Distribution		0.193						
	Transmission								
	Transmission Operation			0.147					
331	331 Oper Trans Fac - OH Line				0.492	0.002563	526		563
333	333 Oper Trans Fac - Substation				0.508	0.002646	543		562
	Transmission Maint								
343	343 Maint Trans OH Line - Predictive			0.145	0.682	0.003504	719		571
349	349 Maint Subst Trans Equip - Predictive				0.318	0.001634	335		570
	Distribution								
	Distribution Operation								
461	461 Oper Distri Fac - OH Line			0.313	0.309	0.003427	703		583
462	462 Oper Distri Fac - UG Line				0.341	0.003782	776		584
463	463 Oper Distri Fac - Substation				0.350	0.003882	797		582
	Distribution Maint								
474	474 Maint Distri OH Line - Predictive			0.395	0.437	0.006117	1,255		593
477	477 Maint Distri UG Line - Predictive				0.422	0.005907	1,212		594
486	486 Maint Subst Distrbution Equip - Predictive				0.141	0.001974	405		592
Accounting/Finance		0.3757							
818	818 Maintain General Ledger, Subledgers, & Statistical Information					0.375700	77,107	[a]	9302
HR/Payroll		0.2466							
766	766 Maintain Employee Records		0.031			0.007645	1,569		921
777	777 Process Payroll		0.969			0.238955	49,042		921
Materials		0.1941							
842	842 Order Materials, Equip., Supplies		0.1			0.019410	3,984	[a]	9302
843	843 Process Invoice & Other Payments		0.649			0.125971	25,854	[a]	9302
850	850 Process Materials & Transaction		0.251			0.048719	9,999	[a]	9302
TOTAL (HECO's portion of Ellipse software maintenance fees)							$ 205,235		
		Sum of [a] - Amt allocated to acct 9302					$ 116,943		

Hawaiian Electric Company, Inc.
Account 931 - Rent Expense
Test Year 2009 Estimate

EXISTING LEASES	[a] Sq Ft	[b] Monthly Rent per Sq Ft $	[c]=[a]x[b] Annual Base Rent Note (2)	[d]=[a]x note(1) Est Annual CAM Note (1)	[e]=[c]+[d] Annual Base & CAM Rent	[f]=[a]x note(1) Est RPT Credit Note (1)	[g]= ([e]+[f]) x (4.712%) Annual General Excise Tax	[h]=[e]+ [f]+[g] Annual Rent TY 2007 ($ 000s)	Reference
Central Pacific Plaza (CPP):									
Suite 700	7,598	$ 1.66	$ 152,223	$ 103,723	$ 255,946	$ (18,157)	$ 11,205	$ 249	See HECO-WP-1410.
Suite 1010	4,509	1.40	75,756	61,554	137,310	(10,775)	5,962	132	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-B
Suite 1020/1025/1075	4,532	1.35	73,418	61,868	135,287	(10,830)	5,864	130	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-C
Suite 1201/1212	2,871	1.65	56,846	39,193	96,039	(6,861)	4,202	93	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-D.
Suite 1250/1270	1,598	1.35	7,141	21,815	28,956	(3,819)	1,184	26	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-E.
Suite 1300	9,601	1.55	181,118	131,067	312,185	(22,944)	13,629	303	See HECO-WP-1411.
Suite 1425	2,788	1.35	46,838	38,060	84,898	(6,663)	3,686	82	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-G.
Suite 1480	1,242	1.40	20,866	16,955	37,821	(2,968)	1,642	36	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-H.
Suite 1515	732	1.49	13,077	9,993	23,070	(1,749)	1,005	22	2007 TY Rate Case, CA-IR-299(c) HECO T-13, Attachment 3.
Suite 1520/1530	2,451	1.66	49,105	33,460	82,564	(5,857)	3,614	80	See HECO-WP-1412.
Suite 1570	2,969	1.49	53,052	40,531	93,583	(7,095)	4,075	91	2007 TY Rate Case, CA-IR-299(c) HECO T-13, Attachment 4.
Suite 1710/1750/1760	4,316	1.40	72,509	58,919	131,428	(10,314)	5,707	127	2007 TY Rate Case, CA-IR-299(c) HECO T-13, Attachment 6.
Total CPP								1,373	
King Street Building	58,313	1.11	781,456	-	781,456	-	36,822	818	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11
ASB Tower - Training Rooms **Note (3)**								61	See HECO-WP-1413.
Pauahi Tower	15,892	1.25	238,380	215,496	453,876	-	21,387	475	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-N.
Honolulu Club	2,544	2.87	87,730	-	87,730	-	4,134	92	See HECO-WP-1414.
Waterhouse - Suite 506	3,085	1.25	46,275	35,740	82,015	(2,777)	3,734	83	2007 TY Rate Case, CA-IR-299(c) HECO T-13, Attachment 8.
Waterhouse - Suite 404	1,662	1.25	24,930	19,254	44,184	(1,496)	1,779	44	2007 TY Rate Case, CA-IR-299(c) HECO T-13, Attachment 8.
Waterhouse - Suite 101	1,806	1.10	26,006	20,923	46,929	(1,625)	2,135	47	See HECO-WP-1415.
Waiau Viaduct	Quarterly payments of $7,925 (no GET)							32	2007 TY Rate Case, CA-IR-2 HECO T-13, Attachment 11-R.
Total 2009 Rent Budget								$ 3,026	
Note (2) adjustment - CPP 1250/1270								21	
Note (3) adjustment - ASB Training Rooms								15	
Total TY 2009 Rent - Adjusted								$ 3,062	

Note Explanations:

Note: Numbers may not add exactly due to rounding.

(1) For CPP leases, estimated common area maintenance (CAM) costs and real property tax (RPT) credits were estimated based on estimated 2008 figures as follows:

	CAM	RPT	
CPP 2008 Estimate	$ 3,087,587	$ 540,495	See HECO-WP-1416.
Estimated Annual Increase (3%)	1.03	1.03	
Estimated CPP 2009 CAM/RPT	$ 3,180,215	$ 556,710	
/ Total CPP Sq Ft (Common Interest)	232,959	232,959	
/ 12 Months	12	12	
Est Monthly 2009 $ per sq ft	$ 1.14	$ 0.20	

For Pauahi Tower lease, CAM costs were estimated based on an estimated CAM rate of $1.0977 per sq ft and escalated 3%. RPT credit is included in the CAM costs. See HECO-WP-1417.

Hawaiian Electric Company, Inc.
Account 931 - Rent Expense
Test Year 2009 Estimate

Note Explanations - continued:

For Waterhouse leases, CAM costs were estimated based on actual 2007 CAM rate of $.91 per sq ft and escalated 3% anually to 2008 and 2009. For RPT credits, assumed $.15 per sq ft for 6 months (7/09-12/09 for suites 404/506 and 1/09-6/09 for suite 101), based on 2008 RPT credits escalated by 3% and based on the timing of the filing and estimated receipt of the RPT exemption.

For Honolulu Club lease, CAM and RPT credits are included in the base rent.

(2) Annual base rents are based on existing leases, except as adjusted based on lease terms and/or assumptions below:

CPP 1201/1212:
The current lease expires August 31, 2008 and is currently being negotiated. For the purposes of the 2009 budget, assumed a $1.65 base rate per sq. ft., similar to the CPP 700 lease which was recently negotiated and executed in 2007.

CPP 1250/1270:
The calculation of the 2009 lease is incorrect. The total 2009 annual BASE lease expense for these suites should be $26,767 in accordance with the existing lease agreement which expires January 31, 2010. Accordingly, the total annual lease expense including CAM, GET and RPT credit should be $47,000, an increase of $21,000 from the current 2009 budgeted amount. Therefore, total rent expense will be adjusted at the next opportunity to determine revenue requirements.

CPP 1425:
The current lease expires October 31, 2009. For the purposes of the 2009 budget, assumed a $1.65 base rate per sq. ft., similar to the CPP 700 lease which was recently negotiated and executed in 2007, beginning November 2009.

Waterhouse 506 and 404:
The current lease expires November 30, 2008 and is currently being negotiated. For the purposes of the 2009 budget assumed a $1.25 base rate per sq. ft. based on initial renewal discussions.

Waterhouse 101:
The current elase expires April 30, 2009. For the purposes of the 2009 budget, assumed a $1.25 base rate per sq. ft. based on initial renewal discussions of Waterhouse 506 and 404.

(3) Budgeted amount is based on an early calculation which has since been updated. The updated amount is $76,000, approximately $15,000 more than originally budgeted. Updated amount is based on additional shared costs in addition to rent (e.g., insurance and overhead). Therefore, total ASB training room rent will be adjusted at the next opportunity to determine revenue requirements.

Reference - continued:

See HECO-WP-1418.

Hawaiian Electric Company, Inc.
Research and Development (R&D) Expenses
Test Year 2009 ($ in Thousands)

			TY 2009
NARUC 9302 R&D Expenses:			
EPRI Dues - HECO's Portion - calculation below			$ 1,657
Develop & Demonstrate New Technology			424
Other Long-Term R&D Strategies:			
Oahu Electric System Analysis		$ 352	
Maui Electric System Analysis Phase 2		75	
Biofuel Agriculture Crop Research Phase 3		50	
Other long-term R&D activities		45	522
Total Account 9302 R&D Expenses			$ 2,603
NARUC 549 R&D Expenses:			
Biofuel Cofiring Project			$ 649
Techonology Division Labor and Labor-Related Costs	Note (3)		132
Renewable Energy Recurring Activities			34
Other Production R&D Costs			84
Total Account 549 R&D Expenses			$ 899
Various NARUC Operation and A&G R&D Expenses			$ 31
EPRI Dues - HECO's Portion:			
Total Estimated EPRI Dues			$ 1,608 [b]
Budget adjustment			49 [a]-[b]
Total 2009 Company-wide EPRI Dues	Note (1)	$ 2,085	
HECO's Portion - UPDATED	Note (2)	79.435%	
Total TY 2009 Estimated EPRI Dues			$ 1,657 [a]

Note: Numbers may not total exactly due to rounding.

Note (1): Amount represents the fixed annual EPRI membership dues per the 5-year EPRI Membership Agreement between HECO and EPRI expiring December 31, 2011.

Note (2): HECO's portion of the total EPRI dues is based on the below allocation:

HECO TY 2007 Docket No. 2006-0386, Interim D&O No. 23749	3,174	79.435%
HELCO TY 2006 Docket No. 05-0315, (HELCO T-9, pg. 75)	324	8.109%
MECO TY 2007 Docket No. 2006-0387, (MECO T-9, pg. 68)	498	12.456%
Total	3,996	

Note (3): Amount represents the labor and labor-related costs of HECO's Technology Division, which is comprised of a Director, Senior Energy Specialist and Project Aide, whose work cannot be directly attributable to specific projects.

Hawaiian Electric Company, Inc.
Research and Development Expenses
2004 to Test Year 2009 Estimate ($ in Thousands)

	Recorded				Forecast	Test Year
Description of R&D Activity	2004	2005	2006	2007	2008	2009
EPRI Dues	1,529	1,529	-	1,608	1,608	1,657
Advanced Meter & Customer Outage	-	177	-	-	-	-
Advanced Meter Infrastructure	-	-	146	383	442	414
Power Line Carrier	-	(11)	-	-	-	-
Broadband over Powerlines - McCully Trial	605	101	1	-	-	-
Broadband over Powerlines - Phase 1 Pilot	-	423	40	40	-	-
Residential Use per Customer Study	-	58	-	-	-	-
Sales Forecast Study	-	-	113	-	-	-
Fuel Additive Testing	-	-	488	-	-	-
Biofuel Feedstock Policy	-	-	-	75	-	-
Critical Peak Pricing	-	-	-	51	-	-
Grid Code Study	-	-	-	27	-	-
Biofuel Agriculture Crop Research	-	-	-	52	50	50
Biofuel Economic Analysis	-	-	-	-	121	-
Biofuel Co-Firing Project	-	-	-	-	-	649
Maui Electric System Analysis	-	-	-	89	255	75
Oahu Electric System Analysis	-	-	-	-	15	352
Electronic Shock Absorber	151	265	30	23	-	-
Technology Cost Allocation	18	31	31	29	27	34
Local EPRI Matching Funds - Note (3)	377	55	-	260	235	-
Renewable Energy Initiatives - Note (3)	-	77	279	157	119	-
Biofuels/Biomass Initiatives - Note (3)	-	140	(14)	105	100	-
Renewable Energy Recurring Activities	-	4	6	22	34	34
Technology Division	158	275	234	174	108	132
HNEI Fuel Cell Facility License	32	32	32	32	32	32
Other - Note (1)	97	119	51	141	67	104
Estimated GL code reversals - Note (2)	(144)	(135)	(146)	-	-	-
Total R&D	2,823	3,140	1,291	3,268	3,213	3,533

Note: Numbers may not total exactly due to rounding.

Note (1): Amounts include miscellaneous R&D costs of accounts 9302 (activities 730 and 731), account 549, and other various accounts.

Note (2): Refer to Ms. Patsy Nanbu's testimony at HECO T-11 for information related to GL code reversed amounts under account 922 - Administrative Expenses Transferred discussion. For 2007 - 2009, the GL code reversal amounts are allocated to each respective R&D project/activity within that year.

Note (3): For the 2009 test year, the budgets of these activities have been put toward the Biofuel Co-Firing Project.

GE/HNEI Maui Electrical System Analysis

As stated in MECO's IRP-3 Plan filed April 30, 2007, the electric system on Maui is being analyzed in a study conducted similar to Hawaii Energy Roadmap Study for the Big Island of Hawaii, which has been conducted by GE Global Research Center (GEGRC) under contract to the University of Hawaii's Hawaii Natural Energy Institute (HNEI). HNEI/GEGRC proposed, and HECO funded (with U.S. Department of Energy (USDOE) and HNEI cost sharing), a similar effort entitled Maui Electrical System Analysis, which includes initial data collection and preliminary analysis of the suitability of this data for future model (MAPS and PSLF models) development of the Maui grid. MECO is making its data available to support the study and HECO agreed to provide up to $344,000 to support not only the data collection and analysis but also development and validation of the system models (over the 2007 and 2008 time period).

As part of the electrical system analysis, the impact of current wind turbine energy on the Maui system will be modeled and evaluated. In addition, the study will evaluate the utilization of available mitigating technology to address the effect of wind variability on grid frequency, and the potential impact of additional wind farms being added to the system. This analysis will assist in determining the amount, if any, of additional intermittent generation the system can reasonably accept without unduly impacting the reliability and operability of the island grid.

In Phase 1, a detailed technical and economic model of the existing electrical infrastructure of the MECO grid is being developed, using information and models provided by MECO, to establish a baseline condition. The transient and production cost models will be validated against MECO historical data to achieve confidence in the fidelity of the approach. After completing validation of the baseline model, the project will proceed to a subsequent phase that is yet to be scoped, and may analyze the technical and economic impact of infrastructure expansion scenarios relative to the baseline condition. The scope, parameters and evaluation criteria for the subsequent phase will be formulated jointly by HNEI, GEGRC, HECO and MECO based on the results obtained from prior phase analyses and the needs of MECO.

The GEGRC scoping document notes that the increasing content of renewable energy resources on Maui is creating regulation, load following, dispatch and unit commitment challenges to the operation of the MECO grid. The intermittent nature of the current wind farm's output has identified the need for several system modifications to optimize operations in order to accommodate the wind farm production. The main objective of the proposed effort is to develop a baseline model of the electrical infrastructure on the MECO grid to characterize these challenges today, and to serve as a reference point for future scenario analyses exploring different renewable energy and mitigating measure configurations of interest to the MECO planners. Specifically, the study will develop stability and production cost models to identify the impact on technical performance and operating economics associated with as-available generation on the Maui grid.

The tasks identified for Phase 1 include:

Task 1.0: Data Consolidation and Preliminary Model Feasibility Analysis

Task 2.0: Data Evaluation, Completion and Manipulation

Task 3.0: System Model Development

Task 4.0: Baseline Model Validation

Task 5.0: Preparation of Phase 2 Proposal

According to the scoping document, the data provided by HECO/MECO, and augmented by GEGRC in Task 2, will be used in Task 3 to populate different simulation models to analyze different aspects of the Maui power system. The models are:

1. Transient dynamic system model in PSLF, for
   - Steady-state or load flow analyses,
   - Transient stability analyses, including generation assets and their excitation and governor controls, and
   - Long-term dynamic analyses, especially suited for analysis of the impact of wind generation in the minutes timescale. The model includes governor controls of generating units and the regulation function of AGC.
2. Production cost model, in MAPS, capturing
   - Hourly Dispatch and Unit Commitment,
   - Fuel consumption,
   - NOx, SOX, C02 Emissions, and
   - Variable cost of production (actual production cost, rather than purchase price from IPPs to MECO).

The system details captured in the PSLF model will include:

- Electrical characteristics of transmission network assets;
- Generator rotor flux transients and inertial effect;
- Generator controls – governor models and excitations systems;
- Relevant characteristics of wind turbines with doubly fed inductions generators and power electronic converters; and
- Relevant characteristics of power electronic interfaced storage devices.

The system details captured in the MAPS model will include:

- Analysis;
- Unit Dispatch and Commitment rules;

- Unit heat rate – variable O&M costs;
- Hourly wind power profiles, by wind plant;
- Hourly load power profiles, by subtransmission node;
- Transmission thermal and other specified constraints; and
- Transmission losses.

According to the scoping document, Task 4 will provide a validation analysis of the model performance. Validation will be performed over three analytical time frames:

1. Regulation (seconds to minutes). Validation of the models in this timeframe will be demonstrated by performing the following comparisons between model predictions and historical results: The PSLF model will be driven with historical wind production and load data. Predicted system frequency will be compared against historical system frequency for the same time window.

2. Load-following (minutes to hours). Validation of the models in this timeframe will be demonstrated by performing the following comparisons between model predictions and historical results: The PSLF model will be driven with historical wind production and load data. Predicted system frequency will be compared against historical system frequency for the same time window. Variation of historical data of power productions of generators will be compared with PSLF results.

3. Unit commitment and dispatch (hours to days). Validation of the models in this timeframe will be demonstrated by performing the following comparisons between model predictions and historical results: The MAPS model will be driven with one year's worth of hourly historical wind production and load data. Predicted system dispatch, energy production, and fuel consumption will be compared against historical system dispatch for the same time window.

In Task 5, GEGRC will work with HNEI, HECO and MECO to establish the parameters and objectives for the Phase 2 analyses.

MECO received the Deliverable for Task 3 on June 10, 2008, and a Tollgate #3 Review was held on June 16, 2008 at MECO. Upon review and acceptance of Task 3 by MECO, HECO, and HNEI, GEGRC will continue work on the model validation. An updated schedule is being developed with a model validation, or Task 4 completion, scheduled for the end of August 2008.

Phase 2 of the project has not been contracted or scheduled. It is anticipated that Phase 2 will commence after Phase 1 is completed.

Hawaiian Electric Company, Inc.
Depreciation and Amortization Expense
For Years 2003 - 2009 ($ in Thousands)

Line		Recorded 2003	Recorded 2004	Recorded 2005	Recorded 2006	Recorded 2007	(A) Estimate 2008	(B) Test Year Estimate 2009
1	Depreciation Accrual	75,603	78,314	79,826	84,358	88,778	91,663	93,089
2	Less: Depreciation on vehicles	(1,320)	(1,473)	(1,774)	(1,812)	(1,790)	(1,978)	(2,140)
3	Amortization of CIAC	(6,924)	(7,287)	(7,484)	(8,056)	(8,488)	(9,009)	(9,295)
4	Amortization of Federal ITC - Note (1)	(1,020)	(976)	(905)	(847)	(764)	(719)	(644)
5	Amortization of SFAS 109 reg asset- Note (1)	604	697	814	945	1,021	2,033	2,173
6	Depreciation Expense	66,943	69,275	70,477	74,588	78,757	81,990	83,183

Note (1): Amortization of Federal ITC is included in depreciation expense in accordance with the SFAS 109 method of accounting for income taxes as described in Mr. Lon Okada's testimony in HECO T-16.

Source:
See HECO-1410 for Columns A & B, lines 1 and 2.
See HECO-WP-1402 for Columns A & B, line 3.

Hawaiian Electric Company, Inc.
Accumulated Depreciation
For Years 2003 - 2009 ($ in Thousands)

Line		Recorded 2003	Recorded 2004	Recorded 2005	Recorded 2006	Recorded 2007	(A) Estimate 2008	(B) Test Year Estimate 2009
1	Acc Dep Beg Bal at January 1	877,401	939,595	988,061	1,050,526	1,122,193	1,174,518	1,242,691
	Plus:							
2	Depreciation Accrual	75,603	78,314	79,769	84,358	88,778	91,663	93,089
3	Salvage	297	279	170	221	198	260	276
	Less:							
4	Retirements - Note (2)	(9,665)	(25,354)	(10,273)	(7,217)	(29,512)	(17,201)	(16,027)
5	Cost of Removal	(4,041)	(4,773)	(7,138)	(5,909)	(7,136)	(6,549)	(6,782)
6	Adjustments - Note (1)			(63)	214	(3)		
7	Acc Dep End Bal at December 31	939,595	988,061	1,050,526	1,122,193	1,174,518	1,242,691	1,313,247

2008 UPDATE:

Note (1): Reclassification of accumulated depreciation for E-business from utility to non-utility (approximately $74K, net) offset by entry to establish ARO accumulated depreciation (approximately $11K) in 2005. Reclassification of accumulated depreciation for the Interisland Communication System from non-utility to utility (approximately $214K) in 2006. Reversal of depreciation for hydrogen cylinders which were should have been expensed in 2007.

Note (2): Effective in 2004, retirements include retirement of assets subject to vintage amortization accounting.

Source:
See HECO-WP-1401 for Columns A & B, lines 2 and 4.
See HECO-WP-1403 for Columns A & B, lines 3 and 5.

Hawaiian Electric Company, Inc.
Depreciation and Amortization Accrual
2008-2009 ($ in Thousands)

Line	Plant Group	(A) Depreciable Plant at 1/1/08	(B) Composite Rate	(C) Estimate 2008 Dep Accr	(D) Depreciable Plant at 1/1/09	(E) Composite Rate	(F) TY Estimate 2009 Dep Accr
1	Production	567,172	1.6891%	9,580	593,704	1.6870%	10,016
2	Transmission	581,274	2.9119%	16,926	596,670	2.9118%	17,374
3	Distribution - Note (2)	1,147,216	4.2988%	49,317	1,186,357	4.2988%	50,999
4	General - Note (1)	173,200	8.0035%	13,862	175,088	7.1735%	12,560
5	Vehicles	27,214	7.2683%	1,978	29,439	7.2693%	2,140
6	TOTAL	2,496,076	3.6723%	91,663	2,581,258	3.6063%	93,089

Note (1): General 2008 and 2009 Dep Accr includes depreciation of leasehold improvements of $66,000. Also, the depreciation accrual includes net unrecovered amortization of $3,298,000 in 2008 and $1,924,000 in 2009.

Note (2): Distribution depreciable plant includes ARO asset amounting to $14,000 and $13,000 at 1/1/08 and 1/1/09, respectively.

Note (3): Note that the depreciable plant balances above exclude land.

Source:
See HECO-WP-1401 for Columns A, C, D and F.

Hawaiian Electric Company, Inc.
Summary of Plant Balances, Accumulated Depreciation
and Annual Dep and Amortization Accruals
For Years 2003 - 2009 ($ in Thousands)

Line	Year	[A] Dep Plant at Beg of Yr	[B] Depr Accrual Note (1)	[C]=[B]/[A] As % of Plant	[D] Acc Depr at Beg of Yr	[E]=[D]/[A] As % of Plant
1	2003	2,024,963	75,603	3.73%	877,401	43.33%
2	2004	2,085,866	78,314	3.75%	939,595	45.05%
3	2005	2,204,392	79,769	3.62%	988,061	44.82%
4	2006	2,296,683	84,358	3.67%	1,050,526	45.74%
5	2007	2,420,391	88,778	3.67%	1,122,193	46.36%
6	Estimate 2008	2,496,076	91,663	3.67%	1,174,518	47.05%
7	TY Estimate 2009	2,581,258	93,089	3.61%	1,242,691	48.14%

Note (1): Includes amortization and depreciation on leasehold improvements and vehicles

Source:
See HECO -WP-1401 for Columns A, B and D, lines 6 and 7.

Hawaiian Electric Company, Inc.
Account 932 - Maintenance of General Plant
Test Year 2009 Estimate ($ in Thousands)

				TY 2009	
Total estimated annual recurring maintenance (Note 1)				$ 681	
Total estimated non-recurring maintenance (Note 2)					
Ward parking structure ramp repairs - Ewa end	$	444			
Ward parking structure ramp repairs - Diamond Head end		628			
Total 2009 non-recurring maintenance projects		1,072	[a]	1,072	
Non-recurring maintenance normalization adjustment (Note 3)				(188)	[d]-[a]
Total 2009 Test Year Maintenance of General Plant				$ 1,565	

Note: Numbers may not total exactly due to rounding.

Note (1): The estimated recurring maintenance amount includes an upward budget adjustment of $88,000 related primarily to King Street building repairs and maintenance work. This adjustment amount was originally included in account 920/921 but reclassified in accordance with NARUC account guidelines. Refer to corresponding deduction adjustment at Ms Patsy Nanbu's testimony at HECO T-11.

Note (2): The original budget for account 932 did not include these 2009 budgeted Ward parking structure ramp repairs. These amounts were reclassified from account 920/921 in accordance with NARUC account guidelines. Refer to corresponding deduction adjustment at Ms Patsy Nanbu's testimony at HECO T-11.

Note (3): The calculation of a normalized non-recurring general maintenance amount is based on a 3-year average of on-going and budgeted non-recurring general maintenance projects for the 2009 test year estimate. Since the majority of the non-recurring maintenance projects is nonlabor, the normalization adjustment will be reflected in nonlabor at HECO-1401. Calculation of the normalized non-recurring maintenance is as follows:

2008 Non-recurring projects			
Ward parking structure covered level improvements	$	254	
Ward parking structure ramp wall repairs		626	
Total 2008 non-recurring maintenance projects		880	[b]
2010 Non-recurring projects			
Ward cafeteria roof improvements	$	85	
Ward parking structure stairwell improvements		177	
Ward fire doors replacement		20	
Ward cafeteria deck coating		7	
Ward parking structure waterproof		60	
King St. building paint/waterproof		351	
Total 2010 non-recurring maintenance projects		700	[c]
Total Normalized Non-recurring projects (3-yr avg, 2008-2010)		884	[d]=([a]+[b]+[c])/3

Hawaiian Electric Company, Inc.
Miscellaneous General Expenses Variances by Account
(Over $200,000 and 10%)

Acct	Codeblock	2007 Recorded	2009 Budget	Inc/(Dec)	% Inc/ (Dec)	Explanation
928	PNP735PHENENPNPZZZZ901	508,938	759,547	250,609	49	These costs relate to the amortization of rate case expenses. A downward normalization adjustment was applied to the 2009 budget to derive the test year 2009 estimate of $440,000.
9302	P4V755PHENENPAPRESI501	-	380,550	380,550	-	These costs relate to the Company's estimated 2009 HECO Board of Directors' fees and expenses. Variance is due to the change in codeblock used. See below.
9302	P9V755PHENENPAPRESI501	260,616	-	(260,616)	(100)	These costs relate to the Company's estimated 2007 HECO Board of Directors' fees and expenses. Variance is due to the change in codeblock used. See above.

HECO T-15
DOCKET NO. 2008-0083

TESTIMONY OF
FAYE CHIOGIOJI

MANAGER
WORKFORCE STAFFING AND DEVELOPMENT
HAWAIIAN ELECTRIC COMPANY, INC.

Subject: Employee Headcount

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Faye Chiogioji, and my business address is 220 South King Street, Suite 700, Honolulu, Hawaii, 96813.

Q. By whom are you employed and in what capacity?

A. I am the Manager of Workforce Staffing & Development for Hawaiian Electric Company, Inc. ("HECO"). My educational background and experience are shown in HECO-1500.

Q. What is your area of responsibility in this proceeding?

A. I am responsible for presenting the Company's total average number of employees budgeted for the test year 2009. In my testimony I will address staffing additions for the following areas:

1) President's Office (including Corporate Audit and Compliance);
2) Corporate Excellence;
3) Finance (except for General Accounting);
4) Legal/Land and Rights of Way;
5) Energy Solutions;
6) Public Affairs;
7) Corporate Relations; and
8) Government and Community Affairs.

I am also responsible for addressing the employee counts for the offices of the Senior Executive Vice President/Chief Operating Officer, Vice President-Customer Solutions, Senior Vice President-Operations, Vice President-Energy Delivery, and Vice President-Power Supply.

Q. Who discusses the need for the additional employees in the other departments?

A. The following individual witnesses will address the estimated number of positions required by their departments in their respective testimonies:

1) D. Giovanni - Power Supply (HECO T-7);
2) R. Young –Energy Delivery (HECO T-8);
3) D. Yamamoto - Customer Service (HECO T-9);
4) A. Hee - Customer Solutions (HECO T-10); and
5) P. Nanbu - General Accounting (HECO T-11).

HECO-1501 lists the witnesses who are responsible for discussing employee counts for each respective department.

ORGANIZATION STRUCTURE

Q. What is the current HECO management organization structure, including reporting relationships among the departmental organizations?

A. The management organization chart in HECO-1502 shows the current HECO management organization structure and reporting relationships.

Q. Have there been changes in the organization and positions that you reflect in your chart?

A. Yes. Within the past year, there have been changes to functional reporting relationships. These changes include:

President's Office

- The Senior Executive Vice President/Chief Operating Officer's ("SEVP/COO") office was established as a direct report to the President to oversee day-to-day utility operations.

Senior Executive Vice President/Chief Operating Officer's ("SEVP/COO") Office

- Senior Vice President Public Affairs position promoted to Executive Vice President Public Affairs; moved from directly reporting to the President to directly reporting to SEVP/COO;
- Senior Vice President Operations, Senior Vice President Energy Solutions, and Senior Vice President Finance and Administration (Financial Vice President was promoted to this position, see explanation that follows) moved from direct reports to the President to direct reports to the SEVP/COO.

Senior Vice President (SVP) Finance and Administration

- Financial Vice President promoted to SVP Finance and Administration, directly reporting to the SEVP/COO instead of the President; oversight responsibility expanded to include Vice President/General Counsel's and Vice President Corporate Excellence's areas.

These changes were made to better align responsibilities with strategic direction. The various witnesses will discuss staffing based on the management organization chart in HECO-1502

TOTAL AVERAGE NUMBER OF EMPLOYEES

Q. What is the Company's total average number of employees for the test year 2009?

A. The Company's test year 2009 average number of employees totals 1,621 as shown in HECO-1503. The average number of employees was determined for the period from January 1, 2009, through December 31, 2009 by summing the employee count budgeted at the beginning of January and the total number of employees budgeted at the end of each month in the test year, then dividing by 13 (HECO-WP-1500).

Q. How did you estimate the January 1, 2009, employee count?

A. In the test year, it is assumed that the labor costs for the same number of employee positions are forecast from the first day of each month through the last day of the month. The January 1st employee count is identical to the employee count at the end of the month and is reflected twice in the calculation.

Q. Please define "number of employees."

A. The employee count includes regular, temporary and probationary employees, but excludes temporary agency help and other contractors hired on a contractual basis. For purposes of the rate case, it also excludes the employees whose labor expenses are recovered through the Demand-side Management ("DSM") adjustment surcharge. Further detail on the DSM adjustment may be found in Mr. Alan Hee's testimony at HECO T-10.

Q. How were the estimates of the number of employees developed?

A. The estimates were developed as part of the budgeting process. Generally, managers establish the personnel requirements for their organizations by first reviewing factors such as the planned workload (e.g., capital projects, non-capital projects, nonrecurring activities or normal day-to-day activities). This step helps to determine the labor "demand" that will be required to accomplish the work.

The manager also reviews what may occur within the existing workforce (e.g., anticipated retirements during the forecast period, in order to determine the supply of labor). When the labor demand exceeds the labor supply available, the individual work activities are prioritized and certain work is identified to be performed on an overtime basis, or contracted out, or performed by temporary personnel, or, in some cases, deferred. If the demands on existing staff are

excessive, or if the additional workload is expected to be ongoing, additional staff may be hired.

Q. How does the test year average budgeted count of 1,621 compare to HECO's most recent actual employee count?

A. As shown in HECO-1503, the actual number of employees on HECO's payroll on March 31, 2008, was 1,500. The 2009 forecasted average test year employee count represents an increase of 121 employees.

Q. Why does HECO require these additional employees?

A. As explained by the Operations and Maintenance ("O&M") witnesses, HECO requires these additional employees, or their equivalent labor costs, to perform the work that the Company expects to complete in 2009. By reflecting the resource requirements as regular employees, the Company also has forecasted the associated labor costs that are required to perform such work.

Q. Can the Company increase overtime in place of hiring additional employees?

A. Yes, but only for a limited time. Excessive overtime experienced over a long period of time will lead to employee fatigue which results in lower quality work. Also, it may lead to lower morale and lower productivity and eventually to the employee leaving the Company.

Q. Can the Company continue to use contractors and temporary help to complete its work requirements?

A. It can to some extent. Where very specialized and nonrecurring tasks are required to be performed, the hiring of contractors or agency workers on a temporary basis may be the most cost effective method for the Company to perform its work. In cases where it has been difficult to fill positions, HECO has had to supplement its workforce through the use of consultants, contractors and agency temps, in addition

to increasing overtime for existing staff. But, generally, hiring regular employees to perform the normal, routine, and ongoing duties is more cost efficient and effective than using temporary workers or contractors in the long run.

Q. Why would regular employees be more efficient and effective over the long-term?

A. The advantages of having regular employees rather than consultants, contractors or temporary workers are that employees will be knowledgeable and conversant with the Company-specific issues, eliminating the learning curve impacts and associated time that is required by outside parties to learn the subject matter. Rather than the Company conducting a search and negotiation for each specific circumstance, the knowledge gained by regular employees on the job will allow the Company to assign and reassign these resources with greater flexibility to various duties and functions. Furthermore, the quality of work produced by regular employees will be more consistent and in line with what management expects because of the direct supervision and daily communication that will take place. Having a more efficient and effective workforce lowers costs in the long-term which is a benefit to the Company and to its ratepayers.

Q. What adjustments were made to the employee counts in the Operating Budget to develop the test year estimates?

A. There were three adjustments made for the test year. The first adjustment was the elimination of one position from the Safety, Security and Facilities Department ("SSF"). Therefore, the manual reduction in employee count is reflected in HECO-WP-1501, and the corresponding adjustment to labor dollars is discussed by Power Supply witness Dan Giovanni in T-7.

The second adjustment was made to transfer one position from the Customer Technology Applications Division to the Energy Services Department.

Consequently, the Customer Technology Applications Division will reflect a decrease in employee count by one with a corresponding increase to the Energy Services Department by one as discussed by Alan Hee in HECO T-10.

The final adjustment was the net removal of five DSM employees from the Energy Services Department. As Mr. Alan Hee discusses in HECO T-10, the Company has removed the DSM employees whose costs are recovered through the DSM surcharge and have been removed from the test year as well. All of these adjustments are reflected in HECO-WP-1501.

Q. The level of employees included in the adjusted budget as of January 1, 2009 is 1,621, as shown in HECO-WP-1501. Does HECO expect to have that number of employees on board as of January 1, 2009?

A. No. The estimated employee count as of December 31, 2008 (taking into account the DSM adjustment) is 1,570 as shown on HECO-1503.

Q. Please explain the purpose of the 2008 Projected End-of-Year estimate.

A. The 2008 Projected End-of-Year estimate of 1,570 was developed by the Workforce Staffing and Development Department as part of its internal work plan for the remainder of 2008. It is included to show the Company's best estimate of the number of employees that will be on its payroll at the end of 2008.

Q. Please explain why the 2008 Projected End-of-Year estimated employee counts are not used as a surrogate for the January 1, 2009 employee count estimate in the calculation to determine the Company's average test year employee count.

A. The 2008 Projected End-of-Year estimate is used for internal work planning and is continually updated as information on retirements, transfers and new positions becomes known. It does not reflect all of the labor resource requirements that are needed to get the work done. As such, it has no relationship to the 2009 test year

budget, and it would be inappropriate to include it in the calculation of the average employees in the test year.

Q. Why weren't more adjustments made to the test year O&M expenses to reflect the fact that a significant number of positions would not be filled at the beginning of 2009?

A. The short answer is that that would result in a significant understatement of the O&M expenses expected for 2009, unless upward revisions also were made to reflect the additional overtime, contract services and temporary hires that would have to be incurred or added to supplement the workforce in order to accomplish the expected work load.

In each O&M area, witnesses were asked to make such an adjustment if the additional work was expected to be deferred beyond 2009, but not if the work was expected to be accomplished through other means that would result in the incurrence of O&M expenses, or if the additional employees were expected to be hired shortly after the beginning of 2009.

Q. Please explain how work is expected to be "accomplished through other means that would result in the incurrence of O&M expenses."

A. As discussed by the O&M Witnesses, when work cannot be deferred, departments will increase the use of supplemental labor (hiring of consultants, contract employees or agency temps) and/or schedule its qualified personnel to work greater amounts of overtime.

Q. Please discuss how HECO temporarily reassigns work to merit exempt employees in addition to their regular responsibilities.

A. Many of HECO's exempt merit employees were promoted from within the Company and possess key knowledge and skills from previous jobs held. At times

when a position becomes vacant and an immediate replacement is not found, HECO's exempt merit employees take on additional work to ensure that key duties and tasks are performed, ensuring that reliability and service to customers are not compromised.

This practice is, at best, a temporary measure that cannot continue for an indefinite period of time. After a while, if the vacancies are not filled, certain work will not get done and employee morale and effectiveness will decline.

Q. Are merit exempt employees paid additional compensation to temporarily take on responsibilities in addition to their regular responsibilities?

A. Merit employees classified as exempt are not paid for overtime. This group of exempt employees includes non-bargaining supervisory, professional and managerial level employees who are responsible for overall results of their assigned areas. While many exempt employees work beyond the standard 40-hour work week, no additional compensation is paid to these employees except under extreme circumstances, such as severe storms and when approved by the HECO President. The only exception are merit supervisors of bargaining unit employees who receive extra straight time pay for hours worked in excess of 40 hours per week while directly supervising bargaining unit employees.

THE HIRING PROCESS AND RECRUITMENT

Q. Please describe HECO's hiring process.

A. The hiring process begins when a department submits a Job Vacancy Requisition (JVR) to Workforce Staffing and Development. With the receipt of the JVR, Workforce Staffing and Development then begins the recruitment process which takes a minimum of four weeks.

Q. Please explain why it takes a minimum of four weeks to recruit new employees.

A. An overview of the hiring process is illustrated in HECO-1504. As described in this exhibit, HECO utilizes a rigorous multi-step recruitment process and each step requires a certain time to complete. And, although the process has not changed within the past few years, the Company has significantly decreased the minimum time required to complete the process from six to four weeks.

HECO's recruitment process begins with the posting of a vacancy within the Company, followed by or sometimes concurrently with postings at HECO's affiliate companies. External recruitment may also take place during the internal and affiliate posting period.

External recruitment includes sending the job vacancy, via fax or e-mail, to the Department of Labor and Industrial Relations, various military organizations, community colleges, and other organizations that ensure equal employment opportunity. HECO advertises its vacancies in local newspapers, on its website, on its telephone employment hotline and will advertise some difficult-to-fill positions in the mainland via various internet sites or professional publications. HECO also recruits at career and job fairs sponsored by the University of Hawaii, community colleges, and various other community organizations.

After a pool of applicants is identified, the selection process begins. The hiring supervisor and his or her team must review the applications, conduct interviews, and review job skills test results. These steps may take from a few weeks to several months. Once a selection is made, the hiring supervisor must receive approval on the proposed salary from the Compensation Division, and final approval from within his or her process area before making the job offer. Obtaining this approval may take one to five days.

Q. Is this hiring process followed for all HECO positions?

A. For the most part. However, for bargaining unit entry-level positions, pre-employment testing is also required. Pre-employment testing assists the Company in screening and evaluating where there may be several hundred applicants for a position. In the case of entry-level positions, HECO draws a large number of applicants, and processing the applications can be time consuming. The greater difficulty, however, lies in identifying qualified applicants with the aptitude for success in the job and the ability to move along lines of progression. The testing program helps to identify such candidates, and for some positions, multiple tests are required. As noted in HECO-1504, this testing may extend the hiring process for an additional three to six weeks.

HECO-1505 describes the hiring process for Linemen positions, which begins with hiring Senior Helpers at the entry level, and illustrates the timeframes involved in filling a position. As shown on this exhibit, although a large number of applicants may apply, a much smaller percentage actually makes it to the interview stage.

Q. What challenges does HECO face in recruiting qualified candidates for its job openings?

A. HECO has experienced several challenges to successful recruitment and hiring. Low unemployment rates, high paying jobs in construction and other industries, a reduction in power engineering graduates nationwide and an industry-wide shortage of skilled utility workers have resulted in strong competition for candidates. During the past three years, Hawaii has experienced low levels of unemployment. The annual average unemployment rate for the state has dropped from 4% in 2002 to 2.5% in 2006, before gradually increasing to 2.7% in 2007 (Hawaii Department of Labor & Industrial Relations, Research and Statistics

Office, Hawaii Workforce Informer, Historical Unemployment Rates "Seasonally adjusted data, 1976 to present," <http://www.hiwi.org./admin/uploadedPublications/468_SADJLAUS.pdf.>, accessed on May 26, 2008). From May 2006 through the end of 2007, Hawaii remained among one of five states with the lowest unemployment rates in the nation. Hawaii does not have an adequate supply of power engineers and journeypersons in line and power plant maintenance work. For engineers, HECO has expanded its recruitment to the mainland which has extended the time required to fill many of the Company's engineering vacancies. In 2009, two recruitment trips are planned to colleges specializing in power engineering. For journey-level line and power plant maintenance employees, HECO hires at the entry or less-skilled level and develops these employees through apprenticeship or trainee programs. Mr. Robert Young in HECO T-8 describes the apprenticeship program that develops Linemen from Senior Helpers.

Compliance requirements have also increased the time it takes to fill a job. For example, a decision by the Ninth Circuit Court in 2005 (Leonel v. American Airlines, Inc., No.03-15890 (9th Cir. 2005)) resulted in a change to the Company's post-offer process. That decision clarified for all employers that physical examinations (such as functional capacity tests and drug screens) must be the last step in the hiring process in order to comply with Title 1, 42 U.S.C., §12112(d)(3) of the Americans with Disabilities Act. Previously, HECO coordinated the background check and physical exam at the same time. Changing from concurrent to sequential procedures has extended the hiring process by at least three days to sometimes up to a month if foreign background checks are required.

1 HECO also experiences delays because there are a limited number of
2 occupational medicine service providers who are able to provide the range of
3 services required, such as post-offer drug screens and physical examinations.
4 These providers have limited staff, a situation which also extends the time involved
5 in processing and hiring a new employee. For example, chest x-rays are required
6 for certain positions. For the past two years, only one x-ray physician at Straub is a
7 "B-Reader," a certification required by the Occupational Safety and Health
8 Administration (OSHA. 1910.1001, Appendix E: Interpretation and Classification
9 of Chest Roentgenograms (X-Ray)...Mandatory... (a) (b) & (c) … For workers with
10 asbestos exposure...). Work waits when he is not available. The situation is worse
11 with the other local provider whose service hours are limited. This causes test and
12 exam results to take longer to be received, and results are provided piecemeal,
13 requiring time-consuming tracking and coordination on HECO's part. It now takes
14 more than a week from the prospective employee's appointment to obtain the
15 examination results, whereas five years ago it took only 2-3 days.
16 As discussed later, HECO has made significant changes to shorten the
17 time to fill a vacancy; however, these strides have been offset by these and other
18 challenges in finding qualified candidates. In 2001, the average time to fill
19 positions was 45 days. The average time to fill positions in subsequent years was
20 as follows:

Average Time to Fill	
Year	Number of Days
2002	55
2003	58
2004	77
2005	67
2006	49
2007	51

Q. What has HECO done to address its recruitment challenges and reduce the gap of unfilled approved jobs?

A. HECO continually looks for ways to improve hiring and shorten the time it takes to fill positions while remaining committed to creating and maintaining a safe and productive workforce. In addition to traditional recruitment methods, HECO has implemented new programs and processes to improve and shorten its hiring processes. These programs and process improvements are listed in HECO-1506.

In 2007 HECO implemented its Beginning Engineer Program (BEP) to provide new engineers (i.e., those with little to no engineering work experience) structured training and developmental experiences to establish a core basis of engineering knowledge, skills, and abilities. The one year entry-level program provides mentoring, job shadowing/rotational assignments, and formal training courses in the areas of planning, transmission and distribution, protection and telecommunications, civil, technical services, project management, substation operations, construction and maintenance operations, customer requests, and power

supply. Mentors and instructors are HECO management employees who participate in this program in addition to carrying out their regular job duties. The three beginning engineers hired in 2007 have completed their program in June 2008 and were placed into difficult-to-fill utility skills positions: Protection Engineer, Substation Engineer, and T&D Engineer.

Also in 2007, in partnership with Leeward Community College and other companies, HECO participated in the development of the Process Technology Program to teach students practical concepts behind the production of consumer goods, like turning oil into electricity. The training provides students with the basic fundamentals needed to understand chemical and refinery plant operations. Four HECO employees are instructors for the program on their own time and this enables them to preview the students and build relationships with them before graduation. The first group of students is expected to graduate in December 2008 and may be eligible to fill entry-level plant operator vacancies.

In early 2008, the Power Supply O&M department began the development of its Leadership Development Program. The new program is intended to identify bargaining unit employees interested in becoming Operations supervisors. Bargaining unit employees selected to the program will receive hands-on technical skills and leadership training intended to ensure success in the job. The program is expected to create a pool of more qualified candidates who possess practical supervisory experience and technical knowledge. It will also reduce the time normally taken to fill the supervisory vacancies in Operations. The program is anticipated to launch in late 2008.

The Workforce Staffing and Development Department (WSD) is actively involved in HECO's HR Suite Project which moved from planning and contracting

to implementation in April 2008. The new system is expected to reduce the number of redundant employment-related transactions and shorten our hiring processes through best-practice technology. HR Suite will also provide hiring staff and managers the ability to better identify qualified applicants through searches of our applicant databases, thereby shortening the time it takes to fill positions. The HR Suite Project is further discussed by Ms. Julie Price in HECO T-13. As will be explained in more detail later, WSD also plans to add two new positions in 2009, a Talent Assessment and Development Specialist and Assessment and Development Coordinator in order to, among other responsibilities, identify and maintain test-qualified applicant pools before actual entry-level vacancies occur. Doing so may accelerate the hiring process for entry-level positions by up to six weeks by eliminating the time normally required to conduct pre-employment testing.

Mr. Robert Young in HECO T-8 and Mr. Alan Hee in HECO T-10 describe other steps that the Company has taken to improve hiring and retain employees.

POSITION VACANCIES

Q. How many positions are vacant in the departments that you support in your testimony?

A. There were 44 vacant positions as of March 31 when compared to the employee count of 403 for these departments estimated for the end of the test year. In this section, I will use the term "vacancy" to refer to positions that are budgeted in the test year but were vacant as of March 31, 2008.

Q. Please explain why HECO requires these additional positions?

A. There are two types of vacancies reflected in the calculated difference between the actual and test year average. As shown in HECO-1507, 25 of the vacancies are for "replacements" which occur with the natural movement of employees into other

positions that become open with terminations or transfers of existing employees, both voluntary and involuntary. This type of vacancy is temporary in nature and is required to support the current and historical operations and workload of the Company. As indicated in HECO-1507 and discussed later in my testimony, ten of the 25 replacement vacancies have been filled since March 31, 2008.

The second type of vacancy is for "new" positions, of which there are 19, to support the additional workload that is required by the Company in the test year.

Q. Why is the 2009 average employee count more representative of the labor resources required to support the current workload as opposed to the most recent actual employee count?

A. As I have explained previously, it has become more and more difficult to recruit qualified employees into the Company. 2008 has been very difficult with local applicant levels dropping for non entry-level positions, forcing the Company to extend its recruitment to the mainland and to use different and innovative channels to reach as many qualified candidates as possible. Mass layoffs by other companies in early 2008 increased the number of applicants for HECO's entry-level positions (for which there is already good response) but resulted in limited or no applicants with the skills or expertise for HECO's vacant difficult-to-fill positions (e.g., information technology, Sarbanes-Oxley ("SOX") compliance, financial analysis, power engineering, regulatory relations). A number of candidates were unwilling to accept jobs for which they were qualified because pay rates were significantly lower than what they had been earning.

Second, voluntary nonretirement terminations have increased in the recent past due to the highly competitive labor market. In 2004, voluntary nonretirement terminations accounted for only 28% of all terminations. In 2005, voluntary

nonretirement terminations accounted for 43% of all terminations, growing to 49% in 2006 and 44% in 2007. The most recent 2008 actual employee counts do not reflect what the departments require to support the current workload nor does it reflect what the departments require to support new business strategies. The 2009 test year average counts are more representative of the various departments' 2009 requirements.

President's Office

Q. What areas does the President's Office include?

A. As shown in HECO-1507, the President's Office includes the Corporate Audit and Compliance Department in addition to the President's Office itself.

