CA-IR-360 **Ref: HECO-922 (DSM Related Expense).**

HECO-922 provides a breakdown of test year DSM-related administration, PAYS and ITS expenses. Please provide the following information:

a. Provide a breakdown of the administration labor costs by RA and position, with reference into CA-IR-1 supporting documentation for relevant labor input sheet details.

b. Provide actual 2006 and actual 5 months ending May 31, 2007 amounts for each labor and non-labor category shown.

c. Explain any significant variances between the historical actual data provided in your response to part (b) of this information request and the proposed test year amounts shown in HECO-922.

d. Confirm that PAYS non-labor amounts are to be removed, for recovery through the IRP cost recovery clause, as indicated in CA-IR-129.

e. Provide supporting documentation for the proposed test year "ITS" amounts, including upstream allocation models employed to derive such amounts.

HECO Response:

a. See the attached worksheet on page 4. Please note the response to CA-IR-1 indicates that the 172 hours were for the Energy Services-Administration. This was a typographical error and it should have been for the VP-Customer Solutions.

b. See the attached worksheet on page 5. The test year estimate for PAYS non-labor expenses reflects the revisions to the PAYS expense estimates identified in HECO's response to CA-IR-122. In CA-IR-122, HECO stated that the non-labor expenses would be recovered through the IRP cost recovery clause as incremental costs rather than being recovered through base rates. Therefore, in revised HECO-922, HECO has removed all PAYS program non-labor expenses except for the labor overheads in expense elements 406, 422, and 423. (These expense elements are removed from the test year Customer Services expense estimate through the GL Code adjustment.)

c. As shown in the workpaper on page 5, there are no significant variances between the prorated YTD test year estimates and YTD actual expenses for labor and non-labor DSM-related expenses.

d. PAYS program non-labor expenses have been removed from the test year Customer Service expense estimate as indicated in part b. above.

The impact on the test year Customer Service expense estimate of the revisions identified in HECO's response to CA-IR-122 (i.e., the addition of two DSM staff positions into the test year revenue requirements, the increase in CIDLC Program non-labor expenses, and the removal of PAYS program non-labor expenses) were provided to the parties in HECO's June 2007 test year update filed on June 15, 2007. Additional workpapers detailing the revisions on key HECO T-9 exhibits are included in HECO's response to CA-IR-357, 358, 359, and this IR (CA-IR-360) on attached pages 6 through 8.

e. ITS amounts are based on an allocation of ITS costs via allocation models which are shown in Exhibit HECO-WP-1051. The DSM Related ITS cost allocations amount to $199,704 which are based on allocations to the following two code blocks (both of which translates to Account block/B37 [Customer Service]/NARUC Account No. 910):

PEZ713PHENENPEZZZZZ451:	$152,808
PEZ713PHENENPNEZZZZ451:	46,896
Total