Q. How many vacancies were there in the Corporate Audit and Compliance Department as of March 31, 2008?

A. There were five vacancies.

Q. What are the positions in the Corporate Audit and Compliance area and why are they required?

A. Three of the five vacancies are a result of internal employee movement or terminations. Those three replacement positions are as follows: Manager, Department Secretary and IT Auditor. The remaining vacancies are intern positions required to support the heavy workload to meet Sarbanes-Oxley Act requirements. The status of all five vacancies is discussed below.

In June of 2007, the department manager left the Company to pursue a new career path. In July of 2007, HEI announced the hiring of David Kostecki as its Internal Auditor with oversight responsibility for the internal audit functions of HECO, HEI and ASB. In light of this hiring, the manager and the already vacant department secretary positions were not filled while reporting relationships were

reviewed. In May of 2008, the Audit Committee of HECO, approved the hiring of a department manager, and a secretary to support him or her, to oversee the long term and short term activities of the department, serve as a liaison with HEI, senior management and external auditors, and ensure that administrative responsibilities required of all departments, such as approving payroll and setting budgets, are carried out.

The IT Auditor position became vacant when the incumbent left HECO on March 8, 2008. The IT Auditor spends much of his/her time on testing Sarbanes-Oxley IT controls and possesses unique and uncommon skills needed for the department to fulfill its SOX and other audit obligations. The department is in the process of backfilling this position.

To manage the seasonal workload caused by SOX reporting deadlines, the department plans to hire four interns annually during the summer months (June through August), with two continuing on a part-time basis from September through February of the following year. The department has found this to be an effective strategy to meet SOX compliance requirements. In 2009, the employee count begins at 11 in January, increases to 15 with the addition of four interns beginning in June and, in September, reduces to 13 through the remainder of the year.

Q. When does HECO expect to fill these vacancies?

A. HECO expects to fill the Manager, Secretary and IT Auditor vacancies by the third quarter of 2008 and the Intern positions by June 2009.

Q. The HECO President and Chief Executive Officer ("CEO") recently announced his plans for retirement, with his last formal day at work as August 1. Will a successor be named by then?

A. It is unlikely a successor will be named by August 1. The HECO Board of Directors' chairperson will assume the duties and responsibilities of the CEO during the executive search. The focus of the executive search is to carefully evaluate key candidates for this critical position and find the right executive to lead HECO in its continued work to achieve its vision of the energy future.

Senior Executive Vice President and Chief Operating Officer's (SEVP/COO) Office

Q. Please describe the new SEVP/COO Office and its two positions.

A. The two positions that make up the office are the SEVP/COO and his Executive Secretary. The SEVP/COO office was established on February 1, 2008 to allow the HECO President and Chief Executive Officer (CEO) to put additional focus on strategic planning that integrates the following critical priorities:

- Play a leadership role in meeting our state's energy needs
- Move aggressively on generating more energy from renewable sources, achieving more energy conservation and efficiency, while also ensuring reliable service to our customers.

As explained in HECO-1508, the SEVP/COO is responsible for leadership of HECO's day-to-day Oahu operations, energy solutions, public affairs, financial and administration areas. These new reporting relationships will allow the HECO President and CEO to focus even more on strategy and vision and provide a strong right hand to help execute the plan.

Q. It has been announced that HECO's SEVP/COO has left the Company. Are there plans to replace him?

A. Yes. As stated above, the position is necessary to allow the HECO President and CEO to focus even more on strategy and vision and to provide a strong right hand to help execute the plan. A strong right hand person will be even more critical to a

new HECO President and CEO. As discussed in HECO-1509, the strategic work done by the incumbent, and the groundwork he has helped put in place before his departure, remains a top priority for HECO. Given the importance of the relationship between the two positions, the new HECO President and CEO will be involved in the selection of the replacement SEVP/COO.

Q. How does HECO plan to manage the vacancies of these two critical leadership positions?

A. To facilitate the continued alignment of all areas of the Company, the Executive Vice President for Public Affairs will assume interim operating responsibility for daily operations until a new CEO is named. The Operations Senior Vice President, the Energy Solutions Senior Vice President and the Finance and Administration Senior Vice President will report to the Executive Vice President for Public Affairs who, in turn, will report to the HECO President and CEO and HECO Board of Directors Chairperson. Filling of the SEVP/COO position will await the appointment of a CEO.

Q. What is the status of the Executive Secretary position in this office?

A. Upon the departure of the SEVP/COO, the incumbent Executive Secretary returned to her former position with Hawaiian Electric Industries. This will enable the next SEVP/COO to select his/her own replacement Executive Secretary.

<u>Corporate Excellence</u>

Q. What areas does the Corporate Excellence Vice President's Process Area include?

A. As shown in HECO-1507, the Corporate Excellence Vice President's Process Area includes the Compensation and Benefits Department; the Industrial Relations Department; the Safety, Security and Facilities Department; and the Workforce

Staffing and Development Department in addition to the Corporate Excellence Vice President's Office itself.

Q. As of March 31, 2008, there was one vacancy in the Compensation and Benefits Department. Please describe the position and the status of filling it.

A. The vacant position is a replacement for the Employee Benefits System Administrator who was promoted and transferred to another department. The Company filled the vacancy on May 12, 2008, and the department is now at its test year employee count of 11.

Q. As of March 31, 2008, there were six vacancies reflected in the Safety, Securities and Facilities Department. Please describe these positions and the status of filling them.

A. In the Safety, Security and Facilities Department (SSF), five of the six vacancies are a result of internal employee movement or terminations. Those five replacement positions are as follows: Custodian, Security Coordinator (2), Security Officer and Workers' Compensation Coordinator. The sixth vacancy is for an additional Security Officer. The status of each of these vacancies is discussed below.

Custodian: The custodian position became vacant due to a retirement. This bargaining unit position is needed to cover both the core daily custodial responsibilities as well as the increasing custodial workload created by the increase in overall staffing, the increased demand on facilities usage, the addition of the new Dispatch Center and the full time conversion of the conference rooms of the Cafeteria to testing sites and office areas for the Customer Information Systems ("CIS") project (see Mr. Darren Yamamoto's testimony in HECO T-9 which describes the CIS project). Currently, the work is covered by increased outside

contract services and increased overtime for the existing employees or, work is delayed or not completed in a timely basis.

Security Coordinator (two replacements): These positions became vacant due to employees who terminated their employment. The positions are needed to oversee the contract security workforce and ensure that Company standards and procedures are followed. Due to the strong competition for experienced security officers, the Security Division has found it helpful to hire temporary employees, often retired law enforcement officers. Temporary employees who meet or exceed the Company's performance expectations are encouraged to compete for our regular positions. The Company intends to fill the positions by August 2008 with full-time temporary employees.

Security Officers (one replacement and one new): The Security Officer position became vacant as a result of an employee transfer to another position. The work is temporarily being covered by increasing outside contract services. Unfortunately, the contract security service is not always able to meet all of HECO's coverage requests, leaving HECO property and personnel vulnerable. (Private security contractors, e.g., AKAL, are experiencing a difficult time in ensuring a continuity of trained officers, due to restricted wages and demand for Security services on Oahu.) Additionally, these contracted security officers are unable to assist HECO with investigations and effective dealings with professional law enforcement agencies. The additional security officer position in 2009 will provide the increased coverage required for the new power plant ("CIP CT-1"). There is always a need to have a 'fully trained' Security Officer available for a new plant. While CIP CT-1 will not be operational until July 1, 2009, there will be a

major increase in security exposures and needs as it nears a readiness state. Mr. Giovanni discusses the new power plant, CIP CT-1, in his testimony at HECO T-7.

Workers' Compensation Coordinator: This position provides administrative support to the Workers' Compensation Division. It became vacant in July 2007 when the incumbent accepted a transfer to another division. Also in July 2007, the Workers' Compensation Division and the Corporate Health/Wellness function moved from the Compensation and Benefits Department to SSF to facilitate a more global approach to improved workplace safety, health and productivity. Thus, SSF took the opportunity to evaluate the position, role, responsibilities, and workload to determine if additions or changes were required to meet ongoing business needs. Bare essential coverage has been provided by an agency temporary since August 2007. The position will be filled by a HECO temp to provide improved and proper coverage - services to both the Workers' Compensation Division and the Employee Health and Wellness Division.

Q. There are nine vacancies in the Workforce Staffing and Development Department. Please describe the vacant positions and the status of filling them.

A. One vacancy is a replacement for a Human Resources ("HR") Assistant who terminated her employment with the Company on March 24, 2008. The HR Assistant provides critical support to the hiring process and ensures that legally required employee reporting and notice requirements are met. Concurrent internal/external recruitment began in early May with interviews beginning in late May. Unfortunately, the department was unable to identify a candidate whose skills, experience and interest matched the job requirements. Consequently, the department is continuing its recruitment for the position and expects that it will be

filled by August 2008. In the meanwhile, two human resources interns were hired on April 28, 2008 to help with the heavy workload.

Q. What are the eight new positions in the Workforce Staffing and Development Department?

A. The remaining eight vacancies are new positions intended to meet increased workload demands or are part of Company strategic initiatives as follows: Talent Assessment and Development Specialist, Assessment and Development Coordinator, Corporate Interns (2), Corporate Mentors (3) and Organizational Development Consultant. These positions are explained below.

Talent Assessment and Development Specialist, and Assessment and Development Coordinator: In 2004, HECO was informed that the aptitude test used for trades and crafts positions would be discontinued by the test publisher. Subsequently, Edison Electric Institute's ("EEI") battery of tests was selected to replace the discontinued test. In addition, EEI's tests were deemed to be superior to certain other existing tests, having been validated in predicting job success by accurately identifying an applicant's aptitude to learn a trade or position specific to the electric utility industry. Consequently, as shown in HECO-1510, by utilizing EEI's tests, the number of different pre-employment tests that HECO administers increased from seven to ten.

As mentioned earlier in the testimony, the EEI tests are one strategy HECO has implemented to accelerate and improve hiring. Since EEI test scores are valid for five years (in contrast to one year for the discontinued tests), these tests allow the Company to identify and maintain test-qualified applicant pools before actual vacancies occur. Unfortunately, the department lacks the resources to regularly and proactively carry out this aspect of the hiring process. Implementation has meant

more testing for both external applicants and current employees as they move from one position to another in the Company. Where one test was used for several positions, now multiple tests may be required. The workload has also increased because HECO must follow strict protocols to maintain the integrity of EEI's tests. In order to reap the full benefit of the new testing program (better job matches and faster applicant referrals to departments), the Talent Assessment and Development Specialist and Coordinator are needed to administer this more robust testing program. These positions would also be responsible for the day-to-day administration of HECO's testing function, scoring of tests, identifying and resolving technical and ethical problems related to the new tests, and ensuring test security and quality control in the use of these tests according to publisher standards. Additionally, these positions will continue the ongoing evaluation and analysis of current tests and assessments, oversee formal employee career development programs, and allow for the identification of alternative methodologies and tools to build our people resources.

Corporate Interns (2): The goal of the Corporate Internship Program ("CIP") is to cultivate the next generation of leaders. HECO's analysis of historical retirements indicates that age is a strong predictor of retirement for management employees and occurs at or around the age of 59. Currently, 47% of the Company's Corporate Leaders (Executives) and 29% of its Enablers (Managers) will be 59 or older within the next three years, making them likely candidates for retirement. Thus, the Company is under pressure to identify and develop future successors. Participants who are chosen as Corporate Interns will rotate into key knowledge areas for up to one year and will be given meaningful assignments/projects that build critical business, people, and technical skills and

relationships. By cross-training in-house, Corporate Interns will develop a wider perspective of the Company and obtain technical expertise which may be beneficial for their positions in their "home" departments and/or prepare them for greater responsibility. The CIP also allows the Company the opportunity to closely observe these employees at work, assess the caliber of the employees, and evaluate long term fitness for upper management positions.

HECO has succession plans for over 60 leadership positions from Corporate Leader to Facilitator. Although there is a place for traditional classroom learning, there is strong research from the Corporate Executive Board ("CEB") which states that "on-the-job experiences are a key source of informal learning, driving a much greater impact on employee and business performance than formal training" ("Emerging Mandates for the Learning and Development Function: Developing the Business Case for Learning Beyond the Classroom," Learning and Development Roundtable, Corporate Executive Board, 2002, p. vi.). Furthermore, although some development can be accomplished within the department or process area, there are a number of high potential Manager and Executive candidates that require development outside of their area. Specific areas of development identified on existing succession plans are as follows: Regulatory, Corporate Finance, and Production.

The CIP selects two high potential candidates from succession plans and places them in positions that match their development need. Candidates for this program are typically the strongest contributors in their respective work groups. Departments have been reluctant to "give up" their top contributor(s) when the workload must be absorbed by the remaining workforce. According to the Society for Human Resource Management (SHRM), the greatest obstacles to knowledge

transfer and employee development are as follows: 1) the source and/or the recipient of knowledge do not know what the other knows or needs to know, 2) resources (time, budget) necessary for the transfer are not available, 3) there is a lack of an established relationship, and 4) delays are caused by structural rigidity and poor processes (see HECO-1511 for the SHRM White Paper, "Building Social and Intellectual Capital: HR's Contribution to Organizational Effectiveness," June 2002). The CIP mitigates these obstacles by providing the developmental goal, resources, structure and process necessary to enable learning and development. Therefore, during the internship, the intern's pay and position count will be reflected under the CIP. This will allow the candidate's department to temporarily backfill, where needed. The CIP is also expected to strengthen the candidate's area one to two management levels deep as others will have the opportunity to develop in vacancies left open by the candidate.

Planning for the Corporate Internship program is currently taking place with implementation anticipated to begin in 2009.

Corporate Mentors (3): The Corporate Mentoring program ("CMP") is designed to address the current critical shortage of skilled power plant workers and proactively address the steady exodus of the baby boomers and their critical knowledge. Individuals who serve as mentors will advise and train one or more protégés for up to one year and ensure all standard operating procedures are documented. Like the CIP program discussed above, departments are reluctant to allow individuals to provide dedicated time to the program due to their existing workload. So during the mentorship, the mentor's pay and position count will be reflected in the Workforce Staffing and Development area. This will allow the mentor's area to temporarily back-fill his/her position, where needed.

Our latest internal critical skills assessment, completed in November 2007, indicates critical shortages in approximately 30 positions. Fourteen of those positions are considered retirement risks and priority will be placed on filling these positions:

Principal, Substation and Protection, Engineering

Principal, Environmental Scientist, Environmental

Sr. Engineer, Power Supply Engineering (2)

Manager, Renewable Integration

Sr. Technical Analyst, Power Supply O&M

Maintenance Supervisor, Power Supply O&M (2)

Director, Power Purchase

Sr. Regulatory Analyst, Regulatory Affairs

Director, Risk Management

Superintendent, Technical Services, System Operations

Supervisor, Instrument and Control, System Operations

Director, Generation Planning, System Planning

While we will continue to partner with colleges and engage in job rotations to address the shortage, there is a concurrent need for programs like the CMP to address the short-term need while ensuring the future success of the Company. Planning for the Corporate Mentoring program is currently taking place with implementation anticipated at the beginning of 2009.

Organizational Development (OD) Consultant: The OD Division provides organization-wide systems, processes and programs that serve to build a competitive corporate culture, cultivate effective leadership, and increase team effectiveness. Examples of the work overseen by this division include corporate

training and development programs, management performance evaluation process, leadership succession planning, corporate culture assessment and group team building facilitation. Annually, the division also coordinates six to seven leadership team meetings on behalf of the President's Office. The division is currently staffed with three positions: a Director, a Consultant and an Assistant. Implementation and oversight of the new Corporate Internship and Corporate Mentorship programs, as described above, cannot be absorbed by the existing staff who is already straining to meet all of the existing training, teambuilding and systems administration needs. This position is necessary to implement and manage these new programs as well as to assist in supporting the current workload.

Finance Vacancies

Q. What areas does the Financial Senior Vice President's Process Area include?

A. As shown in HECO-1507, the Financial Senior Vice President's Process Area includes the Information Technology and Services Department, the Management Accounting and Financial Services Department, and the Risk Management Division in addition to the Financial Senior Vice President's Office itself. The Financial Senior Vice President also oversees the Corporate Excellence and the General Counsel's Process Areas which are discussed separately.

Q. Who discusses the vacancy in the General Accounting Department?

A. Please refer to HECO T-11, testimony of Patsy Nanbu, for discussion of this vacancy.

Q. Please explain the difference between the Information Technology and Services Department ("ITS") March 31, 2008 actual employee counts of 88 and 2009 test year count of 97?

A. The difference of nine headcount is due to six vacant replacement positions and three new positions to be added at the beginning of the 2009 test year.

Q. Please describe the six vacant positions and the status of filling them.

A. The six vacancies are the result of internal employee movement. All positions were vacated during the first quarter of 2008 and the majority will be filled by the end of the second quarter of 2008. The replacement positions include: Senior Development Analyst, Development Analyst, Database Analyst, IT Project Manager/Team Leader and IT Infrastructure Analysts (2).

The Senior Development Analyst assists the Development Services Director with the Company's development methodology support and quality oversight. This vacancy has been filled as of May 19, 2008.

The Development Analyst position vacancy has already been backfilled to provide enterprise systems' support and related third-party product support and is similar to the above Senior Development Analyst position, except it does not mentor others and generally does not do as much lead activity. An employee from the ITS department was selected to fill this position, beginning on May 12, 2008.

The Database Analyst position is a critical position that supports over 100 applications using either SQL Server or Oracle databases and develops, administers, manages and maintains corporate data and databases; assists with research and development of database products and services, systems and applications, internal and external IT policies, standards, and procedures; and as required, performs special database projects for customers. The department has been actively recruiting and interviewing for this position since March 2008; however, it has been unsuccessful in finding qualified or interested candidates and, consequently, has expanded its recruitment to include mainland applicants. The

department anticipates this position will be filled by an external candidate by August 2008.

The IT Project Manager/Team Leader position is essential since it provides project management oversight for a wide variety of system/application development projects. An internal ITS candidate was selected to fill this position on May 12, 2008.

The two IT Infrastructure Analyst positions are important backfills to support a wide variety of data center and IT network infrastructure technologies, which are responsible for planning, coordinating, installing, maintaining, optimizing, and enhancing the distributed computing environment, including server/desktop operating systems, network infrastructure, voice and data communication systems; and provides level two technical support to the department and user community. Both positions were filled on May 27, 2008.

Q. Please explain the three new positions included in the 2009 Test Year estimates for the ITS Department?

A. Three new Development Services Analysts will be added to the ITS Department at the beginning of 2009. These positions are critical to support new enterprise systems' software applications and to support third party software products for new enterprise Unix/Oracle platforms, including configuration/change management, reporting and interface systems. By the end of 2009, HECO will have completed the addition of completely new enterprise systems and multiple new third-party software tools to support the enterprise systems, with no commensurate increase in resources to support them. These new systems that have been or will be added specifically include: Outage Management System ("OMS"), Mobile Workforce Management ("MWM") system, Field Laptops' software, Mobius ("IDARS")

archive/reporting software, CA Harvest software (Change control for OMS, CIS, Ellipse, etc.), Apache and Tomcat Servers, MicroFocus COBOL software, WebLogic Applications Server, Business Objects software, and IBM Websphere software. On the short term horizon, there's also new upgraded Ellipse (Unix version) and new Automated Metering Infrastructure ("AMI") Meter Data Management System (MDMS) and Oracle Human Resources (HR suite) systems/applications to be added. Mr. Robert Young discusses the OMS, MWM System, Field Laptops' software, the new AMIMDMS in HECO T-8. Ms. Julie Price discusses the Oracle Human Resources (HR suite) Project in HECO T-13. Further detail on the remaining projects may be found in Ms. Patsy Nanbu's testimony at HECO T-11.

Q. As of March 31, 2008, there were two vacancies in the Management Accounting and Financial Services Department. Please describe the vacancies and the status of filling them.

A. The vacant positions are replacements for a Senior Financial Analyst and a Management Accounting Analyst.

The Senior Financial Analyst position is critical in managing regulatory, legal, and financial risks or requirements by supporting applications before the Commission (including but not limited to rate cases, new projects, purchase power contracts, generic issues, and financings) and representing the Finance Process Area on many cross functional teams. The Senior Financial Analyst develops approaches for economic analysis of very complex transactions and/or alternatives with significant long-term financial impact, ensures appropriate and consistent use of economic methods for evaluating alternatives, and prepares (or assists in the preparation of) and communicates the results of utility economic analysis of

alternative proposals and investment decisions. The position became vacant in July 2007, and HECO has been recruiting for this somewhat difficult-to-fill position since then. External advertisements for the position were placed in July 2007 and again in February 2008 but did not produce candidates who could meet the Company's requirements. Another ad was placed in the newspaper in May 2008 as we continue our search to fill the position.

The Management Accounting Analyst position is critical to coordinating and analyzing budgets and management reports, including: 1) analyzing operating and capital expenditure information needs of internal and external users and creating ways to meet those needs through the use of HECO systems and other sources, and 2) administering the planning and budgeting processes and systems and tools for the operating and capital budgets. The position became vacant in March 2008, and the department has actively recruited for this position. The position was filled on June 30, 2008.

General Counsel/Legal Vacancies

Q. What areas does the General Counsel's Process Area include?

A. As shown in HECO-1507, the General Counsel's Process Area includes the Legal/Land and Rights of Way (LROW) Department in addition to the General Counsel's Office itself.

Q. Please describe the vacant position in the Legal/LROW Department and the status of filling it.

A. The vacancy was created when the department manager was promoted to Vice President/General Counsel. Rather than replacing the position at the Manager level, the department chose, instead, to backfill the vacancy in April 2008 with another Associate General Counsel to cover the legal caseload previously carried

by the Manager. Although outside counsel are available to undertake the legal workload, the in-house attorneys are more familiar with Company issues and processes and can provide timely guidance on issues on a more broad and strategic basis. The department is currently at its test year count of 19.

Energy Solutions Vacancies

Q. What areas does the Energy Solutions Senior Vice President's Process Area include?

A. As shown in HECO-1507, the Energy Solutions Senior Vice President's Process Area includes the Customer Installations Department, the Energy Projects Department and the Technology Division in addition to the Energy Solutions Senior Vice President's Office itself.

Q. As of March 31, 2008, there were five vacancies reflected in the Customer Installations Department. Please describe these positions and the status of filling them.

A. In the Customer Installations Department, the five vacant positions include the following: Junior Customer Planner (1), Advanced Metering Infrastructure (AMI) Systems Engineers (2), and AMI Project Managers (2). The status of each of these vacancies is discussed below.

The Junior Customer Planner is a bargaining unit position responsible for planning the installation of underground and overhead service to residential, commercial, and industrial customers whose demands are 10 KVA and below. It was a replacement position and was filled in April 2008.

The two new AMI Systems Engineer positions will be tasked with the design, development, deployment, operation, and support of a new AMI system. Further detail on the AMI project is provided by Mr. Robert Young in HECO T-8.

Addition of the AMI Systems Engineers in advance of full-scale AMI deployment is critical from several perspectives: 1) development of the PUC application; and 2) acquisition of specialized knowledge and gaining a detailed understanding of AMI technology, deployment, and operation as a prerequisite to full-scale AMI deployment. Both AMI Systems Engineers will provide technical expertise and operational support to the AMI project managers. The position descriptions are in the process of being finalized.

The two AMI Project Managers are new positions that will be filled by HECO to manage the implementation and integration of the new AMI system, including the initiation and implementation of AMI pilot projects, at MECO and HELCO. These two new positions will work in parallel with the present AMI Project Manager for HECO.

Q. When will the four new positions be staffed?

A. The Company anticipates that the new positions will be staffed at the beginning of 2009.

<u>Public Affairs Vacancies</u>

Q. What areas does the Public Affairs Executive Vice President's Process Area include?

A. As shown in HECO-1507, the Public Affairs Executive Vice President's Process Area includes the Government Relations Department, the Integrated Resource Planning function, and the Public Affairs Executive Vice President's Office itself.

Q. As of March 31, 2008, there was one vacancy in the Integrated Resource Planning function. Please describe the vacant position and the status of filling it.

A. The vacancy was a replacement for a Senior Resource Planning Analyst who transferred to another department in 2007. The Company filled the position on April 28, 2008, and the function is now at its test year employee count of six.

Government and Community Affairs Vacancies

Q. What areas do the Government and Community Affairs Vice President's Process Area include?

A. As shown in HECO-1507, the Government and Community Affairs Vice President's Process Area includes the Education and Consumer Affairs Division, the Government Relations Division, and the Regulatory Affairs Division in addition to the Government and Community Affairs Vice President's Office itself.

Q. Ms. Chiogioji, please explain the anticipated increase of five employees in the Regulatory Affairs area from March 31, 2008 to January 1 in the 2009 test year.

A. The Regulatory Affairs group has estimated the need to increase its employee count by five in this time period to meet the heavy regulatory workload which began in the last few years and is anticipated to continue in the future.

Q. Please describe how the regulatory workload has increased recently.

A. The Regulatory Affairs Division has had a significantly increased level of activity in the last few years. In addition to this proceeding, Regulatory Affairs has managed and been involved in the following major proceedings since 2007:

Docket No.	Description
03-0253	HECO IRP-3
03-0372	Competitive Bidding
04-0046	HELCO IRP-3
04-0077	MECO IRP-3

04-0113	HECO 2005 Test Year Rate Case
05-0315	HELCO 2006 Test Year Rate Case
2006-0386	HECO 2007 Test Year Rate Case
2006-0387	MECO 2007 Test Year Rate Case
2006-0425	Solar Water Heating Program
2006-0497	Standby Service and Interconnection Tariffs
2007-0008	Renewable Portfolio Standards Examination
2007-0084	HECO IRP-4
2007-0176	Intragovernmental Wheeling Investigation
2007-0323	Public Benefits Fund
2007-0331	Competitive Bidding for Renewable Energy on Oahu
2007-0341	DSM Reports and Program Modification Requests
2007-0346	Biodiesel Contract with Imperium Services
2007-0403	Competitive Bidding for Firm Capacity on Maui
2007-0416	Renewable Energy Infrastructure Program
2008-0061	Waivers of Renewable Energy Progjects from Competitive Bidding
2008-0063	Exemption/Waiver of PGV from Competitive Bidding
2008-0074	Dynamic Pricing Pilot Program

The Company has filed numerous other applications and requests for a wide variety of areas including capital improvement projects, overhead/underground transmission lines, underground conversions, DSM program modifications and property transfers. These filings were in addition to the Regulatory Affairs' staff "normal" functions of handling Commission compliance reports and customer complaints.

Q. Why does Regulatory Affairs need more employees now?

A. In the past, the Regulatory Affairs Division has managed to support these filings through the use of merit overtime and in its recent rate cases through the use of consultants. Because of the quantity of filings and the increasing complexity of these filings, the Regulatory Affairs staff is now working significant amounts of overtime as a matter of course, rather than on an infrequent or emergency basis. This situation should not continue much longer in the future since it may lead to deterioration of the quality of work produced and dissatisfaction of the staff, which may then leave for other positions in and outside of the Company. Because of the knowledge and experience required to perform regulatory work for the Company, the loss of such employees would be a blow to the Company as a whole and ultimately to its ratepayers and should be avoided.

Q. Why doesn't the Regulatory Affairs group use consultants and contractors on an as-needed basis to supplement its current workforce?

A. As I mentioned above, Regulatory Affairs has only recently hired regulatory consultants to specifically support rate cases, as opposed to consultants whose role is to testify as subject matter experts. However, because the Company will be filing rate cases on a regular basis along with rate cases for HELCO and MECO, hiring regular employees who are familiar with the Company-specific regulatory issues will be more efficient and effective over the long-term.

Q. Why would regular employees be more efficient and effective over the long-term?

A. The advantages of having regular employees rather than consultants are that employees will be knowledgeable and conversant with the Company-specific regulatory issues, eliminating the learning curve impacts and associated time that is required by consultants to learn the subject matter. The need for the department to

conduct a search and negotiate with consultants for each specific case will be eliminated since the knowledge gained by regular employees on the job will allow the Company to assign and reassign these resources with greater flexibility to various proceedings for the Company, HELCO, and MECO within very short timeframes; and the quality of work produced by regular employees will be more consistent and in line with what management expects because of the direct supervision and daily communication that will take place.

Q. What are the five positions that constitute the difference between the March 31, 2008 employee count and that estimated for beginning of year 2009?

A. The five positions include three analyst positions and two director positions. The division has interviewed for the three analyst positions and anticipates filling these and the two director positions by the end of 2008.

Q. Is the increase in employees in Regulatory Affairs warranted?

A. Yes. Given the need to file timely and accurate documentation with the Commission and to support the Company with its operational initiatives in the future, the staffing of the additional five positions will significantly reduce the overtime being experienced by the current staff and the consultants' costs and allow Regulatory Affairs to maintain the high quality of work going into the future.

<u>Other Departments</u>

Q. Please confirm that the offices of the Vice President-Customer Solutions, the Senior Vice President-Operations, the Vice President-Energy Delivery, the Vice President-Power Supply, and the Vice President Corporate Relations have not included additional employees for the test year period from the count that is reflected at the end of March 2008.

A. These departments and offices have not included additional employees in 2009 compared to their employee counts at the end of March 2008.

SUMMARY

Q. Please summarize your testimony.

A. The total average number of employees estimated by the Company for the test year 2009 is 1,621. With increasing demand for electrical service and power generation, as well as increased governmental regulations and requirements, HECO must increase its staffing level in order to provide the level of service required for its customers.

Q. Does this conclude your testimony?

A. Yes, it does.

Hawaiian Electric Company, Inc.

FAYE CHIOGIOJI

EDUCATIONAL BACKGROUND AND EXPERIENCE

Business Address:	Hawaiian Electric Company, Inc. 200 S King Street, Suite 700 Honolulu, HI 96813
Position:	Manager Workforce Staffing & Development
Education:	Bachelor of Arts, English, University of Hawaii at Manoa Masters in Business Administration with distinction, HR Management, Hawaii Pacific University Zenger Miller/Achieve Global Master Trainer, 1994 Senior Professional in Human Resources (SPHR) life certification, Human Resources Certification Institute/Society for Human Resource Management, 1995 Advanced HR Generalist Certification Program, Society for Human Resource Management, 1997
Experience:	Hawaiian Electric Company, Inc. 1998 - Present Manager Workforce Staffing and Development 1995 - 1998 Director Workforce Staffing and Development 1992 - 1995 Director Human Resource Development 1991 - 1992 Training Administrator Human Resource Development

Experience:
(continued)

State Of Hawaii – Department Of Personnel Services

1988 - 1991
Personnel Management Specialist V, Employee Assistance Branch

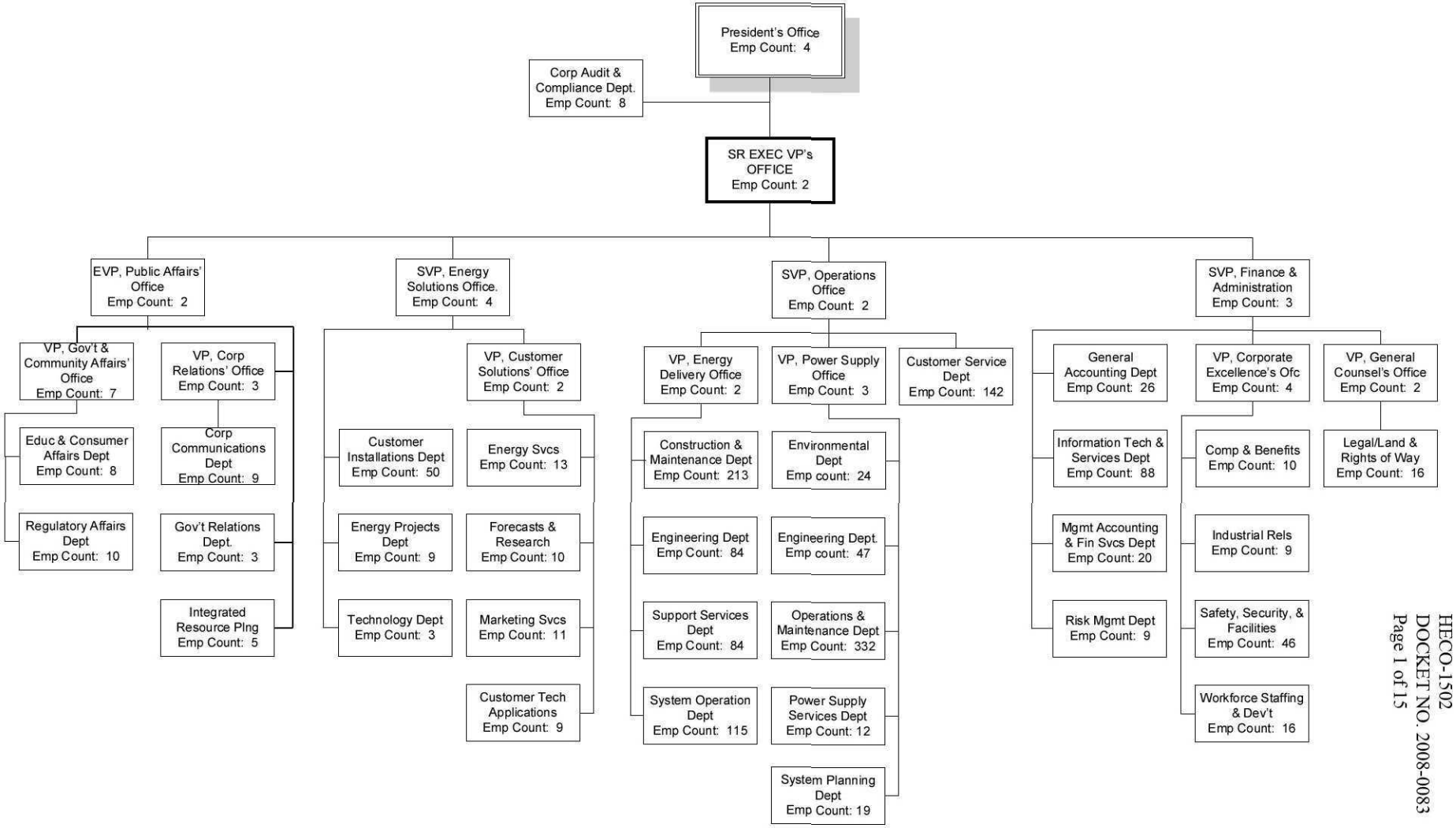
1986 - 1988
Personnel Management Specialist IV, Training Branch

Hawaiian Electric Company, Inc.
2009 Test Year Witness List

Organization	Department	Witness
President's Office		
	Corporate Audit & Compliance (Formerly Internal Audit)	Faye Chiogioji - HECO T- 15
	President's Office	" "
Sr. Exec VP		Faye Chiogioji - HECO T- 15
VP-Corporate Excellence		
	Compensation & Benefits	Faye Chiogioji - HECO T- 15
	Industrial Relations	" "
	Safety, Security & Facilities	" "
	Workforce Staffing & Development	" "
	VP-Corporate Excellence's Office	" "
Sr. VP-Finance		
	General Accounting	Patsy Nanbu - HECO T-11
	Information Technology & Services	Faye Chiogioji - HECO T-15
	Management Accounting & Fin Svcs	" "
	Risk Management	" "
	Financial VP/Treasurer's Office	" "
VP-General Counsel		
	Legal/Land and Rights of Way	Faye Chiogioji - HECO T- 15
	VP-Gen Counsel's Office	" "
Sr. VP-Energy Solutions		
	Customer Installations Dept.	Faye Chiogioji - HECO T- 15
	Energy Projects	" "
	Technology	" "
	Sr. VP-Energy Solutions' Office	" "
VP-Customer Solutions		
	Customer Technology Applications	Alan Hee - HECO T- 10
	Energy Services**†	" "
	Forecasts & Research†	" "
	Marketing Services	" "
	VP-Customer Solutions' Office	Faye Chiogioji - HECO T- 15
Sr. VP-Operations		
	Customer Service	Darren Yamamoto - HECO T- 9
	Sr. VP-Operations' Office	Faye Chiogioji - HECO T- 15
VP-Energy Delivery		
	Construction & Maintenance	Robert Young - HECO T- 8
	Engineering	" "
	Support Services	" "
	System Operation	" "
	VP-Energy Delivery's Office	Faye Chiogioji - HECO T- 15
VP-Power Supply		
	Environmental	Dan Giovanni - HECO T- 7
	Power Supply Engineering (formerly Planning & Engrng)	" "
	Power Supply Operations & Maintenance	" "
	Power Supply Services	" "
	VP-Power Supply 's Office	Faye Chiogioji - HECO T- 15
Exec. VP-Public Affairs		
	Governmental Relations	Faye Chiogioji - HECO T- 15
	Integrated Resource Planning	" "
	EVP-Public Affairs' Office	" "
VP-Corporate Relations		
	Corporate Communications	Faye Chiogioji - HECO T- 15
	VP-Corporate Relations' Office	" "
VP-Government & Community Affairs		
	Education & Consumer Affairs	Faye Chiogioji - HECO T- 15
	Regulatory Affairs	" "
	VP-Gov't & Comm Affairs' Office	" "

HAWAIIAN ELECTRIC COMPANY, INC.

Actual employee count as of 3/31/08



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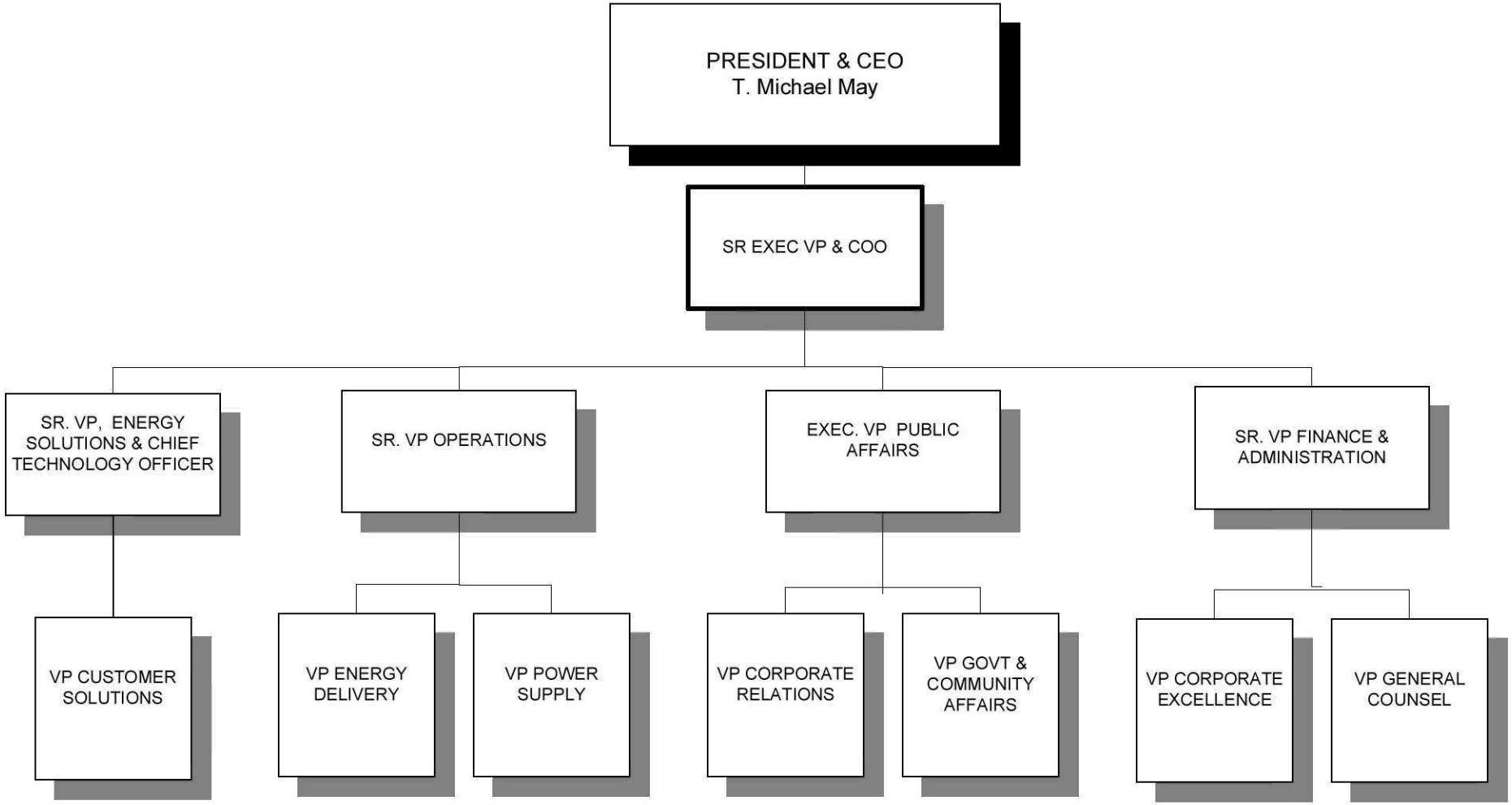
*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

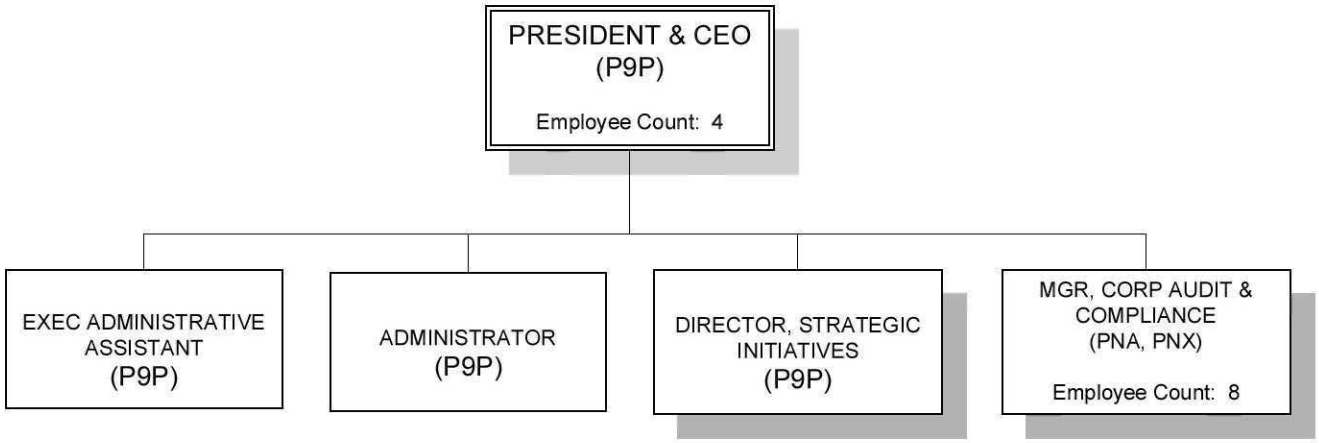
HAWAIIAN ELECTRIC COMPANY, INC.



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

PRESIDENT – HECO

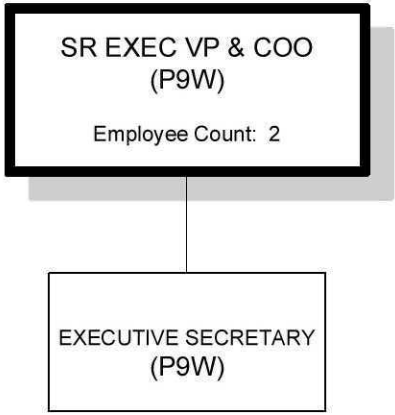
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

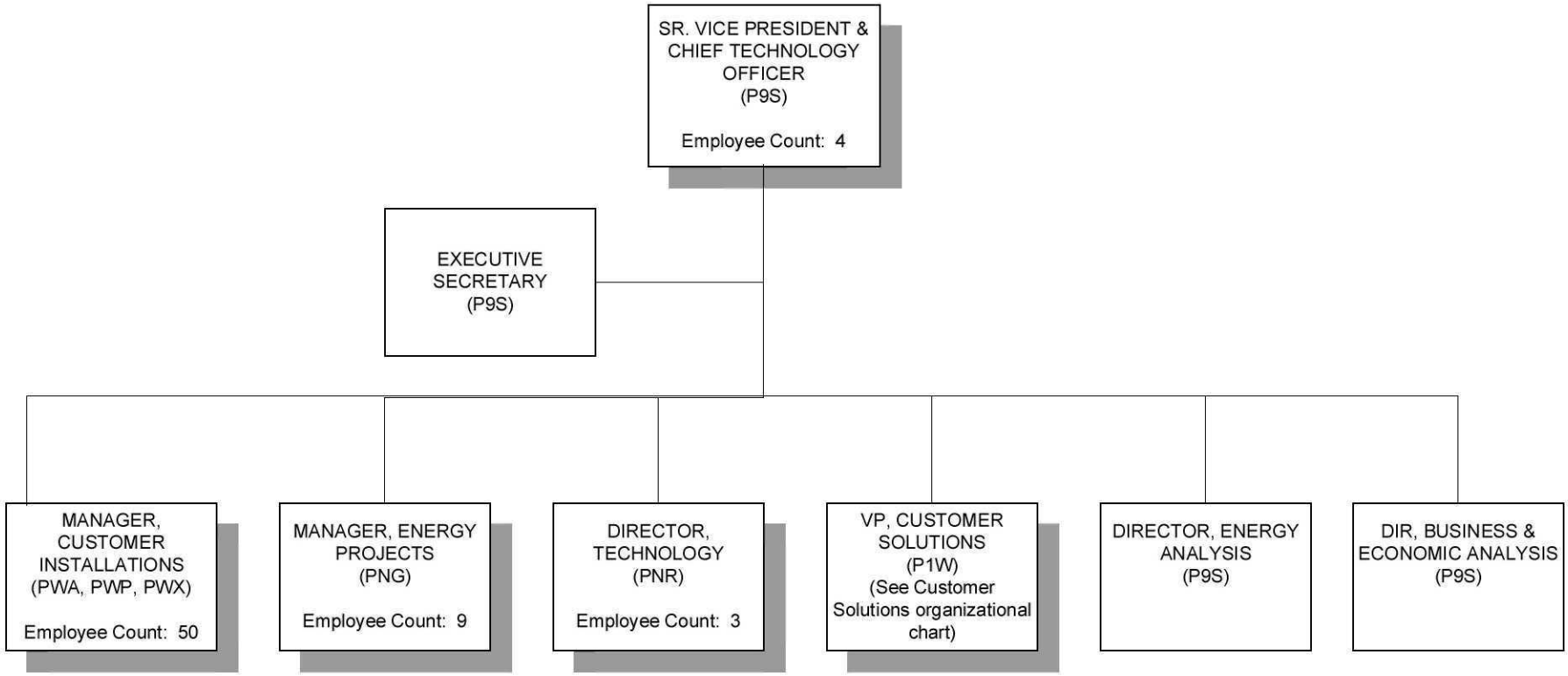
SENIOR EXECUTIVE VP AND CHIEF OPERATING OFFICER

Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

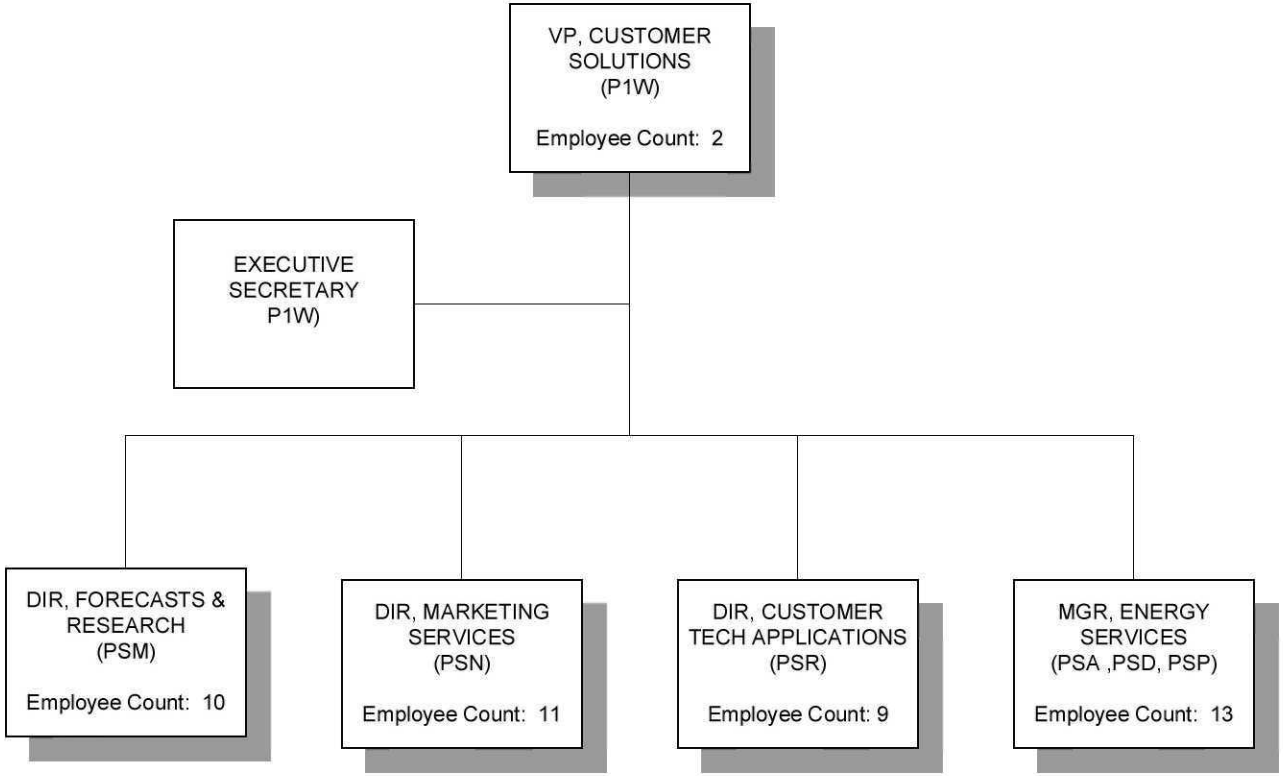
SR. VICE PRESIDENT ENERGY SOLUTIONS
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

Customer Solutions

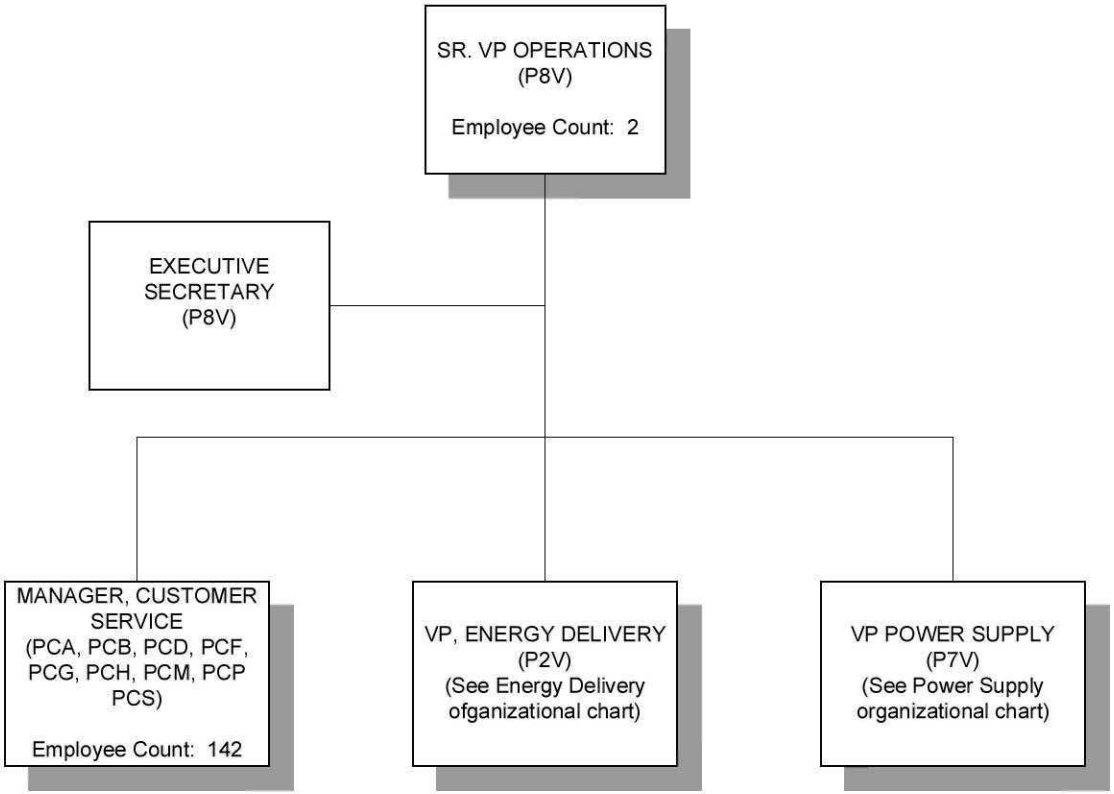
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

SR. VICE PRESIDENT OPERATIONS

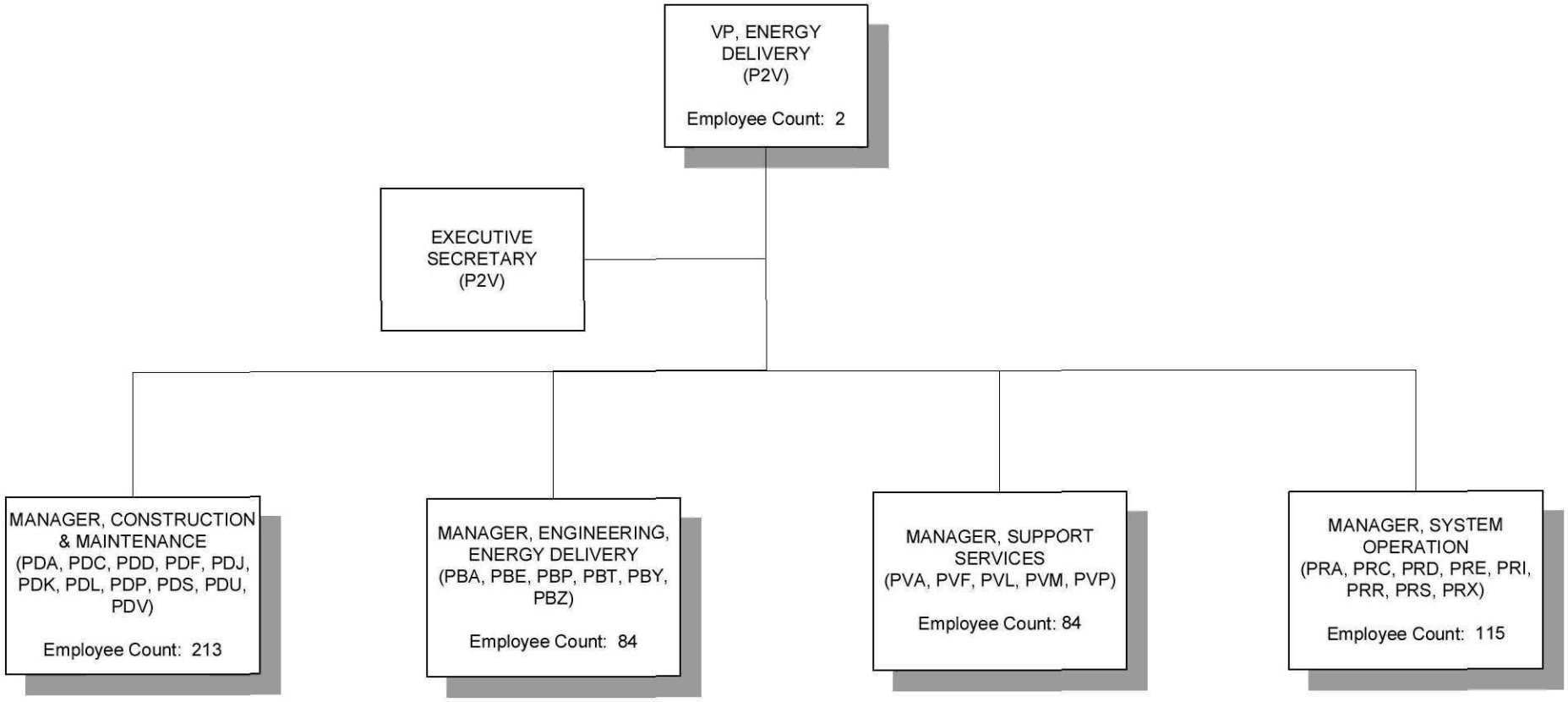
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

ENERGY DELIVERY

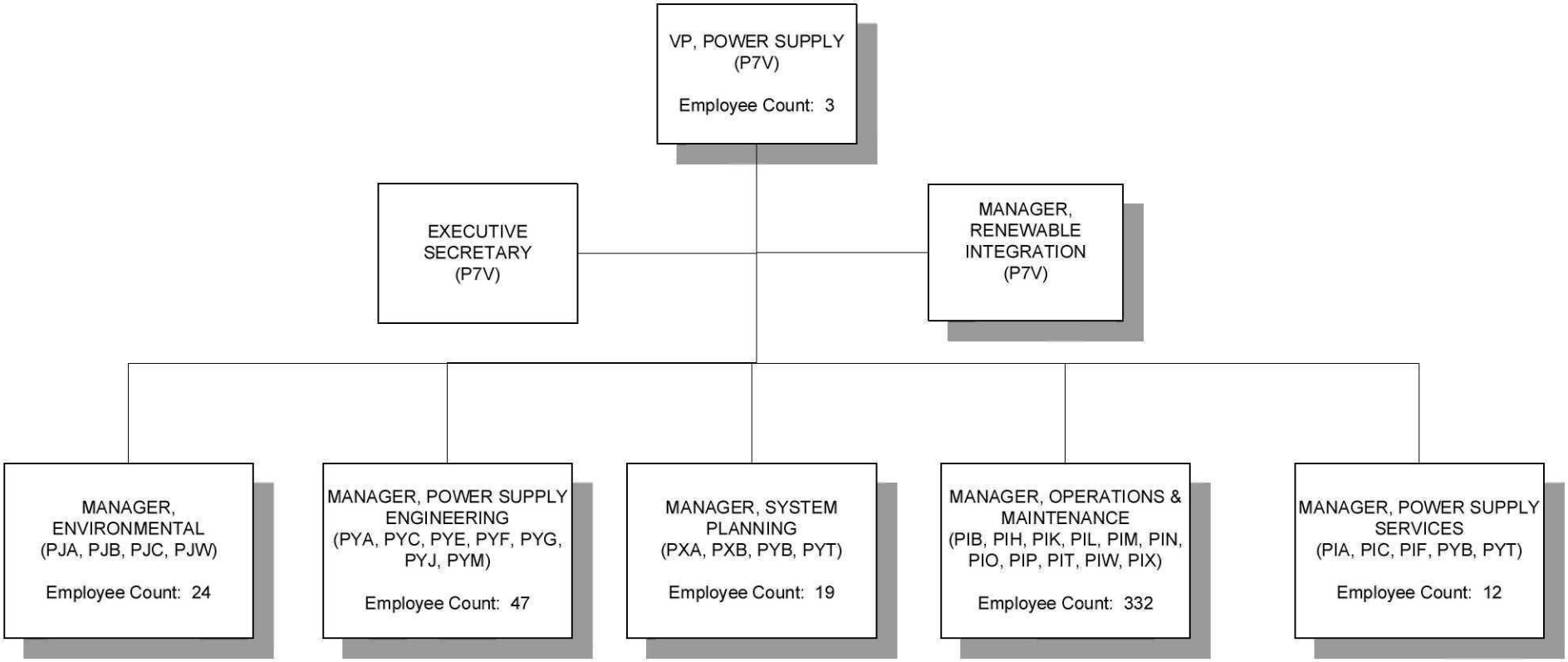
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

POWER SUPPLY

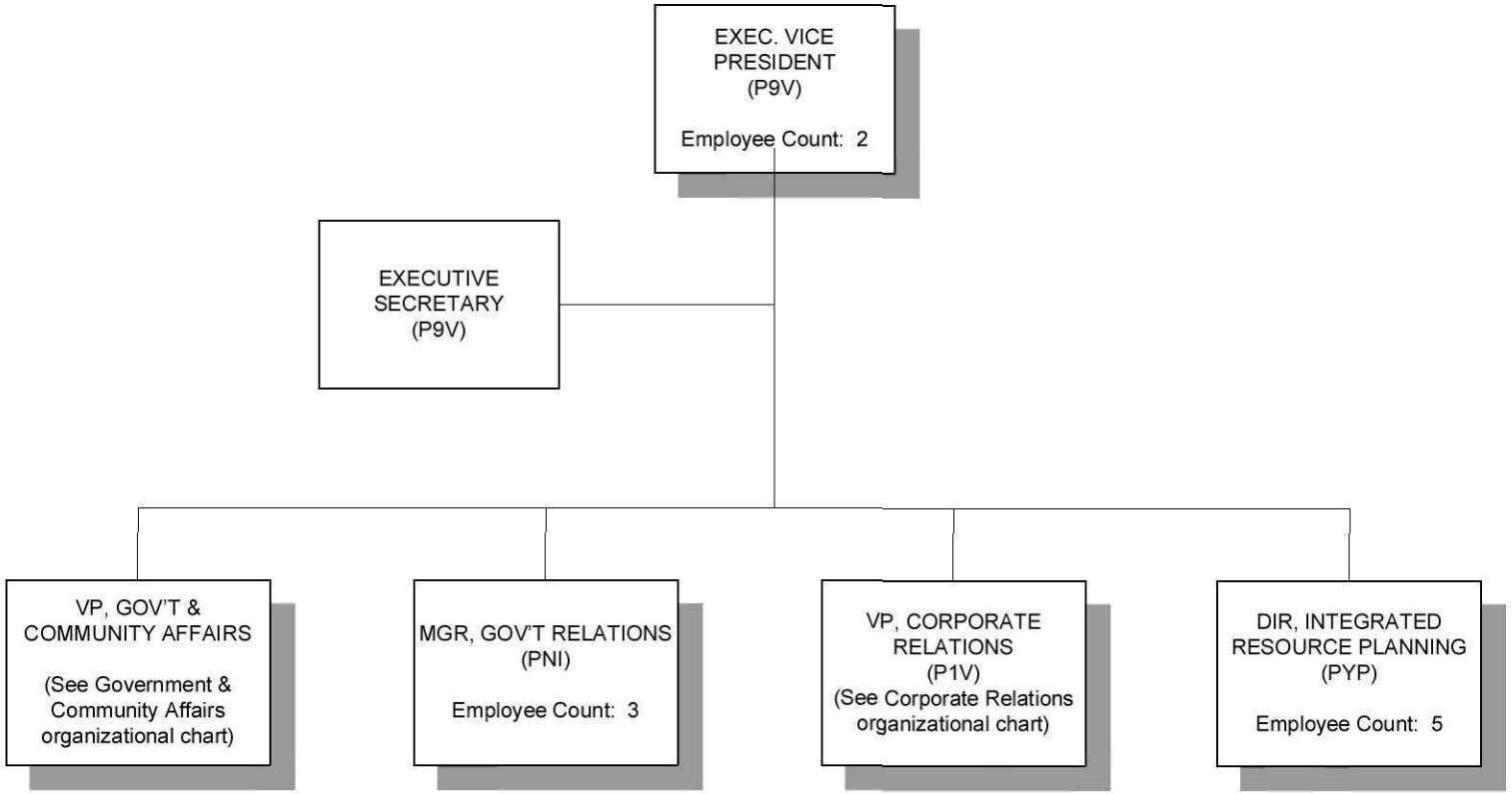
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

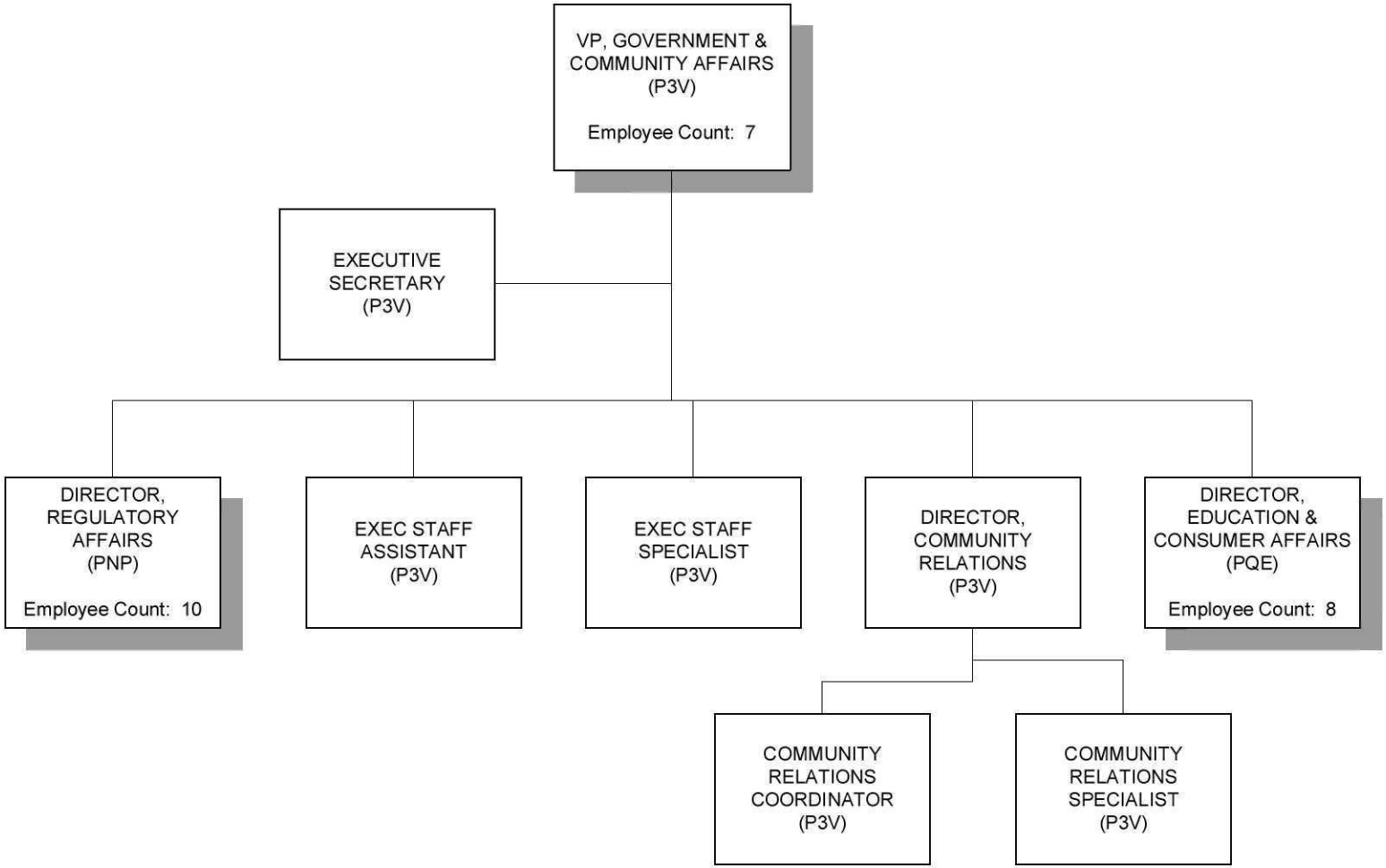
SR. VICE PRESIDENT PUBLIC AFFAIRS

Actual employee count as of 3/31/08



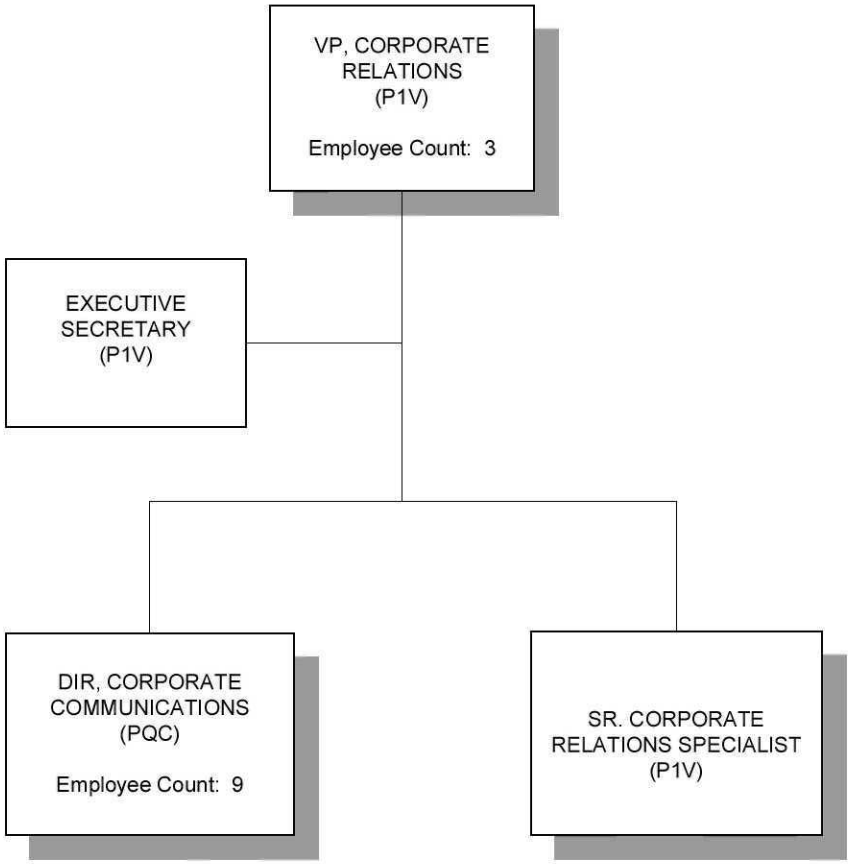
*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

GOVERNMENT & COMMUNITY AFFAIRS
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

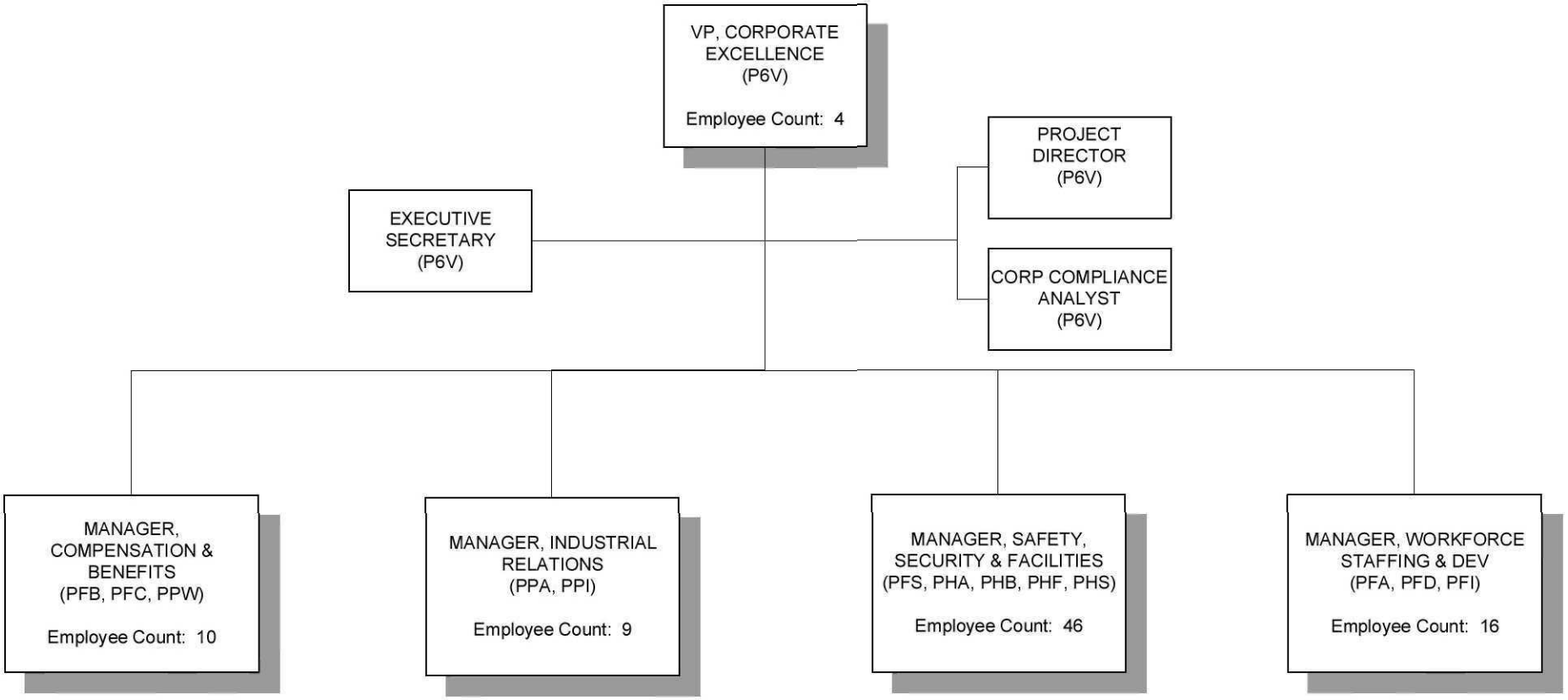
CORPORATE RELATIONS
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

CORPORATE EXCELLENCE

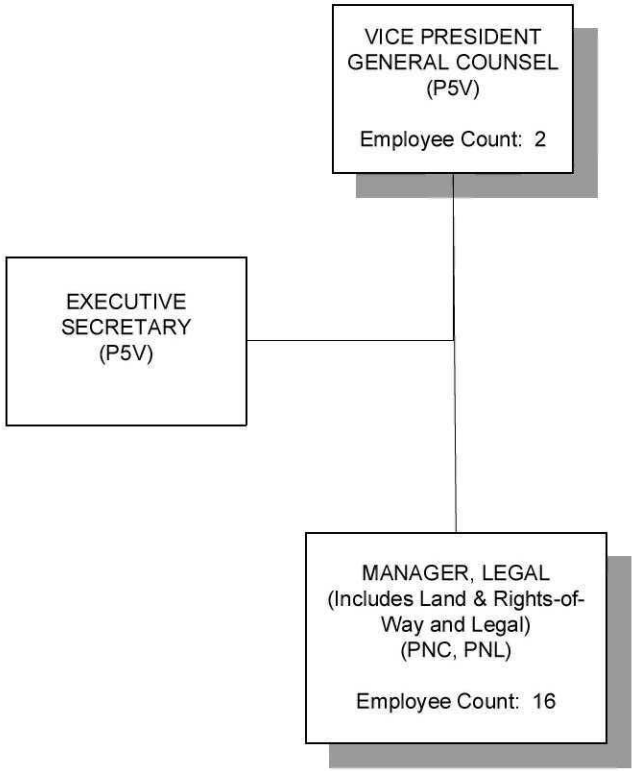
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

GENERAL COUNSEL

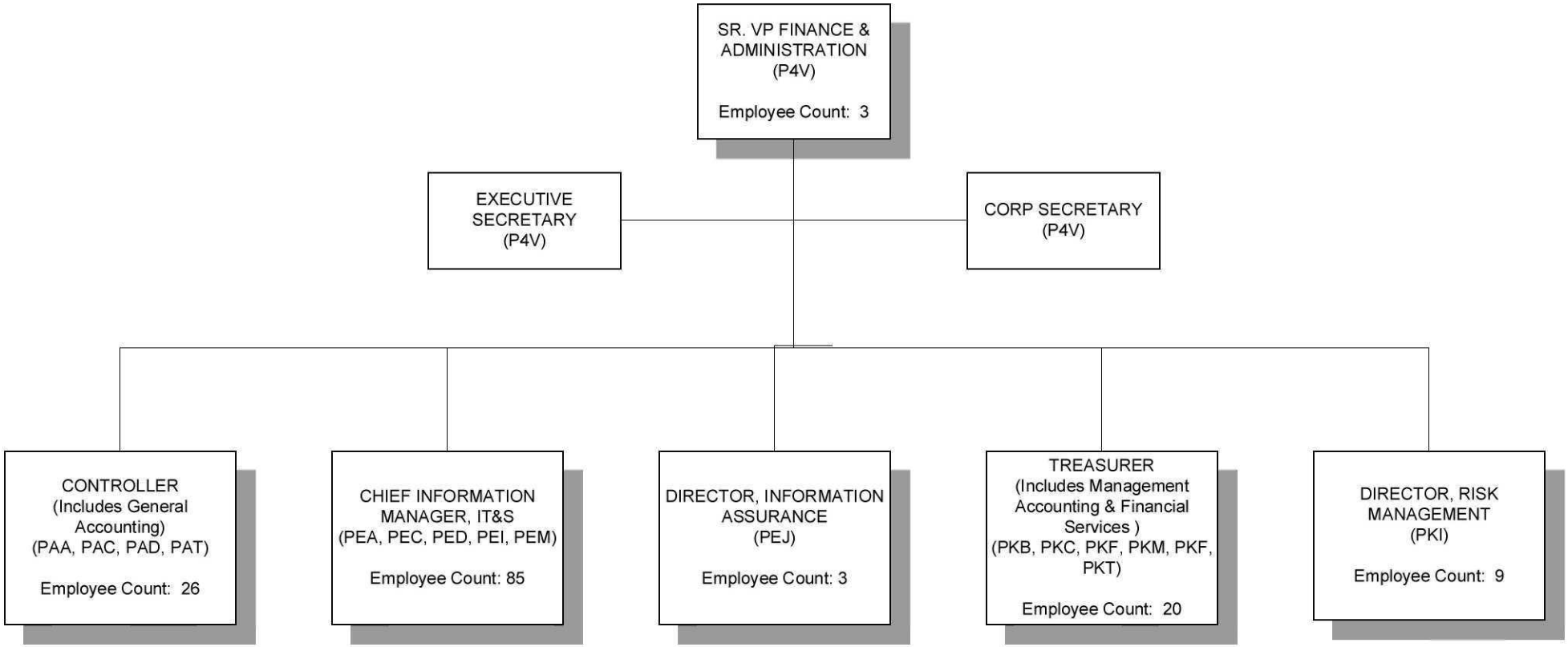
Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

FINANCE

Actual employee count as of 3/31/08



*Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge

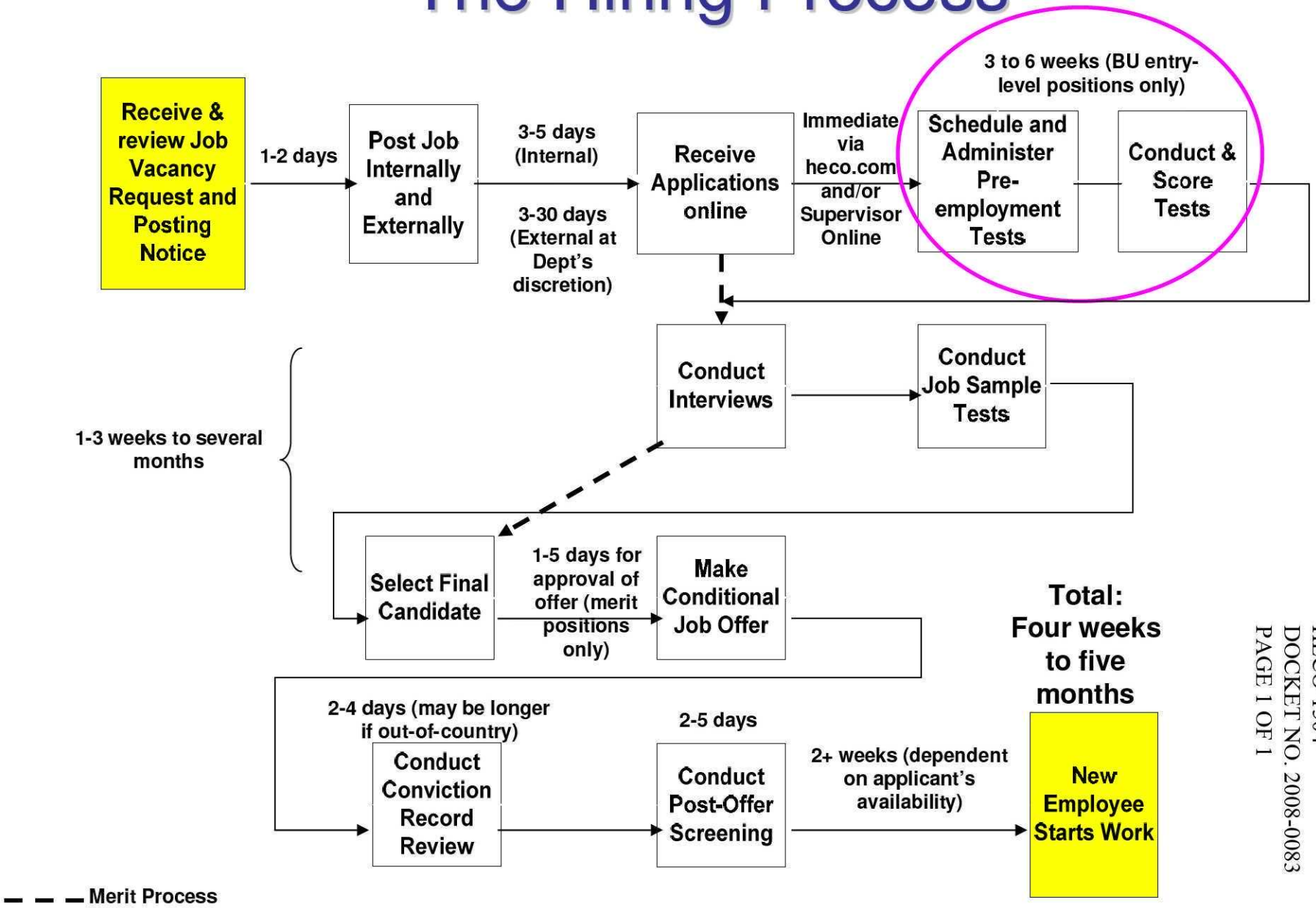
Hawaiian Electric Company, Inc.
Summary Recorded and Average Number of Employees

	A	B	C	D	E	F	G	H	I
	2006 Recorded EOY	2006 Year Average	2007 Recorded EOY	2007 Year Average	2008 YTD Recorded 3/31/08	2008 Projected EOY	2008 EOY Budget	2009 EOY Test Year	**2009 TEST YEAR Average**
President's Office									
Corporate Audit & Compliance (Formerly Internal Audit)	10	11	9	10	8	11	11	13	13
President's Office	2	3	3	3	4	4	3	4	4
Subtotal	12	14	12	13	12	15	14	17	17
Sr. Exec VP					2	2	0	2	2
VP-Corporate Excellence									
Compensation & Benefits	13	13	10	12	10	11	11	11	11
Industrial Relations	9	9	9	8	9	9	9	9	9
Safety, Security & Facilities	42	45	47	44	46	51	51	52	52
Workforce Staffing & Development	16	16	17	3	16	17	18	25	25
VP-Corporate Excellence's Office	2	2	4	17	4	5	5	4	4
Subtotal	82	85	87	84	85	93	94	101	101
SVP-Finance									
General Accounting	26	26	26	25	26	26	26	27	27
Information Technology & Services	95	93	89	92	88	96	94	97	97
Management Accounting & Fin Svcs	22	22	20	21	20	22	22	22	22
Risk Management	9	9	9	9	9	9	9	9	9
Financial VP/Treasurer's Office	4	3	3	4	3	3	3	3	3
Subtotal	156	153	147	151	146	156	154	158	158
VP-General Counsel									
Legal/Land and Rights of Way	16	16	15	16	16	17	18	17	17
VP-Gen Counsel's Office	2	2	2	2	2	2	2	2	2
Subtotal	18	18	17	18	18	19	20	19	19
Sr. VP-Energy Solutions									
Customer Installations	44	47	50	46	50	51	53	55	55
Energy Projects	8	8	9	9	9	9	9	9	9
Technology	3	3	3	3	3	3	3	3	3
Sr. VP-Energy Solutions' Office	4	4	4	4	4	4	4	4	4
Subtotal	59	62	66	62	66	67	69	71	71
VP-Customer Solutions*									
Customer Technology Applications	8	8	9	9	9	9	9	9	9
Energy Services*	17	16	12	11	13	13	13	15	15
Forecasts & Research*	9	10	10	10	10	10	10	10	10
Integrated Resource Planning**	6	5	Moved to EVP Public Affairs as of 3/15/07						
Marketing Services	11	11	11	12	11	11	12	12	12
VP-Customer Solutions' Office	2	2	2	2	2	2	2	2	2
Subtotal	53	52	44	44	45	45	46	48	48
Sr. VP-Operations									
Customer Service	126	127	136	132	142	147	147	148	148
Sr. VP-Operations' Office	3	3	2	2	2	2	2	2	2
Subtotal	129	130	138	134	144	149	149	150	150
VP-Energy Delivery									
Construction & Maintenance	220	212	215	216	213	220	220	220	220
Engineering	84	85	83	86	84	85	88	85	85
Support Services	80	80	84	82	84	85	85	85	85
System Operation	105	108	114	110	115	118	118	118	118
VP-Energy Delivery's Office	2	2	2	2	2	2	2	2	2
Subtotal	491	487	498	496	498	510	513	510	510
VP-Power Supply									
Environmental	22	22	24	22	24	24	24	25	25
Power Supply Engineering (formerly Planning & Engineering)	40	38	46	44	47	47	47	52	52
Power Supply Operations & Maintenance	315	307	332	326	332	350	354	375	375
Power Supply Services	28	29	13	12	12	15	15	15	15
System Planning	0	0	19	19	19	22	22	22	22
VP-Power Supply 's Office	2	2	2	2	3	3	2	3	3
Subtotal	407	398	436	425	437	461	464	492	492
VP-Special Projects	3	3	Special Projects Department dissolved in January of 2007						
Exec. VP-Public Affairs									
Governmental Relations	2	3	3	3	3	3	3	3	3
Integrated Resource Planning			5	5	5	5	6	6	6
EVP-Public Affairs' Office	3	2	3	3	2	2	3	2	2
Subtotal	5	5	11	11	10	11	12	11	11
VP-Corporate Relations									
Corporate Communications	8	12	9	8	9	9	10	9	9
VP-Corporate Relations' Office	3	2	3	3	3	3	3	3	3
Subtotal	11	14	12	11	12	12	13	12	12
VP-Government & Community Affairs									
Education & Consumer Affairs	8	8	8	7	8	8	8	8	8
Regulatory Affairs	7	7	9	9	10	15	15	15	15
VP-Gov't & Comm Affairs' Office	7	7	7	7	7	7	7	7	7
Subtotal	22	22	24	23	25	30	30	30	30
Company Total	**1448**	**1443**	**1498**	**1477**	**1500**	**1570**	**1578**	**1621**	**1621**

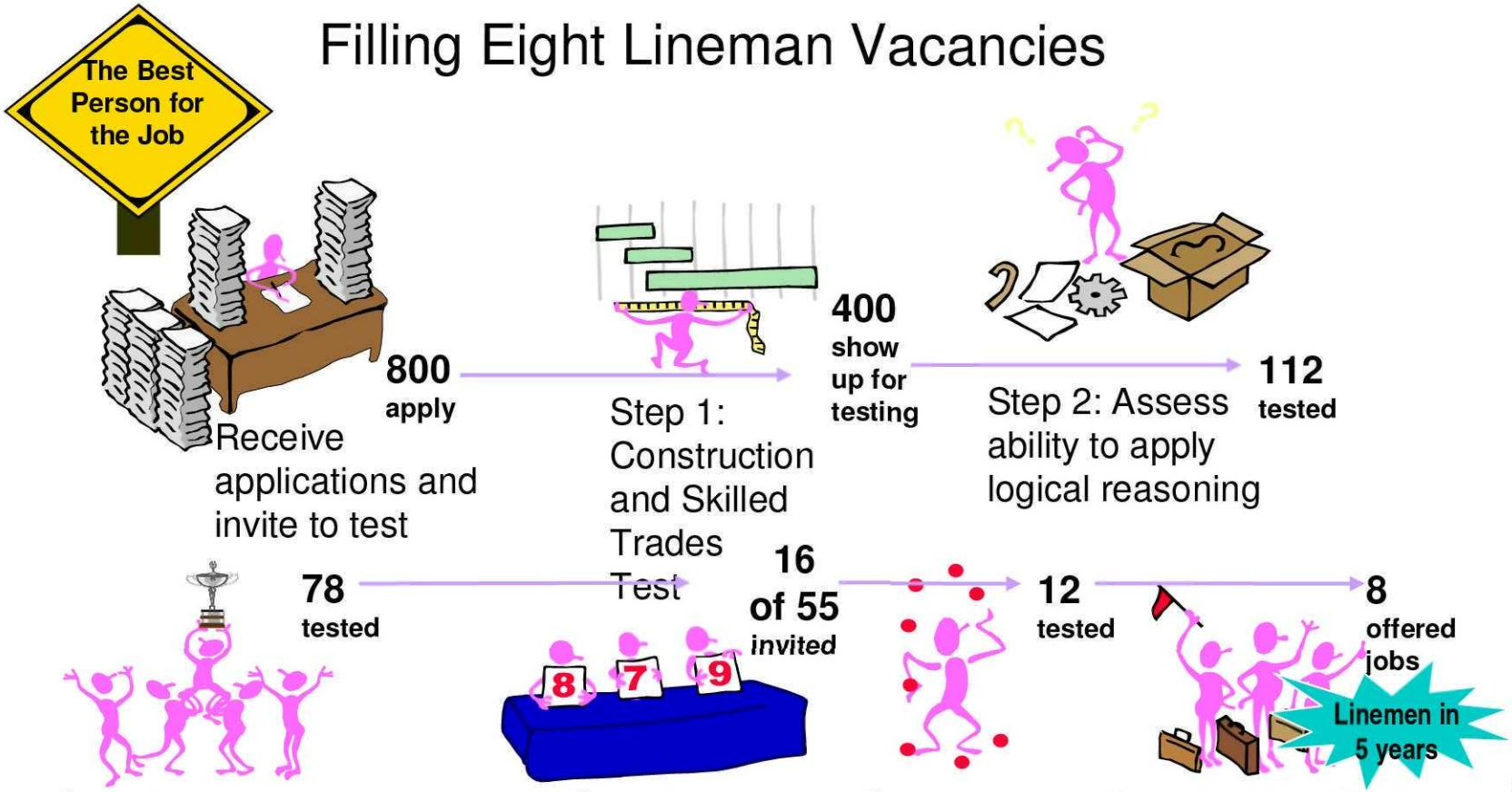
* Employee counts include interns and temporary employees on HECO payroll, but exclude employees covered under the DSM surcharge adjustment docket from all year

Printed 7/1/2008

The Hiring Process



Filling Eight Lineman Vacancies



Programs to Accelerate Hiring

2005

- Re-established Project Aide/Intern (beyond summer) program; 8 of 22 2005 summer interns were hired into Project Aide/Intern positions; 2 were in critical utility skills positions
- Modified application process for external applicants, resulting in 100% of external applicants applied on-line via heco.com jobsonline; enabled faster processing of invitations for testing; immediate access to applications by hiring supervisors; eliminated the 5 days needed previously to copy and distribute hard copy resumes
- Implemented on-site pre-employment testing at Job Fairs; increased applicant show rate from 50% to 95% thereby increasing size of applicant pools

2006

- Implemented new Edison Electric Institute pre-employment tests to improve quality and job fit of candidates to utility specific positions
- Initiated Energy Delivery job rotations to build bench strength for critical skill positions in EDP; 3 employees added to pool of qualified candidates; one employee transferred to critical skill EDP position
- Held on-site job fair and testing at Power Plant to increase quality and quantity of applicants for Power Supply vacancies; 97% increase in Power Supply applicants; 12 utility-specific critical skill positions filled in Power Supply
- Implemented 1st Come-1st Serve Aptitude Testing; reduced average time to identify test-qualified applicants from 13 to 8 days; pre-employment testing process went from 4-7 weeks to 3-6 weeks

2007

- Implemented Beginning Engineer program to develop and "grow" critical utility-specific engineering skills in recent graduates with little or no experience; three employees hired into Program; will fill permanent critical utility-specific positions upon program completion in June 2008
- Implemented 2nd round of Energy Delivery job rotations; upon completion 9 additional employees to be added to pool of qualified candidates
- Established Leeward Comm College Process Technology Program to identify a pool of qualified candidates to fill Operator Trainee vacancies; first graduates anticipated in December 2008
- Initiated electronic background check process; reduced average turnaround time for results from 2 weeks to 3 days

2008

In Progress:

- HR Suite Project underway to reduce the number of redundant transactions and improve applicant processing through best-practice technology
- Development of Power Supply O&M Leadership Development Program to identify and prepare the next generation of supervisors in Power Supply and reduce time-to-fill vacancies in Operations by creating a qualified pool of frontline supervisor candidates

2009

Future Plans:

- HR Suite iRecruitment module Go-Live anticipated in April 2009; will enable integrated applicant processing, resume parsing and applicant database competency search feature to reduce time to recruit
- Conduct recruitment twice per year at power engineering colleges to identify qualified candidates for Beginning Engineer Program
- Implement EEI Career Assessment and Development (CADI) tool for more effective employee/applicant job placement and career development
- Implement Corporate Internship Program to enable cross-training in-house to cultivate next generation of leaders and establish a qualified pool of applicants to fill senior management and executive positions

Hawaiian Electric Company, Inc.
Vacant Positions as of March 31, 2008
HECO T-15

	2008 YTD Recorded 3/31/08	2009 EOY Test Year	Diff EOY Test Year vs 3/31/08 Recorded	Replacement		New	
President's Office							
Corporate Audit & Compliance (Formerly Inte	8	13	5	Manager, Dept. Secretary, IT Auditor	3	Part-time Interns to meet SOX deadlines (annually Sept thru Feb)	2
President's Office	4	4	0				
Subtotal	12	17	5				
Sr. Exec VP	2	2	0				
VP-Corporate Excellence							
Compensation & Benefits	10	11	1	Ee Benefits Systems Administrator (filled 5/12/08)	1		
Industrial Relations	9	9	0				
Safety, Security & Facilities	46	52	6	Custodian, Security Coordinator (2), Security Officer, WC Coordinator (currently filled by unbudgeted agency temp)	5	Security Officer	1
Workforce Staffing & Development	16	25	9	HR Assistant	1	Testing Specialist, Testing Coordinator, OD Consultant, Corporate Interns (2), Corporate Mentors (3)	8
VP-Corporate Excellence's Office	4	4	0				
Subtotal	85	101	16				
SVP-Finance							
Information Technology & Services	88	97	9	Senior Development Analyst (filled 5/19/08), Development Analyst (filled 5/12/08), Database Analyst, IT Project Manager/Team Leader (filled 5/12/08), IT Infrastructure Analyst (2) (both filled 5/27/08)	6	Development Services Analysts	3
Management Accounting & Fin Svcs	20	22	2	Sr. Financial Analyst, Mgmt Acctg Analyst (filled 6/30/08)	2		
Risk Management	9	9	0				
Financial VP/Treasurer's Office	3	3	0				
Subtotal	120	131	11				
VP-General Counsel							
Legal/Land and Rights of Way	16	17	1	Backfill manager with Assoc. Genl Counsel (filled 4/28/08)	1		
VP-Gen Counsel's Office	2	2	0				
Subtotal	18	19	1				

Hawaiian Electric Company, Inc.
Vacant Positions as of March 31, 2008
HECO T-15

	2008 YTD Recorded 3/31/08	2009 EOY Test Year	Diff EOY Test Year vs 3/31/08 Recorded	Replacement		New	
Sr. VP-Energy Solutions* **							
Customer Installations	50	55	5	Jr. Customer Planner (filled 4/21/08)	1	AMI Systems Engr (2), AMI Project Mgr (2)	4
Energy Projects	9	9	0				
Technology	3	3	0				
Sr. VP-Energy Solutions' Office	4	4	0				
Subtotal	66	71	5				
VP-Customer Solutions* **							
VP-Customer Solutions' Office	2	2	0				
Sr. VP-Operations							
Sr. VP-Operations' Office	2	2	0				
VP-Energy Delivery							
VP-Energy Delivery's Office	2	2					
VP-Power Supply							
VP-Power Supply 's Office	3	3	0				
Exec. VP-Public Affairs							
Governmental Relations	3	3	0				
Integrated Resource Planning	5	6	1	Sr Resource Planning Analyst (filled 4/28/08)	1		
EVP-Public Affairs' Office	2	2	0				
Subtotal	10	11	1				
VP-Corporate Relations							
Corporate Communications	9	9	0				
VP-Corporate Relations' Office	3	3	0				
Subtotal	12	12	0				
VP-Government & Community Affairs							
Education & Consumer Affairs	8	8	0				
Regulatory Affairs	10	15	5	Director, Analyst II (2), Sr. Analyst	4	Director	1
VP-Gov't & Comm Affairs' Office	7	7	0				
Subtotal	25	30	5				
Total Vacancies in T-15:	359	403	44		25		19

January 25, 2008

Contact: Suzy P. Hollinger
Manager, Treasury and Investor Relations
(808) 543-7385 Telephone
(808) 203-1155 Facsimile
E-mail: shollinger@hei.com

Lynne T. Unemori
HECO Vice President Corporate Relations
(808) 543-7972 Telephone
(808) 543-4476 Facsimile
Lynne.Unemori@heco.com

HAWAIIAN ELECTRIC INDUSTRIES, INC. ANNOUNCES EXECUTIVE APPOINTMENTS

HONOLULU -- Hawaiian Electric Industries, Inc. **(NYSE - HE)** today announced that Eric K. Yeaman, HEI Financial Vice President, Treasurer and Chief Financial Officer (CFO), has been named Senior Executive Vice President and Chief Operating Officer (COO) of its utility subsidiary Hawaiian Electric Company, Inc. (HECO). Mr. Yeaman will report to HECO President and Chief Executive Officer, T. Michael (Mike) May.

"We are pleased to have one of our outstanding leaders assume a key operating role at our major electric utility subsidiary," said Constance H. Lau, HEI President and Chief Executive Officer and Chairman of the HECO Board. "Helping solve Hawaii's energy issues has become increasingly important and complex, and Eric's leadership of the day-to-day responsibilities of our Oahu utility will enable Mike to give even greater focus to our ongoing efforts to develop a balanced, comprehensive energy plan for Hawaii's future—one that considers reliability, energy security, the environment and the needs of the communities we serve," Lau added.

In his capacity as COO, Mr. Yeaman will be responsible for overseeing the Oahu utility's day-to-day operations, energy solutions, public affairs and financial/administrative process areas. Mr. May will continue overall leadership responsibility for the entire utility organization, including subsidiaries, Hawaii Electric Light Company, which serves the island of Hawaii, and Maui Electric Company which serves the islands of Maui, Molokai and Lanai.

"Eric brings strong leadership skills and experience that will help us further develop and advance our plans for Hawaii's energy future," said May.

Prior to joining HEI in 2003, Mr. Yeaman served as COO for Kamehameha Schools, Hawaii's largest land trust, where he led numerous change management initiatives and developed and implemented new financial, investment and operational strategies to improve organizational effectiveness and efficiency.

He is a board member of The Nature Conservancy of Hawaii, Hawaii Community Foundation, Queen's Health Systems, Queen's Medical Center, Queen Emma Land Company, Enterprise Honolulu, Hawaii Pacific University and the Asia-Pacific Center for Security Studies Foundation.

Replacing Yeaman as HEI Acting Financial Vice President, Treasurer and Chief Financial Officer is Curtis Y. Harada, currently HEI Controller, a position he will retain.

Because of the heightened importance of ensuring community input in planning for the future, Hawaiian Electric Company also named Robert (Robbie) Alm as Executive Vice President for Public Affairs. Alm previously held the position of Senior Vice President for Public Affairs.

"Under Robbie's leadership we have worked hard to improve on the process by which we make decisions, ensuring that the concerns of the community are considered upfront," said Lau.

"Our strategic success takes the ability to work through complex regulatory, government and community issues and Robbie has successfully brought those skills to the table."

Tayne S. Y. Sekimura, currently Hawaiian Electric Company Financial Vice President, will be promoted to Senior Vice President, Finance and Administration. In her new role, Sekimura will oversee HECO's financial, human resources, legal and corporate administration areas.

All appointments are effective February 1, 2008.

HEI supplies power to over 400,000 customers or 95% of Hawaii's population through its electric utilities, Hawaiian Electric Company, Hawaii Electric Light Company and Maui Electric Company, and provides a wide array of banking and other financial services to consumers and businesses through American Savings Bank, the state's third largest financial institution based on year-end asset size.

FORWARD-LOOKING STATEMENTS

This release may contain "forward-looking statements," which include statements that are predictive in nature, depend upon or refer to future events or conditions, and usually include words such as expects, anticipates, intends, plans, believes, predicts, estimates or similar expressions. In addition, any statements concerning future financial performance (including future revenues, expenses, earnings or losses or growth rates), ongoing business strategies or prospects and possible future actions, which may be provided by management, are also forward-looking statements. Forward-looking statements are based on current expectations and projections about future events and are subject to risks, uncertainties and assumptions about HEI and its subsidiaries, the performance of the industries in which they do business and economic and market factors, among other things. These forward-looking statements are not guarantees of future performance.

Forward-looking statements in this release should be read in conjunction with the "Forward-Looking Statements" discussion (which is incorporated by reference herein) set forth on page iv of HEI's Quarterly Report on Form 10-Q for the quarter ended September 30, 2007, and in HEI's future periodic reports that discuss important factors that could cause HEI's results to differ materially from those anticipated in such statements. Forward-looking statements speak only as of the date of this release.

###

From: May, Mike
Sent: Thursday, May 08, 2008 3:00 PM
To: zz$All HECO; zz%All HELCO; zz$All MECO
Cc: Lau, Connie
Subject: HECO Executive News

It is with mixed emotion that I share this important announcement with all of you:

Today, it is being announced that Eric Yeaman, HECO's Senior Executive VP and Chief Operating Officer, has been appointed the new President and CEO of Hawaiian Telcom.

The appointment is clearly a testament to Eric's recognized management and leadership skills and the broad experience he can bring to an organization. We've seen these skills demonstrated firsthand through his years at HEI and in the brief time he's been on board with us in his current position, where he hit the ground running to transition into his COO role. While this is an obvious loss for our organization, it is an opportunity of a lifetime for Eric and in the broader sense, a move to help restore local leadership to a critical utility company in our community.

The important strategic work that Eric has been involved in remains a top priority for our company and with the groundwork he has helped put in place be assured that momentum will continue. Eric will transition to Hawaiian Telcom at the end of this month. Because this opportunity arose unexpectedly, plans have not been finalized for Eric's replacement, but we will keep you informed.

In the meantime, please join me in congratulating Eric on this tremendous achievement!

** Please share this email with employees who do not have access to email **

HECO Pre-Employment Testing Program

Continuing:	
1. BAPT (Berger Aptitude for Programming Test) – Sr. Helper	
2. POSS (Plant Operator Selection System) – Power Plant Operators	
3. REID with Service Relations – All BU Implementors	
4. Employee Safety Inventory – All BU Implementors	
5+. Skill Tests (Oral & Written Directions, Typing, etc.)	
From	*To New in 2006*
6. DAT (Differential Aptitude Test) –*Sr. Helper* –*Auto Mechanic* –*Drafters*	6. MASS (Plant Maintenance Selection System) –*Plant Maintenance Helper, Sr. Helper* 7. CAST (Construction & Skilled Trades) –*Sr. Helper, Automotive Mechanic* 8. TECH (Technicians) –*Jr. Customer Planner, Drafters, Communications*
7. GCT (General Clerical Test) –*Acct Svcs. Clerk* –*Mail Clerk* –*Meter Reader*	9. SASS (Support & Administrative Selection System) - *Account Services Clerk, Mail Clerk, Clerk Typists, Meter Readers* 10. Customer Service Representative Test (2008 go-live) - *Customer Service Representatives*

SHRM Information Center

SHRM

WHITE

PAPER

BUILDING SOCIAL AND INTELLECTUAL CAPITAL: HR'S CONTRIBUTION TO ORGANIZATIONAL EFFECTIVENESS

(click here for Spanish version)

By Robert J. Greene, PhD, SPHR, CCP, CBP, GRP

Revised June 2002

Abstract

An organization's social and intellectual capital are increasingly potent sources of competitive advantage. The most effective tools for leveraging social and intellectual capital to produce maximum impact on organizational performance are the management of culture, organizational design, staffing strategy, development strategy, performance management strategy and rewards strategy, all of which do or should fall within the realm of the human resource function. Human resources must take the lead by formulating strategies and designing programs that will produce alignment and cohesiveness and that will encourage the creation, dissemination and application of knowledge to the organization's advantage. By asking for, measuring, recognizing and rewarding behavior that effectively leverages social and intellectual capital, human resources becomes a vital contributor to organizational success.

Part one deals with concepts underlying effective management of social and intellectual capital and part two discusses specific applications of these concepts.

Part One

Introduction

Nations and unions of nations are Balkanizing into new entities, others are changing their names/identities and still others are forming new unions. One of the primary reasons for success or failure of any entity seems to be the existence of social capital that serves as a glue to hold diverse constituencies together (Fukayama). The World Bank definition of social capital that can be applied to countries, societies or organizations is: "norms and social relations imbedded in social structures that enable people to coordinate actions and achieve desired goals." The social capital exists in the relationships, not in the agents themselves; it requires mutual commitment, since if one party withdraws it disappears. Social capital can also be defined in a manner that fits a prevalent definition of organizational culture: "how an organization deals with the problems associated with external adaptation and internal integration" (Schein). Social capital and culture are different, albeit closely related. Culture is the software that enables an entity to create social capital and to apply it in a manner that produces value. Since abundant and appropriate social capital promotes shared values, commitment, collaboration, engagement and loyalty, it sets the stage for a citizen mindset, rather than a free agent mindset. This makes social capital a necessary but not sufficient prerequisite for effectively using human resources (a.k.a. intellectual capital).

In the commercial world, organizations are appearing/ disappearing, changing their names/identities, Balkanizing, combining and forming alliances at an unprecedented rate. Much as with nations, organizations survive and prosper when there is something to align people's beliefs, values, priorities and goals (Cohen and Prusak). There are management theorists proposing the virtual organization as the model for success in today's kind of environment. But many others are uneasy about this "film crew management" approach as a way to build organizational value and sustain it. When all of an organization's assets (its intellectual capital) go home on Friday and are free not to come back on Monday, investment analysts wonder what the organization really possesses. As many organizations see their market value at many times their book value, they struggle to identify ways of effectively managing the intangibles that account for the majority of their value (Lev; Edvinsson). Investment analysts currently base a significant portion of their valuation of organizations on intangible assets or capital that the accountants do not enter into their books. And there is widespread agreement that current accounting rules requiring investments in intangibles (such as R&D and employee training) to be treated as current expenses both discourage these investments and understate the value of organizations (Becker, Huselid and Ulrich; Lev; Edvinsson).

Much of this intangible value of organizations is in the form of intellectual capital. It can be used to gain competitive advantage and many organizations find it is their only sustainable competitive advantage. For it to act as a sustainable advantage, however, an organization's intellectual capital must be of value to customers, be difficult to imitate, be superior to that of competitors, produce the needed products, be capable of being diffused throughout the organization and remain useful in the future (Leonard and Swap). Those suggesting that intellectual capital is the only form of organizational capital that can produce a sustainable competitive advantage point out that the traditional forms of capital (financial, brand, operational and customer) can be duplicated easily by competitors or be bypassed by strategies such as early emulation or being a low cost provider (Sullivan; Steward; Klein).

Effective Management of Intellectual Capital

Effective management of intellectual capital requires that the knowledge critical to organizational success be created/captured, organized/analyzed, disseminated and applied to produce the desired results, thereby enabling the organization to know what it needs to know to remain viable. And organizations must have the learning capacity to expand intellectual capital as required, as well as to use it in a manner that enables external adaptation and internal integration (Argyris and Schon; Chawla; Botkin; Davenport and Prusak; Schein; Neef). The management of intellectual capital appears in the literature most frequently under the heading of "knowledge management." But there is confusion over the definition of knowledge management, since most of the literature is focused on the technology used to transfer information (VonKrogh, Ichijo and Nonaka). A recent McKinsey and Co. global survey of knowledge management practices suggests this is far too narrow a focus (Kluge, Stein and Licht). This article uses a broader interpretation of intellectual capital, encompassing both legally protectable intellectual property and the knowledge, skills and behaviors that can be used to an organization's advantage, but that can also be learned and used by other organizations since they lack legal protection (see Figure 1). Technology will be treated here as an enabler--a necessary but not sufficient prerequisite for the effective management of knowledge. The emphasis will be on human resource management strategies and programs that can effectively leverage intellectual capital. This is not intended to diminish the importance of technology for transmitting information, but only to recognize that having technology does not mean people will utilize it to effectively leverage intellectual capital, it only makes it possible.

The critical challenges associated with effectively managing intellectual capital are:

- Defining what the organization needs to know/be able to do and who needs to know it/do it.
- Determining what the organization does know/can do and who knows it/can do it.
- Identifying "need to know--know" and "need to do--able to do" gaps.
- Formulating a strategy to close these gaps.
- Creating the vision/mission, culture, environment, strategy, structure and human resource strategies/programs that will facilitate effectiveness in the short run and sustain it over the long term through continuous learning.

The appropriate human resource strategies/programs must be in place to encourage people to produce the desired results. The potential contributions of the human resources function to effectively managing intellectual

capital are in the following areas:

1. Defining, evaluating and shaping culture.
2. Designing the organizational structure and defining employee roles.
3. Formulating staffing and development strategies and designing programs.
4. Formulating performance management strategies and designing programs.
5. Formulating rewards strategies and designing programs.

An effective human resource strategy must fit the context within which it will be used, facilitate realizing the mission and meeting the objectives and enable the organization to attract, retain and engage the right people with the right skills and the right motivation (see Figure 2). Although culture and organization design frequently do not fall within the domain assigned the HR function, there are strong arguments that they should. Too many organizations let their culture happen rather than consciously shaping it and continually reassessing it for effectiveness and appropriateness. And rarely is any function responsible for making decisions relative to organizational design, leaving this critical area to people with no training. It is therefore suggested that HR strategies, programs and processes are the most powerful tools to drive effective management of intellectual capital (Leonard; O'Dell and Grayson).

Cultural Definition, Evaluation and Shaping

Effective management of intellectual capital requires a supportive culture. Knowledge is first and foremost cultural and only then technological (Boisot). The culture must be such that knowledge sharing is asked for and rewarded, people are given resources to facilitate it, people are trained in the skills required to do it and the structure, role design and staffing levels enable it to happen (Rogers; Prusak; Ulrich). A key cultural characteristic, whether an organization views its people as costs or as assets, will profoundly impact how committed it will be to invest in ensuring intellectual capital is a high priority and that people are equipped to manage it well.

Performing a cultural assessment is a critical step for an organization towards ensuring that its culture nurtures effective creation, dissemination and application of intellectual capital (Greene, 1995). A culture that facilitates widespread employee involvement is more apt to prompt widespread sharing of knowledge and more apt to instill the view that all employees, customers, suppliers and other constituencies are potential sources of valuable knowledge. And if managers consider the effect of their decisions and actions on overall organizational results, rather than only on their own unit, knowledge is more likely to be shared across units, maximizing its value to the organization. But if the culture encourages silence and conformity to minimize conflict and/or if management believes that decisions should be centralized at the upper levels of the organization, the flow of communication and the creation, dissemination and application of knowledge will be impeded (Morrison and Milliken). Tools such as the Army's After Action Reviews, GE's Work Outs, Sears Town Hall Meetings, Shell's Trade Shows and Monsanto's Town Hall Meetings herald the values of sharing the organization's objectives and pooling knowledge gained by units to the benefit of the overall organization and its workforce.

Although most children in their formative years are taught to share their possessions with others, they have historically then learned other lessons in U.S. schools. This retraining is accomplished by making it clear that it is a competitive world, that it is better to be first in your class than to be last and that the way to gain a competitive advantage over others is to know more. Sharing knowledge is often termed "cheating" and punishment is the typical result. Additionally, the Anglo Saxon cultures place great emphasis on being right and not looking ignorant or uninformed, which discourages people from requesting information they need and keeps them from engaging in true and open dialogue. And the fear of being wrong or of being thought inadequate often impedes the information flow between parties. It is easy to get people to speak about their successes but few will offer in-depth descriptions of the disasters they perpetrated.

An organization's culture can encourage a "share your knowledge for the common good" mindset or it can reinforce the "keep the best of what you have to look better relative to others" approach learned during school years. Organizations that use hierarchical structures and career management principles predicated on competition at the individual level throw a significant cultural hurdle in the path to effective knowledge management. The prevailing business culture in the U.S. is individualistic, especially after the downsizing and reengineering binges of the last decade, which left most people with a "survival of the fittest" mindset (Pfeffer

and Sutton). Interpersonal skills are often not emphasized in training programs, at least not relative to analytical and problem solving skills. Effective communicators are usually thought to be those who can deliver a speech well and who can persuade others to accept their ideas. The celebration of those who are always right and criticism of those found to be wrong makes it hard to convince people to make others as effective as they can be, to the betterment of the overall organization.

This kind of culture can result in managers being reluctant to hire people more capable than they are and can also lead to them controlling the effectiveness of their top subordinates by metering the flow of critical information. Technology using databases and expert systems can increase access to information needed for effectiveness (Zuboff). But if managers control access to the knowledge through the use of hierarchy and rules, they negate the potential knowledge leveraging capabilities of the technology. Another challenge facing many organizations is the existence of a strong "NIH" (not invented here) bias imbedded in the culture. This goes beyond the "we have always done it this way" counter to proposed change. NIH thinking presents a real barrier to having new knowledge and approaches imported from the outside. This mindset can impede honest consideration of best practices discovered through benchmarking and even impede transfer of practices and ideas from other parts of the same organization (Dixon). In an attempt to provide an antidote to this malady, Raychem has instituted an NIH award that goes to those using knowledge from within the organization, and the source of the knowledge receives a certificate saying, "I had a great idea and X is using it" (Leonard and Swap).

Motorola developed a program that delivered rewards and recognition to teams through its Total Customer Satisfaction Contests when they could demonstrate the innovativeness of their approach and how it positively impacted customer satisfaction. Other teams evaluating contributions did so based on how much they themselves could learn and benefit. The organization has changed the focus recently with its Teaming For Excellence program that uses a knowledge management navigator site for teams to share experiences; recognition and rewards for teams are now based on a performance scorecard. IBM increased sales by 20 percent by changing its internal sales force contests, rewarding those who learned the most from customers and who shared it with others, rather than those who increased their own sales the most.

Additional challenges are created when organizations utilize cross-functional and cross-cultural teams to perform critical functions such as product design. Individualistic cultures such as the U.S. or Australia will not be as friendly to knowledge dissemination as will collectivist cultures such as Japan and China (Trompenaars and Hamden-Turner; Greene, 1995). Mixing people from different cultures raises issues concerning the appropriate team structure and culture. Occupational differences (e.g., specialized knowledge, different priorities and processes) also complicate the knowledge transfer process, as do generational differences (Greene, 1999).

Linguistic and cultural differences are obvious impediments to effective interaction when borders are crossed and these differences often offset the advantages of a team-based structure that includes greater creativity, broader perspectives and a wider range of approaches (Adler). Technology can be an enabler but these obstacles just cited must be dealt with in order for these "global relay teams" to be effective (O'Hara-Deveraux and Johanson; Marquardt and Reynolds).

As mentioned earlier, there is generally no position or function charged with defining, evaluating and shaping the organization's culture. Human resources is the most logical function to assume this responsibility, guided and supported by executive management. Defining the culture, assessing its effectiveness in light of the organizational context and formulating strategies for reshaping it naturally fall within the purview of HR. Selecting, developing and rewarding people in a manner that facilitates the creation of the desired culture is the key to getting the job done well and these strategies/programs are shaped by HR. Direction from executive management in the form of a clear vision and articulated values is also needed, but it will be the HR strategies and programs that will set the stage for developing and maintaining an appropriate and effective culture.

Organizational, Workplace and Role Design

Organization structure can be defined as a temporary, continuously evolving response to the organization's needs to adapt to its environment and to integrate its internal processes (Schein). An effective structure in a rapidly changing context can be likened to a client server network approach to information processing. Structures that operate like client server networks enable the organization to perform all work at the most efficient level, to fully utilize agent capabilities, to enable continuous and instantaneous self-organization and to facilitate economic, informational and emotional exchange both within the organization and with the environment. At each level within the network, the goals, roles and relationships of each agent are defined, subject to change when necessitated by changes in the context.

To continue with another analogy borrowed from information technology, organizational units can be viewed as

objects, performing their assigned responsibilities and calling upon other units to supplement their capabilities. Complexity science has pointed out that behavior at any level is emergent; it is not the predictable sum of all of its components, but rather the result of the interactions between all parties (Wheatley). Therefore, the level of connectivity within that network will be determined by the density and the quality of the relationships between the people (Noria and Eccles; Pasternak and Viscio; Dixon; Leonard).

If the network metaphor is applied to organizational design it results in strategies that differ from those produced by the efficiency mindset underlying hierarchical approaches to structure. For example, reengineering and its constant companion downsizing aim at an end state involving no redundancy of knowledge, skills or headcount. As a result, people who need to work together and to integrate their knowledge attempt to do so without sharing and without having any slack time to do it in or official sanction to do it. The 3M culture includes story telling and behavioral modeling that encourages people to do their best to innovate and to work cooperatively with others to expand their capabilities. Relative to its staffing levels and structure, Bill Coyne, head of R&D, says of their rule that allows everyone 15 percent of their time to work on their own interests that "the 15% is meaningless… the number is not as important as the message, which is *that there is slack in the system*. If you have a good idea and the raw nerve to skirt your lab manager's expressed desires, then go for it" (Grundling).

Much knowledge is "tacit" and must be transmitted person-to-person (such as in a master-apprentice type of relationship) because it cannot be rendered explicit by writing it down (Nonaka and Takeuchi). Expert systems have been limited by the extent to which the experts can codify the decision rules and techniques they use to do their work and much of the work today requires exhibiting job-related behaviors that are the result of internalized learning, resulting in heuristics that cannot be expressed directly. Therefore, "slack" is not synonymous with waste, but a necessary condition for transferring tacit knowledge.

Research by Szulanski at INSEAD has identified the chief inhibitors to the flow of knowledge to be: 1) the source and/or the recipient of knowledge do not know what the other knows or needs to know, 2) resources (time, budget) necessary for the transfer are not available, 3) there is a lack of an established relationship and 4) delays are caused by structural rigidity and poor processes. In addition to these factors a lack of mutual trust will inhibit the free flow of knowledge. The inhibitor leading Szulanski's list is the lack of knowledge about who knows/does not know and who needs to know what someone else has to offer. One of the tools that have been used to remedy this defect is a "knowledge yellow pages." A wide range of knowledge types (knows about, knows how, knows why) can be included in an accessible database and individuals/groups possessing the required knowledge can be indexed to a topic list. Indexes can be created and software tools can be utilized to facilitate searches and to make contacting appropriate parties less difficult. An example of the "yellow pages" approach is a fifty year-old utility with a wide variety of technologies, methods and processes. The utility found great value in identifying people who were competent to work with the older, rarely used equipment and systems. When a less experienced staff member needed to know "how this stuff really works," rather than what the operating manuals (when they exist) say, an inquiry could quickly and easily be directed to the appropriate party. In addition to increasing productivity and speed, the recognition associated with being listed as an expert was also found to be a source of significant job satisfaction.

Increasingly organizations are outsourcing functions, using contractors and consultants to supplement their workforce and entering into alliances/ventures with other organizations. The structure used to accomplish work and assign roles to the various players will have a major impact on how effectively work is done. The free flow of knowledge to and from contractors is difficult to achieve, since contractors often view their knowledge as their "product" and sharing that knowledge can create competitors. Organizations are also often hesitant to share their intellectual capital (processes and technology) with outsiders, particularly if it is not possible to protect its value by turning it into intellectual property through patents and copyrights (Stewart; Edvinsson and Malone). Joint ventures therefore pose difficult integration issues, which are often overlooked until the desired results do not materialize and the cause is identified too late in the venturing/contracting process. An inter-organizational example of the "yellow pages" approach is the Fuji-Xerox alliance. Both organizations have committed to identifying where relevant expertise resides within the two entities and to pooling intellectual capital across organizational boundaries.

Obstacles to the free flow of knowledge also exist when temporary and part-time personnel are used. Organizations often do not recognize the benefits of training these people and of informing them fully, particularly when it is felt that they are just passing through or that they have their heads and hearts somewhere else. But if these depictions are indeed true it argues for reconsidering using such personnel to serve customers or to perform important work. But even if their importance is recognized there must also be an economic justification for investing in training temporaries and part-timers, particularly considering today's mobility among skilled people. Organizations relying on knowledge management as a competitive advantage will be more likely to recognize these people as important participants in the workforce, since information will

typically be broadly disseminated and everyone will be viewed as potential contributors of new knowledge and will be required to use knowledge effectively, as long as both the culture and the structure support it.

Organizational entities termed "communities of practice" are increasingly being used to deal with some of the knowledge creation/dissemination challenges just discussed. These are primarily social entities that do not appear on organization charts and are typically voluntary in nature--"shadow units" with no department number or name. Membership consists of a defined knowledge domain, a community that operates within that domain and a shared practice. The purpose of these communities of practice is to promote knowledge, competence and motivation (Wenger). They co-exist with the formal structure but are based on collegial relationships, rather than formal reporting relationships. COPs preserve their identity by adhering to norms and values and rely on social capital that creates a level of trust enabling open sharing. Effective operation requires that authority in any matter follow expertise rather than organizational power/position. Examples of COPs include Hewlett-Packard "learning communities" and Daimler-Chrysler "tech clubs." To effectively nurture these entities organizations must support and encourage them, rather than attempting to manage them.

As with culture, HR must play a central role in creating a structure that facilitates effective leveraging of intellectual capital. The structure of the organization and the design of work roles must be managed with knowledge creation and dissemination in mind. The human resources function is the most logical one to control this activity, particularly if an effective organizational development capability exists within HR. Managers may still make local decisions, but these should be guided by global principles established by those with the knowledge and skill to formulate them (Davis and Botkin; Klein; Myers).

Staffing and Development Strategies/Programs

A workforce capable of developing the required pool of intellectual capital can be built by staffing the organization with the right people and training them to act in a manner conducive to creating, disseminating and applying knowledge. Competencies that support effective intellectual capital management can be identified, defined and used to select personnel. People who "share their toys" can be identified through a number of selection instruments and the interviewing process can incorporate criteria related to knowledge sharing. It is also possible to increase the range of personal approaches to problem solving, through the use of focused staffing criteria. Mixing "left-brained" and "right-brained" people can produce a "whole-brained" workforce. Additionally, diversity relative to points of view, experience and training should be incorporated in staffing strategies, to ensure that sufficiently different viewpoints are considered when the workforce engages in dialogue.

Staffing levels should be evaluated to ensure there is sufficient knowledge overlap between people (horizontally and vertically) and that an appropriate amount of slack resources (time; budget) exist to facilitate knowledge sharing. This runs counter to one of the cultural icons within Anglo-Saxon business culture--the principle of efficiency. The loathing of redundancy or overlap throws an obstacle in the path to knowledge sharing and the absence of overlap in U.S. organizations impedes knowledge flow. Many successful Asian companies find it easier to disseminate and even create the necessary knowledge, even though they might appear to be over-staffed in the eyes of North American management thinkers, because overlap and redundancy of knowledge are viewed as enablers for knowledge transfer, rather than sources of inefficiency (Nonaka and Takeuchi). Employment security is also an issue. Its existence encourages stretching and sharing, while its absence impedes transfer. This notion of security does not translate to a job for life, but it does mean that dramatic improvements in one's productivity and quality of work will result in positive, not negative consequences. If all gains go to shareholders and executives and result in less job security for everyone else, it will be difficult to get employees enthusiastic about initiatives such as re-engineering (a.k.a. downsizing) or total quality management. A frequent consequence of getting "lean" is the loss of crucial institutional memory. A national research laboratory involved in the Manhattan Project found it necessary to bring back people who had taken advantage of early retirement incentives to convey the tacit knowledge that had not been rendered explicit by writing it down in formal operating procedures. It turned out that a lot of the steps appearing only between the lines in the procedure manuals were critical components of processes.

Training programs can develop the interpersonal skills of employees. Behaviors supporting effective intellectual capital creation and sharing can be modeled by the leadership of the organization, encouraging employees to use these interpersonal skills. Federal Express now spends four to five percent of payroll on training/ development, with emphasis on training to create the necessary knowledge, testing for competence and retraining to replace or supplement existing knowledge so it fits the evolving environment. The organization assigns a weight of 12 percent to job knowledge test scores when conducting performance reviews, thereby establishing consequences related to knowing what is needed to be effective. Training personnel in the use of technological tools that facilitate knowledge transfer is a prerequisite for realizing their potential. Allowing longer-service managers and employees to skip the computer/email fad seriously reduces the potential of knowledge networks and also

impedes the integration of work, particularly when process participants are not geographically co-located.

Career management programs that recognize and reward those who do contribute to the effectiveness of others through knowledge sharing can be very effective in motivating behavioral change. Promotions accompanied with clear explanations as to why a promotion occurred can be used to celebrate the value of knowledge sharing and supportive behavior. Writing behavioral competencies into career ladder definitions can communicate to employees what it takes to be successful and can encourage them to exhibit the desired behaviors. If employees think success means looking better than others, rather than making others more effective, they will be likely to behave in a counter-productive, self-serving manner.

Once again, the critical tools fall within the purview of HR. By assuming the responsibility for the end objective of effective intellectual capital management, HR can integrate and align the strategies/programs that will facilitate success.

Performance Management Strategies/Programs

What an organization measures and rewards is likely to happen. Once role specifications and competency models are developed and used to select, place and develop people who are capable of effectively creating and disseminating knowledge the next step is to define performance using criteria that encourage employees to turn capabilities into action. The most commonly used performance criteria are productivity, quality of work and dependability. Although these criteria will promote individual effectiveness, they overlook the contributions of an individual to making others and the unit more effective. Coaches often point out the difficulty of making all-star basketball teams play well together. Inevitably each of the five people on the floor is used to having the ball in their hands one-third to one-half of the time, a mathematical impossibility for an all-star unit. Also, the members were selected for being individual standouts--a questionable selection strategy if interdependent behavior is required.

Increasingly, organizations are adding additional factors to the performance appraisal that measure "contribution to the effectiveness of others" and "contribution to unit/ organizational effectiveness." This is happening even in job-based structures where work teams are not used as a form of organization, recognition that "teamwork" is needed even among relatively independent individual jobholders. The use of such criteria increases the likelihood that knowledge creation/dissemination will occur, since evaluations on these factors will influence the performance appraisal. That also impacts behaviors because the criteria have been formally declared to be important and desirable. As an example, one fifth of the performance evaluation of Ernst and Young consultants is based on the extent to which they have expanded, captured and shared knowledge with colleagues (Neef). When contributions to the effectiveness of others are being measured the use of multi-rater assessment may become desirable. Having the co-workers, subordinates, customers and superiors provide input into performance evaluation can provide a multi-perspective, broader view of how well the employee helps others to be more effective. It also lets the employee know that the views of these parties are valued and that they are considered in the evaluation process.

A final step is to recognize contributions to creating intellectual capital and turning intellectual capital into intellectual property as a dimension of performance. Most organizations underutilize their patents and other forms of intellectual property. There are numerous stories of organizations doing simple reviews of their intellectual property inventories and realizing millions by selling unused patents and reactivating the use of those having application to current or new products. It is rare however for organizations to do assessments of the full range of their intellectual capital, to determine what can be converted into intellectual property. Existing methods and processes often contain technology (e.g., equipment modifications or unique processes) that could be rendered explicit and protected, potentially making them salable or licensable products. To encourage this activity it should be made clear that this is an important value adder and that these contributions will be measured as a part of performance management and that they will be recognized through the rewards programs.

Once again stating the theme of this paper, HR should be capable of taking a leadership role in ensuring the performance management strategies and programs fit the organizational context and contribute to the attainment of its objectives.

Rewards Strategies/Programs

Contributions to creating new knowledge and/or more effectively disseminating and applying existing knowledge can be rewarded if compensation programs are designed appropriately. The most popular reward for performance in U.S. organizations is merit pay, even among the elite Malcolm Baldridge award winners. Merit

pay can potentially be effective in encouraging effective management of intellectual capital if the performance metrics related to making others effective are built into the performance appraisals and if the appraisals impact rewards. However, many merit pay programs are set up as a fixed sum game (e.g., each manager has five percent of payroll to use for salary increases). This has the unfortunate effect of putting individuals in competition with each other, thereby retarding the propensity to share knowledge and to make others effective. After all, why would anyone behave in a manner that made competitors more effective? The use of various forms of "person-focused" pay can encourage acquisition of skill and knowledge without putting employees in competition with each other and the prevalence of these programs has increased significantly for occupations that fit this approach (Greene, 1993).

One pronounced trend today is the increased use of individual, group and organization-wide variable pay plans (Greene, 1997). Funds for variable pay tend to flex based on results, rather than being a fixed budgetary item. That means that collective success may create a "we won" attitude, since the funds available for rewards are larger and everyone can share in success. Promoting a sense of shared destiny is typically one of the main objectives of profit-sharing, employee stock ownership and group incentive plans. These plans also increase alignment between individuals and groups, by creating shared performance criteria, standards and measures, and by tying the size of reward funds available to realized performance.

It has been argued that a weakness of aggregated measures is that they do not provide a line of sight between what an individual does and what the eventual outcomes are at the group/organization-wide level. But organizations have successfully linked performance measures at all levels together to ensure they are integrated (Stack). Individual merit pay has not been made obsolete by incentive programs; instead, merit-based base pay and variable pay are being used in conjunction with each other to elicit multiple behaviors through a balance between individual success and group/organizational success measures.

Recognition programs can also provide a source of valued rewards. If having a reputation of being an innovator, a mentor or a contributor to organizational effectiveness brings honor and prestige to the person there is an incentive to be viewed in this manner. Money is usually not expected for all forms of contributions, such as making others more effective, and the satisfaction produced by sincere recognition and thanks can be even more potent.

Employee ownership programs seem to offer the ultimate incentive to create, disseminate and apply knowledge effectively, particularly as knowledge increasingly is becoming the key to sustained competitive advantage and increased organizational value. Stock-based programs have the advantage of aligning the economic interests of all the constituencies within the organization. Assuming that people share equally or proportionately in total shareholder return (price appreciation plus dividends) there is a common interest in creating the performance that will increase that return. Broad eligibility for equity-based programs does have its dangers, since many employees do not understand the equity markets or the implications of stock ownership.

But most organizations willing to invest in at least the minimum amount of education required have found that these obstacles can be overcome. And stock programs do not require the organization to fund employee rewards out of operating earnings. The equity markets provide that wealth through stock price appreciation.

The turbulent nature of the equity markets recently mandates that organizations honestly portray what stock ownership is apt to mean to employees in economic terms. Many of the high-tech start-ups have expected employees to forsake the security of competitive salaries and benefits for the prospect of wealth through initial public offerings or stock price appreciation. Some of them have found that when success was not forthcoming in the short run the defections by key players left the organization without the required skills. Others have found that employees did not see the connection between performing in a manner that leads to sustainable success and equity market price levels, thereby causing them to concentrate on short-term results. Despite the limitations, the message that everyone is in the game together makes stock-based programs a potentially powerful tool for facilitating cooperative behavior.

Summary Of Social/Intellectual Capital Management Concepts

The concepts presented thus far provide a model for effectively managing social and intellectual capital. Not "managing" in a top-down, control-oriented manner, but rather building and leveraging these forms of human capital in a way that increases organizational effectiveness in the short term and its viability in the future.

Part Two of this paper addresses some of the organizational initiatives that have been most commonly employed of late, as well as some of the challenges created by environmental and organizational change. In each case the benefits of effectively managing social and intellectual capital are discussed as they apply to the specific

initiative/challenge.

Part Two

Applications Of These Concepts

Organizations have faced continuous, rapid environmental change and to remain viable they have merged/acquired, formed alliances, digitized customer relationships, responded to economic downturns and globalized. Each of these initiatives creates new challenges associated with effectively managing the organization's social and intellectual capital.

Mergers & Acquisitions

The expanded role for human resources described in this paper can help organizations cope with the current blizzard of activity in mergers and acquisitions. Given the frequency with which these organizational "blends" fail to last and/or meet their objectives, increasing the success rate will have a major impact on the effectiveness of the organizations pursuing them.

The most significant obstacles to successful M&As directly relate to social and intellectual capital issues, according to a 2001 survey conducted by Towers Perrin and the SHRM Foundation. These obstacles are: loss of productivity, incompatible cultures, loss of key talent, clash of management styles, the inability to manage change, the inability to sustain financial performance and the failure to ensure the objectives and synergies sought were well understood by all parties. It is evident that most of these obstacles can be related to culture and to human resource management, making social and intellectual capital a critical concern in mergers and acquisitions.

The extent to which cultural and human resource management issues will be encountered should certainly be determined during the pre-deal and due diligence phases of mergers and acquisitions. However, the TP/SHRM Foundation study found that HR was involved very little or not at all in a majority of the M&As studied until the final stages. What is striking about the study results is that HR was involved in these early stages twice as often in the successful M&As than in the unsuccessful ones.

By assigning a leadership role in cultural shaping, organizational design and the components of HR strategy (staffing, development, performance management and rewards) the HR function can ensure that it will be involved from the inception of these initiatives, thereby increasing the probability of success by avoiding or managing the common obstacles to success.

Alliances

Many organizations successful in creating new knowledge derive little economic value from their innovations. Xerox PARC invented but did not capitalize on several breakthrough technologies. Other organizations such as Dow have carefully managed knowledge and processes, turning it into intellectual property where possible, thereby increasing the opportunities to benefit commercially.

For organizations that can create knowledge, turn it into intellectual property, create a saleable product and take it to market directly, alliances typically are not required. In an increasingly complex environment, however, there is a need for complementary knowledge and/or capabilities not available within a single organization. It is here that alliances can help an organization exploit their knowledge. But much as with mergers and acquisitions, creating alliances requires more than finding what seems to be good product/customer/technology synergism.

Culture can be a major challenge, just as it is within a single organization when cross-functional and cross-business unit cooperation is the key to success. If people from different parts of the world and from different cultural heritages manage alliance partners, the challenge to find an alliance culture that will be effective is magnified further. Additionally, the human resource strategies and processes must not motivate people to behave in ways that reduce the effectiveness of the alliance. For example, if individual, group and organizational incentive plans reward profit maximization, each party will be inclined to fight for a larger share of the revenues realized by the venture. Unless there is also an incentive to cooperate with alliance partners to maximize the aggregated performance competitive and self-serving behavior is likely.

Digitizing Customer Relationships

The explosion of communication technology has precipitated a tsunami of service digitization. Electronic airline tickets and reservations are more or less accepted by many, but for those willing to wait out a recorded voice plea to use the airline website there is still the prospect of a real person at the end. Other organizations have designed entirely electronic interfaces with customers, denying the customer any practical access to a member of the organization. As the service strategies evolve there is a critical need for each organization to decide what their customer interfaces should look like and it takes an understanding of the customer to make intelligent decisions. "Customer capital" was mentioned in the introduction, and an organization that has high quality relationships with the customers it needs to succeed will benefit from them. But customer loyalty is fragile and inappropriately digitizing contacts with the customer, even partially, could quickly erode their inclination to remain with the organization.

People must make the decisions about the nature of the interface with the customer. To make good decisions they must understand the customer's needs/priorities, the organization's value proposition to the customer and the culture, strategy and structure of the organization. They must also use judgment to determine if digitizing service will turn the organization's offerings into a commodity, rather than being viewed as a unique or at least differentiated product. Use of an ISO9000 type of model to fashion service has been a failure, mechanizing service and depersonalizing the organization in the eyes of the customer.

Even the appropriate customer interface has to be well executed and this requires the right people doing the right things in the right way. Employee attitude impacts customer satisfaction and the existence of the appropriate culture for building social capital will have a positive effect on attitudes and satisfaction levels of employees. HR strategy is the key to creating the right setting and to selecting, developing and rewarding people in the right way.

Organizational Responses To Economic Downturns

Drops in revenue associated with macroeconomic downturns have historically prompted short-term cost reductions as the first response. Since most U.S. organizations rely on the equity markets for a significant portion of their financial capital, the impatience of institutional investors prompts such a response. And since people costs have traditionally been virtually all fixed (except for executives and direct sales personnel), the first step is often headcount reduction. If social and intellectual capital are critical to organizational success and future viability, this expendable-unit view of employees is dysfunctional. By continuously reminding executive management of the criticality of social and intellectual capital some of the instant layoffs can perhaps be reconsidered, balancing the supposed benefits with the eventual costs. By building variable compensation into the total compensation package, employee interests can be better aligned with those of the organization.

Broad-based ownership programs are an example of a compensation program that communicates "we are in this together." However, strategists must also ensure that one form of compensation is not overly prominent in the total package. Many firms that relied heavily on stock options, thinking them to be a free lunch (wealth creation without charging earnings), recently learned that they also can have a dark side when equity markets correct downward. On the other hand, using programs that create shared ownership can result in employee willingness to ride out the troughs, knowing they will participate fully during the peaks.

Economic education and the message that everyone shares proportionately in the same rewards can help the organization create social capital, thereby enabling it to effectively leverage its intellectual capital.

Globalizing

Deploying an organization's products, services and capabilities across the globe magnifies the challenges associated with building and leveraging social and intellectual capital. The cultural and structural challenges associated with merging people who have been socialized and educated in dramatically different ways are even more monumental than those faced during mergers and acquisitions. Many organizations using cross-cultural/geographical teams have experienced the barriers presented by different languages, beliefs, values and norms. Organizations who compete based on innovation have found that their primary need is to effectively discover new knowledge in all parts of the world and then to integrate it across the organization, spanning large cultural and geographic differences--"learning from the world" as a core capability (Doz, Santos and Williamson). Silicon Valley is still innovating, but so are Cambridge, Bangalore, Tel Aviv, Taipei, Singapore and Tokyo, and to win it is necessary to gather, merge and apply that knowledge in an intensely competitive environment.

Staffing the organization with the right people, developing them appropriately, managing their performance effectively and rewarding them adequately are mandatory. Human resources can contribute greatly to the likelihood of success by developing the strategies and programs required to produce a workforce that can make

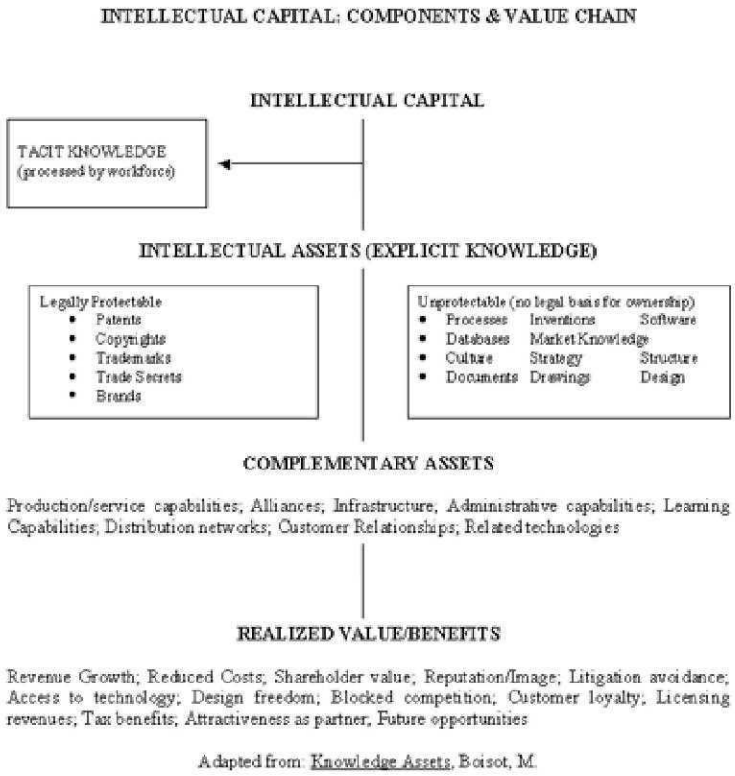
globalization a success.

Conclusion

All of the tools that have been discussed in part one fall or should fall within the realm of human resources management. Although much of the responsibility for managing human resources is dispersed throughout the organization, the human resources function has an opportunity to assume leadership in the integration and alignment of strategies/programs that impact on building and managing social and intellectual capital. As discussed in part two cultural shaping and organizational design become critically important during merger and acquisition activity, as well as during other major organizational change initiatives, which illustrates how important culture and structure are in making them work. It is obvious someone needs to step up and lead in these areas and the argument has been that HR should be the designated function.

It takes an entire organization to raise an idea. Creating knowledge is easier in a culture that communicates everyone is important and capable of contributing. Disseminating knowledge is facilitated when organizational structure and role design provide the necessary resources and the mechanisms for sharing knowledge. Disseminating and applying knowledge becomes a priority for employees when they are selected, trained and rewarded for doing so. Effectively managing intellectual capital means more than creating an intranet site and asking employees to post ideas and to learn what they need to know. Technology can be an enabler, but for it to improve knowledge dissemination, employees must both want and know how to share the knowledge they have. The primary mechanisms for providing the impetus lie within the organization's human resources strategies and programs. If these strategies and programs serve the organization well, human resources becomes a major contributor to a critical source of sustainable competitive advantage.

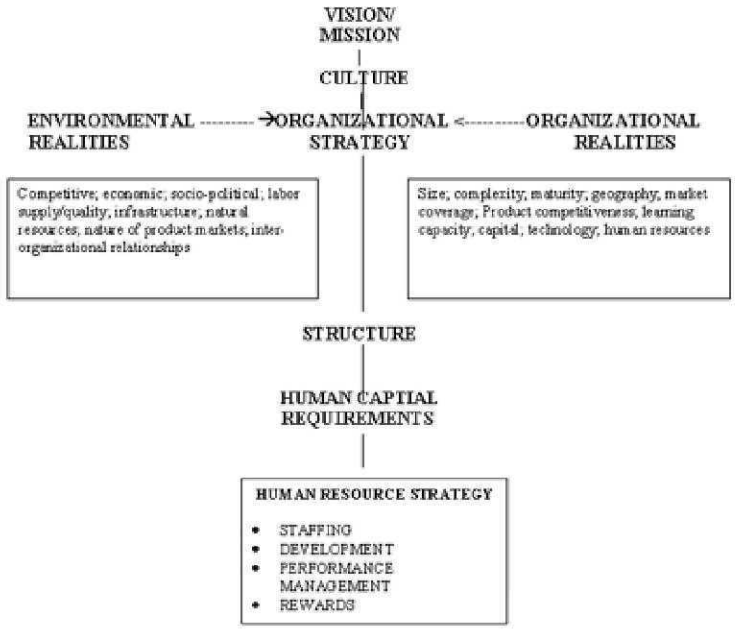
FIGURE 1



Adapted from: Knowledge Assets, Boisot, M.

FIGURE 2

ALIGNING HUMAN RESOURCE STRATEGY WITH ORGANIZATIONAL CONTEXT



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HECO T-16
DOCKET NO. 2008-0083

TESTIMONY OF
LON K. OKADA

MANAGER
CORPORATE TAXES
HAWAIIAN ELECTRIC INDUSTRIES, INC.

Subject: Taxes Other Than Income Taxes
Income Tax Expense
Unamortized Net SFAS 109 Regulatory Asset
Unamortized Investment Tax Credits
Accumulated Deferred Income Taxes
Recent Tax Developments

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Lon K. Okada and my business address is 900 Richards Street, Honolulu, Hawaii.

Q. By whom are you employed and in what capacity?

A. I am employed by Hawaiian Electric Industries, Inc. ("HEI") and my title is Manager of Corporate Taxes. HECO-1600 provides my educational background and work experience.

Q. What are your areas of responsibility in this proceeding?

A. My testimony will cover the following areas for the 2009 test year for Hawaiian Electric Company, Inc. ("HECO" or "Company"):

1) Taxes Other Than Income Taxes,
2) Income Tax Expense,
3) Unamortized Net SFAS 109 Regulatory Asset,
4) Unamortized Investment Tax Credits,
5) Accumulated Deferred Income Taxes, and
6) Recent Tax Developments.

Q. Please explain the terms "under present rates", "under current effective rates" and "under proposed rates" as used in this testimony.

A. Some of the test year estimates covered in this testimony, such as Taxes Other than Income Taxes, are affected by rates charged by HECO to its ratepayers. For these estimates, test year amounts are provided based on rates approved by the

Commission in HECO's test year 2005 rate case (Docket No. 2004-0113) ("present rates"), based on HECO's 2005 rate case rates plus the surcharges for the interim rate increase that the Commission approved in HECO's 2007 test year rate case (Docket No. 2006-0386) ("current effective rates"), and based on rates proposed by the Company in this instant docket ("proposed rates").

Q. Please describe the three scenarios in the Company's proposed rates.

A. The three scenarios are based on different treatments of the capital additions and operations and maintenance ("O&M") expenses associated with the Company's Campbell Industrial Park Generation Station and Transmission Project ("CIP CT-1"): 1) base case, 2) interim increase, and (3) CIP CT-1 Step. The rationale for these three proposed scenarios is discussed in Mr. Robert Alm's testimony in HECO T-1 and further discussed by Mr. William Bonnet in HECO T-23.

Q. Please describe the base case.

A. The base case includes one-half of the capital additions and five months (August to December) of test year 2009's O&M expenses associated with CIP CT-1.

Q. Please describe the interim increase.

A. The interim increase does not include any of the capital additions or O&M expenses associated with CIP CT-1. This is intended to be the interim increase, while the CIP CT-1 Step is being reviewed.

Q. Please describe the CIP CT-1 Step.

A. The CIP CT-1 Step includes all of the capital additions and annualized test year 2009 O&M expenses for CIP CT-1.

1 TAXES OTHER THAN INCOME TAXES

2 Q. What are the specific taxes included in "Taxes Other than Income Taxes"?

3 A. The following six taxes or fees are included in this category. The first three are
4 related to payroll. The last three are related to utility revenue.

5 1) Federal Insurance Contribution Act and Medicare ("FICA/Medicare") taxes,
6 2) Federal Unemployment ("FUTA") tax,
7 3) State Unemployment ("SUTA") tax,
8 4) State Public Service Company ("PSC") tax,
9 5) State Public Utility ("PUC") fee, and
10 6) County Franchise Royalty ("Franchise") tax.

11 Q. What are HECO's test year estimates for Taxes Other than Income Taxes?

12 A. The estimated amounts included in HECO's 2009 test year operating expenses as
13 "Taxes Other than Income Taxes" are shown in HECO-1601, pages 1 and 2. For
14 the 2009 test year estimates, this amount is: $166,100,000 under present rates,
15 $172,965,000 under current effective rates, $180,526,000 under the base case,
16 $179,408,000 under the interim increase, and $181,621,000 under the CIP
17 CT-1 Step.

18 1) FICA/Medicare Tax

19 Q. What is the 2009 test year FICA/Medicare tax expense?

20 A. The Company's 2009 test year FICA/Medicare tax expense is $7,267,000 under
21 the base case, $7,226,000 under the interim increase and $7,313,000 under the
22 CIP CT-1 Step. See HECO-WP-1601, page 2.

Q. How is this amount determined?

A. For each of these scenarios, the test year 2009 FICA/Medicare tax expense includes two elements, the FICA portion and the Medicare portion. Both are based on taxable wages. The FICA portion has an estimated per employee maximum taxable wage base of $106,500 at a rate of 6.2%. The Medicare portion is based on a rate of 1.45% with no wage base limitation. The test year estimate of FICA/Medicare taxes was obtained by applying the effective tax rates actually experienced by HECO for each pay period in 2007 to the 2009 test year estimates of gross pay by pay period. The tax rates trend downward as the year progresses as employees reach the FICA maximum wage base. See HECO-WP-1601, page 3 for the calculation of the FICA/Medicare taxes.

Q. How is the total FICA/Medicare tax allocated to operations, capital projects and billable projects?

A. The total FICA/Medicare tax is calculated and then allocated among operations, capital projects and billable projects based on the estimated division of labor charges to these three categories. See HECO-WP-1601, page 2. The amount allocated to operating expenses is included in Taxes Other than Income Taxes.

The amount allocated to capital projects represents charges to construction work in progress that eventually are booked to plant in service. The cost of these payroll taxes is recovered through depreciation of plant in service. The amount allocated to billable projects is recovered through outside billings to third parties with no net cost or benefit to the Company.

Q. Why is this allocation methodology reasonable?

A. As previously explained, total FICA/Medicare tax is equal to the applicable tax rate times test year wages. These wages are essentially equivalent to total labor charges. Therefore, allocating FICA/Medicare tax charges according to where labor is charged is a reasonable method of allocation. This methodology was approved by the Commission in Decision and Order No. ("D&O") 24171 issued on May 1, 2008 in Docket No. 04-0113 for the HECO 2005 test year and is consistent with the 2007 test year methodology used in Docket No. 2006-0386.

2) FUTA Tax

Q. What is the 2009 test year FUTA tax expense?

A. The Company's FUTA tax expense for the 2009 test year is $66,000 as shown on HECO-1601.

Q. How is this amount determined?

A. This amount is based on a taxable wage base of $7,000 per employee and a net tax rate of 0.8% in accordance with Internal Revenue Code ("IRC") § 3301 and § 3302. The allocation of this tax cost between operations, capital, and billable projects is identical to the methodology used for the FICA/Medicare tax explained above. This methodology was used by HECO to derive the FUTA tax test year estimates in Docket No. 04-0113 (HECO's 2005 test year rate case) that are embedded in the test year revenue requirements that the Commission approved in its final D&O 24171. In its 2007 test year rate case, Docket No. 2006-0386, HECO used the same methodology to derive its FUTA tax test year estimates,

which were included in the revenue requirements to determine the interim rate increase approved by the Commission in Interim D&O 23749.

3) SUTA Tax

Q. What is the 2009 test year SUTA tax expense?

A. The Company's SUTA tax expense for the 2009 test year is estimated to be $0 as shown on HECO-1601. The Company's test year estimate is based on a rate of 0.0% and a wage base of $13,000. The rate and taxable base are determined annually by the State of Hawaii Department of Labor and Industrial Relations, and the rate is based on a ratio determined by the Company's latest three-year average taxable payroll and accumulated reserve.

Q. How did the Company estimate the 2009 test year wage base and tax rate?

A. The test year base of $13,000 is the result of a recent law change (2007 Act 110; HB 1500 HD2 SD2) temporarily reducing the SUTA wage base for all employers to $13,000 for the years 2008 through 2010. The Company estimated that the 2009 rate would be identical to the 2008 approved rate of 0.0%.

4) PSC Tax

Q. What is the 2009 test year PSC tax expense?

A. The PSC tax expense for the 2009 test year is: $105,233,000 under present rates, $109,781,000 under current effective rates, $114,791,000, under the base case, $114,078,000 under the interim increase, and $115,486,000 under the CIP CT-1 Step. See HECO-1601, pages 1 and 2.

Q. How is the PSC tax determined?

A. The tax is imposed on the gross utility revenues of the Company at a base rate of 5.885% in accordance with Hawaii Revised Statutes ("HRS") § 239-5. The tax rate increases by an incremental percentage if the ratio of PSC net income to PSC gross taxable revenue exceeds 15%. However, in recent years, the Company's ratio has been below the 15% threshold. The test year's ratio will also be less than 15% based on the projected PSC net income to PSC gross taxable revenue ratio. Accordingly, the Company has applied the 5.885% minimum rate in calculating its 2009 test year PSC tax expense for all the scenarios. HRS § 239-5 also provides that the tax in excess of the tax at 4% will be paid to the county in which the Company generates its taxable revenue. In this case, the excess calculated at the rate of 1.885% will be the portion payable to the City and County of Honolulu. HECO has consistently used the 5.885% rate to calculate test year PSC tax expense in its recent rate cases.

5) PUC Fee

Q. What is the 2009 test year PUC fee expense?

A. The 2009 test year PUC fee expense is: $8,941,000 under present rates, $9,327,000 under current effective rates, $9,753,000 under the base case, $9,692,000 under the interim increase, and $9,812,000 under the CIP CT-1 Step. See HECO-1601, pages 1 and 2.

Q. How is the PUC fee determined?

A. The fee is determined by multiplying gross utility revenues by a statutory semiannual rate of 0.25%, or 0.5% annually as set forth in HRS § 269-30(b).

6) Franchise Tax

Q. What is the 2009 test year Franchise tax expense?

A. The 2009 test year Franchise tax expense is: $44,593,000 under present rates, $46,524,000 under current effective rates, $48,649,000 under the base case, $48,346,000 under the interim increase, and $48,944,000 under the CIP CT-1 Step. See HECO-1601, pages 1 and 2.

Q. How is the Franchise tax determined?

A. The Franchise tax is computed by multiplying gross receipts from the sale of electricity by a rate of 2.5% in accordance with HECO's franchise and HRS § 240-1.

INCOME TAX EXPENSE

Q. What is the 2009 test year income tax expense?

A. The 2009 test year income tax expense is: ($4,751,000) under present rates, $22,648,000 under current effective rates, $52,829,000 under the base case, $49,989,000 under the interim increase, and $55,659,000 under the CIP CT-1 Step. See HECO-1602, pages 1 and 2. All calculations of income taxes use a composite rate of 38.9097744%. This rate assumes the top marginal Federal income tax rate of 35% and a State income tax rate of 6.4%. This combined rate was the result of the enactment of the Revenue Reconciliation Act of 1993, which

increased the Federal rate from 34% to 35%. The calculations are shown on HECO-WP-1602, page 1.

Q. What method did HECO use to compute the test year income tax expense?

A. HECO calculated the test year income tax expense based on the "short form" method that has consistently been used in previous HECO rate cases. The Commission has consistently approved test year revenue requirements in previous rate cases, in which this method was used to compute income tax expense, including HECO's last final D&O 24171 issued on May 1, 2008 in Docket No. 04-0113.

<u>"Short Form" Income Tax Methodology</u>

Q. What is the "short form" method of calculating income tax expense?

A. The "short form" method is used for ratemaking purposes and calculates the total income tax expense in one step. It does not calculate the current and deferred components of income tax expense separately.

Q. Why is the "short form" method used?

A. This method simplifies the calculation of income tax expense and was used as the income tax calculation methodology for ratemaking purposes in recent rate case decisions for HECO, HELCO and MECO.

Q. How does the "short form" method simplify the calculation of income tax expense?

A. The "short form" method simplifies the calculation of income tax expense by using net operating income before income taxes, with certain adjustments which

are explained below. This adjusted net operating income is the taxable income for ratemaking purposes.

Taxable income for ratemaking purposes is multiplied by the composite Federal/State income tax rate of 38.9097744%. This resulting amount is the income tax expense used in deriving net operating income for ratemaking purposes.

Adjustments to Derive Taxable Income for Ratemaking Purposes

Q. Please explain the calculation of net operating income before income taxes?

A. Net operating income before income taxes is equal to operating revenues less O&M expenses, depreciation expense, amortization of State capital goods credit ("State ITC"), taxes other than income taxes, and interest expense on customer deposits.

Q. What types of adjustments are made to net operating income before income taxes to derive test year taxable income for ratemaking purposes?

A. There are two categories of adjustments:

1) Interest expense related to operations, and
2) Permanent book/tax differences.

Interest Expense Related to Operations

Q. Why does interest expense related to operations reduce taxable income for the calculation of income taxes?

A. For ratemaking purposes, interest expense related to operations is recovered in rates as a component of the allowed rate of return on rate base (specifically, the

debt rate embedded in the weighted cost of capital) which is expressed on a pretax basis. The interest component, however, is tax deductible and must therefore be included in the calculation of income tax expense in order to account for the tax benefit related to the deductible interest.

Q. What is the 2009 test year interest expense?

A. The 2009 test year interest expense is $31,837,000 under the base case, $30,062,000 under the interim increase, and $33,637,000 under the CIP CT-1 Step, as shown on HECO-1602, pages 1 and 2.

Q. How is this interest expense calculated?

A. The 2009 test year interest expense for each scenario is calculated based on the interest synchronization methodology approved by the Commission in D&O 24171 (May 1, 2008) in Docket No. 04-0113 in determining HECO's revenue requirements in that docket.

This method attempts to match the interest deduction in calculating the income tax expense to HECO's rate base and cost of debt for the test year. The interest deduction is derived by applying HECO's estimated weighted cost of debt to its estimated rate base at proposed rates for each scenario as shown on HECO-WP-1602, page 2.

<u>Permanent Book/Tax Differences</u>

Q. What are "permanent book/tax differences"?

A. Permanent book/tax differences are items that are recognized in the calculation of regulatory and book net income that will never be recognized in taxable income or vice versa.

Q. What is the total amount of the permanent book/tax differences accounted for in 2009 test year?

A. For the 2009 test year, the permanent book/tax difference totaled $78,000 as shown on HECO-WP-1602, page 3.

Q. What permanent book/tax differences are reflected in determining HECO's 2009 test year income tax expense?

A. For the 2009 test year, the only permanent book/tax difference relates to meals and entertainment expenses. Such amounts are reasonable costs of doing business. However, only 50% of these expenses are deductible for tax purposes and recognized in the calculation of taxable income. This is consistent with HECO's determination of income taxes in prior rate cases, including Docket Nos. 2006-0386 and 04-0113. See HECO WP-1602, page 3, for the calculation of the meals and entertainment disallowance.

Adjustments to Income Tax Expense

Q. Why are adjustments to income tax expense required?

A. HECO adjusts income tax expense when a deduction is applicable to the Federal tax calculation only and not the State. This methodology is necessary because the tax calculation in the revenue requirement model automatically applies a Federal and State composite tax rate to taxable income. The special treatment of Federal

only deductions ensures that income tax expense for ratemaking purposes is not overstated by the State effect.

Domestic Production Activities Deduction

Q. What is the domestic production activities deduction?

A. IRC § 199 was enacted under the American Jobs Creation Act of 2004 and provides tax relief, in the form of the domestic production activities deduction ("DPAD"), for domestic manufacturers. This deduction is calculated as a percentage of income from qualified activities. Eligible taxpayers may claim a 6% deduction from 2007 through 2009. The full 9% deduction is available in 2010 and thereafter. Hawaii has not adopted this Federal DPAD deduction for Hawaii income tax purposes.

Q. How does DPAD apply to HECO?

A. One of those qualified activities is the production of electricity. As an integrated producer of electricity, HECO generates and delivers electricity to customers. IRC § 199 and its related regulations specify that only the production of electricity is an eligible activity, and income from the transmission or distribution of electricity will not qualify. Consequently, HECO is entitled to take this DPAD deduction as a percentage of income attributable only to the generation of electricity.

Q. How does the Company determine this income and segregate it from the income attributable to the Company's other activities?

A. The Treasury regulations state that an integrated producer, such as HECO, that produces and delivers electricity, must allocate its gross receipts between 1) production, which qualifies as domestic production gross receipts ("DPGR"), and 2) distribution and transmission, which do not qualify as DPGR. Any "reasonable method" that is satisfactory to the IRS may be used, based on the facts and circumstances. HECO allocates the gross receipts based on the latest cost of service study performed for ratemaking purposes. The Treasury regulations further provide that cost of goods sold must be allocated specifically to the qualified gross receipts and all other indirect costs should be allocated or apportioned using the guidelines set forth in IRC § 861. Based on this guidance, indirect costs are allocated based on the DPGR as a percentage of total gross receipts, and interest expense is allocated based on the tax basis of generation assets relative to the tax basis of all assets.

Q. What is the Company's estimate of the impact of DPAD on income tax expense?

A. The DPAD deduction reduces income tax expense by $1,028,000 under the base case, $908,000 under the interim increase, and $1,182,000 under the CIP CT-1 Step. See HECO-WP-1602, pages 4 - 9.

<u>Preferred Stock Dividend Deduction</u>

Q. Why does the Company adjust income tax expense for preferred stock dividends?

A. IRC § 247 allows a deduction for dividends paid on certain preferred stock of public utilities issued before October 1, 1942 or preferred stock issued after such date if issued to refund or replace the previously qualified preferred stock.

HECO preferred stock series C and I qualify for this deduction in the amount of $66,000. Since this Federal rule does not apply for Hawaii income tax purposes, the Federal tax effect of $23,000 serves to reduce income tax expense. See HECO-WP-1602, page 10.

Accounting for the State Capital Goods Excise Tax Credit

Q. What is the 2009 test year amortization of State ITC?

A. The 2009 test year amortization of the State ITC is $1,462,000. See HECO-1604.

Q. What is the State ITC?

A. The State ITC was enacted in 1987 under HRS § 235-110.7 and was designed to promote capital investment and to mirror the qualification rules of the old Federal investment tax credit ("ITC"). The four percent credit applies to qualifying equipment purchased and placed into service by businesses in Hawaii.

For book and ratemaking purposes, the credit is deferred in the year earned and subsequently amortized over the estimated useful life of the associated asset as was done with the Federal ITC. The amortization on new additions begins when the book depreciation commences on those additions.

Q. How is the 2009 test year amortization of State ITC presented?

A. Consistent with Docket Nos. 2006-0386 and 04-0113, State ITC is presented as a pretax amortization which increases operating income for ratemaking purposes. The Federal and State income tax expense related to the State ITC is incorporated in the income tax calculation for ratemaking purposes. This presentation is used

since it is consistent with the financial presentation under SFAS 109, which favors a "gross of tax" presentation.

Accounting for Federal Investment Tax Credit

Q. What is the 2009 test year amortization of Federal ITC?

A. The 2009 test year amortization of Federal ITC ("ITC") is $644,000. See HECO-1603. For ratemaking purposes, the credits earned and taken in prior years' income tax returns are amortized over 30 years, which is the approximate composite useful life of the assets giving rise to the credits. The amortization of Federal ITC (formerly included as an adjustment to income tax expense prior to SFAS 109) is now included as an adjustment in determining depreciation expense. See HECO-1408.

Q. What is the 2009 test year amortization of the regulatory liability related to Federal ITC?

A. The 2009 test year amortization of the regulatory liability related to Federal ITC is $410,000. See HECO-WP-1606.

Q. What is the relationship between Federal ITC and this regulatory liability?

A, As mandated by SFAS 109, Accounting for Income Taxes, the regulatory liability represents the "gross-up" for the tax effect of the ITC amortization as well as the tax on tax. The amortization of the regulatory liability (credit to depreciation expense) has no impact on revenue requirements or net income because this amortization is offset by a corresponding increase (debit) to deferred income tax

expense. The regulatory liability is amortized over the same period as the related Federal ITC.

Q. How is the amortization of Federal ITC treated?

A. Under SFAS 109, the amortization of Federal ITC is considered a temporary difference on which a deferred tax must be provided. A regulatory liability is established as the equal and offsetting credit to the deferred income tax asset. This is an artificial creation of SFAS 109 since Federal ITC never entered into the computation of taxable income for Federal income tax return purposes. Federal ITC was a credit (as opposed to a deduction) that reduced the calculated income tax liability, dollar for dollar.

Consequently, the amortization of this regulatory liability increases net operating income by the identical amount of income tax expense calculated on the combined amortization of ITC and of the related regulatory liability. The amortization of the regulatory liability and the additional income tax expense are equal and offsetting, resulting in the same revenue requirements impact of Federal ITC before SFAS 109. In the 2009 test year, the debit to the regulatory liability of $410,000 offsets the credit to the Federal ITC deferred tax asset of $410,000. These amounts can be verified by taking the change in the year-end balances of the regulatory liability and the Federal ITC deferred tax asset. See HECO-1607.

UNAMORTIZED NET SFAS 109 REGULATORY ASSET

Q. What is the 2009 test year average net unamortized SFAS 109 regulatory asset?

A. The 2009 test year average unamortized net SFAS 109 regulatory asset is $61,310,000 as shown on HECO-1606, page 2. This represents the "gross up" of taxes required under SFAS 109. The equal and offsetting accumulated deferred income tax liabilities are provided in HECO-1607.

Q. How was the 2009 test year average net unamortized SFAS 109 regulatory asset calculated?

A. The Company calculated this amount by taking the average of the SFAS 109 regulatory asset at the beginning and end of the test year. The balance at the beginning of the test year was derived by utilizing the recorded balance as of December 31, 2007 and adding the 2008 estimate of the gross up of Allowance for Funds Used During Construction ("AFUDC") equity incurred and subtracting the 2008 estimated amortization of the net SFAS 109 regulatory asset. The balance at the end of the test year was similarly derived by adjusting the December 31, 2008 estimated balance for the 2009 estimates for the AFUDC gross up and amortizations. See HECO-1606, page 2.

<u>Excess Deferred Income Taxes</u>

Q. How does the Company's adoption of SFAS 109 alter the presentation of excess deferred income taxes?

A. SFAS 109 requires that deferred tax liabilities and assets be established to reflect changes in income tax rates. Consequently, the income tax rate reduction enacted by the 1986 Tax Reform Act ("TRA") required an adjustment to the Company's deferred income tax balance as of January 1, 1993. Consistent with SFAS 109's

1 focus on the balance sheet, the portion of the deferred tax balance (established
2 prior to 1987 at higher rates) in excess of that which is required to satisfy future
3 tax liabilities at the 1986 TRA 34% rate represents excess deferred taxes. This
4 excess was carved out and classified as a regulatory liability.
5 In addition, the amount carved out as a regulatory liability was grossed up to
6 reflect the fact that the amortization of this regulatory liability represents current
7 and future revenue reductions which have a related tax effect. Mechanically, this
8 is accomplished by computing the tax effect of the regulatory liability plus the tax
9 thereon (i.e., tax on tax). This "gross up" amount serves to increase the regulatory
10 liability with an equal and offsetting debit to accumulated deferred income tax
11 liability.
12 Q. How does the SFAS 109 book treatment affect the ratemaking presentation of
13 excess deferred income taxes?
14 A. Because the future financial statement impact of the excess deferred taxes is now
15 reflected in the resulting regulatory liability, the reduction of test year income tax
16 expense is now accomplished in two pieces: 1) through the amortization of the
17 "grossed up" regulatory liability included in operating income, and 2) the income
18 taxes calculated on the amortization. For ratemaking purposes, the net operating
19 income impact is equivalent to the former adjustment to income tax expense for
20 excess deferred taxes in the calculation of income tax expense.
21 Q. What is the 2009 test year amortization of the regulatory liability related to excess
22 deferred income taxes?

A. The 2009 test year amortization of the regulatory liability related to excess deferred taxes is $58,000. See HECO-1606, page 2. This amount was calculated by determining that amount of excess deferred income tax benefit flowing back to ratepayers. This is consistent with the treatment of excess deferred taxes in Docket Nos. 2006-0386 and 04-0113.

Q. Please describe the background of excess deferred income taxes and the methodology used in determining the flow back.

A. The TRA of 1986 contained a provision which reduced the top corporate income tax rate from 46% to 40% in 1987 and to 34% in 1988 and subsequent years. In years prior to 1987, deferred income taxes were calculated and established at the then current 46% rate under the assumption that the taxes would be paid at the higher 46% rate in the future when the underlying timing differences "turned around."

The change to these lower rates created the excess deferred taxes, and the law required that regulated utilities normalize those excess deferred income taxes related to accelerated depreciation. Under SFAS 109, the amortization of the regulatory liability accomplishes what was previously accomplished via the amortization of excess deferred income taxes, and accordingly, the methodology for the amortization of this regulatory liability closely follows the methodology previously used for excess deferred income taxes.

Q. How was the amortization of the regulatory liability related to excess deferred income taxes calculated?

A. The amortization of the regulatory liability related to the excess deferred income taxes can be divided into two categories. The first category deals with excess deferred income taxes related to accelerated depreciation in account 282. The second category includes excess deferred income taxes in account 283, which are for all items other than accelerated depreciation.

Under the 1986 TRA, regulated companies must use the average rate assumption method in calculating the normalized amount of excess deferred income taxes related to accelerated depreciation for all vintages subject to the normalization rules of the tax code. SFAS 109 does not change the normalization requirement contained in the TRA of 1986.

The average rate assumption method is used for all vintages after 1970. Excess deferred income taxes related to accelerated depreciation on pre-1971 vintages were completely amortized by 1993. As of December 31, 2008, the regulatory liability related to the excess deferred income taxes for accelerated depreciation was fully amortized.

Q. How does the Company calculate the amortization of the regulatory liability related to all other excess deferred income taxes other than those related to accelerated depreciation?

A. The regulatory liability related to all other excess deferred income taxes other than those related to accelerated depreciation is being amortized over the estimated remaining life of the underlying timing differences. This amortization method was used in HECO's previous rate cases, including Docket Nos. 2006-0386

and 04-0113. The amortization of the regulatory liability, under SFAS 109, has the same effect and result on revenue requirements as the amortization of excess deferred income taxes under the superseded Accounting Principles Board ("APB") 11.

Q. Why are the revenue requirements the same under the old and new accounting rules?

A. Under the old APB 11 rules, excess deferred income taxes were treated as a direct adjustment to income tax expense, and the amortization of excess deferred income taxes reduced income tax expense dollar for dollar.

Under SFAS 109, the grossed up excess deferred income taxes are amortized into operating income, and income taxes are calculated on that amortization. The impact on operating income is exactly the same as under APB 11 since the grossed up number net of its tax effect is equal to the excess deferred tax amortization before gross up.

Q. How does the Company's adoption of SFAS 109 impact rate base?

A. SFAS 109 has no impact on rate base. Although SFAS 109 requires HECO to establish certain tax-related regulatory assets and liabilities, equal and offsetting increases are made to accumulated deferred income taxes.

Q. How does the Company handle the amortization of excess State deferred income taxes?

A. HECO amortizes State excess deferred income taxes in the same manner as Federal excess deferred income taxes.

1 Deficit Deferred Income Taxes

2 Q. How does the 1993 Omnibus Budget Reconciliation Act ("1993 Tax Act") affect
3 the deferred income tax balances for the 2009 test year?

4 A. The 1993 Tax Act increased the income tax rate by one percent, from 34% to
5 35%. As a result, the Federal deferred income tax liability balances were deficient
6 by that one percent since the underlying temporary differences are expected to
7 reverse at the current 35% rate.

8 Q. What does SFAS 109 require in this instance where the income tax rate increases?

9 A. Under SFAS 109's balance sheet orientation, HECO must provide the additional
10 deferred income taxes to cover this one percent deficit since the deferred tax
11 liability balances were adjusted at the beginning of 1993 to provide for future
12 taxes at the lower 34% rate. The 1993 Tax Act was signed into law later in the
13 year and provided for the higher 35% rate.

14 Q. What accounting adjustments were made upon the enactment of the higher 1993
15 income tax rate?

16 A. Consistent with the treatment of excess deferred income taxes, the one percent
17 deficit deferred income tax was calculated and grossed up for the tax on tax effect.
18 This amount was then set up as additional deferred income tax liability with an
19 offsetting regulatory asset. In effect, this adjustment reinstates a portion of the
20 excess deferred income taxes, previously carved out and placed into the regulatory
21 liability account.

Q. What is the 2009 test year amortization of the regulatory asset related to deficit deferred income taxes?

A. The 2009 test year amortization of the regulatory asset related to deficit deferred income taxes is ($111,000). See HECO-1606, page 2. This amount was calculated using a method similar to how excess deferred income taxes were computed.

Q. Why is the amortization of the regulatory asset related to deficit deferred income taxes included in the depreciation expense calculation?

A. The amortization of this regulatory asset related to deficit deferred income taxes is the converse of the amortization of the regulatory liability related to excess deferred income taxes. Whereas excess deferred income taxes resulted from the tax rate decrease contained in the TRA of 1986, deficit deferred taxes are caused by the tax rate increase contained in the 1993 Tax Act. This amortization has the effect of increasing cost of service for deferred income taxes, which were established at a 34% rate upon the adoption of SFAS 109 at the beginning of 1993, in order to meet the expected future liability at the higher current rate of 35%.

UNAMORTIZED INVESTMENT TAX CREDITS

Q. What is the 2009 test year estimate of the average unamortized Federal and State investment tax credits?

A. The 2009 test year estimate of the average unamortized investment tax credits is $32,831,000 under the base case, $31,091,000 under the interim increase, and

$34,571,000 under the CIP CT-1 Step. See HECO-1604. The entire balance is made up of the State ITC. The Federal ITC originating in years prior to 1971 was fully amortized as of December 31, 2000.

Q. How is the 2009 test year average unamortized investment tax credit calculated?

A. The Company calculated this amount by taking the average of the State ITC at the beginning and end of the test year. The balance at the beginning of the test year was derived by utilizing the recorded unamortized State ITC as of December 31, 2007 subtracting the 2008 estimated amortization of State ITC and adding the 2008 vintage estimated State ITC. The balance at the end of the test year was similarly derived by utilizing the comparable 2009 test year estimates of State ITC amortization and vintage additions. See HECO-1604.

Q. Why is average State ITC different for the base case, interim increase and CIP CT-1 Step scenarios?

A. Under the base case, State ITC on CIP CT-1 is included as a 2009 addition, and thus is included only in the end of year balance. Under the interim increase, State ITC on CIP CT-1 is not included in the beginning or end of year balance. Under the CIP CT-1 Step, State ITC on CIP CT-1 is included in both the beginning of year and end of year balances.

Q. What is the Company's position regarding the regulatory treatment of benefits due to the State ITC?

A. Because there are no laws or regulations that require the sharing of the State ITC benefits between ratepayers and shareholders, the Company passes all of the

benefits of the State ITC to the ratepayers. Thus, the unamortized balance serves to reduce rate base and the annual amortization reduces the income tax expense. This treatment of the State ITC benefit was used by the Commission in determining HECO's revenue requirement in prior rate cases, including Docket Nos. 2006-0386 and 04-0113.

ACCUMULATED DEFERRED INCOME TAXES

Q. What is the 2009 test year estimate of the average accumulated deferred income taxes ("ADIT")?

A. The 2009 test year estimate of the average ADIT is $135,277,000 under the base case, $134,856,000 under the interim increase, and $134,600,000 under the CIP CT-1 Step, as shown on HECO-1605, pages 1 and 2.

Q. Why do the amounts in the three scenarios differ?

A. The differences are due to the various scenarios for CIP CT-1 generating unit and their impact on State ITC earned and tax depreciation.

Q. How does the ADIT balance affect rate base?

A. HECO's net positive ADIT balance (which is a credit to liability) serves to reduce rate base.

Q. How did the Company calculate the average ADIT balance?

A. The Company calculated this amount by taking the average of the accumulated Federal and State deferred tax balances at the beginning and end of the test year. The balance at the beginning of the test year was derived by utilizing the April 30, 2008 recorded deferred Federal and State income tax balances and adding the

estimated deferred income tax expense for the last eight months ending December 31, 2008. The balance at the end of the test year was derived by utilizing the estimated deferred Federal and State income tax balances as of December 31, 2008 and adding the estimated deferred income tax expense for the 2009 test year. The deferred taxes for items excluded in determining HECO's revenue requirements in the Commission's D&O 24171 issued on May 1, 2008 in Docket No. 04-0113 for HECO's 2005 test year have been excluded from the deferred tax balance for the 2009 test year. See HECO-WP-1605.

Status of Application to the IRS for Change in Accounting Method

Q. What is the status of the application to the IRS for a change in accounting method related to the overhead costs allocated to self-constructed assets—i.e., the simplified service cost method ("SSCM")?

A. On February 9, 2007, the Company received a letter from the IRS granting permission to change its method of accounting to the SSCM, subject to the guidance in Revenue Ruling 2005-53 and any other administrative guidance or directives subsequently issued by the IRS. The background of this application process was fully explained in my testimony for HECO in Docket Nos. 2006-0386 (see HECO T-15, pages 22-24) and 04-0113 (see HECO T-17, page 22 and HECO RT-17, pages 11-14), as well as my testimony (see MECO T-13, pages 23-27) and response to CA-IR-381 in the MECO 2007 test year rate case (Docket No. 2006-0387).

Q. What actions were taken as a result of the IRS granting permission for HECO to change its accounting method?

A. HECO filed an amended 2001 tax return as part of HEI's consolidated income tax return, in which HECO claimed a deduction of $127 million related to the SSCM change in accounting method. This protective claim was made in response to the IRS approval for the method change and with consideration to the results of "test case" settlements.

Q. What was the result of the settlement of these test cases?

A. The IRS Appeals Office reached agreement on their "test cases," and settlement guidelines were circulated internally to their examination teams addressing the hazards of litigating the "routine and repetitive" issue under the SSCM. These guidelines have not been published, but it appears that the IRS has established settlement percentages for each utility property account. These guidelines only address the "routine and repetitive" issue and do not address the "base" to which these percentages would be applied. This "base" is comprised of the pool of qualified allocable overhead costs, which are generally referred to as "mixed service costs." The IRS examination team reviewed HECO's mixed service costs, and they have denied HECO's refund claims related to the SSCM change in accounting method. HECO expects to oppose this disallowance by filing an appeal to the IRS Appeals Office. Due to this continued uncertainty, HECO cannot yet calculate an estimate of the potential benefit.

1 Impact of the Simplified Service Cost Method

2 Q. How does any potential benefit related to SSCM deduction manifest itself in this
3 rate proceeding?

4 A. Based on the IRS guidance to date, HECO's estimated 2009 test year ADIT
5 should not include any adjustment for the potential change in accounting method
6 described above because any SSCM deduction allowed will never result in a
7 deferral of income taxes in the test year.

8 In addition to the previously mentioned uncertainty of resolution, the new
9 regulations require the recapture (give back) of any prior year tax return benefits
10 received from the SSCM change. This recapture must be completed by the tax
11 year ended December 31, 2006. Thus, any potential deferred income taxes
12 created by SSCM would have to be completely reversed as of December 31, 2006.

13 Q. What other options are available to HECO in this regard?

14 A. In January 2006, the Company filed a protective application for change in
15 accounting method to a facts and circumstances method for allocating overhead
16 costs to self-constructed assets, effective for 2005. The Company and its
17 consultants believed that this protective application would provide HECO more
18 options in determining its prospective cost allocation method, at such time when
19 the issues in the original application for the simplified service cost method were
20 resolved. The Company filed its 2005 income tax return without making any
21 adjustment for any new method since the adjustment is dependent on the
22 resolution of the 2001 application for the simplified service cost method.

Q. What is HECO's current expectation of adopting this new method?

A. Due to the drawn-out controversy and uncertainty that the SSCM has created, it is more prudent to observe the positions to be taken by the IRS in the examination of other taxpayers. Only after the facts and circumstances method develops an audit track record would HECO evaluate and consider the viability of another accounting method change.

FASB Interpretation No. 48, Accounting for Uncertainty in Income Taxes

Q. How does the FASB Interpretation No. 48 (FIN 48), Accounting for Uncertainty in Income Taxes, affect ADIT?

A. FIN 48 provides specific guidance on how to evaluate and quantify income tax uncertainty. The FIN 48 adjustments represent management's estimate of the difference between the recognizable income tax benefits for book purposes and the benefits claimed on the Company's tax returns. These differences are basically a "discount" factor to the tax benefits claimed on the income tax returns. To the extent that these tax benefits are associated with temporary differences, FIN 48 requires this "discount" portion of the tax benefit to be carved out and separately presented as an "other tax liability."

Q. Please explain the background of FIN 48 and the mechanics of how these adjustments are calculated.

A. This was fully explained in my testimony (HECO T-15) in Docket No. 2006-0386 on pages 29-32.

Q. How does HECO propose to treat the FIN 48 adjustment to ADIT for the 2009 test year?

A. HECO proposes to reverse the effects of the FIN 48 adjustment in ADIT since they represent only an estimate of what income taxes may eventually be paid as a result of the government examination of the returns filed or to be filed.

Q. What is the effect of reversing the FIN 48 adjustments in ADIT?

A. The reversal of the FIN 48 adjustments will keep the post-FIN 48 ADIT measurement consistent with the pre-FIN 48 measurement. This presentation of ADIT maintains the consistency of our income tax returns with our deferred income taxes.

Q. What is the amount of the FIN 48 adjustment that is excluded from the ADIT balance for the 2009 test year?

A. The amount of the FIN 48 adjustment for the beginning and ending of 2009 test year is ($3,898,000) since no change to the uncertain issues is projected for the test year. See HECO-WP-1605.

Q. What other impacts does FIN 48 have on the financial statements?

A. Under FIN 48, a taxpayer is required to accrue interest and penalties for which, under relevant law, the taxpayer would be liable, based on the FIN 48 adjustments. FIN 48 allows the taxpayer to classify the interest and penalties as part of the FIN 48 tax liability or as a discrete item separate from the related taxes. HECO has accrued interest separate from the related FIN 48 tax liabilities.

Q. How does this accrued interest affect HECO's 2009 test year ADIT?

A. Since the FIN 48 interest is basically an estimated reserve, HECO cannot deduct this interest on its income tax returns. Consequently, this is a temporary difference for which deferred income taxes are provided, and HECO has excluded these deferred income taxes from the test year ADIT, consistent with the treatment of the FIN 48 adjustments to ADIT.

Q. How does the Company propose to treat a FIN 48 liability or asset that is created by a permanent difference?

A. In a small number of cases, the FIN 48 adjustment may be derived from a permanent difference, which is an item of income or expense that is permanently included for book and not for tax, or vice versa. In this instance, the difference would not be temporary over time, and there would not be an offsetting entry to deferred income taxes. Consequently, the tax effect will flow through income as an estimated reserve item and rate base should not include the associated non-current liability or asset. This estimate is not included in HECO's test year income tax expense nor is it included in rate base, consistent with the treatment of FIN 48 temporary differences discussed above.

Q. What is the amount of FIN 48 liability associated with permanent differences excluded from rate base?

A. The FIN 48 liability excluded from rate base is $239,000, related to research and development credits claimed in prior years.

1 RECENT TAX DEVELOPMENTS

2 Miscellaneous 2007 Tax Acts

3 Q. How has the passage of a variety of tax acts in 2007 impacted the 2009 test year
4 estimates?

5 A. Congress passed, and the President signed into law, several measures providing
6 tax relief for taxpayers who might otherwise be affected by the alternative
7 minimum tax ("AMT") and assistance to homeowners facing foreclosure.
8 Congress also passed comprehensive energy legislation containing several tax
9 provisions, tax breaks for victims of the Virginia Tech tragedy, an omnibus fiscal
10 year 2008 budget bill that increases funding for the IRS, and a substantial
11 technical corrections bill. These acts were generally narrow in scope and have no
12 effect on test year estimates.

13 Economic Stimulus Act of 2008

14 Q. How has the passage of the Economic Stimulus Act of 2008 impacted the 2009
15 test year estimates?

16 A. In addition to the much touted recovery rebates for individuals, the 2008 Act
17 provides investment incentives for businesses in the form of enhanced expensing
18 and depreciation provisions. The latter depreciation provisions do affect HECO's
19 test year tax depreciation.

20 Q. What depreciation changes were made by the 2008 Act?

21 A. The Economic Stimulus Act of 2008 provided for 50% bonus depreciation for
22 eligible property acquired and placed into service in 2008. The types of property

eligible for this bonus depreciation are the same as those included in the previous depreciation packages provided in the 2001 through 2004 time frame. Thus, most utility property with recovery periods not exceeding 20 years qualify, provided that they are acquired and placed into service in 2008. Certain long-production-period property may also qualify for this bonus depreciation even if not placed into service by December 31, 2008. Conversely, long-production-period property that begins production prior to January 1, 2008, generally will not qualify for bonus depreciation.

Q. How does this bonus depreciation affect 2009 test year estimates?

A. HECO has incorporated these changes into its estimates of tax depreciation and accumulated deferred income taxes for the test year.

Q. Does this conclude your testimony?

A. Yes, it does.

LON K. OKADA

EDUCATION AND EXPERIENCE BACKGROUND

Business Address:	Hawaiian Electric Industries, Inc. 900 Richards Street Honolulu, Hawaii 96813
Current Position:	Manager of Corporate Taxes (18 years)
Previous Positions:	Manager of Taxes and Depreciation Hawaiian Electric Company, Inc. (1 year)
	Director of Taxes and Depreciation Hawaiian Electric Company, Inc. (5 years)
	Tax Manager, Coopers & Lybrand (5 years)
	Senior Assistant Accountant, Deloitte Haskins & Sells (2 years)
Education:	Bachelor of Science, Business Administration Graduated Magna Cum Laude University of Southern California
	Juris Doctor Hastings College of the Law, University of California
Other Qualifications:	Certified Public Accountant, Hawaii and California
	Member of the State Bar, Hawaii and California
Previous Testimony:	Docket No. 5658--Depreciation Adjustment Income Tax Calculation
	Docket Nos. 6432, 6531, 6998, 6999, 7000, 7764, 99-0207, 04-0113, 2006-0386 and 2006-0387 – HECO, HELCO, and MECO Taxes Other than Income Taxes, Income Tax Expense, Unamortized Investment Tax Credits, Accumulated Deferred Income Taxes and Net SFAS 109 Regulatory Assets

HAWAIIAN ELECTRIC COMPANY, INC.
TAXES OTHER THAN INCOME TAXES
CHARGED TO OPERATIONS

PRESENT RATES
TEST YEAR 2009

($ Thousand)

		BASE CASE			INTERIM INCREASE			CIP CT-1 STEP		
		A	B	(A+B) C	D	E	(D+E) F	G	H	(G+H) I
		Present Rates	Adjustment	Proposed Rates	Present Rates	Adjustment	Proposed Rates	Present Rates	Adjustment	Proposed Rates
PAYROLL TAXES										
1	F.I.C.A. Taxes	7,267		7,267	7,226		7,226	7,313		7,313
2	Federal Unemployment Taxes	66		66	66		66	66		66
3	State Unemployment Taxes	-		-	-		-	-		-
4	Total Payroll Taxes	7,333	-	7,333	7,292	-	7,292	7,379	-	7,379
REVENUE TAXES										
5	Public Service Company Taxes	105,233	9,558	114,791	105,233	8,845	114,078	105,233	10,253	115,486
6	Public Utility Fees	8,941	812	9,753	8,941	751	9,692	8,941	871	9,812
7	Franchise Royalty Taxes	44,593	4,056	48,649	44,593	3,753	48,346	44,593	4,351	48,944
8	Total Revenue Taxes	158,767	14,426	173,193	158,767	13,349	172,116	158,767	15,475	174,242
9	TOTAL TAXES OTHER THAN INCOME TAXES	*166,100*	*14,426*	*180,526*	*166,059*	*13,349*	*179,408*	*166,146*	*15,475*	*181,621*

SOURCE: HECO-WP-1601

HECO-1601
DOCKET NO. 2008-0083
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HAWAIIAN ELECTRIC COMPANY, INC.
TAXES OTHER THAN INCOME TAXES
CHARGED TO OPERATIONS

CURRENT EFFECTIVE RATES
TEST YEAR 2009

($ Thousand)

		BASE CASE			INTERIM INCREASE			CIP CT-1 STEP		
		A	B	(A+B) C	D	E	(D+E) F	G	H	(G+H) I
		Present Rates	Adjustment	Proposed Rates	Present Rates	Adjustment	Proposed Rates	Present Rates	Adjustment	Proposed Rates
PAYROLL TAXES										
1	F.I.C.A. Taxes	7,267		7,267	7,226		7,226	7,313		7,313
2	Federal Unemployment Taxes	66		66	66		66	66		66
3	State Unemployment Taxes	-		-	-		-	-		-
4	Total Payroll Taxes	7,333	-	7,333	7,292	-	7,292	7,379	-	7,379
REVENUE TAXES										
5	Public Service Company Taxes	109,781	5,010	114,791	109,781	4,297	114,078	109,781	5,705	115,486
6	Public Utility Fees	9,327	426	9,753	9,327	365	9,692	9,327	485	9,812
7	Franchise Royalty Taxes	46,524	2,125	48,649	46,524	1,822	48,346	46,524	2,420	48,944
8	Total Revenue Taxes	165,632	7,561	173,193	165,632	6,484	172,116	165,632	8,610	174,242
9	TOTAL TAXES OTHER THAN INCOME TAXES	172,965	7,561	180,526	172,924	6,484	179,408	173,011	8,610	181,621

SOURCE: HECO-WP-1601

HECO-1601
DOCKET NO. 2008-0083
PAGE 2 OF 2

HAWAIIAN ELECTRIC COMPANY, INC.
COMPUTATION OF INCOME TAX EXPENSE

PRESENT RATES
TEST YEAR 2009

($ Thousand)

		BASE CASE			INTERIM INCREASE			CIP CT-1 STEP			
		A	B	C	D	E	F	G	H	I	
		Present Rates	Adjustment	Proposed Rates	Present Rates	Adjustment	Proposed Rates	Present Rates	Adjustment	Proposed Rates	References
1	Total Operating Revenues	1,790,053	162,526	1,952,579	1,790,053	150,401	1,940,454	1,790,053	174,348	1,964,401	
	Operating Expenses:										
2	Fuel Oil and Purchased Power	1,293,709		1,293,709	1,293,709		1,293,709	1,293,709		1,293,709	
3	Other Operation & Maint Exp	225,801	117	225,918	224,187	108	224,295	227,051	125	227,176	
4	Depreciation & Amortization	83,183		83,183	83,183		83,183	83,183		83,183	HECO-1408
5	Amortization of State ITC	(1,462)		(1,462)	(1,462)		(1,462)	(1,462)		(1,462)	HECO-1604
6	Taxes Other Than Income Taxes	166,100	14,426	180,526	166,059	13,349	179,408	166,146	15,475	181,621	HECO-1601
7	Other Interest, Net	471		471	471		471	471		471	
8	Total Operating Expenses	1,767,802	14,543	1,782,345	1,766,147	13,457	1,779,604	1,769,098	15,600	1,784,698	
9	Operating Income Before Taxes	22,251	147,983	170,234	23,906	136,944	160,850	20,955	158,748	179,703	
	Tax Adjustments:										
10	Interest Expense	(31,837)		(31,837)	(30,062)		(30,062)	(33,637)		(33,637)	HECO-WP-1602, page 2
11	Meals & Entertainment	78		78	78		78	78		78	HECO-WP-1602, page 3
12	Total Tax Adjustments	(31,759)	-	(31,759)	(29,984)	-	(29,984)	(33,559)	-	(33,559)	
13	Taxable Income for Rate-Making	(9,508)	147,983	138,475	(6,078)	136,944	130,866	(12,604)	158,748	146,144	
14	Composite Effective Income Tax Rate	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	
15	Total Income Tax Expense	(3,700)	57,580	53,880	(2,365)	53,285	50,920	(4,904)	61,768	56,864	
16	Tax benefit of Domestic Production Activities Deduction	1,028		1,028	908		908	1,182		1,182	HECO-WP-1602, pages 4-9
17	Tax Benefit of Deductible Preferred Stock Dividends	23		23	23		23	23		23	HECO-WP-1602, page 10
18	INCOME TAX EXPENSE	(4,751)	57,580	52,829	(3,296)	53,285	49,989	(6,109)	61,768	55,659	

NOTE: Totals may not add exactly due to rounding.

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DOCKET NO. 2008-0083
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HAWAIIAN ELECTRIC COMPANY, INC.
COMPUTATION OF INCOME TAX EXPENSE

CURRENT EFFECTIVE RATES
TEST YEAR 2009

($ Thousand)

		BASE CASE			INTERIM INCREASE			CIP CT-1 STEP			
		A	B	C	D	E	F	G	H	I	
		Current Eff Rates	Adjustment	Proposed Rates	Current Eff Rates	Adjustment	Proposed Rates	Current Eff Rates	Adjustment	Proposed Rates	References
1	Total Operating Revenues	1,867,390	85,188	1,952,578	1,867,390	73,064	1,940,454	1,867,390	97,011	1,964,401	
	Operating Expenses:										
2	Fuel Oil and Purchased Power	1,293,709		1,293,709	1,293,709		1,293,709	1,293,709		1,293,709	
3	Other Operation & Maint Exp	225,857	61	225,918	224,243	52	224,295	227,107	70	227,177	
4	Depreciation & Amortization	83,183		83,183	83,183		83,183	83,183		83,183	HECO-1408
5	Amortization of State ITC	(1,462)		(1,462)	(1,462)		(1,462)	(1,462)		(1,462)	HECO-1604
6	Taxes Other Than Income Taxes	172,965	7,561	180,526	172,924	6,485	179,409	173,011	8,611	181,622	HECO-1601
7	Other Interest, Net	471		471	471		471	471		471	
8	Total Operating Expenses	1,774,723	7,622	1,782,345	1,773,068	6,537	1,779,605	1,776,019	8,681	1,784,700	
9	Operating Income Before Taxes	92,667	77,566	170,233	94,322	66,527	160,849	91,371	88,330	179,701	
	Tax Adjustments:										
10	Interest Expense	(31,837)		(31,837)	(30,062)		(30,062)	(33,637)		(33,637)	HECO-WP-1602, page 2
11	Meals & Entertainment	78		78	78		78	78		78	HECO-WP-1602, page 3
12	Total Tax Adjustments	(31,759)	-	(31,759)	(29,984)	-	(29,984)	(33,559)	-	(33,559)	
13	Taxable Income for Rate-Making	60,908	77,566	138,474	64,338	66,527	130,865	57,812	88,330	146,142	
14	Composite Effective Income Tax Rate	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	38.9097744%	
15	Total Income Tax Expense	23,699	30,181	53,880	25,034	25,886	50,920	22,495	34,369	56,864	
16	Tax benefit of Domestic Production Activities Deduction	1,028		1,028	908		908	1,182		1,182	HECO-WP-1602, pages 4-9
17	Tax Benefit of Deductible Preferred Stock Dividends	23		23	23		23	23		23	HECO-WP-1602, page 10
18	INCOME TAX EXPENSE	22,648	30,181	52,829	24,103	25,886	49,989	21,290	34,369	55,659	

NOTE: Totals may not add exactly due to rounding.

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HAWAIIAN ELECTRIC COMPANY, INC.
FEDERAL INVESTMENT TAX CREDIT
FOR THE YEARS 2004 - 2009

($ Thousand)

		A	B	C	D	E	F	
		Actual 2004	Actual 2005	Actual 2006	Actual 2007	Estimate 2008	**Test Year 2009**	
1971 REVENUE ACT								
1	Beginning Balance	6,602	5,633	4,728	3,881	3,117	**2,398**	
2	Amortizations	(969)	(905)	(847)	(764)	(719)	**(644)**	HECO-1408
3	Additions (Net of Recap)							
4	Other Adjustments							
5	Ending Balance	5,633	4,728	3,881	3,117	2,398	**1,754**	
6	Average Balance						**2,076**	

SOURCE: HECO-WP-1603

HAWAIIAN ELECTRIC COMPANY, INC.
STATE CAPITAL GOODS EXCISE TAX CREDIT
FOR THE YEARS 2004 - 2009

($ Thousand)

		A Actual 2004	B Actual 2005	C Actual 2006	D Actual 2007	E Estimate 2008	F BASE CASE Test Year 2009	G Adjustment	(F+G) H INTERIM INCREASE Test Year 2009	I Adjustment	(F+I) J CIP CT-1 STEP Test Year 2009
1	Beginning Balance	22,444	24,759	26,481	28,478	29,548	30,531		30,531	3,480	34,011
2	Amortizations	(996)	(1,117)	(1,201)	(1,301)	(1,383)	(1,462)		(1,462)		(1,462)
3	Additions (Net of Recap)	3,311	2,839	3,198	2,371	2,366	6,061	(3,480)	2,581	(3,480)	2,581
4	Ending Balance	24,759	26,481	28,478	29,548	30,531	35,130	(3,480)	31,650	-	35,130
5	Average Balance						32,831		31,091		34,571

SOURCE: HECO-WP-1604

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HAWAIIAN ELECTRIC COMPANY, INC.
SUMMARY OF DEFERRED INCOME TAX LIABILITY
BALANCES FOR RATE BASE PURPOSES
FEDERAL AND STATE

($ Thousand)

		A	B	C	D	E
		Actual Balance 12/31/2005	Actual 2006 Adds (Amort), Net	Actual Balance 12/31/2006	Actual 2007 Adds (Amort), Net	Actual Balance 12/31/2007
	Accelerated Depreciation over Straight Line					
1	FEDERAL	61,335	(2,120)	59,215	(2,842)	56,373
2	STATE	7,191	(409)	6,782	(228)	6,554
3	Subtotal	68,526	(2,529)	65,997	(3,070)	62,927
	All Other Items					
4	FEDERAL	56,119	447	56,566	(6,727)	49,839
5	STATE	9,967	200	10,167	(1,030)	9,137
6	Subtotal	66,086	647	66,733	(7,757)	58,976
7	TOTAL	134,612	(1,882)	132,730	(10,827)	121,903
8	AVERAGE BALANCE					

	BASE CASE	Actual Balance 12/31/2007	Estimate 2008 Adds (Amort), Net	BASE CASE Estimate Balance 12/31/2008	Estimate 2009 Adds (Amort), Net	BASE CASE Estimate Balance 12/31/2009
	Accelerated Depreciation over Straight Line					
9	FEDERAL	56,373	3,203	59,576	(1,498)	58,078
10	STATE	6,554	(499)	6,055	45	6,100
11	Subtotal	62,927	2,704	65,631	(1,453)	64,178
	All Other Items					
12	FEDERAL	49,839	8,370	58,209	2,624	60,833
13	STATE	9,137	1,473	10,610	483	11,093
14	Subtotal	58,976	9,843	68,819	3,107	71,926
15	TOTAL	121,903	12,547	134,450	1,654	136,104
16	AVERAGE BALANCE - BASE CASE					135,277

HAWAIIAN ELECTRIC COMPANY, INC.
SUMMARY OF DEFERRED INCOME TAX LIABILITY
BALANCES FOR RATE BASE PURPOSES
FEDERAL AND STATE

($ Thousand)

		F	G	H	I	J
	INTERIM INCREASE	Actual Balance 12/31/2007	Estimate 2008 Adds (Amort), Net	INTERIM INCREASE Estimate Balance 12/31/2008	Estimate 2009 Adds (Amort), Net	INTERIM INCREASE Estimate Balance 12/31/2009
	Accelerated Depreciation over Straight Line					
1	FEDERAL	56,373	3,203	59,576	(3,356)	56,220
2	STATE	6,554	(499)	6,055	(294)	5,761
3	Subtotal	62,927	2,704	65,631	(3,650)	61,981
	All Other Items					
4	FEDERAL	49,839	8,370	58,209	3,769	61,978
5	STATE	9,137	1,473	10,610	693	11,303
6	Subtotal	58,976	9,843	68,819	4,462	73,281
7	TOTAL	121,903	12,547	134,450	812	135,262
8	AVERAGE BALANCE - INTERIM INCREASE					134,856

	CIP CT-1 STEP	Actual Balance 12/31/2007	Estimate 2008 Adds (Amort), Net	CIP CT-1 STEP Estimate Balance 12/31/2008	Estimate 2009 Adds (Amort), Net	CIP CT-1 STEP Estimate Balance 12/31/2009
	Accelerated Depreciation over Straight Line					
9	FEDERAL	56,373	3,203	59,576	(1,498)	58,078
10	STATE	6,554	(499)	6,055	45	6,100
11	Subtotal	62,927	2,704	65,631	(1,453)	64,178
	All Other Items					
12	FEDERAL	49,839	7,225	57,064	3,769	60,833
13	STATE	9,137	1,263	10,400	693	11,093
14	Subtotal	58,976	8,488	67,464	4,462	71,926
15	TOTAL	121,903	11,192	133,095	3,009	136,104
16	AVERAGE BALANCE - CIP CT-1 STEP					134,600

HAWAIIAN ELECTRIC COMPANY, INC.
SFAS 109 RECONCILIATION
REGULATORY ASSETS AND LIABILITIES

($ Thousand)

		A Actual Balance 12/31/2005	B Actual 2006 Amort	C Actual 2006 Adds	D Actual Balance 12/31/2006	E Actual 2007 Amort	F Actual 2007 Adds	G Actual Balance 12/31/2007
1	CWIP Equity Transition (#18673100)	1,850	(87)		1,763	(75)		1,688
2	SFAS 109 Flow Through (#18673200)	3,264	(326)		2,938	(326)		2,612
3	Plant Transition (#18673300)	20,459	(1,023)		19,436	(1,023)		18,413
4	CWIP Equity Ongoing (#18673400)	30,280	(893)	2,585	31,972	(932)	2,805	33,845
5	Federal ITC (#18673500)	(3,011)	539		(2,472)	487		(1,985)
	Excess Deferred Taxes							
6	(#18673110 - Acct 282)	(1,809)	904		(905)	904		(1)
7	(#18673900 - Acct 283)	(1,414)	58		(1,356)	58		(1,298)
8	Subtotal	(3,223)	962	-	(2,261)	962	-	(1,299)
	Deficit Deferred Taxes							
9	(#18673120 - Acct 282)	2,216	(111)		2,105	(111)		1,994
10	(#18673190 - Acct 283)				-			-
11	Subtotal	2,216	(111)	-	2,105	(111)	-	1,994
12	TOTAL	51,835	(939)	2,585	53,481	(1,018)	2,805	55,268
13	AVERAGE BALANCE				52,658			54,375

NOTE: All SFAS 109 assets and liabilities and related taxes have been computed on effective tax rate of 32.8947368% (Federal) and 6.0150376% (State).

HAWAIIAN ELECTRIC COMPANY, INC.
SFAS 109 RECONCILIATION
REGULATORY ASSETS AND LIABILITIES

($ Thousand)

		H Actual Balance 12/31/2007	I Estimated 2008 Amort	J Estimated 2008 Adds	K Estimated Balance 12/31/2008	L Estimated 2009 Amort	M Estimated 2009 Adds	N Estimated Balance 12/31/2009
1	CWIP Equity Transition (#18673100)	1,688	(75)		1,613	(75)		1,538
2	SFAS 109 Flow Through (#18673200)	2,612	(326)		2,286	(326)		1,960
3	Plant Transition (#18673300)	18,413	(1,023)		17,390	(1,023)		16,367
4	CWIP Equity Ongoing (#18673400)	33,845	(1,013)	5,362	38,194	(1,106)	7,596	44,684
5	Federal ITC (#18673500)	(1,985)	458		(1,527)	410		(1,117)
	Excess Deferred Taxes							
6	(#18673110 - Acct 282)	(1)			(1)			(1)
7	(#18673900 - Acct 283)	(1,298)	58		(1,240)	58		(1,182)
8	Subtotal	(1,299)	58	-	(1,241)	58	-	(1,183)
	Deficit Deferred Taxes							
9	(#18673120 - Acct 282)	1,994	(111)		1,883	(111)		1,772
10	(#18673190 - Acct 283)	-	-		-	-		-
11	Subtotal	1,994	(111)	-	1,883	(111)	-	1,772
12	TOTAL	55,268	(2,032)	5,362	58,598	(2,173)	7,596	64,021
13	AVERAGE BALANCE				56,933			61,310

NOTE: All SFAS 109 assets and liabilities and related taxes have been computed on effective tax rate of 32.8947368% (Federal) and 6.0150376% (State).

HAWAIIAN ELECTRIC COMPANY, INC.
RECONCILICATION OF SFAS 109 REGULATORY ASSETS/LIABILITIES AND DEFERRED TAXES

($ Thousand)

	Description	A Regulatory Asset/Liab Balance 12/31/2007	B Federal Def Tax Balance 12/31/2007	C State Def Tax Balance 12/31/2007	D * Other 12/31/2007	E Total Def Tax Balance 12/31/2007
1	CWIP Equity Transition	1,688	(1,429)	(261)	2	(1,688)
2	SFAS 109 Flow Through	2,612	(2,207)	(404)	(1)	(2,612)
3	Plant Transition	18,413	(15,567)	(2,847)	1	(18,413)
4	CWIP Equity Ongoing	33,845	(28,614)	(5,233)	2	(33,845)
5	Federal ITC	(1,985)	1,678	308	(1)	1,985
6	Excess Accel Depr	(1)			1	1
7	Excess Deferred Taxes	(1,298)	428	79	791	1,298
8	Deficit Accel Depr	1,994	(658)	(120)	(1,216)	(1,994)
9	Deficit Deferred Taxes	-	-	-		-
10	TOTAL	55,268	(46,369)	(8,478)	(421)	(55,268)

	Description	Regulatory Asset/Liab Balance 12/31/2008	Federal Def Tax Balance 12/31/2008	State Def Tax Balance 12/31/2008	* Other 12/31/2008	Total Def Tax Balance 12/31/2008
11	CWIP Equity Transition	1,613	(1,365)	(250)	2	(1,613)
12	SFAS 109 Flow Through	2,286	(1,931)	(353)	(2)	(2,286)
13	Plant Transition	17,390	(14,702)	(2,688)		(17,390)
14	CWIP Equity Ongoing	38,194	(32,290)	(5,904)		(38,194)
15	Federal ITC	(1,527)	1,291	237	(1)	1,527
16	Excess Accel Depr	(1)			1	1
17	Excess Deferred Taxes	(1,240)	409	75	756	1,240
18	Deficit Accel Depr	1,883	(621)	(113)	(1,149)	(1,883)
19	Deficit Deferred Taxes	-	-			-
20	TOTAL	58,598	(49,209)	(8,996)	(393)	(58,598)

HAWAIIAN ELECTRIC COMPANY, INC.
RECONCILICATION OF SFAS 109 REGULATORY ASSETS/LIABILITIES AND DEFERRED TAXES

($ Thousand)

	Description	A Regulatory Asset/Liab Balance 12/31/2009	B Federal Def Tax Balance 12/31/2009	C State Def Tax Balance 12/31/2009	D * Other 12/31/2009		E Total Def Tax Balance 12/31/2009
1	CWIP Equity Transition	1,538	(1,302)	(238)	2		(1,538)
2	SFAS 109 Flow Through	1,960	(1,655)	(303)	(2)		(1,960)
3	Plant Transition	16,367	(13,837)	(2,530)			(16,367)
4	CWIP Equity Ongoing	44,684	(37,766)	(6,906)	(12)		(44,684)
5	Federal ITC	(1,117)	944	173			1,117
6	Excess Accel Depr	(1)	-	-	1		1
7	Excess Deferred Taxes	(1,182)	390	72	720	**	1,182
8	Deficit Accel Depr	1,772	(585)	(107)	(1,080)	**	(1,772)
9	Deficit Deferred Taxes	-					-
10	TOTAL	64,021	(53,811)	(9,839)	(371)		(64,021)

* Column D amounts represent the net unamortized "base" SFAS 109 adjustments recorded in 1993 related to excess and deferred taxes booked to Reg Ass/Liab. Columns B and C represent the tax "gross up" of these "base" items.
Lines 1 through 5 do not have comparable "base" amounts in Column D because their SFAS 109 adjustments only required a tax "gross up". The "base" on which this gross up was calculated resides in either plant in service or unamortized Federal ITC balance sheet accounts. On the other hand, the "base" for lines 6 through 9 were accounted for in the Reg Asset/Liab. Account.

** The reconciling item represents excess/deficit deferred tax on pre-109 basis.

Column A is from HECO-1606, p. 2
Column B is from HECO-WP-1605, pp. 1-2. Note that excess and deficit accelerated depreciation (Line 6 and 8) is included in 282 depreciation.
Column C is from HECO-WP-1605, pp. 3-4. Note that excess and deficit accelerated depreciation (Line 6 and 8) is included in 282 depreciation.

HECO T-17
DOCKET NO. 2008-0083

TESTIMONY OF
LORIE ANN NAGATA

TREASURER
HAWAIIAN ELECTRIC COMPANY, INC.

Subject: Plant Additions, Property Held for Future Use, Contributions in Aid of Construction, Customer Advances, and Budget Process

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Lorie Ann Nagata and my business address is 900 Richards Street, Honolulu, Hawaii 96813.

Q. By whom are you employed and in what capacity?

A. I am employed by Hawaiian Electric Company, Inc. ("HECO" or "Company") as its Treasurer. HECO-1700 provides my educational background and work experience.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the Company's 2008 and test year 2009 estimates of:

1) plant additions;
2) property held for future use;
3) contributions in aid of construction ("CIAC"); and
4) customer advances.

The rate base, tax, and depreciation witnesses will use these estimates to derive the test year estimates in their respective areas.

I am also responsible for addressing the Company's operations and maintenance ("O&M") expense budget methodology, including general wage increase assumptions and general inflation factor.

PLANT ADDITIONS

Q. What are plant additions?

A. Plant additions for a particular year are the total cost of capital projects that the Company completes and places in utility service during that year. A plant addition occurs when the costs are transferred from the construction work in

progress account to the utility plant in service account. Total capital expenditures incurred for a project are all part of the plant addition amount when the completed facility is placed in service.

Q. How are plant additions used in this rate case?

A. Plant additions are used to determine the utility plant in service balances. In this rate case, the estimated 2008 plant additions are added to the actual 2008 beginning-of-the-year ("BOY") utility plant in service balance to determine the estimated end-of-year ("EOY") 2008 utility plant in service balance. This balance then becomes the estimated 2009 BOY utility plant in service balance. The estimated 2009 plant additions are then added to this balance to determine the utility plant in service balance at the end of the test year 2009.

Q. What is the Company's estimate of plant additions for 2008 and test year 2009?

A. The Company's estimate of plant additions is $110,220,000 for 2008 and $264,679,000 for test year 2009, as shown on HECO-1701.

<u>Development of Plant Addition Estimates</u>

Q. How were the estimates for plant additions for 2008 and test year 2009 developed?

A. The plant addition estimates are an outcome of the process that develops the Company's capital expenditures estimate which consists of programs and projects. The 2008 and test year 2009 plant addition estimates were calculated by adding:

1) estimates for straggling costs to be incurred in 2008 and 2009 for projects placed in service prior to 2008;

2) estimated program expenditures for 2008 and 2009; and

3) the sum of expenditures incurred during all years, up until the year the project is placed in service, for all projects forecast to be placed in service in 2008 and test year 2009;

Q. What are "straggling costs"?

A. "Straggling costs" consist of, but are not limited to, invoices received after the project was placed in service for materials received and/or services rendered before the project was placed in service, and costs incurred after the project has been placed in service, including costs associated with final project work on-site, as-built drawings, archiving files, closing contracts, and preparing and filing required reports with the PUC and government agencies.

Development of Estimated Program Expenditures

Q. What are program expenditures that are also included in Plant Additions?

A. A program is a collection of a specific category or type of small projects that individually are generally less than $100,000 and budgeted in its entirety. The estimated program costs are based on metrics such as the estimated number of service requests, poles installed, vehicles purchased, etc. The costs for programs were estimated by many different program managers using assumptions and data determined by them for the respective program. The plant additions for programs for 2008 and test year 2009 are assumed to equal the program expenditures for 2008 and test year 2009, respectively.

Development of Project Estimates

Q. How were the estimates for the projects developed?

A. Each project is assigned to a project manager or project engineer and he or she is responsible for designing and managing the project's scope, schedule, and cost estimates. The schedule considers, among other things, the required need date, the

project's priority relative to other projects, lead time to order materials, resource requirements, and approvals required such as permitting and regulatory approval.

Q. Is it reasonable to expect that the timing, scope or cost of an individual project may change over the course of a year?

A. Yes. This sometimes happens in the normal course of business. There may be changes in needs or requirements that would cause changes in plans.

Q. Why are projects sometimes not completed as scheduled?

A. While HECO makes every effort to estimate adequate time for the project's tasks, there will inevitably be changes to the duration of tasks or additional tasks may be added due to unanticipated events. There are also some projects whose execution depends on the timing of generation unit outages; if the generation unit outage schedule changes, the project schedule changes accordingly.

Q. Were there any adjustments to reflect slippages in the project schedules for 2008 and 2009?

A. No. While some of the projects will inevitably slip in schedule and be placed in service later than anticipated, usually there are other projects that will be completed earlier than projected; or identified after the budget is finalized, remain unbudgeted and placed in service. Based on information for the years 1999 to 2007, the annual percent difference between recorded and forecast total plant additions ranged from -30% to 60%, or on average, a -6% difference for the nine-year period (see HECO-1702). While the annual percent difference can vary significantly, the percent difference is relatively insignificant over a longer-term perspective. As such, forecast total plant additions are comparable to the recorded total plant additions and the 2008 and test year 2009 plant addition estimates are therefore reasonable.

Q. How is the Company's total capital expenditures estimate determined?

A. Once individual projects are identified and their scope, schedules, and cost estimates developed, the following process is generally followed to develop the Company's capital expenditures estimate.

1) Managers and staff from each department meet to review and rank, to the degree possible, their proposed projects to determine which projects should move forward in the budget process.

2) Projects are reviewed by the responsible process areas to determine which projects should be considered for inclusion in the upcoming five-year capital budget.

3) The lists of proposed projects for each process area are compiled and presented to the Capital Budget Committee ("CBC").

4) The CBC reviews the proposed projects from a Company-wide perspective and determines which projects to include in (or exclude from) the upcoming five-year capital budget.

5) The project manager or responsible party receives the approved project list and builds/refines the detailed budget estimate.

During the detailed budgeting process, resource leveling reports are generated at several key points in the process to allow those providing resources an opportunity to view the demands, in terms of labor hours, placed on their resources. If necessary, adjustments are made such that the difference between supply and demand for a resource class for a responsibility area is reasonable. This generally results in a more realistic capital budget.

6) To ensure the completeness of the Company's final capital budget, consideration is given to adding any projects that were deferred or created between the process area review period and when the detailed budget is built/refined.

7) The proposed capital budget is reviewed at officer briefings and those projects that will be included in (or excluded from) the final budget for the upcoming five years is determined.

8) Subsequently, the five-year capital budget is presented to the Company's Board of Directors.

Q. Was there a review of the capital budget subsequent to when the five-year capital budget was presented to the Company's Board of Directors?

A. Yes. As part of the process to review the budget that was to be used as the starting point for developing the test year estimates, the capital budget was reviewed in conjunction with the review of the O&M expense budget earlier this year.

Q. Were there any changes to the capital budget as a result of the review?

A. Yes. While the capital expenditures for 2008 remained relatively level, the capital expenditures for 2009 increased by approximately $33 million.

Q. What were the drivers for the $33 million increase in capital expenditures for 2009?

A. As a result of management's review of the need to maintain reliability of our infrastructure, the Company determined that the level of capital expenditures needed to be increased to ensure reliable service. The increase of $33 million for 2009 resulted primarily from a $55 million increase due to an increase in the number of projects and in the costs of various projects and programs, offset by a

$22 million decrease due to the delay in the Parallel Plan Unit and Substation project.[1]

Q. Please describe the nature of the increased level of capital expenditures?

A. The increased level of capital expenditures included costs to maintain or improve generation unit reliability, to prevent overloads of existing equipment due to forecasted new loads, for spare equipment to prevent a long duration, emergency outage, and to replace aging equipment which are showing signs of deterioration. See discussion regarding HECO's aging infrastructure by Mr. Dan Giovanni in HECO T-7 and by Mr. Robert Young in HECO T-8.

Q. What was the review process for this updated capital expenditures budget for 2009?

A. The CBC reviewed the updated capital expenditures level for 2008 and 2009 and they were subsequently presented to the HECO and HEI Boards of Directors at a Joint Board meeting in June 2008.

Q. Why is the test year 2009 estimate of plant additions of $264,679,000 significantly higher than the plant addition estimate of $110,220,000 for 2008?

A. The plant additions for the test year 2009 are $154 million higher than for 2008 due primarily to the CIP1 Generating Station and Transmission Addition ("CIP1 Generating Unit") project which has estimated plant additions of $153 million in 2009. (There are also $9 million of plant additions for the CIP1 Generating Unit that will go into service in 2008 and $2 million included in Property Held for Future Use which will be discussed later in my testimony.) The CIP1 Generating Unit project Plant Additions are shown on HECO-1703.

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[1] Per HECO 2008 Capital Expenditures Budget filed February 29, 2008, this project consists of constructing a nominal 100MW simple cycle combustion turbine unit at HECO's Barbers Point Tank Farm and installing associated substation equipment at AES Substation to meet forecasted load growth in accordance with the Competitive Bidding framework.

Q. Did HECO submit applications for review for any of the specific projects that are expected to be added to utility plant in service?

A. Yes. Paragraph 2.3.(g)(2) of General Order No. 7 requires the Company to file an application for all projects with estimated capital expenditures in excess of $2,500,000[2] excluding customer contributions or 10% of the total utility plant in service, whichever is less, to the Commission for review at least 60 days prior to commencement of construction or commitment for expenditure, whichever is earlier. HECO-1704 provides a list of projects that have been approved by the Commission and will be placed in service and/or have straggling costs placed in service in 2008 and 2009.

Q. Please provide examples of projects for which applications for review were submitted to the Commission that will be placed in service and/or have straggling costs placed in service in 2008 and 2009.

A. On May 23, 2007, the Commission approved HECO's CIP1 Generating Unit in Decision and Order No. 23457 (Docket No. 05-0145). The CIP1 Generating Unit involves: (1) the construction, purchase and installation of a new generating facility (Project No. P4900000), which includes the purchase and installation of a nominal 110MW simple-cycle combustion turbine generator and its support equipment (including blackstart generation installed on site to enable the combustion turbine unit to be started even in the event of an island-wide power outage) at a new generating facility site located at HECO's existing Barbers Point Tank Farm; (2) the purchase of 3.80 acres of land to expand the existing Barbers Point Tank Farm to accommodate the new generating facility (Project Nos.

[2] Prior to July 1, 2004, General Order No. 7 required the submission of all projects with estimated capital expenditures in excess of $500,000. Decision and Order No. 21002 in Docket No. 03-0257 ordered the modification of Paragraph 2.3(g)(2) of General Order No. 7 to increase the threshold from $500,000 to $2,500,000.

P0001084 and P0001585) and the purchase of easements from Chevron and Campbell Estate for the new transmission line (Project No. P0001340); (3) the purchase and construction of a new two-mile overhead 138 kV transmission line from HECO's AES Substation to HECO's CEIP Substation in Campbell Industrial Park (Project No. P0001050); (4) modifications and additions to HECO's AES Substation (Project No. P0001051) and Kalaeloa Relays (Project No. P0001137), additions to HECO's CEIP Substation (Project No. P0001052), modifications to HECO's Kahe Generating Station Substation (Project No. P0001136); and (5) the purchase and installation of communication components of the CIP1 Generating Unit consisting of Fiber Communications (Project No. P0001134) and the Microwave Communications (Project No. P0001135). As discussed by Mr. Robert Alm in HECO T-1, HECO is proposing a revenue step increase for the CIP1 Generating Unit based on the plant addition amount shown on HECO-1703.

As background on the CIP1 Generating Unit, the application for the CIP1 Generating Unit was filed on June 17, 2005. Motions to intervene and participate were granted. Written testimonies and responses to information requests were filed by HECO and the parties and participant. HECO and the Consumer Advocate filed a joint stipulation dated December 4, 2006, and filed a joint motion for approval of stipulation on that date. The stipulation addresses areas with which the Consumer Advocate and HECO reached agreement, including HECO's commitment to use biofuels in the proposed combustion turbine. Decision and Order No. 23457 was granted on May 23, 2007 from the Commission approving HECO's CIP1 Generating Unit.

Q. Does the CIP1 Generating Unit project costs conform to its initial cost estimate?

A. No. The filed costs and schedules are based on information known and/or available at the time the estimates were developed and finalized. As final engineering design and construction of the various projects (or components) proceed, the costs and schedules are revised and updated. While the CIP1 Generating Unit project is still on schedule with an in-service date of July 31, 2009, an estimate provided to the Commission in a March 5, 2008 informational filing ("March 5, 2008 filing") totaled $164 million which is 19% higher than the Commission's approved estimate of $137 million. The variance is due to: (1) an increased estimate of construction costs; (2) an increase cost of the combustion turbine generator based on the escalation formula in the purchase contract; (3) an increased cost for transformers; and (4) newly planned laboratory testing using biodiesel.[3]

Q. How does the total cost estimate of the CIP1 Generating Unit project reflected in this test year 2009 docket compare with the March 5, 2008 filing estimate?

A. The current total cost estimate of $163.8 million for the CIP1 Generating Unit project is about $170,000, or 0.1%, lower than the estimate provided in the March 5, 2008 filing. As construction of the various projects within the CIP1 Generating Unit project proceeds, the costs for the individual projects may change and will be updated accordingly.

Q. Is there another example of a project for which an application for review was submitted to the Commission and the project did not conform to its initial cost estimate and schedule?

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[3] See informational filing dated March 5, 2008 to the Commission updating the cost estimate for Docket No. 05-0145 Campbell Industrial Park Generating Station and Transmission Additions project.

A. Yes. HECO received approval to proceed with its Ko Olina Substation Project by Decision and Order No. 22001 (Docket No. 05-0056) on August 31, 2005. The Ko Olina Substation was expected to be placed in–service in June 2006, but was delayed to January 30, 2008, due to projected loads not materializing as originally estimated. However, one of the 46kV line extensions was installed in March 2007 at the request of Centex Destination Properties, the adjacent developer/property owner.

The Commission's approved estimate for the Ko Olina Substation Project was $2.8 million, net of CIAC. The higher overall cost for the project of $3.8 million, net of CIAC, was due to higher than estimated equipment and material costs, the requirement for additional civil-structural-architectural ("CSA") substation engineering, the higher than estimated construction costs for the substation CSA construction, the 46kV duct line and the digging for the pole holes, and the project delay. The higher net project cost was offset to some extent by an additional contribution by Centex Destination Properties for the 46kV line installation.[4]

PROPERTY HELD FOR FUTURE USE

Q. What is property held for future use?

A. Property held for future use is property owned and held for future use in utility service under a definite plan for such use within 10 years after acquisition.

Q. What is the average balance of property held for future use for test year 2009?

A. The estimated average balance of property held for future use is $2,331,000 for test year 2009, as shown in HECO-1705.

[4] See Interim Accounting Report dated March 31, 2008 for Docket No. 05-0056 – Item Y00044 Installation of Ko Olina Substation.

Q. What changes have occurred in 2008 and are reflected in the property held for future use test year 2009 account balances?

A. In connection with the start of construction for the CIP1 Generating Unit, $1,262,000 for the cost of the 44-feet wide parcel of approximately two acres running between HECO's Barbers Point Tank Farm and H-Power needed to accommodate HECO's new generating unit and auxiliaries were transferred from property held for future use to utility plant in service in May 2008.

Q. What properties are included in property held for future use in the 2009 test year?

A. The following properties are in property held for future use in the 2009 test year:

- A second parcel at the CIP1 Generating Unit site
- A pipeline at the Barbers Point Deep Draft Harbor to be used in the future as a fuel oil pipeline, i.e., Kalaeloa-Barbers Point Harbor Pipeline ("KBPH Pipeline")
- A 1.112 acre parcel at the Kapolei Substation site.

Q. Please describe the second parcel at the CIP1 Generating Unit site.

A. This is a 1.76 acre property between Hanua Street and HECO's existing AES Substation that will allow for expansion of the AES Substation. The purchase price of this property was $1,810,000.

Q. Please describe the KBPH Pipeline.

A. The KBPH pipeline was installed in 1991 in conjunction with the construction of the State's Kalaeloa-Barbers Point deep draft harbor project. HECO installed the pipeline at that time since the State's laying of a 15-inch thick reinforced concrete pier and container storage area made it infeasible to lay the pipeline at a later date. Installing the pipeline during the construction of the State's Kalaeloa-Barbers

Point Harbor permitted HECO to have the infrastructure to access fuel at costs lower than if the pipeline was installed after the construction of the State's harbor.

As a result of the pipeline, the Company, and ultimately ratepayers, maintain some leverage in contract negotiations for fuel oil and also maintain future options for the pipeline as a possible gateway for imported fuel and biofuel directly to HECO's Barber's Point Tank Farm location.

Q. Has the Commission allowed the inclusion of the KBPH Pipeline in property held for future use in prior rate cases?

A. Yes. The Commission allowed inclusion of the KBPH Pipeline in property held for future use in its Decision and Orders for HECO's 1992, 1994, 1995, and 2005 rate cases, Docket Nos. 6998, 7700, 7766, and 04-0113 respectively. Also, the interim rate increase authorized in Interim Decision and Order No. 23749 ("Interim D&O"), issued October 22, 2007 in the Company's 2007 test year rate case (Docket No. 2006-0386), was based on a rate base amount that included the KBPH Pipeline in property held for future use. In that proceeding, neither the Consumer Advocate nor the DOD recommended any adjustment to the inclusion of the KBPH Pipeline in property held for future use.

Q. What is the $4,000 included in property held for future use for the Kapolei Substation?

A. This parcel was dedicated to HECO by the Housing and Community Development Corporation of Hawaii to provide electrical infrastructure for the Kapolei East area. HECO's purchase price was its site investigation and closing costs. Installation of a distribution substation is currently scheduled for 2011 to accommodate loads in the Kapolei East area such as the proposed Kapolei Mall and Department of Hawaiian Home Land's residential developments.

1 CONTRIBUTIONS IN AID OF CONSTRUCTION

2 Q. What is CIAC?

3 A. CIAC is defined in Rule No. 1 of Company's tariff as "money, property, or
4 services contributed to the Company for construction which is not subject to
5 refund or reimbursement in whole or in part." These types of contributions are
6 non-refundable and generally are required when a customer requests facilities that
7 are acceptable to HECO, but are additions beyond the standard facilities that
8 HECO would normally install. For example, when a customer requests a backup
9 transformer that is in addition to what HECO would normally install, the customer
10 is responsible for the costs for the backup transformer. Besides monetary (cash)
11 CIAC, the Company also receives "in-kind" contributions, which are non-cash
12 contributions such as duct line infrastructure built by a subdivision developer, or
13 similar customer, who later turns over ownership of the facilities to the Company.

14 Q. What is the Company's estimate of receipts of cash CIAC for 2008 and test year
15 2009?

16 A. The estimated receipts of cash CIAC are $6,246,000 and $6,754,000 for 2008 and
17 test year 2009, respectively, as shown on HECO-1706.

18 Q. How were the cash receipts of CIAC estimated?

19 A. CIAC for specific projects and programs are estimated differently. For specific
20 projects, engineers determine the specific contributions attributable to the specific
21 projects since contributions for specific projects vary considerably from project to
22 project. The estimates of contributions for programs are based on a trend of
23 previous years' receipts. Since programs consist of numerous projects of low cost
24 (many of which are unknown months in advance), it is impractical to forecast the
25 contributions for these projects individually.

Q. Why are the test year 2009 estimates of cash CIAC higher than the CIAC for 2008?

A. The cash CIAC for the test year 2009 is about $508,000 higher than for 2008 due primarily to the $2.1 million CIAC estimated for the Kaloi Substation Land Transfer from the University of Hawaii in 2009, offset by having estimated about half as many projects with CIAC in 2009 than in 2008.

Q. What is the estimated transfer from customer advances to CIAC for 2008 and test year 2009?

A. The estimated transfer from customer advances to CIAC is $19,000 and $67,000 for 2008 and test year 2009, respectively, as shown on HECO-1706. These funds are customer advances that are no longer refundable. Transfers from customer advances to CIAC are discussed further in the next section on customer advances.

Q. What is the Company's estimate of "in-kind" CIAC for 2008 and test year 2009?

A. The estimated "in-kind" CIAC are $3,864,000 and $4,204,000 for 2008 and test year 2009, respectively, as shown on HECO-1706.

Q. How were the "in-kind" CIAC estimated?

A. "In-kind" CIAC were estimated in a similar fashion as cash receipts of CIAC. Engineers determined the specific "in-kind" contributions for specific projects while the estimates for "in-kind" contributions for programs are based on a trend of previous years' "in-kind" contributions.

CUSTOMER ADVANCES

Q. What are customer advances?

A. Customer advances are funds advanced by the customer for facilities provided by HECO. Customer advances are required for requests for service that require new lines to be constructed for which the cost to construct exceeds the customer's

1 expected revenue for 60 months. Customer advances differ from CIAC in that
2 they are subject to refund in whole or in part.
3 Q. What is the average balance for customer advances for test year 2009?
4 A. The estimated average balance for customer advances is $848,000, as shown on
5 HECO-1707.
6 Q. What are the components of customer advances?
7 A. The components of customer advances consist of receipts of customer advances,
8 refunds of customer advances, and transfers of customer advances to CIAC.
9 Q. What are the estimated receipts of customer advances for 2008 and test year 2009,
10 respectively?
11 A. HECO's estimates of receipts of customer advances are $105,000 and $110,000
12 for 2008 and test year 2009, respectively, as shown on HECO-1707.
13 Q. What are the estimated refunds of customer advances for 2008 and test year 2009?
14 A. The estimated refunds of customer advances are $119,000 and $124,000 for 2008
15 and test year 2009, respectively, as shown on HECO-1707.
16 Q. When are customer advances refunded?
17 A. Refunds of customer advances are made when permanent customers, other than
18 the customer who provided the advance, are served from the facility for which an
19 advance was made or when permanent residents occupy the homes in a new
20 subdivision. The amount refunded to a customer is limited to the amount of the
21 advance collected and no refund is made after ten years from the date of the
22 advance.
23 Q. How were the receipts and refund amounts estimated?
24 A. Generally, receipts from customer advances for construction and refunds paid out
25 are estimated based on the five-year average for recorded amounts for 2003

through 2007. The five-year average receipts amount is escalated for inflation and rounded to the nearest $5,000 to derive the estimated receipts amount. The refunds amount is derived by applying a 2003-2007 refunds to 2003-2007 receipts ratio to the estimated receipts amount and then rounded to the nearest $5,000. See HECO-WP-1707, page 2.

Q. What are the estimated transfers of customer advances to CIAC for 2008 and test year 2009?

A. The estimated transfers of customer advances to CIAC are $19,000 and $67,000 for 2008 and test year 2009, respectively, as shown on HECO-1707.

Q. Why are customer advances transferred to CIAC?

A. When the ten-year refund period applicable to an advance has expired, the amount of Customer Advance for a project that has not yet been refunded is transferred to CIAC.

Q. How were the transfers to CIAC estimated?

A. The transfers to CIAC are calculated from records of advances. Advances received in 1998 and 1999 that are not expected to be refunded within ten years (expiring in 2008 and 2009) are forecast to be transferred to CIAC in 2008 and test year 2009, respectively.

BUDGET PROCESS

Q. How were the test year 2009 estimates for Operations and Maintenance ("O&M") expenses developed?

A. The test year 2009 estimates for O&M expenses were initially developed as part of the Company's 2007 budgeting process for the 2008 and 2009 budget years. During the budgeting process, detailed estimates of O&M expenses were prepared by responsible parties ("users") throughout the Company. The detailed estimates,

1 called responsibility area ("RA") budgets, were then summarized to produce the
2 2008 and 2009 O&M expense budgets. The 2008 and 2009 earnings estimates,
3 which incorporated the O&M expense budgets, were then presented to the
4 Company's officers, HEI, and the Boards of Directors of the Company and HEI.
5 Q. Were the 2009 O&M expense budget subsequently reviewed?
6 A. Yes. In early 2008, the users had the opportunity to review and adjust their 2009
7 RA budgets. The Company's officers reviewed the O&M expense estimates for
8 their respective areas of responsibility which resulted in further adjustments to the
9 2009 O&M budget. After those adjustments were made, the 2009 O&M expense
10 budget was finalized and became the starting point for the test year 2009 O&M
11 expense estimates, which are summarized at HECO-WP-101.
12 Q. Did the O&M expense witnesses make adjustments to the 2009 O&M expense
13 budget to arrive at the test year 2009 O&M expense estimates?
14 A. Yes. There are three types of adjustments that were made to determine the test
15 year estimates: (1) budget adjustments, (2) issue simplification adjustments, and
16 (3) normalization adjustments.
17 Q. What are the reasons for making budget adjustments?
18 A. Adjustments to the 2009 O&M expense budget are made either (1) to make
19 adjustments for known or expected significant changes in the test year, which
20 were not reflected in the final budget at the time it was completed, or (2) to correct
21 errors that were discovered after the estimates were completed.
22 Q. What is an example of a budget adjustment?
23 A. As discussed by Mr. Russell Harris in HECO T- 12, adjustments were made to
24 reduce the 2009 insurance O&M expense budget to reflect updated estimates.

Q. What are issue simplification adjustments?

A. These adjustments are made to simplify issues and are adjustments made only for rate case purposes. For example, HECO has excluded from the test year estimate certain costs (such as performance incentive plans compensation expenses, as addressed by Ms. Patsy Nanbu in HECO T-11) from the test year results of operations, which were denied and/or contested in prior rate cases, in order to simplify and limit the contested issues in this case. As Mr. Robert Alm explains in HECO T-1, HECO's position continues to be that these are appropriate costs of doing business that HECO will actually incur, and must be included in rates if HECO is to be afforded a full opportunity to earn a fair return. Therefore, HECO has not waived its right to seek recovery of these costs in future rate cases.

Q. What are normalization adjustments?

A. These are ratemaking rather than budget adjustments. Normalization adjustments are intended to make the test year results of operation more representative of a normal, on-going level of operations, or of the operating conditions that are expected to be in effect during the period that the rates set in this docket will be in effect. For example, it may be appropriate to amortize an unusual, non-recurring expense over a period of several years for ratemaking purposes if rates are not adjusted on an annual basis.

Q. What is an example of a normalization adjustment?

A. As discussed by Mr. Alan Hee in HECO T-10, a normalization adjustment to reduce the 2009 budget estimates to one-half of the costs for the biennial Pacific Coast Electrical Association Conference that will be incurred in 2009 has been made to determine the test year estimates. For such costs, it may be appropriate to

amortize this non-recurring expense over a period of two years for ratemaking purposes.

Q. Does the 2008 O&M expense budget include measures to reduce costs and protect earnings?

A. Yes. As part of the budget process in 2007, a 2008 pro forma income statement was prepared for management's review and approval. Management was concerned that revenues would not be able to support the level of spending in the budget as cost increases have outpaced sales growth. See discussion regarding HECO's increasing O&M expenses by Mr. Dan Giovanni in HECO T-7 and by Mr. Robert Young in HECO T-8. As such, a target reduction of about $8 million was made to reflect an assumed reduction in spending in the short run, keeping in mind that it is in the interest of its customers for management to plan for earnings to be at levels higher than in recent years. The Company's actual rates of return on simple average rate base and on simple average common equity as filed with the Commission have been:

	Return on Rate Base	Return on Common Equity
2005	6.20%	6.92%
2006	6.78%	7.61%
2007	4.92%	4.52%

See discussion regarding HECO's financial integrity by Ms. Tayne Sekimura in HECO T-20.

The target reduction was allocated to the process areas (and some process areas further allocated their target adjustment to their departments). Each process area was given discretion as to how to achieve the reduction, as long as safety,

reliability and service were not put at risk. These reductions are reflected in the functional accounts that are expected to be impacted.

Although these target reductions are reflected in the 2008 O&M expense budget, the Company will forgo achievement of such target reductions if safety, reliability or service will be compromised.

General Wage Increase

Q. What is the impact of general wage increases in the 2009 budget?

A. On an annual basis, general wage rates for test year 2009 are expected to be 7.50% (for bargaining unit employees) and 8.55% (for merit employees) higher than the respective 2007 wage rates (see HECO-1105).

Q. How was the wage increase determined for bargaining unit positions for the test year?

A. In accordance with the Company's negotiated labor agreement with the International Brotherhood of Electrical Workers, Local 1260, non-compounded wage increases for bargaining unit employees are 3.5% on November 1, 2007, and 4.0% on January 1, 2009. The percentage increases are applied to bargaining unit wage rates as of October 31, 2007. The labor agreement which included a wage increase effective November 1, 2007, was not ratified until March 2008, thus the higher wages for November and December 2007, were not paid until March of 2008.

Q. How was the salary increase determined for merit positions for the test year?

A. For merit employees, wage rates increased by an average of 3.5% on May 1, 2007 and 0.25% on September 1, 2007 over wage rates as of April 30, 2007. Merit wages were also increased 0.25% effective November 1, 2007, however, the retroactive payment was made in January 2008. Merit wage rates are estimated to

increase by 3.5% effective May 1, 2008, 0.30% effective September 1, 2008, and 0.20% effective December 2008 applied to merit wage rates as of April 30, 2008 and 4.0% effective May 1, 2009, 0.30% effective September 1, 2009 and 0.20% effective December 1, 2009 with the percentage increases being applied to merit wage rates as of April 30, 2009.

General Inflation Factor

Q. Was a general inflation factor utilized in HECO's budgeting process?

A. Yes. In developing the non-labor O&M expense estimates for the 2009 budget, HECO used a general inflation factor when specific known cost indices for non-labor costs were not available. Users were instructed to reflect in their 2009 budget, specific inflation rates or cost indices that were applicable to the cost items being estimated. When specific known cost indices for non-labor costs were not available, a general inflation factor was used.

Q. What general inflation factor was used in developing the 2009 O&M expense budget?

A. HECO used a general inflation factor of 2.5% for the 2009 O&M expense budget.

Q. How was the above general inflation factor determined?

A. HECO used an inflation rate based on information available at the time the budget was prepared. The Blue Chip Economic Indicators reported in its January 10, 2008 issue (see HECO-WP-1708, page 1) that the Consumer Price Index (CPI) for 2009 would increase by 2.3%, which was rounded to 2.5% to arrive at the general inflation factor for the 2009 O&M expense budget.

Q. Do more recent estimates support HECO's inflation rate assumptions as reasonable?

A. Yes. HECO's inflation rate assumption for test year 2009 is reasonable as the May 10, 2008 issue of the Blue Chip Economic Indicators reported that the CPI for 2009 would now increase by 2.5% (see HECO-WP-1708, page 2).

Q. Has the Commission allowed the use of inflation factors in determining projected expenses in previous rate case decisions?

A. Yes. In previous decisions, including HECO's 2005 and 2007 test year rate cases, Docket Nos. 04-0113 and 2006-0386, respectively, the Commission approved expenses that were derived from the inflation factors and the parties to the cases did not object to the general inflation factors used by the Company.

Q. Has the Company provided a list of activities where the inflation factor was used, as requested by the Consumer Advocate in prior cases?

A. Yes. HECO-1708 provides a list of activities where the general inflation factor was used in the Company's budgeting tool to determine the non-labor estimates for the test year.

Q. How did HECO identify the activities where the inflation factor was used and determine the corresponding budget amounts?

A. The Company's budgeting tool allows the user to select a data field indicating the use of an "escalator" (general inflation factor). By selecting this "escalator" data field, the budgeting tool will automatically "escalate" the amount budgeted by the "escalation" factor that has been set up in the budgeting tool. The information on HECO-1708, pages 1 through 9, was developed by selecting the budget data that used the "escalation" data field.

1 SUMMARY

2 Q. Please summarize your testimony.

3 A. HECO proposes that its plant additions estimate for 2008 and test year 2009 be
4 based on the total cost of all projects forecast to be placed in service in 2008 and
5 2009, respectively, which results from its current process to develop project
6 estimates.

7 The Company further proposes that three of its properties, the KBPH
8 Pipeline, the Kapolei Substation, and one parcel of land in Campbell Industrial
9 Park, be included in the year end 2009 test year balance of property held for future
10 use.

11 HECO's forecast of plant additions are $110,220,000 and $264,679,000 for
12 2008 and test year 2009, respectively. The average balance of property held for
13 future use is $2,331,000 for the test year. Estimated CIAC cash receipts are
14 $6,246,000 for 2008 and $6,754,000 for 2009. In-kind CIAC are estimated to be
15 $3,864,000 and $4,204,000 for 2008 and 2009, respectively. Transfers from
16 customer advances to CIAC are $19,000 for 2008 and $67,000 for 2009.
17 Customer advance receipts are estimated to be $105,000 and $110,000 in 2008
18 and 2009, respectively. The estimates for customer advance refunds are $119,000
19 for 2008 and $124,000 for the test year.

20 The Company's estimates for plant additions, property held for future use,
21 contributions in aid of construction, and customer advances, and general wage
22 increase and general inflation factor are reasonable for test year ratemaking
23 purposes. In addition, the Company's budget methodology is reasonable.

24 Q. Does this conclude your testimony?

25 A. Yes, it does.

LORIE ANN NAGATA

EDUCATIONAL BACKGROUND AND EXPERIENCE

Present Employer:	Hawaiian Electric Company, Inc. 900 Richards Street, Honolulu, Hawaii 96813
Current Position:	Treasurer of Hawaiian Electric Company, Inc. Treasurer of Maui Electric Company, Limited and Hawaii Electric Light Company, Inc.
Previous Positions with Present Employer:	Manager, Management Accounting Assistant Treasurer Director, Management Accounting Director, Corporate Accounting Accounting Control Supervisor Budget Analyst Financial Accountant
Education:	University of Hawaii Bachelor of Business Administration Chaminade University Masters of Business Administration Stanford University, Graduate School of Business Financial Management Program
Previous Rate Case Testimony:	Docket No. 04-0113 – Plant Additions, Budget Process Docket No. 6999 – Miscellaneous Administrative and General Expenses Docket No. 6998 – Miscellaneous Administrative and General Expenses
Professional License:	Certified Public Accountant

Hawaiian Electric Company, Inc.

2008 and 2009

PLANT ADDITIONS

($ Thousands)

	2008	2009	Reference
Projects	$62,507	$206,540	HECO-WP-1701
Programs	$47,712	$58,139	HECO-WP-1701
Total	$110,220	$264,679	

Totals may not add due to rounding.

Hawaiian Electric Company, Inc.

1999 - 2007

PLANT ADDITIONS

($ Thousands)

Year	Recorded	Budget	$ Difference	% Difference
1999	58,898	83,874	-24,976	-30%
2000	75,026	84,612	-9,586	-11%
2001	87,901	55,007	32,894	60%
2002	86,271	77,442	8,829	11%
2003	70,613	89,447	-18,834	-21%
2004	146,577	125,571	21,006	17%
2005	109,530	133,203	-23,673	-18%
2006	131,114	171,836	-40,722	-24%
2007	106,095	110,074	-3,979	-4%
1999-2007	872,025	931,066	-59,041	-6%

Hawaiian Electric Company, Inc.
Campbell Industrial Park Generating Station and Transmission Additions
Plant Additions

Project No.	Description	2008	2009	2010	Total
P0001052	CIP1 CEIP Substation Mod	620,572	3,966		624,538
P0001135	CIP1 Unit Addition-Microwave	759,695			759,695
P0001137	CIP1 Unit Addition-Kalaeloa	178,574			178,574
P0001340	CIP1 Unit Addition-Easements	6,185,183			6,185,183
P0001585	CIP1 Land - Gen Station	1,261,761			1,261,761
P0001050	CIP1 AES-CEIP#2 Trans Line		5,192,149		5,192,149
P0001051	CIP1 AES Substation Add		3,110,097		3,110,097
P0001134	CIP1 Unit Addition-Fiber		503,051		503,051
P0001136	CIP1 Unit Addition-Kahe Bkrs		1,755,643		1,755,643
P4900000	CIP1 Unit 1 Addition		142,353,685	50,000	142,403,685
	Plant Additions	9,005,785	152,918,591	50,000	161,974,376
P0001084	Parcel between Hanua Street and AES Substation (TMK 9-1-26:38) included in Property Held for Future Use				1,809,875
	Total Project Cost				163,784,251

HAWAIIAN ELECTRIC COMPANY, INC.

Projects Approved By the Public Utilities Commission
Included In 2008 & 2009 Plant Additions

($ THOUSANDS)

DOCKET NO.	D&O NO.	ITEM	DESCRIPTION	ESTIMATED PLANT ADDITIONS * Prior Years	2008	2009	FUTURE YEARS	TOTAL
00-0040	18292	Y00023	Ward Avenue A/C Improvements	8,132	1	-	-	8,133
01-0135	18680	P0000474	Waialua Sugar Privatization	1,670	2	-	-	1,672
01-0274	20436	P0000507	Kam Highway Resurfacing	2,002	23	-	-	2,025
02-0206	19774	P9539000	Kahe 3 Boiler Controls Upgrade	4,185	37	-	-	4,222
02-0207	19775	P9454000	Kahe 4 Boiler Controls Upgrade	4,611	0	-	-	4,611
02-0413	20089	Y00047	Puuloa Road Widening	1,372	570	-	-	1,942
03-0360	21224	Y00030	New Dispatch Center	26,854	356	-	-	27,210
04-0104	22294	P0000939	Waiau CT Separation	929	30	-	-	959
04-0278	21692	Y00040	Ford Island Substation	24,510	258	-	-	24,768
04-0350	21993	Y00039	Mamala Substation	7,425	14	-	-	7,439
05-0056	22001	Y00044	Ko Olina Substation	-	5,019	-	-	5,019
05-0145	23457	Y49000	CIP1 Generation Addition	-	9,006	152,919	50	161,975
05-0146	23514	Y00064	CIP-Community Benefits Package	-	789	1,173	-	1,962
2007-0409	23915	P0001534	Barbers Point Fuel Oil Tank #131	-		4,294	-	4,294

* Total cost of project before reduction for CIAC, if any.

Hawaiian Electric Company, Inc.

2008 and 2009

PROPERTY HELD FOR FUTURE USE

($ Thousands)

Recorded balance - 12/31/07	$3,593
Transfer Parcel No. 39 (tax map key 9-1-26:39) to Utility Plant in Service for Campbell Industrial Park Generating Station	($1,262)
Estimated balance - 12/31/08	$2,331
No Estimated Changes in 2009	
Estimated balance - 12/31/09	$2,331

Hawaiian Electric Company, Inc.

2008 and 2009

PROPERTY HELD FOR FUTURE USE

($ Thousands)

Name of Site	Size	Tax Map Key	Year Acquired	Proposed Service Date	Purchase Price
Kalaeloa-Barbers Point Harbor Pipeline	----	9-1-14:08	1991	----	$ 517
Campbell Industrial Park Generating Station	2.045 acres	9-1-26:39	2007	July 2009	$1,262
Campbell Industrial Park Generating Station	1.76 acres	9-1-26:38	2007	Post 2009	$1,810
Kapolei Substation	1.112 acres	9-1-16:90	2006	2011	$ 4

Hawaiian Electric Company, Inc.

2008 and 2009

CONTRIBUTIONS IN AID OF CONSTRUCTION

($ Thousands)

	2008	2009	Reference
Contributions in aid of construction:			
In-Kind	$ 3,864	$ 4,204	HECO-WP-1706
Cash CIAC:			
Customer Installations	$ 3,446	$ 3,542	HECO-WP-1706
Energy Delivery	$ 2,800	$ 3,212	HECO-WP-1706
Total	$ 6,246	$ 6,754	HECO-WP-1706
Customer Advances:			
Receipts	$ 105	$ 110	
Refunds	$ (119)	$ (124)	
Transfers	$ (19)	$ (67)	

Hawaiian Electric Company, Inc.

2008 and 2009

CUSTOMER ADVANCES

($ Thousands)

			Reference
Recorded balance - 12/31/07	$	921	
2008:			
Receipts		105	HECO-WP-1707
Refunds		(119)	HECO-WP-1707
Transfers to CIAC		(19)	HECO-WP-1707
Estimated balance - 12/31/08	$	888	
2009:			
Receipts		110	HECO-WP-1707
Refunds		(124)	HECO-WP-1707
Transfers to CIAC		(67)	HECO-WP-1707
Estimated balance - 12/31/09	$	807	
Average 2009 balance	$	848	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	(A) 2009 Costs Using Specific Cost Indices (Note 1)	(B) 2009 Costs Using 2.50% General Inflator	HECO-1708, Page	(C) = (A) + (B) 2009 Budget
Production Operations	14,418,241	-		14,418,241
Production Maintenance	26,773,285	31,520	2	26,804,805
Transmission Operations	1,817,283	369,815	3	2,187,098
Transmission Maintenance	1,658,693	1,784,455	4	3,443,149
Distribution Operations	3,449,158	431,925	5	3,881,082
Distribution Maintenance	2,266,198	5,056,824	7	7,323,023
Customer Accounts	9,239,003	-		9,239,003
Customer Service	24,009,954	-		24,009,954
A&G Operations	73,771,529	108,935	8	73,880,465
A&G Maintenance	351,837	18,450	9	370,287
Total O&M - Non-Labor (Note 2)	157,755,182	7,801,925		165,557,107
Total O&M - Labor (Note 3)				75,034,879
Total O&M - Labor/Non-Labor On-Costs				30,904,413
Total O&M - A&G/Emp Ben Transferred to Constr/Other				(18,475,425)
Total O&M - per HECO-WP-101				253,020,973

Note 1 - i.e., - Negotiated Contract, Lease Agreement, Other Cost Indices
Note 2 - Excludes Non-Labor On-costs
Note 3 - Excludes Labor On-costs

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
Production	551	PNG	210	PDG	NE	NPASVP7Z	501	15,761	2.50%
Maintenance	551	PNG	210	PDG	NE	NPASVP7Z	506	15,759	2.50%
								31,520	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
Transmission	561	PRE	376	OAH	NE	NPRZZZZZ	201	2,206	2.50%
Operations	561	PRE	376	OAH	NE	NPRZZZZZ	462	2,101	2.50%
|	561	PRE	376	OAH	NE	NPRZZZZZ	501	21,853	2.50%
|	562	PRC	333	OAH	NE	NPRZZZZZ	201	2,105	2.50%
|	563	PDS	328	OAH	NE	P0000361	201	14,006	2.50%
|	563	PDS	328	OAH	NE	P0000361	501	212,751	2.50%
|	563	PDS	328	OAH	NE	P0000361	505	86,751	2.50%
|	563	PDS	328	OAH	NE	P0000362	201	2,518	2.50%
|	563	PDS	328	OAH	NE	P0000362	501	5,092	2.50%
|	563	PDS	328	OAH	NE	P0000362	505	8,591	2.50%
|	564	PDS	329	OAH	NE	P0000361	201	220	2.50%
|	564	PDS	329	OAH	NE	P0000361	501	3,514	2.50%
|	564	PDS	329	OAH	NE	P0000361	505	1,433	2.50%
V	566	PRE	326	OAH	NE	NPRZZZZZ	201	6,672	2.50%
								369,815	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
Transmission	569	PVL	351	OAH	NE	NPVZZZZZ	205	2,460	2.50%
Maintenance	571	PDP	341	OAH	NE	P0000127	201	7,350	2.50%
|	571	PDP	341	OAH	NE	P0000127	501	157,595	2.50%
|	571	PDS	342	OAH	NE	P0000360	201	13,969	2.50%
|	571	PDS	342	OAH	NE	P0000360	501	1,185	2.50%
|	571	PDS	342	OAH	NE	P0000360	505	6,606	2.50%
|	571	PDS	342	OAH	NE	P3401000	201	1,610	2.50%
|	571	PDS	342	OAH	NE	P3401000	501	22,398	2.50%
|	571	PDS	342	OAH	NE	P3401000	505	11,464	2.50%
|	571	PDS	342	OAH	NE	P3402000	201	4,773	2.50%
|	571	PDS	342	OAH	NE	P3402000	501	81,474	2.50%
|	571	PDS	342	OAH	NE	P3402000	505	7,020	2.50%
|	571	PDS	344	OAH	NE	P0000124	201	6,603	2.50%
|	571	PDS	344	OAH	NE	P0000124	501	4,201	2.50%
|	571	PDS	344	OAH	NE	P0000124	505	3,975	2.50%
|	571	PDS	355	OAH	NE	P0000361	501	64,761	2.50%
|	571	PDS	360	OAH	NE	P0000124	201	134	2.50%
|	571	PDV	355	OAH	NE	P0000126	501	1,365,300	2.50%
|	572	PDS	347	OAH	NE	P0000122	201	1,254	2.50%
|	572	PDS	347	OAH	NE	P0000122	501	1,175	2.50%
|	572	PDS	347	OAH	NE	P0000122	505	697	2.50%
V	572	PVL	347	OAH	NE	NPVZZZZZ	205	18,450	2.50%
								1,784,455	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
Distribution	581	PRE	377	OAH	NE	NPRZZZZZ	501	62,344	2.50%
Operations	583	PDS	458	OAH	NE	P0000361	201	3,802	2.50%
|	583	PDS	458	OAH	NE	P0000361	501	59,204	2.50%
|	583	PDS	458	OAH	NE	P0000361	505	23,552	2.50%
|	583	PDS	458	OAH	NE	P0000362	201	1,864	2.50%
|	583	PDS	458	OAH	NE	P0000362	501	3,769	2.50%
|	583	PDS	458	OAH	NE	P0000362	505	6,356	2.50%
|	584	PDS	459	OAH	NE	P0000361	201	663	2.50%
|	584	PDS	459	OAH	NE	P0000361	501	10,076	2.50%
|	584	PDS	459	OAH	NE	P0000361	505	4,108	2.50%
|	584	PDS	459	OAH	NE	P0000362	201	159	2.50%
|	584	PDS	459	OAH	NE	P0000362	501	320	2.50%
|	584	PDS	464	OAH	NE	P0000361	201	367	2.50%
|	584	PDS	464	OAH	NE	P0000361	501	153,750	2.50%
|	584	PDS	464	OAH	NE	P0000361	501	5,720	2.50%
|	584	PDS	464	OAH	NE	P0000361	505	2,332	2.50%
|	584	PDS	464	OAH	NE	P0000362	505	541	2.50%
|	588	PDF	600	OAH	NE	P0000740	201	83,626	2.50%
|	588	PDF	600	OAH	NE	P0000740	501	5,379	2.50%
|	588	PRE	456	OAH	NE	NPRZZZZZ	201	3,782	2.50%
V	588	PRE	456	OAH	NE	NPRZZZZZ	501	210	2.50%
								431,925	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
Distribution	591	PVL	488	OAH	NE	NPVZZZZZ	205	2,460	2.50%
Maintenance	593	PDP	471	OAH	NE	P0000127	201	24,169	2.50%
|	593	PDP	471	OAH	NE	P0000127	501	682,910	2.50%
|	593	PDS	440	OAH	NE	P1510000	201	20	2.50%
|	593	PDS	442	OAH	NE	P1580000	201	1,916	2.50%
|	593	PDS	473	OAH	NE	P0000360	201	37,760	2.50%
|	593	PDS	473	OAH	NE	P0000360	501	3,215	2.50%
|	593	PDS	473	OAH	NE	P0000360	505	17,852	2.50%
|	593	PDS	473	OAH	NE	P3400000	201	54,956	2.50%
|	593	PDS	473	OAH	NE	P3400000	501	7,958	2.50%
|	593	PDS	473	OAH	NE	P3400000	505	35,609	2.50%
|	593	PDS	475	OAH	NE	P0000123	201	27,636	2.50%
|	593	PDS	475	OAH	NE	P0000123	501	16,441	2.50%
|	593	PDS	475	OAH	NE	P0000123	505	63,230	2.50%
|	593	PDS	494	OAH	NE	P0000361	501	31,897	2.50%
|	593	PDS	500	OAH	NE	P0000123	201	1,119	2.50%
|	593	PDS	500	OAH	NE	P0000123	501	681	2.50%
|	593	PDS	500	OAH	NE	P0000123	505	2,542	2.50%
|	593	PDV	494	OAH	NE	P0000126	501	3,159,050	2.50%
|	594	PDS	416	OAH	NE	P1990000	501	7,364	2.50%
|	594	PDS	448	OAH	NE	P1820000	201	187	2.50%
|	594	PDS	476	OAH	NE	P1810000	201	4,415	2.50%
|	594	PDS	476	OAH	NE	P1810000	501	17,123	2.50%
|	594	PDS	476	OAH	NE	P1810000	505	1,665	2.50%
|	594	PDS	476	OAH	NE	P1810000	506	4,790	2.50%
|	594	PDS	478	OAH	NE	P0000122	201	234,535	2.50%
|	594	PDS	478	OAH	NE	P0000122	501	178,388	2.50%
|	594	PDS	478	OAH	NE	P0000122	505	334,312	2.50%
|	594	PDS	501	OAH	NE	P0000122	201	6,269	2.50%
|	594	PDS	501	OAH	NE	P0000122	501	5,867	2.50%
|	594	PDS	501	OAH	NE	P0000122	505	3,489	2.50%
|	595	PDS	479	OAH	NE	P1789000	201	418	2.50%
|	595	PDS	479	OAH	NE	P1789000	505	590	2.50%
|	595	PDS	481	OAH	NE	P0000120	201	597	2.50%

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
Distribution	595	PDS	481	OAH	NE	P0000120	501	2,471	2.50%
Maintenance	595	PDS	481	OAH	NE	P0000120	505	2,192	2.50%
|	595	PDS	481	OAH	NE	P0000120	508	333	2.50%
|	595	PDS	482	OAH	NE	P1793000	201	2,042	2.50%
|	595	PDS	482	OAH	NE	P1793000	501	1,205	2.50%
|	595	PDS	482	OAH	NE	P1793000	505	1,021	2.50%
|	595	PDS	484	OAH	NE	P0000121	201	3,605	2.50%
|	595	PDS	484	OAH	NE	P0000121	501	5,219	2.50%
|	595	PDS	484	OAH	NE	P0000121	505	1,694	2.50%
|	595	PDS	484	OAH	NE	P0000359	201	6,063	2.50%
|	595	PDS	484	OAH	NE	P0000359	501	5,331	2.50%
|	595	PDS	484	OAH	NE	P0000359	505	21,044	2.50%
|	595	PDS	505	OAH	NE	P0000121	201	401	2.50%
|	595	PDS	505	OAH	NE	P0000121	501	580	2.50%
|	595	PDS	505	OAH	NE	P0000121	505	188	2.50%
|	595	PVL	481	OAH	NE	NPVZZZZZ	205	7,688	2.50%
V	598	PVL	492	OAH	NE	NPVZZZZZ	205	24,317	2.50%
								5,056,824	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
A & G Operation	921	PVL	842	PHE	NE	NPVZZZZZ	205	2,460	2.50%
|	921	PVL	931	PHE	NE	NPVZZZZZ	501	12,300	2.50%
|	925	PVL	795	PHE	NE	NPVZZZZZ	205	4,920	2.50%
|	9302	PJB	753	PHE	NE	P0001170	201	65,906	2.50%
|	9302	PJW	753	PHE	NE	P0001168	201	800	2.50%
V	9302	PJW	753	PHE	NE	P0001168	508	22,550	2.50%
								108,935	

Hawaiian Electric Company, Inc.
Operations & Maintenance Non-Labor Costs
Use of General Inflator
2009

Block of Account	NARUC Account	RA	Activity	Location	Indicator	Project	Expense Element	2009 Amount	General Inflator
A & G Maintenance	932	PVL	932	WRD	NE	NPVZZZZZ	205	18,450	2.50%
								18,450	

HECO T-18
DOCKET NO. 2008-0083

TESTIMONY OF
DARREN DOI

SENIOR FINANCIAL ANALYST
FINANCIAL ANALYSIS
MANAGEMENT ACCOUNTING AND FINANCIAL SERVICES
HAWAIIAN ELECTRIC COMPANY, INC.

Subject: Rate Base

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INTRODUCTION

Q. Please state your name and business address.

A. My name is Darren Doi and my business address is 900 Richards Street, Honolulu, Hawaii 96813.

Q. By whom are you employed and in what capacity?

A. I am a Senior Financial Analyst in the Financial Analysis Division at Hawaiian Electric Company, Inc. ("HECO" or "Company"). HECO-1800 provides my educational background and work experience.

Q. What is your area of responsibility in this proceeding?

A. My testimony will present HECO's estimated average rate base for the 2009 test year and the working cash calculation included in the estimated average rate base.

AVERAGE RATE BASE

Q. What is the Company's estimate of the average rate base for the test year 2009?

A. HECO estimates the test year 2009 average rate base at proposed rates to be $1,407,980,000 in support of the Campbell Industrial Park Generation Station and Transmission Project ("CIP1 Generating Unit") Step Increase as shown on HECO-1801 and HECO-1801(a) and $1,258,355,000 in support of the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1801(b) and HECO-1801(c).

Q. Please describe the CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit)?

A. HECO is requesting a rate increase that will be implemented in steps to more closely match cost recovery with cost incurrence. The first step is an Interim Increase (based on the Company's revenue requirements exclusive of any 2009

CIP1 Generating Unit costs[1]). The second step is a Step Increase based on the return on investment of the CIP1 Generating Unit Step, including the full cost of the 2009 CIP1 Generating Unit plant additions in the 2009 net cost of plant balance. It also includes the related accumulated deferred income tax and unamortized investment tax credit balances, and associated production operations and maintenance expenses, employee benefits and payroll taxes. This second step is to be effective on the in service date of the CIP1 Generating Unit. The CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit) being proposed are discussed by Mr. Robert Alm in HECO T-1 and further discussed by Mr. William Bonnet in HECO T-23. Within my testimony I will describe, in more detail, the individual rate base components and working cash impacts related to the CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit).

A reconciliation of the test year 2009 average rate base balance at proposed rates for the CIP1 Generating Unit at full cost and at the Interim Increase (without CIP1 Generating Unit) is provided at HECO-1801(b) and HECO-1801(c). Also included in this exhibit is a reconciliation to the unadjusted test year average rate base balances (referenced as "base case").

Q. What is rate base?

A. Rate base is the net investment that is used or useful for public utility purposes that has been funded by investors. Consistent with §269-16(b) of the Hawaii Revised Statutes which requires "…a fair return on the property of the utility actually used or useful for public utility purposes", investors should have the opportunity to earn a fair rate of return on rate base.

[1] The Interim Increase includes certain 2008 plant additions associated with the CIP1 Generating Unit project.

1 Rate Base Calculation

2 Q. How is the rate base calculated in this docket?

3 A. For the 2009 test year, the Company calculated an average rate base which is the
4 sum of the average balances of "investments in assets" less the sum of the average
5 balances of "funds from non-investors." I will define these terms later in my
6 testimony.

7 HECO generally calculates the test year rate base in accordance with the
8 concepts adopted by the Commission in prior rate case decisions, including the
9 stipulation of the Parties in the Stipulated Settlement Letter filed September 5,
10 2007 ("HECO 2007 Stipulation") and Interim Decision and Order No. 23749
11 (dated October 22, 2007) in Docket No. 2006-0386 ("HECO 2007 Interim
12 Decision"), HECO's test year 2007 rate case; the stipulation of the Parties
13 ("HECO 2005 Stipulation") and Decision and Order No. 24171 (dated May 1,
14 2008) in Docket No. 04-0113 ("HECO 2005 Decision"), HECO's test year 2005
15 rate case; Decision and Order No. 14412 (dated December 11, 1995) in Docket
16 No. 7766 ("HECO 1995 Decision"), HECO's test year 1995 rate case; and
17 Decision and Order No. 13704 (dated December 28, 1994) as amended by Order
18 No. 13718 (dated January 5, 1995) in Docket No. 7700, HECO's test year 1994
19 rate case.

20 Q. How are the average balances for the rate base items calculated?

21 A. The average balance of each of the components of rate base is equal to the sum of
22 the estimated 2008 and estimated 2009 year-end balances divided by two. Within
23 my testimony, I will describe the calculation of the 2008 and 2009 year-end
24 balances for each rate base item or will reference the appropriate HECO witness.

INVESTMENTS IN ASSETS

Q. What are investments in assets?

A. Investments in assets include all investments necessary to provide reliable electric service. Both investors and non-investors pay for these investments.

Q. What items are included in investments in assets?

A. The investments in assets include:

1) net cost of plant in service,
2) property held for future use,
3) fuel inventory,
4) materials and supplies inventories,
5) unamortized net Statement of Financial Accounting Standards ("SFAS") 109 regulatory asset,
6) unamortized system development costs,
7) unamortized reverse osmosis ("RO") water pipeline regulatory asset,
8) asset retirement obligation ("ARO") regulatory asset, and
9) working cash.

Q. Are there rate base components that HECO proposes to include in the test year rate base that were not included in any prior HECO rate cases?

A. Yes. HECO did not previously forecast or include the unamortized RO water pipeline regulatory asset. I will discuss this component later in my testimony.

1) Net Cost of Plant in Service

Q. What is the test year estimate of the average net cost of plant in service?

A. The estimated average net cost of plant in service for the test year 2009 is $1,545,465,000 for the CIP1 Generating Unit Step Increase and $1,392,546,000

for the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1802 and HECO-1802(a).

Q. Please describe net cost of plant in service.

A. Net cost of plant in service is comprised of the gross plant in service less accumulated depreciation.

Q. What is gross plant in service?

A. The gross plant in service is the original cost of plant assets. The original cost of plant assets includes the cost of equipment, construction and all other costs necessary for the projects and investments to be used or useful for public utility purposes.

Q. What is accumulated depreciation?

A. Accumulated depreciation is the cumulative amount of depreciation that has been expensed in the past. Depreciation is the allocation of a portion of the original cost of the asset to each period in the estimated useful life of an asset. Part of the accumulated depreciation is reclassified as a cost of removal regulatory liability for financial reporting purposes, and part of the cost of removal regulatory liability is reclassified as asset retirement obligations for financial reporting purposes. Mr. Bruce Tamashiro discusses the details of depreciation, accumulated depreciation, and the associated financial reporting reclassifications in HECO T-14.

Q. Why is accumulated depreciation deducted from the original cost of assets?

A. Since the Company recovers depreciation through its revenues, it has already recovered the accumulated depreciation amount; therefore investors do not need to earn a return on this.

Q. How was the estimated average net cost of plant in service calculated for the CIP1 Generating Unit Step Increase?

A. The starting point was the recorded net cost of plant in service at December 31, 2007. That amount was derived by subtracting accumulated depreciation and the regulatory liability for removal costs from gross plant in service at December 31, 2007. HECO made the following adjustments for the 2008 estimates:

1) Add net plant additions (additions including in-kind contributions in aid of construction ("CIAC") presented by Ms. Lorie Nagata in HECO T-17)
2) Add costs of removal (presented by Mr. Bruce Tamashiro in HECO T-14),
3) Subtract salvage value (presented by Mr. Bruce Tamashiro in HECO T-14), and
4) Subtract depreciation accrual (presented by Mr. Bruce Tamashiro in HECO T-14).

This net amount was the estimated net cost of plant in service at December 31, 2008. The process was then repeated for the 2009 test year after including the estimated full cost of the CIP1 Generating Unit plant additions to the January 1, 2009 net cost of plant in service balance.

The average net cost of plant in service was calculated by dividing the sum of the estimated 2009 beginning of year balance and the 2009 end of year balance by two.

Q. Why is HECO proposing to include the full cost of the test year CIP1 Generating Unit plant additions in the average net cost of plant in service balance?

A. HECO is including the estimated $152,919,000 (HECO-1703) cost of the 2009 CIP1 Generating Unit plant additions to avoid distorting its ongoing revenue requirements.

Q. Why is it necessary to adjust the average rate base in this manner in the CIP1 Generating Unit Step Increase?

A. The underlying philosophy of the rate setting process necessitates the use of this proposed adjustment to the rate base in this case. Ratemaking assumes that electric rates set on the basis of test year results will provide adequate revenues to cover the expenses of providing electric service and providing both a return <u>of</u> the investment and a return <u>on</u> the investment in assets serving customers.

Adjusting the rate base in this manner in the CIP1 Generating Unit Step Increase allows HECO the opportunity to earn a reasonable rate of return on the total test year investment of the CIP1 Generating Unit, from the moment it goes into service onward.

The CIP1 Generating Unit is scheduled to be placed in service July 31, 2009. Under a test year average rate base calculation (reference base case), the cost of the 2009 CIP1 Generating Unit plant additions would only be added to the 2009 year-end cost of plant in service balance. The test year average rate base would reflect only one-half ($76 million) of HECO's estimated $153 million invested for the CIP1 Generating Unit. This is illustrated in HECO-1802(b). Upon being placed in service the CIP1 Generating Unit will be fully operational and will be servicing customers, yet HECO would not have the opportunity to earn a reasonable rate of return on its actual investment.

Therefore, including the full cost of the 2009 CIP1 Generating Unit plant additions in rate base in the CIP1 Generating Unit Step Increase, is necessary to

allow HECO the meaningful opportunity to earn a fair return on 100% on its 2009 investment in the CIP1 Generating Unit when it becomes fully operational. The CIP1 Generating Unit Step Increase is discussed by Mr. Robert Alm in HECO T-1 and Mr. William Bonnet in HECO T-23.

Q. Please describe how the 2009 CIP1 Generating Unit plant additions impact the average net cost of plant in service at the Interim Increase (without CIP1 Generating Unit)?

A. At the Interim Increase (without CIP1 Generating Unit), HECO proposes to exclude the 2009 CIP1 Generating Unit plant additions from the calculation of the average net cost of plant in service. HECO proposed the Interim Increase (without CIP1 Generating Unit) be implemented prior to the CIP1 Generating Unit being fully operational. As the CIP1 Generating Unit is not fully operational at the Interim Increase, the Company should not be allowed the opportunity to earn a return on its investment. Therefore, the Company has excluded the 2009 CIP1 Generating Unit plant additions from the calculation of the average net cost of plant in service as shown on HECO-1802(a). The Interim Increase (without CIP1 Generating Unit) is discussed by Mr. Robert Alm in HECO T-1 and Mr. William Bonnet in HECO T-23.

For reference, the average net cost of plant in service at base case is shown on HECO-1802(b).

Q. Why is the net cost of plant in service included in rate base?

A. The net cost of plant in service represents the Company's unrecovered investment in plant necessary to provide electric service.

Q. Did the Commission allow the inclusion of net cost of plant in service in rate base in prior HECO rate case decisions?

A. Yes. For example, the Commission included net cost of plant in service in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

2) Property Held for Future Use

Q. What is the test year estimate of the average property held for future use?

A. Average property held for future use for test year 2009 is $2,331,000 as shown on HECO-1801.

Q. What is property held for future use?

A. Property held for future use is property owned by HECO and held for future utility purposes. Ms. Lorie Nagata explains the details and calculation of property held for future use in HECO T-17.

Q. Why is property held for future use included in rate base?

A. Property held for future use represents the Company's investment in property needed to provide electric service in the future. The smooth operation of the utility sometimes requires the acquisition of property before it is needed.

Q. Did the Commission allow the inclusion of property held for future use in rate base in prior HECO rate cases?

A. Yes. For example, the Commission included property held for future use in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

3) Fuel Inventory

Q. What is the test year estimate of the average fuel inventory?

A. The estimated average fuel inventory for test year 2009 is $82,683,000, as shown on HECO-1801.

Q. What is fuel inventory?

A. Fuel inventory is the Company's investment in a supply of fuel held in inventory. Mr. Ronald Cox explains the details of fuel inventory in HECO T-5.

Q. Why is fuel inventory included in rate base?

A. An investment in fuel inventory is required to ensure a sufficient supply of fuel for the Company's power plants so that HECO can provide reliable electric service to its customers.

Q. Did the Commission allow the inclusion of fuel inventory in rate base in prior HECO rate cases?

A. Yes. For example, the Commission included fuel inventory in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

4) Materials and Supplies Inventories

Q. What is the test year estimate of the average materials and supplies inventories?

A. The estimated average materials and supplies inventories for both production and transmission and distribution for test year 2009 is $16,015,000, as shown on HECO-1803. The test year estimate includes an adjustment for the payment lag associated with the investment in inventory.

Q. What are materials and supplies inventories?

A. Materials and supplies inventories include production inventory and transmission and distribution inventory. Mr. Dan Giovanni in HECO T-7 and Mr. Robert Young in HECO T-8 discuss in detail the inventories of their respective areas and how they calculated the 2008 and 2009 year-end balances before the adjustment for payment lag.

Q. Why does the inventory balance include an adjustment for the payment lag?

A. In the HECO 1995 Decision, the Commission determined that materials and supplies inventory should be adjusted to reflect the payment lag associated with goods received but not yet paid for by the Company.

Q. How was the payment lag associated with inventory determined?

A. The payment lag days presented in this rate case were previously presented in the HECO 2007 test year rate case (Docket No. 2006-0386) and originally in the HECO 2005 test year rate case (Docket No. 04-0113). In the 2005 test year rate case, HECO did a study of payments for inventory purchases to determine the length of time between when inventory is received and when payment is made. HECO tested a sample of 2003 inventory purchases and determined the payment lag for each item. Then, HECO calculated the dollar-weighted average days for the sample. The study is summarized on HECO-WP-1803, page 3.

Q. Why is it appropriate to use the payment lag days that were determined in the 2005 test year rate case?

A. The Company determined that there were no significant changes from the 2005 test year rate case to internal processes and procedures over invoice review and payment. As there were no significant changes which would impact the calculation of the payment lag days, the number of payment lag days calculated in the 2005 test year rate case should reasonably represent the number of payment lag days in the 2009 test year.

Q. What was the result of the inventory payment lag study?

A. The payment lag days are approximately 19.5 days.

Q. How are the results of the inventory payment lag study used in determining the adjustment to the materials and supplies inventory?

A. The adjustment to the materials and supplies inventory is calculated by multiplying the forecasted daily additions to inventory for the 2009 test year by the inventory payment lag days of 19.5 days. The calculation of the inventory adjustment is shown on HECO-WP-1803, page 1.

Q. What is the test year payment lag adjustment to the materials and supplies inventory?

A. The estimated payment lag adjustment to the materials and supplies inventory for test year 2009 is $1,007,000, comprised of a $405,000 adjustment to production inventory and a $601,000 adjustment to transmission and distribution inventory as shown on HECO-1803.

Q. How does the payment lag adjustment to inventory affect the payment lag included in the working cash calculation that you discuss later in your testimony?

A. In theory, the operations and maintenance ("O&M") non-labor payment lag, assuming that inventory is adjusted for the payment lag, is shorter than if the inventory payment lag had been accounted for in the O&M non-labor payment lag. Since the inventory balance represents only that portion of inventory that has been paid for, the working cash related to O&M non-labor reflects inventory charges to O&M from the "paid-up" inventory balance. O&M charges from inventory therefore have no payment lag in the current lead-lag study in HECO-WP-1806.

Q. Why are materials and supplies inventories included in rate base?

A. An investment in an adequate supply of materials and supplies is necessary to ensure that the Company can effectively operate and maintain its electrical system to provide continuous and reliable service to its customers.

Q. Did the Commission allow the inclusion of materials and supplies inventory in rate base in prior HECO rate cases?

A. Yes. For example, the Commission included materials and supplies inventory in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

5) Unamortized Net SFAS 109 Regulatory Asset

Q. What is the test year estimate of average net SFAS 109 regulatory asset?

A. The estimate for the unamortized net SFAS 109 regulatory asset is $61,310,000, as shown on HECO-1801.

Q. What is the unamortized net SFAS 109 regulatory asset?

A. As described by Mr. Lon Okada in HECO T-16, the net regulatory asset is an accounting asset that came about due to the reporting requirements of SFAS 109.

Q. How was the average unamortized net SFAS 109 regulatory asset calculated?

A. Mr. Okada describes the calculation of the average unamortized net SFAS 109 regulatory asset in HECO T-16.

Q. Why is the unamortized net SFAS 109 regulatory asset included in rate base?

A. As explained by Mr. Lon Okada in HECO T-16, SFAS 109 requires the debt portion of the Allowance for Funds used during Construction ("AFUDC"), as well as any other item previously recorded on a net-of-tax basis, to be calculated and capitalized on a gross-of-tax basis. As a result, plant in service would have increased by the tax effect of the debt portion of AFUDC. However, instead of increasing plant in service, SFAS 109 requires this gross-up adjustment to a regulatory asset, with the offsetting credit to the deferred income tax liability account. Because the regulatory asset is offset by the corresponding increase in deferred taxes, there is no net rate base impact.

Q. Did the Commission allow the inclusion of unamortized net SFAS 109 regulatory asset in rate base in prior HECO rate cases?

A. Yes. For example, the Commission included unamortized net SFAS 109 regulatory asset in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

6) Unamortized System Development Costs

Q. What is the test year estimate of unamortized system development costs?

A. The test year estimate of unamortized system development costs is $17,452,000, as shown on HECO-1801.

Q. What is included in unamortized system development costs?

A. The unamortized system development costs relate to the Human Resources Suite ("HR Suite") project as presented by Ms. Julie Price in HECO T-13, the Outage Management System ("OMS") project as presented by Mr. Robert Young in HECO T-8 and the Customer Information System ("CIS") project as presented by Mr. Darren Yamamoto in HECO T-9.

Q. Why are unamortized system development costs included in rate base?

A. In Decision and Order No. 18365, Docket No. 99-0207 (Hawaii Electric Light Co., Inc.'s test year 2000 rate case), the Commission ruled that its pre-approval is required before any computer software development project costs may be deferred and amortized for ratemaking purposes. For the HR Suite project, the Company filed its application in Docket No. 2006-0003 on January 3, 2006, requesting approval of its proposed accounting treatment to defer costs related to the HR Suite project. The Commission issued Decision and Order No. 23413 on May 3, 2007 approving HECO's proposed accounting and ratemaking treatment. The project is estimated to be completed and in service in April 2009. For the

OMS project the Company filed its application on May 28, 2004 in Docket 04-0131. The Commission issued Decision and Order No. 21899 on June 30, 2005 approving HECO's proposed accounting and ratemaking treatment. The project was completed and placed in service in July 2007. For the CIS project the Company filed its application on August 4, 2004 in Docket No. 04-0268. The Commission issued Decision and Order No. 21798 on May 3, 2005 approving HECO's proposed accounting and ratemaking treatment. The project is estimated to be completed and in service in May 2009.

As presented by Ms. Patsy Nanbu in HECO T-11, the unamortized costs of computer software development projects are similar to the undepreciated costs of capitalized plant and equipment, and should be included in the calculation of rate base. Rate base treatment is appropriate because investors have provided the funds up front to develop the computer software systems which are expected to be in service during the test year. As such, the unamortized system development costs are appropriately included in rate base and allow investors the opportunity to earn a fair return on their investment.

Q. Did the Commission allow the inclusion of unamortized system development costs in rate base in prior HECO rate cases?

A. Yes. The Commission included unamortized system development cost in determining rate base in the HECO 2007 Interim Decision. In the 2005 test year rate case, because there were no unamortized system development costs (i.e., unamortized system development costs equaled "0"), no deferred system development costs were reflected in the rate base.

<u>7) Unamortized RO Water Pipeline Regulatory Asset</u>

Q. What is the test year estimate of the RO water pipeline regulatory asset?

A. The test year estimate of the RO water pipeline regulatory asset is $3,183,000 as shown on HECO-1801.

Q. What is the RO water pipeline regulatory asset?

A. The RO water pipeline regulatory asset accounts for the portion of the RO water pipeline that will be dedicated to the Board of Water Supply of the City and County of Honolulu ("BWS") upon completion of construction. The BWS will then own, operate and maintain that section of pipeline. Please see Docket No. 05-0146 for a more detailed description of the RO water pipeline project. Construction of the RO water pipeline is anticipated to be completed in August 2009.

Q. How was the average RO water pipeline regulatory asset calculated?

A. The average RO water pipeline regulatory asset was calculated by starting with the zero recorded balance at December 31, 2008 and adding the estimated cost of the RO water pipeline that is to be dedicated to BWS, then subtracting the estimated test year amortization. This net amount is the estimated unamortized RO water pipeline regulatory asset balance at December 31, 2009. The average unamortized RO water pipeline regulatory asset is calculated by dividing the sum of the estimated 2008 end of year balance of zero and the 2009 end of year balance by two. This calculation is shown on HECO-1121.

Q. Why is the unamortized RO water pipeline regulatory asset included in rate base?

A. As explained by Ms. Patsy Nanbu in HECO T-11, the unamortized RO water pipeline regulatory asset represents a portion of the pipeline that will be dedicated to BWS and will no longer be owned, operated or maintained by the Company. However, ratepayers will continue to benefit from the RO water pipeline. Thus, the costs of the section of pipeline dedicated to BWS should be recovered from

ratepayers through rates. The effect of including the unamortized balance of the RO water pipeline regulatory asset in rate base mirrors the ratemaking impact if that section of the RO water pipeline continued to be reflected in Plant in Service. Further, the Commission approved this accounting and ratemaking treatment in Decision and Order No. 23514 (dated June 27, 2007) in Docket No. 05-0146.

8) ARO Regulatory Asset

Q. What is the test year estimate of the ARO regulatory asset?

A. The test year estimate of the ARO regulatory asset is $13,000, as shown on HECO-1804.

Q. What is the ARO regulatory asset?

A. The ARO regulatory asset represents HECO's cost of removal for certain assets as calculated under Financial Accounting Standards Board ("FASB") Interpretation No. 47, "Accounting for Conditional Asset Retirement Obligation" ("FIN No. 47"), adopted in December 2005. FIN No. 47 and the ARO regulatory asset are further described by Mr. Bruce Tamashiro in HECO T-14.

Q. How was the average ARO regulatory asset calculated?

A. The average ARO regulatory asset was calculated by dividing the sum of the estimated 2008 end of year balance and the 2009 end of year balance by two.

Q. Why is the ARO regulatory asset included in rate base?

A. As explained by Mr. Bruce Tamashiro in HECO T-14, the recognition of the Company's ARO and inclusion of the ARO regulatory asset has no effect on rate base. In general, upon initial recordation of the ARO, the cost of the asset is increased by the amount of the ARO. Rather than recording depreciation expense or accretion expense as the increased asset cost is depreciated or as the ARO increases, respectively, a regulatory asset is recorded. The net book value of the

asset cost related to the ARO plus the regulatory asset related to the depreciation and accretion expense, net of the ARO liability sum to zero.

Q. Did the Commission allow the inclusion of the ARO regulatory asset in rate base in prior HECO rate cases?

A. Yes. The Commission included the ARO regulatory asset in determining rate base in the HECO 2007 Interim Decision.

9) Working Cash

Q. What is the test year estimate of working cash at present, current effective and proposed rates?

A. The test year estimate of working cash at present, current effective and proposed rates is $41,721,000, $41,025,000 and $40,152,000 for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a). The test year estimate of working cash at present, current effective and proposed rates is $41,575,000, $40,879,000 and $40,,000 for the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1806(b) and HECO-1806(c).

For reference, the test year estimate of working cash at present, current effective and proposed rates for base case is shown on HECO-1806(d) and HECO-1806(e).

Q. What is working cash?

A. Working cash is the net cash needed for smooth fiscal operations. Working cash is comprised of sources and uses of cash from operations. Electric service provided before customers pay for services is a use of cash. This will be referred to as the revenue collection lag. Goods and services received before suppliers are paid are a source of cash. This will be referred to as the payment lag.

Q. Why is working cash included in rate base?

A. Working cash is included in rate base because it represents an investment which enables the Company to have sufficient funds to pay suppliers and conduct other business necessary for the provision of electric service to consumers. Inclusion of the working cash investment in rate base recognizes the timing of cash flows through the Company.

Q. What are the elements of working cash?

A. Working cash is comprised of the net of the revenue collection lag and the payment lags. I will discuss these elements in detail in the following sections.

Q. Is the calculation of working cash consistent with the methodology used in prior HECO rate cases?

A. Yes. The methodology that I have used to calculate working cash in this rate case is consistent with the methodology used in prior rate cases including HECO's 2005 and 2007 test year rate cases. However, I have included certain refinements and modifications which I will discuss in detail in the following sections.

Revenue Collection Lag

Q. What is the test year estimate of the revenue collection lag days?

A. As discussed by Mr. Darren Yamamoto at HECO T-9, the estimated revenue collection lag days for test year 2009 is 37 days.

Q. What is a revenue collection lag?

A. The revenue collection lag is the time between the provision of electric service and the receipt of cash for that service. This lag represents the average period of time the Company extends credit to its customers for electric service delivered.

Q. What is the working cash impact associated with the revenue collection lag?

A. The working cash impact associated with the revenue collection lag is the cash needed because services are provided to customers before customers pay for the services.

Q. How is the working cash requirement associated with the revenue collection lag calculated?

A. The revenue collection lag is net against the payment lag. Then the net payment lag days are applied to each of the payment categories discussed later in my testimony.

Q. Why are depreciation and amortization, interest on customer deposits, and operating income excluded from revenues in the revenue collection lag calculation?

A. All revenues should be included in the calculation of working cash needs associated with the revenue collection lag. However, the Company recognizes that the Commission has disallowed these items in the determination of working cash needs in previous decisions. Therefore, the Company has excluded these items to simplify the issues and to speed the regulatory process in this case. The Company reserves the right, however, to bring these issues before the Commission in the future.

Payment Lag

Q. What is a payment lag?

A. A payment lag occurs when the Company incurs an obligation to pay for an item or service before the Company actually pays for it. Payment lags can be associated with purchases of goods or services or for payments of costs of doing business, such as taxes.

Q. What is the working cash impact associated with the payment lag?

A. The working cash impact associated with the payment lag depends on when the Company is required to pay for expenditures. Generally, payments are made after the goods or services have been received. Therefore payment lags are a source of working cash.

Q. What is included in the payment lag?

A. The payment lag includes six categories:

1) Fuel purchases,
2) O&M labor,
3) O&M non-labor,
4) Purchased power,
5) Revenue taxes, and
6) Income taxes.

Q. Why has the Company limited the payment lag to these six items in this docket?

A. In general, <u>all</u> payments should be included in the calculation of working cash sources from payment lags. However, the Company has excluded those items that the Commission has excluded in previous decisions in the determination of working cash. Limiting the working cash needs to these six categories of payments is consistent with the working cash calculation reflected in the HECO 2005 Decision as well as the HECO 2007 Interim Decision. If all revenues were included in the calculation of the revenue collection lag, it would be appropriate to include all payments in the payment lag calculation.

Q. How are the working cash sources calculated for the six categories of payments?

A. The working cash sources for the six categories of payments are calculated as follows:

1. Determine the payment lag days for each category.
2. Subtract the payment lag days from the revenue collection lag days to calculate the net collection lag days.
3. Estimate the total annual expenditures for the test year for each category based on the test year expense estimates.
4. Determine the average daily expenditures by dividing the total annual expenditures for each payment category by 365 days.
5. Multiply each payment's respective average daily expenditure by its net payment lag days.

I will describe the working cash calculation for each payment category in the next section.

1) Working Cash for Fuel Purchases

Q. What is the test year estimate of working cash required for fuel purchases?

A. The test year estimate of working cash required for fuel purchases is $44,332,000, for both the CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit), as shown on HECO-1806 through HECO-1806(c), columns F and H.

Q. What is the test year estimate of fuel purchases?

A. The estimated annual amount of fuel purchases is $809,058,000, for both the CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1806 through HECO-1806(c), column D.

Q. What is the test year estimate of the fuel purchases lag days?

A. The test year estimate of the fuel payment lag days is 17, as shown on HECO-1806 through HECO-1806(c), column B.

Q. How were the payment lag days for fuel payments calculated?

A. The payment lag days for fuel payments were calculated by determining the vendors who will supply fuel, determining the proportions of fuel expense attributable to each vendor, determining the payment lag days for each vendor, and calculating the weighted average payment lag days.

Q. How were the vendors who will supply fuel determined?

A. The vendors who are expected to supply fuel in the test year were determined based on the contracts for fuel and fuel-related services and discussion with HECO's Fuels Resources Division.

Q. What vendors are expected to supply fuel in the test year?

A. There are three vendors who are expected to supply fuel in the test year. They include Chevron, Tesoro and Imperium Services, LLC ("Imperium"). The Company entered into a new fuel supply contract with Imperium in 2007 to supply biodiesel beginning in 2009. HECO filed an application with the Commission in Docket No. 2007-0346 on October 18, 2007, requesting approval of the contract. Mr. Ronald Cox discusses fuel inventory in HECO T-5 and Mr. Ross Sakuda discusses fuel expense in HECO T-4.

Q. How were the proportions of fuel expense relating to each vendor determined?

A. The proportions were determined based on a breakdown by vendor of spot fuel price for each type of fuel and the forecasts of fuel consumption by fuel type. HECO's Fuels Resources Division provided a breakdown by vendor of spot fuel prices for each type of fuel consumed. HECO's Generation Planning Division provided forecasts of fuel consumption by fuel type.

Q. How were the payment lag days for each vendor determined?

A. The payment lag days for Chevron and Tesoro were determined based on a study of 2005 payments made, which was previously presented in the HECO 2007 test year rate case (Docket No. 2006-0386). The payment lag days for Imperium Services, LLC were determined based on the payment terms in the fuel supply contract.

Q. How was the weighted average payment lag days calculated?

A. The weighted average payment lag days represent the sum of the proportion for each vendor multiplied by the payment lag. The calculation of fuel payment lag days is shown on HECO-WP-1806, page 1.

Q. Is the calculation of the working cash for fuel purchases for the 2009 test year consistent with the method of calculation used in prior HECO rate cases?

A. The methodology, including the determination of the payment lag days for the vendors, is consistent with the methodology used in HECO's 2005 and 2007 test year rate cases. In the 2005 test year, HECO used a modified method to determine the payment lag days for Tesoro and Chevron because the amendments extending the contracts were not available at the time the Company conducted the study for the application. New contracts were executed and implemented in 2005. HECO subsequently updated and presented the payment lag days in rebuttal testimony to include available payments as well as a forecast schedule of deliveries and payments for the rest of the test year. Since the same contracts were in effect in 2007, the Company based its test year estimate on 2005 actual payment lag days. Likewise, the Company based its 2009 test year estimate on the 2005 actual payment lag days determined in the 2007 test year rate case.

Q. Why is it appropriate to use the payment lag days for Chevron and Tesoro that were determined in the 2007 test year rate case?

A. The Company determined that there have been no significant changes from the 2007 test year rate case to internal processes and procedures over invoice review and payment. In addition, there have been no contract amendments or significant changes noted in the contract terms which would impact the calculation of the payment lag days. The number of payment lag days calculated in the 2007 test year rate case is reasonably representative of the number of payment lag days expected for the 2009 test year.

2) Working Cash for O&M Labor

Q. What is the test year estimate of working cash required for O&M labor?

A. The test year estimate of working cash required for O&M labor is $7,282,000 for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), columns F and H and $7,198,000 for the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1806(b) and HECO-1806(c), column F and H.

Q. What is the test year estimate of O&M labor?

A. The estimated annual amount of O&M labor is $102,228,000 for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), column D and $101,045,000 for the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1806(b) and HECO-1806(c), column D.

Q. What is the test year estimate of the O&M labor payment lag days?

A. The test year estimate of the O&M labor payment lag days is 11 days, as shown on HECO-1806 through HECO-1806(c), column B.

Q. How were the payment lag days for O&M labor calculated?

A. The payment lag days for O&M labor were calculated by determining the proportions of significant types of disbursements for labor, determining the

payment lag days for each type of disbursement, and calculating the weighted average payment lag days.

Q. What are the significant types of labor disbursements?

A. The significant types of labor disbursements are payments to employees by check or direct deposit (including deposits to employees' credit union accounts), to the federal government for federal income tax withholding and for Federal Insurance Contribution Act and Medicare taxes ("FICA"), to the state government for state income tax withholding, and to the employees' Hawaiian Electric Industries Retirement Savings Plan ("HEIRS") account.

Q. How were the proportions of significant labor disbursements determined?

A. The proportions for significant labor disbursements were based on 2007 payroll data.

Q. How was the payment lag days for each type of disbursement determined?

A. The payment lag days presented in this rate case are based on the actual 2007 pay schedule and payments.

Q. How were the weighted average payment lag days for O&M labor calculated?

A. HECO determined the weighted average payment lag days for O&M labor by calculating the sum of proportions of labor disbursements multiplied by the respective payment lag days (including check clearing lag days). The calculation of O&M labor payment lag days is shown on HECO-WP-1806, page 8.

Q. Is the calculation of working cash for O&M labor consistent with the method of calculation used in prior HECO rate cases?

A. Yes. The methodology used in this test year is consistent with the methodology in HECO's 2007 and 2005 test year rate cases.

3) Working Cash for O&M Non-Labor

Q. What is the test year estimate of working cash required for O&M non-labor?

A. The test year estimate of working cash required for O&M non-labor is $2,656,000 for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), columns F and H and $2,623,000 for the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1806(b) and HECO-1806(c), columns F and H.

Q. What is the test year estimate of O&M non-labor?

A. The test year estimate of O&M non-labor is $138,515,000 for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), column D and $136,747,000 for the Interim Increase (without CIP1 Generating Unit) as shown on HECO-1806(b) and HECO-1806(c), column D.

Q. What is the test year estimate of the O&M non-labor payment lag days?

A. The test year estimate of the O&M non-labor payment lag days is 30 days, as shown on HECO-1806 through HECO-1806(c), column B.

Q. How were the payment lag days for O&M non-labor calculated?

A. The payment lag days for O&M non-labor were calculated by obtaining the test year estimates of O&M non-labor expenses. Large O&M non-labor payments were separately identified and the payment lag for those items was determined. A sample of all other O&M non-labor expenses was examined to determine the payment lag for the sample.

Q. What large O&M non-labor payments were separately identified?

A. Pension expense, other postretirement benefits other than pensions ("OPEB") expense, pension regulatory liability amortization, OPEB regulatory liability amortization, emission fees, and Electric Power Research Institute ("EPRI") dues were separately identified.

Q. What is the payment lag for pension expense?

A. The payment lag for pension expense is zero as shown on HECO-WP-1806, page 32. Consistent with the pension tracking mechanism there is no pension contribution expected in the test year. As there is no expected pension contribution, there is no expected pension payment, and therefore no payment lag. I briefly describe the pension tracking mechanism later in my testimony. Ms. Patsy Nanbu discusses the pension tracking mechanism in HECO T-11.

Q. If the Company expects to make no pension contribution in the test year, why is pension expense included in working cash?

A. As stated earlier in my testimony, the Company's position is that all revenues should be included in the calculation of working cash needs associated with the revenue collection lag. The revenues associated with the pension expense are not received at the same time the expense is recognized and are subject to the same revenue collection lag as any other item forming the basis for its revenue estimate. Although the Commission has disallowed the revenue collection for certain other non-cash items, the Company maintains its position that all revenue should be included in the revenue collection lag and therefore included the pension expense in the revenue collection lag.

Q. What is the payment lag for OPEB expense?

A. The payment lag for OPEB expense is 66 days as shown on HECO-WP-1806, page 32.

Q. How was the payment lag for OPEB expense determined?

A. The payment lag for OPEB expense was based on historical and forecast quarterly OPEB payments from 2008. Details of the study are provided in HECO-WP-1806, page 33.

Q. What is the payment lag for the pension regulatory liability and OPEB regulatory liability amortization expense?

A. The pension regulatory liability and OPEB regulatory liability amortization expense is included with a revenue collection lag consistent with all other items (37 days) and a payment lag of zero, as shown on HECO-WP-1806, page 32.

Q. Why is the pension regulatory liability and OPEB regulatory liability amortization expense subject to the revenue collection lag?

A. As stated earlier in my testimony, the Company's position is that all revenues should be included in the calculation of working cash needs associated with the revenue collection lag. The revenues associated with the pension regulatory liability and OPEB regulatory liability amortization expenses are not received at the same time the expenses are recognized and are subject to the same revenue collection lag as any other item forming the basis for its revenue estimate. Consistent with its position with respect to pension expense, the Company maintains that all revenue should be included in the revenue collection lag and therefore, included the pension regulatory liability and OPEB regulatory liability amortization expense in the revenue collection lag. The pension regulatory liability and OPEB regulatory liability are discussed later in my testimony.

Q. What is the payment lag for emission fees?

A. The payment lag for emission fees is 252 days as shown on HECO-WP-1806, page 32.

Q. How was the payment lag for emission fees determined?

A. The payment lag for emission fees was based on emission fee payments made in 2008. Details of the study are provided in HECO-WP-1806, page 34.

Q. What is the payment lag for EPRI dues?

A. The payment lag for EPRI dues is (3) days as shown on HECO-WP-1806 page 32.

Q. How was the payment lag for EPRI dues determined?

A. The payment lag for EPRI dues was based on historical quarterly EPRI payments from 2007. Details of the study are provided on HECO-WP-1806, page 35.

Q. What is the payment lag for other O&M non-labor?

A. The payment lag for other O&M non-labor is 30 days as shown on HECO-WP-1806, page 32.

Q. How was the payment lag for other O&M non-labor determined?

A. The payment lag days for other O&M non-labor expenses presented in this rate case were previously presented in the HECO 2007 test year rate case (Docket No. 2008-0386) and HECO 2005 test year rate case (Docket No. 04-0113). In these two rate cases the payment lag days were based on a study of a randomly selected sample of 2003 O&M non-labor transactions. First, the payment lag for each item in the sample was determined. Then the Company calculated the dollar weighted average days for the sample. Payment lag days for all other O&M non-labor were based on this study. Details of the study are provided on HECO-WP-1806, pages 36 and 37.

Q. Why is it appropriate to use the payment lag days that were determined in the 2007 and 2005 test year rate cases?

A. The Company determined that there have been no significant changes from the 2007 and 2005 test year rate cases to internal processes and procedures over invoice review and payment. As there have been no significant changes which would impact the calculation of the payment lag days, the number of payment lag

days calculated in the 2007 and 2005 test year rate cases is reasonably representative of the number of payment lag days in the 2009 test year.

Q. How were the weighted average payment lag days for O&M non-labor calculated?

A. The weighted average payment lag days is the sum of the proportions of the separately-identified large 2009 test year O&M non-labor payments and the sample of all other 2009 test year O&M non-labor payments multiplied by the respective payment lag days (including check clearing lag days). Details of the study and calculation of O&M non-labor payment lag days is shown on HECO-WP-1806, pages 32.

Q. Is the calculation of the O&M non-labor payment lag days consistent with the method of calculation used in prior HECO rate cases?

A. Yes. As explained above, the methodology used for the 2009 test year is consistent with the methodology used in HECO's 2007 and 2005 test year rate cases.

4) Working Cash Provided by Purchased Power

Q. What is the test year estimate of working cash provided by purchased power?

A. The test year estimate of working cash provided by purchased power is $0 for both the CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit), as shown on HECO-1806 through HECO-1806(c), columns F and H.

Q. What is the test year estimate of purchased power?

A. The estimated annual amount of purchased power is $477,055,000 for both the CIP1 Generating Unit Step Increase and the Interim Increase (without CIP1 Generating Unit), as shown on HECO-1806 through HECO-1806(c), column D.

Q. What is the test year estimate of the purchased power payment lag days?

A. The test year estimate of the purchased power payment lag days is 37 days, as shown on HECO-1806 through HECO-1806(c), column B.

Q. How were the payment lag days for purchased power calculated?

A. The payment lag days for purchased power were calculated by obtaining the test year estimates of independent power producer ("IPP") payments, determining the respective payment lag days for each type of payment, and calculating the weighted average payment lag days.

Q. Who provided the test year estimates of IPP payments?

A. HECO's Purchased Power Division provided the estimates of IPP payments.

Q. How was the payment lag days for capacity and energy determined?

A. The payment lag days for H-Power, AES and Kalaeloa presented in this rate case were previously presented in the HECO 2007 test year rate case (Docket No. 2006-0386). These payment lag days for purchased power were based on the terms of HECO's purchased power agreements ("PPAs") with each respective IPP.

Q. Why is it appropriate to use the payment lag days that were determined in the 2007 test year rate case for estimated 2009 payments to these IPPs?

A. For these payment lag days the Company determined that there were no significant changes from the 2007 test year rate case to the IPPs contracted with and to the internal processes and procedures over the payments to these IPPs. There have also been no significant changes to the payment terms in the PPAs with the respective IPPs. As there have been no significant changes noted which would impact the calculation of the payment lag days, the Company concluded

that the number of payment lag days calculated in the 2007 test year rate case is reasonably representative of the payment lag days in the 2009 test year.

Q. Were any payment lag days updated in this rate case?

A. The Company updated the payment lag days for the purchased power supplied by small vendors, including Chevron and Tesoro.

Q. How was the payment lag days for Chevron and Tesoro determined?

A. The payment lag days for both Chevron and Tesoro were determined based on a study of 2007 energy payments made as shown on HECO-WP-1806, page 43.

Q. Did the Company enter into any new PPAs to purchase power in the test year?

A. Yes. The Company entered into a new Solar Energy Purchase Agreement ("SEPA") in 2007 with Hoku Solar, Inc. ("Hoku"). The Commission approved the SEPA in Decision and Order No. 24225 (dated May 13, 2008) in Docket No. 2007-0425. The Company expects Hoku to begin supplying energy by the end of 2008. Mr. Dan Ching in HECO T-6 discusses this in further detail.

Q. How was the payment lag days for energy payments to Hoku determined?

A. The Company calculated the payment lag days based on forecast monthly deliveries and on the payment terms detailed in the SEPA. A check clearing lag of five days was estimated as there are no current or historical payments on which to base it on. (See HECO-WP-1806, page 42.)

Q. How was the weighted average payment lag days calculated?

A. The weighted average payment lag days were the sum of the proportion of test year payments for each type of payment to the IPPs multiplied by the payment lag days (including check clearing lag days). The calculation of purchased power payment lag days is shown on HECO-WP-1806, page 38.

Q. Is the calculation of the purchased power payment lag days consistent with the method of calculation used in prior HECO rate cases?

A. Yes. The methodology used in this test year is consistent with the methodology used in HECO's 2007 and 2005 test year rate cases. However, the Company made a refinement to the payment lag day study in the 2005 test year rate case (from the study performed for the 1995 test year rate case) to reflect a separate payment lag for the AES bonus since HECO receives a separate invoice for the AES availability bonus after each contract year. This refinement is reflected in the 2009 test year rate case and is shown on HECO-WP-1806, page 41.

5) Working Cash Provided by Revenue Taxes

Q. What is the test year estimate of working cash provided by revenue taxes?

A. The test year estimate of working cash provided by revenue taxes is $12,614,000 at present rates and $13,160,000 at current effective rates and $13,844,000 at proposed rates for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), columns F and H. For the Interim Increase (without CIP1 Generating Unit) the test year estimate of working cash provided by revenue taxes is $12,614,000 at present rates and $13,160,000 at current effective rates and $13,675,000 at proposed rates as shown on HECO-1806(b) and HECO-1806(c), columns F and H.

Q. What is the test year estimate of revenue taxes?

A. The estimated annual amount of revenue taxes is $158,767,000 at present rates, $165,632,000 at current effective rates and $174,243,000 at proposed rates for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), column D. For the Interim Increase (without CIP1 Generating Unit) the estimated annual amount of revenue taxes is $158,767,000 at present rates,

$165,632,000 at current effective rates and $172,117,000 at proposed rates as shown on HECO-1806(b) and HECO-1806(c), column D.

Q. What is the test year estimate of the revenue tax payment lag days?

A. The test year estimate of the revenue tax payment lag days is 66 days, as shown on HECO-1806 through HECO-1806(c), column B.

Q. How were the payment lag days for revenue tax payments calculated?

A. HECO calculated the payment lag days for revenue tax payments by first determining the proportions of various revenue tax payments, then determining the payment lags for the various revenue tax payments, and finally calculating the weighted average payment lag days.

Q. What were the various revenue tax payments?

A. Revenue tax payments included: public service company tax, franchise tax, and public utility fee.

Q. How were the proportions of revenue tax payment determined?

A. The proportions of revenue tax payments were determined based on the respective tax rates.

Q. How was the payment lag for each respective type of revenue tax payment determined?

A. The payment lags for the public service company tax, franchise royalty tax and the public utility fee were based on actual 2007 payments. The check clearing lag days for each type of revenue tax payment were also based on a study of the 2007 revenue tax payments.

Q. How was the weighted average payment lag days calculated?

A. The weighted average payment lag days represent the sum of the proportions of revenue taxes multiplied by the respective payment lag days (including check

clearing lag days). The calculation of revenue tax payment lag days is shown on HECO-WP-1806, page 44.

Q. Was the calculation of the revenue tax payment lag days consistent with the method of calculation used in prior HECO rate cases?

A. Yes. The methodology used for the 2009 test year is consistent with the methodology used in HECO's 2007 and 2005 test year rate cases. However, the Company made a refinement to the payment lag day study in the 2007 test year rate case from the 2005 test year rate case. In the 2005 test year rate case, the revenue tax payment lag days were based on forecasted test year payments with due dates based on the regulations or rules governing the projected payments. The check clearing lags were based on actual revenue tax payments. In the 2007 test year rate case, the payment lag days and check clearing lag days were calculated based on actual 2005 revenue tax payments. This refinement is reflected in the 2009 test year rate case and is shown on HECO-WP-1806, pages 45-46. For the 2009 test year rate case the payment lag days and check clearing lag days were calculated based on actual 2007 revenue tax payments.

<u>6) Working Cash Provided by Income Taxes</u>

Q. What is the test year estimate of working cash provided by income taxes?

A. The test year estimate of working cash provided by income taxes is ($64,000) at present rates, $86,000 at current effective rates and $274,000 at proposed rates for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), columns F and H. For the Interim Increase (without CIP1 Generating Unit) the test year estimate of working cash provided by income taxes is ($37,000) at present rates, $113,000 at current effective rates and $255,000 at proposed rates as shown on HECO-1806(b) and HECO-1806(c), columns F and H.

Q. What is the test year estimate of income taxes?

A. The estimated annual amount of income taxes is ($11,699,000) at present rates, $15,700,000 at current effective rates and $50,069,000 at proposed rates for the CIP1 Generating Unit Step Increase as shown on HECO-1806 and HECO-1806(a), column D. For the Interim Increase (without CIP1 Generating Unit) the estimated annual amount of income taxes is ($6,689,000) at present rates, $20,710,000 at current effective rates and $46,595,000 at proposed rates as shown on HECO-1806(b) and HECO-1806(c), column D.

Q. What is the test year estimate of the income tax payment lag days?

A. The test year estimate of the income tax payment lag days is 39 days, as shown on HECO-1806 through HECO-1806(c), column B.

Q. How were the payment lag days for income taxes calculated?

A. The payment lag days for income taxes were calculated by determining the proportions of federal and state income tax payments, determining the payment lag days for federal and state income tax payments, and calculating the weighted average payment lag days.

Q. How were the proportions of federal and state income tax payments determined?

A. The proportions of federal and state income tax payments were determined by the respective effective tax rates. Effective tax rates take into consideration the deductibility of state income taxes.

Q. How was the payment lag for each respective type of income tax payment determined?

A. The payment lag for each type of income tax payment was determined based on its respective tax regulation and projected payments for 2009. There were no check clearing lag days because payments are made by electronic funds transfer.

Q. How was the weighted average payment lag days calculated?

A. The weighted average payment lag days were the sum of the proportions of federal and state income taxes multiplied by their respective payment lag. The calculation of the payment lag days for income taxes is shown on HECO-WP-1806, page 47.

Q. Is the calculation of the income tax payment lag days consistent with the method of calculation used in prior HECO rate cases?

A. Yes. The methodology is consistent with the methodology used in HECO's 2007 and 2005 test year rate cases.

FUNDS FROM NON-INVESTORS

Q. What are funds from non-investors?

A. Funds from non-investors are funds that are invested in assets to provide reliable electric service that are from sources other than investors.

Q. What are the categories of funds from non-investors?

A. The categories of funds from non-investors are:

1) unamortized CIAC,
2) customer advances for construction,
3) customer deposits,
4) accumulated deferred income taxes,
5) unamortized investment tax credits,
6) unamortized gain on sales,
7) pension regulatory liability, and
8) OPEB regulatory liability.

Q. Why are funds provided by non-investors deducted from the investment in assets in determining rate base?

A. Investors and non-investors provide the funds that are invested in the assets needed to provide reliable electric service. Funds provided by non-investors are deducted from investments in assets to determine the amount of investor-provided funds. The investor-funded portion of investments in assets servicing customers (i.e., rate base) is the amount on which investors are entitled to receive a fair return. Therefore, rate base represents only the portion of investment in assets that is funded by investors.

1) Unamortized Contributions in Aid of Construction

Q. What is the test year estimate of average unamortized CIAC?

A. The estimated average unamortized CIAC for test year 2009 is $178,410,000, as shown on HECO-1805.

Q. What is unamortized CIAC?

A. CIAC is money or property that a developer or customer contributes to the Company to fund a utility capital project. As specified in the Company's tariff, the contribution is nonrefundable. Amortization of CIAC offsets depreciation expense. Ms. Lorie Nagata discusses CIAC in HECO T-17. Mr. Bruce Tamashiro discusses amortization of CIAC in HECO T-14.

Q. How was the estimated average unamortized CIAC calculated?

A. The average unamortized CIAC was estimated by adding its beginning of the year balance to the estimated CIAC additions for the test year, then subtracting the amortization of CIAC to arrive at the estimated end of the year balance. The beginning of the year balance and the end of the year balance were summed and divided by two to estimate the average balance for the test year.

Q. Did the Commission approve the deduction of CIAC from rate base in prior HECO rate cases?

A. Yes. The Commission included CIAC as a deduction from investments in assets funded by investors in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

2) Customer Advances for Construction

Q. What is the test year estimate of customer advances?

A. The estimated average customer advances balance for construction for test year 2009 is $848,000, as shown on HECO-1801.

Q. What are customer advances for construction?

A. Customer advances for construction are funds paid by customers to the Company which may be refunded in whole or in part as specified in the Company's tariff. Ms. Lorie Nagata discusses customer advances for construction in detail in HECO T-17.

Q. How is the average customer advances calculated?

A. The average customer advances was calculated by adjusting the recorded customer advances balance at December 31, 2007 for estimated changes in 2008 to determine the estimated balance at December 31, 2008. The process is then repeated for the 2009 test year. The sum of the balances at December 31, 2008 and 2009 divided by two is the estimated average balance for customer advances. This calculation is shown on HECO-1707.

Q. Did the Commission approve the deduction of customer advances from rate base in prior HECO rate cases?

A. Yes. The Commission included customer advances as a deduction from investments in assets funded by investors in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

1 3) Customer Deposits

2 Q. What is the test year estimate for customer deposits?

3 A. The estimated average customer deposits balance for test year 2009 is $7,695,000,
4 as shown on HECO-1801.

5 Q. What are customer deposits?

6 A. Customer deposits are monies collected from customers who do not meet HECO's
7 criteria for establishing credit at the time they request service. Mr. Darren
8 Yamamoto discusses customer deposits in detail in HECO T-9.

9 Q. How is the average customer deposits calculated?

10 A. Mr. Yamamoto explains the calculation of average customer deposits in HECO
11 T-9.

12 Q. Did the Commission approve the deduction of customer deposits from funds from
13 investors to determine rate base in prior HECO rate cases?

14 A. Yes. The Commission included customer deposits as a deduction from
15 investments in assets funded by investors in determining rate base in the HECO
16 2005 Decision as well as in the HECO 2007 Interim Decision.

17 4) Accumulated Deferred Income Taxes

18 Q. What is the test year estimate of accumulated deferred income taxes?

19 A. The estimated average accumulated deferred income tax balance is $134,600,000
20 for the CIP1 Generating Unit Step Increase as shown on HECO-1801 and
21 HECO-1801(a). For the Interim Increase (without CIP1 Generating Unit) the
22 estimated average accumulated deferred income tax balance is $134,856,000 as
23 shown at HECO-1801(b) and HECO-1801(c).

Q. What are accumulated deferred income taxes?

A. Accumulated deferred income taxes are the cumulative amount by which tax expense has exceeded tax remittances. This is primarily due to tax timing differences resulting from differences between book depreciation and accelerated depreciation used for the calculation of income taxes. Mr. Lon Okada discusses accumulated deferred income taxes in detail in HECO T-16.

Q. How was the average accumulated deferred income taxes calculated?

A. Mr. Okada describes the calculation of average accumulated deferred income taxes in HECO T-16.

Q. Who provides the accumulated deferred income tax funds?

A. Accumulated deferred income taxes are funds provided by ratepayers. Although rates are established based on income tax expense, tax remittances to the government on a cumulative basis have been lower than the taxes collected through rates. As a result, ratepayers have funded the accumulated deferred income tax balance. Over time, the Company will eventually pay the government the amounts recorded as deferred income taxes.

Q. Did the Commission approve the deduction of accumulated deferred income taxes from rate base in prior HECO rate cases?

A. Yes. The Commission included accumulated deferred income taxes as a deduction from investments in assets funded by investors in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

5) Unamortized Investment Tax Credits

Q. What is the test year estimate for unamortized investment tax credits?

A. The estimated average unamortized investment tax credit balance is $34,571,000 for the CIP1 Generating Unit Step Increase as shown on HECO-1801 and

HECO-1801(a). For the Interim Increase (without CIP1 Generating Unit) the estimated average unamortized investment tax credit balance is $31,091,000 as shown at HECO-1801(b) and HECO-1801(c).

Q. What are unamortized investment tax credits?

A. Unamortized investment tax credits are tax credits which reduce tax payments in the year the credit originates, but for ratemaking purposes, the credits are amortized. Mr. Lon Okada discusses unamortized investment tax credits in detail in HECO T-16.

Q. How was the average unamortized investment tax credit calculated?

A. Mr. Okada explains the calculation of average unamortized investment tax credit in HECO T-16.

Q. Who provides the unamortized investment tax credit funds?

A. Similar to accumulated deferred income taxes, unamortized investment tax credits are funds provided by ratepayers. These funds are provided as a result of differences in timing of when the credits are taken for purposes of calculating tax payments to the government as opposed to when adjustments are made to income tax expense for ratemaking purposes.

Q. Did the Commission approve the deduction of unamortized investment tax credits from rate base in prior HECO rate cases?

A. Yes. The Commission included unamortized investment tax credits as a deduction from investments in assets funded by investors in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

<u>6) Unamortized Gain on Sales</u>

Q. What is the test year estimate of unamortized gain on sales?

A. The estimated average unamortized gain on sales balance for test year 2009 is $1,055,000 as shown on HECO-1801. In this rate base calculation, unamortized gain on sales includes the unamortized lease premium balance.

Q. What is unamortized gain on sales?

A. Unamortized gain on sales is the gain on the sale of utility property, net of the amount that has been amortized. Ms. Patsy Nanbu describes unamortized gain on sales in HECO T-11.

Q. Who provided unamortized gain on sales funds?

A. The purchaser of the property provided the funds that comprise the unamortized gain on sales balance.

Q. Did the Commission deduct unamortized gain on sales from funds from investors in determining rate base in prior HECO rate cases?

A. Yes. The Commission included unamortized gain on sales as a deduction from investments in assets funded by investors in determining rate base in the HECO 2005 Decision as well as in the HECO 2007 Interim Decision.

<u>7) Pension Regulatory Liability</u>

Q. What is the test year estimate of the pension regulatory liability?

A. The estimated average pension regulatory liability balance for test year 2009 is $2,746,000 as shown on HECO-1801.

Q. What is the pension regulatory liability?

A. The pension regulatory liability was established upon the adoption of the pension tracking mechanism. The pension tracking mechanism calls for the recording of a pension regulatory liability (or regulatory asset) to track the cumulative difference between the level of actual net periodic pension costs ("NPPC") during a rate

effective period and the level of Commission approved NPPC included in rates for that rate effective period.

Q. What does a pension regulatory liability represent?

Q. A pension regulatory liability represents the cumulative NPPC included in rates over a rate effective period in excess of the actual cumulative NPPC during that same period.

Q. Please briefly describe the pension tracking mechanism?

A. The pension tracking mechanism ensures the pension costs recovered through rates are based on NPPC, as reported for financial reporting purposes, and ensures that all amounts contributed to the pension trust funds (after the pension asset, which is the cumulative pension contributions in excess of cumulative pension costs recognized, is reduced to zero) are in an amount equal to actual NPPC and are recoverable through rates. In Docket No. 2006-0386, HECO's 2007 test year rate case, HECO, the Consumer Advocate and the Department of Defense (collectively referred to as the "Parties") agreed to the HECO 2007 Stipulation, which included the pension tracking mechanism. The pension tracking mechanism was approved on an interim basis by the Commission in the HECO 2007 Interim Decision. Ms. Patsy Nanbu describes the pension tracking mechanism in more detail in HECO T-11.

Q. What is the NPPC?

A. The NPPC is the annual amount that the Company must recognize on its financial statement as the cost of providing pension benefits to its employees for the year, and includes amounts ultimately charged primarily to both expense and to capital. It is the current period charge for the pension plan and is calculated based on the actuarial assumptions of pension obligation, the economic performance of the

fund investment, and amortization of prior period amounts. The NPPC and its calculation is further explained by Ms. Julie Price in HECO T-13.

Q. Why is the pension liability a deduction in the calculation of rate base?

A. The pension regulatory liability represents the cumulative excess amount of rate-payer provided funds (based on the Commission approved NPPC) recovered in rates over a rate effective period in excess of the actual NPPC calculated and recognized over that same period. Under the pension tracking mechanism, as included in the HECO 2007 Stipulation, which was agreed to by the Parties and approved on an interim basis in the HECO 2007 Interim Decision the pension regulatory liability is a deduction in the calculation of rate base.

8) OPEB Regulatory Liability

Q. What is the test year estimate of the OPEB regulatory liability?

A. The estimated average OPEB regulatory liability balance for test year 2009 is $700,000 as shown on HECO-1801.

Q. What is the OPEB regulatory liability?

A. The OPEB regulatory liability was established upon the adoption of the OPEB tracking mechanism. The OPEB tracking mechanism calls for the recording of a OPEB regulatory liability (or regulatory asset) to track the cumulative difference between the level of actual OPEB costs (based on the net periodic benefit costs ("NPBC")) during a rate effective period and the level of Commission approved OPEB costs included in rates for that rate effective period.

Q. What does an OPEB regulatory liability represent?

Q. A OPEB regulatory liability represents the cumulative OPEB costs included in rates over a rate effective period in excess of the actual cumulative OPEB costs during that same period.

Q. Please briefly describe the OPEB tracking mechanism?

A. The OPEB tracking mechanism ensures that the OPEB costs recovered through rates are based on the NPBC as reported for financial reporting purposes, and ensures that all amounts contributed to the OPEB trust funds are in an amount equal to the actual OPEB costs and are recoverable through rates. In Docket No. 2006-0386, HECO's 2007 test year rate case, the Parties agreed to the HECO 2007 Stipulation, which included the OPEB tracking mechanism. The OPEB tracking mechanism was approved on an interim basis by the Commission in the HECO 2007 Interim Decision. Ms. Patsy Nanbu describes the OPEB tracking mechanism in more detail in HECO T-11.

Q. What is the NPBC?

A. The NPBC is the annual amount that the Company must recognize on its financial statement as the cost of providing OPEB benefits to its employees for the year, and includes amounts ultimately charged primarily to both expense and to capital. It is the current period charge for the OPEB plan and is calculated based on the actuarial assumptions of the OPEB obligation, the economic performance of the fund investment, and amortization of prior period amounts. The NPBC and its calculation is further explained by Ms. Julie Price in HECO T-13.

Q. Why is the OPEB liability a deduction in the calculation of rate base?

A. Similar to the discussion above regarding the pension regulatory liability, the OPEB regulatory liability represents the cumulative excess amount of rate-payer provided funds (based on the Commission approved OPEB costs) recovered in rates over a rate effective period in excess of the actual OPEB costs recognized over that same period. The inclusion of the OPEB regulatory liability as a deduction in the calculation of rate base is required under the OPEB tracking

mechanism, as included in the HECO 2007 Stipulation, which was agreed to by the Parties in the HECO 2007 Stipulation and approved on an interim basis in the HECO 2007 Interim Decision.

SUMMARY

Q. What is your conclusion as to the rate base proposed by the Company?

A. The Company proposes that the Commission allow the inclusion of the full cost of the CIP1 Generating Unit plant additions in rate base at the CIP1 Generating Unit Step Increase. The test year average rate base is $1,409,549,000 at present rates, $1,408,853,000 at current effective rates and $1,407,980,000 at proposed rates for the CIP1 Generating Unit Step Increase.

At the Interim Increase (without CIP1 Generating Unit), the test year average rate base is $1,259,707,000 at present rates, $1,259,012,000 at current effective rates and $1,258,355,000 at proposed rates.

This rate base represents the investment which is used or useful in providing electric utility service that has been funded by investors. The investors should be allowed the opportunity to earn a fair rate of return on this rate base.

The Company has shown the reasonableness of each of the estimates used in this calculation and has demonstrated the appropriate treatment of each of the elements in the rate base calculation. Therefore, the rate base presented by the Company is reasonable and should be used to set electric rates in this docket.

Q. Does this conclude your testimony?

A. Yes, it does.

HAWAIIAN ELECTRIC COMPANY, INC.

DARREN DOI

EDUCATIONAL BACKGROUND AND EXPERIENCE

Business Address:	900 Richards Street Honolulu, HI 96813
Current Position:	Senior Financial Analyst Financial Analysis Division Management Accounting and Financial Services Department
Years of Service:	3 Years
Previous Experience:	Financial Reporting Manager, AIG Hawaii Insurance Company Senior Auditor, KPMG LLP
Education:	University of Southern California Bachelor of Science in Accounting Bachelor of Science in Business Administration - Finance
Certification:	Certified Public Accountant (not in public practice), State of Hawaii

Hawaiian Electric Company, Inc.

2009 Average Rate Base (Present Rates)

CIP1 Generating Unit at Full Cost for Step Increase

($ in thousands)

Investment in Assets Serving Customers	12/31/2008	12/31/2009	Average for 2009	HECO Reference
Net Cost of Plant in Service	1,532,876	1,558,053	1,545,465	1802
Property Held for Future Use	2,331	2,331	2,331	1705
Fuel Inventory	80,152	85,214	82,683	505
Materials & Supplies Inventories	16,015	16,015	16,015	1803
Unamortized Net SFAS 109 Regulatory Asset	58,598	64,021	61,310	1606
Unamortized System Development Costs	4,568	30,336	17,452	1117
RO Water Pipeline Regulatory Asset	0	6,366	3,183	1121
ARO Regulatory Asset	13	12	13	1804
Working Cash at Present Rates	41,721	41,721	41,721	1806
Total Investments in Assets	1,736,274	1,804,069	1,770,172	
Funds from Non-Investors				
Unamortized CIAC	177,545	179,275	178,410	1805
Customer Advances	888	807	848	1707
Customer Deposits	7,380	8,009	7,695	902
Accumulated Deferred Income Taxes	133,095	136,104	134,600	1605
Unamortized Investment Tax Credit	34,011	35,130	34,571	1604
Unamortized Gain on Sales	1,364	746	1,055	1120
Pension Regulatory Liability	3,051	2,441	2,746	1124
OPEB Regulatory Liability	777	622	700	1125
Total Deductions	358,111	363,134	360,622	
Average Rate Base at Present Rates			1,409,549	
Change in Working Cash			(1,569)	1806
Average Rate Base at Proposed Rates			1,407,980	

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

2009 Average Rate Base (Current Effective Rates)

CIP1 Generating Unit at Full Cost for Step Increase

($ in thousands)

Investment in Assets Serving Customers	12/31/2008	12/31/2009	Average for 2009	HECO Reference
Net Cost of Plant in Service	1,532,876	1,558,053	1,545,465	1802
Property Held for Future Use	2,331	2,331	2,331	1705
Fuel Inventory	80,152	85,214	82,683	505
Materials & Supplies Inventories	16,015	16,015	16,015	1803
Unamortized Net SFAS 109 Regulatory Asset	58,598	64,021	61,310	1606
Unamortized System Development Costs	4,568	30,336	17,452	1117
RO Water Pipeline Regulatory Asset	0	6,366	3,183	1121
ARO Regulatory Asset	13	12	13	1804
Working Cash at Current Effective Rates	41,025	41,025	41,025	1806(a)
Total Investments in Assets	1,735,578	1,803,373	1,769,475	
Funds from Non-Investors				
Unamortized CIAC	177,545	179,275	178,410	1805
Customer Advances	888	807	848	1707
Customer Deposits	7,380	8,009	7,695	902
Accumulated Deferred Income Taxes	133,095	136,104	134,600	1605
Unamortized Investment Tax Credit	34,011	35,130	34,571	1604
Unamortized Gain on Sales	1,364	746	1,055	1120
Pension Regulatory Liability	3,051	2,441	2,746	1124
OPEB Regulatory Liability	777	622	700	1125
Total Deductions	358,111	363,134	360,622	
Average Rate Base at Current Effective Rates			1,408,853	
Change in Working Cash			(872)	1806(a)
Average Rate Base at Proposed Rates			1,407,980	

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

2009 Average Rate Base (Present Rates)

Reconciliation of Step Increases

($ in thousands)

Investment in Assets Serving Customers	CIP1 Gen Unit at Full Cost [1] Avg. Rate Base for 2009	Less: Full Cost CIP1	Interim Increase (w/o CIP1) Avg. Rate Base for 2009	Add: CIP1 Avg. Cost	Base Case Avg. Rate Base for 2009
Net Cost of Plant in Service [2]	1,545,465	(152,919)	1,392,546	76,460	1,469,005
Property Held for Future Use	2,331		2,331		2,331
Fuel Inventory	82,683		82,683		82,683
Materials & Supplies Inventories	16,015		16,015		16,015
Unamortized Net SFAS 109	0		0		0
Regulatory Asset	61,310		61,310		61,310
Unamortized System Development Costs	17,452		17,452		17,452
RO Water Pipeline Regulatory Asset	3,183		3,183		3,183
ARO Regulatory Asset	13		13		13
Working Cash at Present Rates [3]	41,721	(146)	41,575	92	41,667
Total Investments in Assets	1,770,172	(153,065)	1,617,106	76,552	1,693,658
Funds from Non-Investors					
Unamortized CIAC	178,410		178,410		178,410
Customer Advances	848		848		848
Customer Deposits	7,695		7,695		7,695
Accumulated Deferred Income Taxes [4]	134,600	257	134,856	421	135,277
Unamortized Investment Tax Credit [4]	34,571	(3,480)	31,091	1,740	32,831
Unamortized Gain on Sales	1,055		1,055		1,055
Pension Regulatory Liability	2,746		2,746		2,746
OPEB Regulatory Liability	700		700		700
Total Deductions	360,622	(3,224)	357,399	2,161	359,560
Average Rate Base at Present Rates	1,409,549	(149,842)	1,259,707	74,391	1,334,098
Change in Working Cash [3]	(1,569)	216	(1,353)	(109)	(1,462)
Average Rate Base at Proposed Rates	1,407,980		1,258,355		1,332,636

NOTE: Totals may not add exactly due to rounding.

[1] HECO-1801

[2] Changes represent the full cost and average cost of the CIP1 Gen Unit in the test year. Please see HECO-1703.

[3] HECO-1806, HECO-1806(b) & HECO-1806(d).

[4] See further discussion and details in HECO T-16.

Hawaiian Electric Company, Inc.

2009 Average Rate Base - (Current Effective Rates)

Reconciliation of Step Increases

($ in thousands)

Investment in Assets Serving Customers	CIP1 Gen Unit at Full Cost [1] Avg. Rate Base for 2009	Less: Full Cost CIP1	Interim Increase (w/o CIP1) Avg. Rate Base for 2009	Add: CIP1 Avg. Cost	Base Case Avg. Rate Base for 2009
Net Cost of Plant in Service [2]	1,545,465	(152,919)	1,392,546	76,460	1,469,005
Property Held for Future Use	2,331		2,331		2,331
Fuel Inventory	82,683		82,683		82,683
Materials & Supplies Inventories	16,015		16,015		16,015
Unamortized Net SFAS 109 Regulatory Asset	61,310		61,310		61,310
Unamortized System Development Costs	17,452		17,452		17,452
RO Water Pipeline Regulatory Asset	3,183		3,183		3,183
ARO Regulatory Asset	13		13		13
Working Cash at Current Effective Rates [3]	41,025	(146)	40,879	92	40,971
Total Investments in Assets	1,769,475	(153,065)	1,616,411	76,552	1,692,962
Funds from Non-Investors					
Unamortized CIAC	178,410		178,410		178,410
Customer Advances	848		848		848
Customer Deposits	7,695		7,695		7,695
Accumulated Deferred Income Taxes [4]	134,600	257	134,856	421	135,277
Unamortized Investment Tax Credit [4]	34,571	(3,480)	31,091	1,740	32,831
Unamortized Gain on Sales	1,055		1,055		1,055
Pension Regulatory Liability	2,746		2,746		2,746
OPEB Regulatory Liability	700		700		700
Total Deductions	360,622	(3,224)	357,399	2,161	359,560
Average Rate Base at Current Effective Rates	1,408,853	(149,841)	1,259,012	74,391	1,333,402
Change in Working Cash [3]	(872)	215	(657)	(109)	(766)
Average Rate Base at Proposed Rates	1,407,980		1,258,355		1,332,636

NOTE: Totals may not add exactly due to rounding.

[1] HECO-1801(a)

[2] Changes represent the full cost and average cost of the CIP1 Gen Unit in the test year. Please see HECO-1703.

[3] HECO-1806(a), HECO-1806(c) & HECO-1806(e).

[4] See further discussion and details in HECO T-16.

Hawaiian Electric Company, Inc.

Net Cost of Plant in Service

CIP1 Generating Unit at Full Cost for Step Increase

($ in thousands)

	Original Cost	Accum. Depreciation, Removal Reg. Liability, Acc. Retirement Oblig.	Net Plant In Service	HECO Reference
Recorded Balances - 12/31/07	2,529,629	(1,174,518)	1,355,111	
ESTIMATED CHANGES in 2008:				
Net Plant Additions	110,220		110,220	1701
Cost of Removal		6,549	6,549	1409
Salvage		(260)	(260)	1409
Depreciation Accrual		(91,663)	(91,663)	1408
Retirements [1]	(17,201)	17,201	0	1409
Estimated Balances - 12/31/08	2,622,648	(1,242,691)	1,379,957	
Full Cost - CIP1 Gen Unit	152,919		152,919	1703
Estimated Balances - 1/1/09	2,775,567	(1,242,691)	1,532,876	
ESTIMATED CHANGES in 2009:				
Net Plant Additions	111,760		111,760	1701
Cost of Removal		6,782	6,782	1409
Salvage		(276)	(276)	1409
Depreciation Accrual		(93,089)	(93,089)	1408
Retirements [1]	(16,027)	16,027	0	1409
Estimated Balances - 12/31/09	2,871,300	(1,313,247)	1,558,053	
AVERAGE 2009 BALANCE			**1,545,465**	

NOTE: Totals may not add exactly due to rounding.

[1] Original cost of estimated retirements for the respective year.

Hawaiian Electric Company, Inc.

Net Cost of Plant in Service

Interim Increase (w/o CIP1 Generating Unit)

($ in thousands)

	Original Cost	Accum. Depreciation, Removal Reg. Liability, Acc. Retirement Oblig.	Net Plant In Service	HECO Reference
Recorded Balances - 12/31/07	2,529,629	(1,174,518)	1,355,111	
ESTIMATED CHANGES in 2008:				
Net Plant Additions	110,220		110,220	1701
Cost of Removal		6,549	6,549	1409
Salvage		(260)	(260)	1409
Depreciation Accrual		(91,663)	(91,663)	1408
Retirements [1]	(17,201)	17,201	0	1409
Estimated Balances - 12/31/08	2,622,648	(1,242,691)	1,379,957	
ESTIMATED CHANGES in 2009:				
Net Plant Additions	111,760		111,760	1701
Cost of Removal		6,782	6,782	1409
Salvage		(276)	(276)	1409
Depreciation Accrual		(93,089)	(93,089)	1408
Retirements [1]	(16,027)	16,027	0	1409
Estimated Balances - 12/31/09	2,718,382	(1,313,247)	1,405,135	
AVERAGE 2009 BALANCE			**1,392,546**	

NOTE: Totals may not add exactly due to rounding.

[1] Original cost of estimated retirements for the respective year.

Hawaiian Electric Company, Inc.

Net Cost of Plant in Service

Base Case

($ in thousands)

	Original Cost	Accum. Depreciation, Removal Reg. Liability, Acc. Retirement Oblig.	Net Plant In Service	HECO Reference
Recorded Balances - 12/31/07	2,529,629	(1,174,518)	1,355,111	
ESTIMATED CHANGES in 2008:				
Net Plant Additions	110,220		110,220	1701
Cost of Removal		6,549	6,549	1409
Salvage		(260)	(260)	1409
Depreciation Accrual		(91,663)	(91,663)	1408
Retirements [1]	(17,201)	17,201	0	1409
Estimated Balances - 12/31/08	2,622,648	(1,242,691)	1,379,957	
ESTIMATED CHANGES in 2009:				
Net Plant Additions	264,679		264,679	1701
Cost of Removal		6,782	6,782	1409
Salvage		(276)	(276)	1409
Depreciation Accrual		(93,089)	(93,089)	1408
Retirements [1]	(16,027)	16,027	0	1409
Estimated Balances - 12/31/09	2,871,300	(1,313,247)	1,558,053	
AVERAGE 2009 BALANCE			**1,469,005**	

NOTE: Totals may not add exactly due to rounding.

[1] Original cost of estimated retirements for the respective year.

Hawaiian Electric Company, Inc.

Materials & Supplies Inventory

($ in thousands)

	12/31/2008	12/31/2009	Average for 2009	HECO Reference
Production Inventory	8,809	8,809	8,809	703
Adjustment to Inventory related to Accounts Payable	(405)	(405)	(405)	WP-1803, p.1
Adjusted Production Inventory	8,404	8,404	8,404	(a)
Transmission & Distribution Inventory	8,211	8,211	8,211	803
Adjustment to Inventory related to Accounts Payable	(601)	(601)	(601)	WP-1803, p.1
Adjusted T&D Inventory	7,610	7,610	7,610	(b)
Total Materials & Supplies	16,015	16,015	16,015	(a) + (b)

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Unamortized ARO Regulatory Asset

($ in thousands)

			HECO Reference
RECORDED BALANCES - 12/31/07	14		
ESTIMATED CHANGES in 2008:			
Accretion & Depreciation	5		
Cost of Removal	(6)		
ESTIMATED BALANCE - 12/31/08	13	(A)	
ESTIMATED CHANGES in 2009:			
Accretion & Depreciation	5		
Cost of Removal	(6)		
ESTIMATED BALANCE - 12/31/09	12	(B)	
AVERAGE 2009 BALANCE	13	[(A)+(B)]/2	

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

Unamortized Contributions In Aid of Construction

($ in thousands)

		HECO Reference
RECORDED BALANCES - 12/31/07	176,425	
ESTIMATED CHANGES in 2008:		
Cash Receipts	6,246	1706
In-Kind Receipts	3,864	1706
Transfer from Advances	19	1706
Amortization	(9,009)	1408
ESTIMATED BALANCE - 12/31/08	177,545	
ESTIMATED CHANGES in 2009:		
Cash Receipts	6,754	1706
In-Kind Receipts	4,204	1706
Transfer from Advances	67	1706
Amortization	(9,295)	1408
ESTIMATED BALANCE - 12/31/09	179,275	
AVERAGE 2009 BALANCE	178,410	

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

WORKING CASH ITEMS, 2009 (Present Rate)

CIP1 GENERATING UNIT AT FULL COST FOR STEP INCREASE

($ in thousands)

	(A) Revenue Collection Lag (Days)	Payment Lag Workpaper Reference	(B) Payment Lag (Days)	(C) Net Collection Lag (Days) (A) - (B)	Annual Amount Workpaper Reference	(D) Annual Amount	(E) Average Daily Amount - Present (D) / 365	(F) Working Cash Required (Provided) under Present Rates (C) x (E)	(G) Average Daily Amount - Proposed (D) / 365	(H) Working Cash Required (Provided) under Proposed Rates (C) x (G)
	per HECO T-9	HECO WP-1806			HECO WP-2304					
ITEMS REQUIRING WORKING CASH:										
Fuel Purchases	37	p. 1	17	20	p. 10	809,058	2,217	44,332	2,217	44,332
O&M Labor	37	p. 8	11	26	p. 11	102,228	280	7,282	280	7,282
O&M Nonlabor	37	p. 32	30	7	p. 11	138,515	379	2,656	379	2,656
ITEMS PROVIDING WORKING CASH:										
Purchased Power	37	p. 38	37	0	p. 10	477,055	1,307	0	1,307	0
Revenue Taxes - Present Rates	37	p. 44	66	(29)	p. 6	158,757	435	(12,614)		
Revenue Taxes - Proposed Rates	37	p. 44	66	(29)	p. 6	174,243			477	(13,844)
Income Taxes - Present Rates	37	p. 47	39	(2)	p. 9	(11,699)	(32)	64		
Income Taxes - Proposed Rates	37	p. 47	39	(2)	p. 9	50,069			137	(274)
Total WORKING CASH								41,721		40,152
Change in WORKING CASH										**(1,569)**

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

WORKING CASH ITEMS, 2009 (Current Effective Rates)

CIP1 GENERATING UNIT AT FULL COST FOR STEP INCREASE

($ in thousands)

	(A) Revenue Collection Lag (Days)	Payment Lag Workpaper Reference	(B) Payment Lag (Days)	(C) Net Collection Lag (Days) (A) - (B)	Annual Amount Workpaper Reference	(D) Annual Amount	(E) Average Daily Amount - Effective (D) / 365	(F) Working Cash Required (Provided) under Effective Rates (C) x (E)	(G) Average Daily Amount - Proposed (D) / 365	(H) Working Cash Required (Provided) under Proposed Rates (C) x (G)
	per HECO T-9	HECO WP-1806			HECO WP-2301					
ITEMS REQUIRING WORKING CASH:										
Fuel Purchases	37	p. 1	17	20	p. 10	809,058	2,217	44,332	2,217	44,332
O&M Labor	37	p. 8	11	26	p. 11	102,228	280	7,282	280	7,282
O&M Nonlabor	37	p. 32	30	7	p. 11	138,515	379	2,656	379	2,656
ITEMS PROVIDING WORKING CASH:										
Purchased Power	37	p. 38	37	0	p. 10	477,055	1,307	0	1,307	0
Revenue Taxes - Effective Rates	37	p. 44	66	(29)	p. 6	165,632	454	(13,160)		
Revenue Taxes - Proposed Rates	37	p. 44	66	(29)	p. 6	174,243			477	(13,844)
Income Taxes - Effective Rates	37	p. 47	39	(2)	p. 9	15,700	43	(86)		
Income Taxes - Proposed Rates	37	p. 47	39	(2)	p. 9	50,069			137	(274)
Total WORKING CASH								41,025		40,152
Change in WORKING CASH										**(872)**

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

WORKING CASH ITEMS, 2009 (Present Rate)

INTERIM INCREASE (W/O CIP1 GENERATING UNIT)

($ in thousands)

	(A) Revenue Collection Lag (Days)	Payment Lag Workpaper Reference	(B) Payment Lag (Days)	(C) Net Collection Lag (Days) (A) - (B)	Annual Amount Workpaper Reference	(D) Annual Amount	(E) Average Daily Amount - Present (D) / 365	(F) Working Cash Required (Provided) under Present Rates (C) x (E)	(G) Average Daily Amount - Proposed (D) / 365	(H) Working Cash Required (Provided) under Proposed Rates (C) x (G)
	per HECO T-9	HECO WP-1806			HECO WP-2305					
ITEMS REQUIRING WORKING CASH:										
Fuel Purchases	37	p. 1	17	20	p. 10	809,058	2,217	44,332	2,217	44,332
O&M Labor	37	p. 8	11	26	p. 11	101,045	277	7,198	277	7,198
O&M Nonlabor	37	p. 32	30	7	p. 11	136,747	375	2,623	375	2,623
ITEMS PROVIDING WORKING CASH:										
Purchased Power	37	p. 38	37	0	p. 10	477,055	1,307	0	1,307	0
Revenue Taxes - Present Rates	37	p. 44	66	(29)	p. 6	158,767	435	(12,614)		
Revenue Taxes - Proposed Rates	37	p. 44	66	(29)	p. 6	172,117			472	(13,675)
Income Taxes - Present Rates	37	p. 47	39	(2)	p. 9	(6,689)	(18)	37		
Income Taxes - Proposed Rates	37	p. 47	39	(2)	p. 9	46,595			128	(255)
Total WORKING CASH								41,575		40,222
Change in WORKING CASH										**(1,353)**

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

WORKING CASH ITEMS, 2009 (Current Effective Rates)

INTERIM INCREASE (W/O CIP1 GENERATING UNIT)

($ in thousands)

	(A) Revenue Collection Lag (Days)	Payment Lag Workpaper Reference	(B) Payment Lag (Days)	(C) Net Collection Lag (Days) (A) - (B)	Annual Amount Workpaper Reference	(D) Annual Amount	(E) Average Daily Amount - Effective (D) / 365	(F) Working Cash Required (Provided) under Effective Rates (C) x (E)	(G) Average Daily Amount - Proposed (D) / 365	(H) Working Cash Required (Provided) under Proposed Rates (C) x (G)
	per HECO T-9	HECO WP-1806			HECO WP-2302					
ITEMS REQUIRING WORKING CASH:										
Fuel Purchases	37	p. 1	17	20	p. 10	809,058	2,217	44,332	2,217	44,332
O&M Labor	37	p. 8	11	26	p. 11	101,045	277	7,198	277	7,198
O&M Nonlabor	37	p. 32	30	7	p. 11	136,747	375	2,623	375	2,623
ITEMS PROVIDING WORKING CASH:										
Purchased Power	37	p. 38	37	0	p. 10	477,055	1,307	0	1,307	0
Revenue Taxes - Effective Rates	37	p. 44	66	(29)	p. 6	165,632	454	(13,160)		
Revenue Taxes - Proposed Rates	37	p. 44	66	(29)	p. 6	172,117			472	(13,675)
Income Taxes - Effective Rates	37	p. 47	39	(2)	p. 9	20,710	57	(113)		
Income Taxes - Proposed Rates	37	p. 47	39	(2)	p. 9	46,595			128	(255)
Total WORKING CASH								40,879		40,222
Change in WORKING CASH										**(657)**

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

WORKING CASH ITEMS, 2009 (Present Rate)

BASE CASE

($ in thousands)

	(A) Revenue Collection Lag (Days)	Payment Lag Workpaper Reference	(B) Payment Lag (Days)	(C) Net Collection Lag (Days) (A) - (B)	Annual Amount Workpaper Reference	(D) Annual Amount	(E) Average Daily Amount - Present (D) / 365	(F) Working Cash Required (Provided) under Present Rates (C) x (E)	(G) Average Daily Amount - Proposed (D) / 365	(H) Working Cash Required (Provided) under Proposed Rates (C) x (G)
	per HECO T-9	HECO WP-1806			HECO WP-2306					
ITEMS REQUIRING WORKING CASH:										
Fuel Purchases	37	p. 1	17	20	p. 10	809,058	2,217	44,332	2,217	44,332
O&M Labor	37	p. 8	11	26	p. 11	101,597	278	7,237	278	7,237
O&M Nonlabor	37	p. 32	30	7	p. 11	137,850	378	2,644	378	2,644
ITEMS PROVIDING WORKING CASH:										
Purchased Power	37	p. 38	37	0	p. 10	477,055	1,307	0	1,307	0
Revenue Taxes - Present Rates	37	p. 44	66	(29)	p. 6	158,767	435	(12,614)		
Revenue Taxes - Proposed Rates	37	p. 44	66	(29)	p. 6	173,193			475	(13,761)
Income Taxes - Present Rates	37	p. 47	39	(2)	p. 9	(12,466)	(34)	68		
Income Taxes - Proposed Rates	37	p. 47	39	(2)	p. 9	45,114			124	(247)
Total WORKING CASH								41,667		40,205
Change in WORKING CASH										**(1,462)**

NOTE: Totals may not add exactly due to rounding.

Hawaiian Electric Company, Inc.

WORKING CASH ITEMS, 2009 (Current Effective Rates)

BASE CASE

($ in thousands)

	(A) Revenue Collection Lag (Days)	Payment Lag Workpaper Reference	(B) Payment Lag (Days)	(C) Net Collection Lag (Days) (A) - (B)	Annual Amount Workpaper Reference	(D) Annual Amount	(E) Average Daily Amount - Effective (D) / 365	(F) Working Cash Required (Provided) under Effective Rates (C) x (E)	(G) Average Daily Amount - Proposed (D) / 365	(H) Working Cash Required (Provided) under Proposed Rates (C) x (G)
	per HECO T-9	HECO WP-1806			HECO WP-2303					
ITEMS REQUIRING WORKING CASH:										
Fuel Purchases	37	p. 1	17	20	p. 10	809,058	2,217	44,332	2,217	44,332
O&M Labor	37	p. 8	11	26	p. 11	101,597	278	7,237	278	7,237
O&M Nonlabor	37	p. 32	30	7	p. 11	137,850	378	2,644	378	2,644
ITEMS PROVIDING WORKING CASH:										
Purchased Power	37	p. 38	37	0	p. 10	477,055	1,307	0	1,307	0
Revenue Taxes - Effective Rates	37	p. 44	66	(29)	p. 6	165,632	454	(13,160)		
Revenue Taxes - Proposed Rates	37	p. 44	66	(29)	p. 6	173,193			475	(13,761)
Income Taxes - Effective Rates	37	p. 47	39	(2)	p. 9	14,933	41	(82)		
Income Taxes - Proposed Rates	37	p. 47	39	(2)	p. 9	45,114			124	(247)
Total WORKING CASH								40,971		40,205
Change in WORKING CASH										**(766)**

NOTE: Totals may not add exactly due to rounding.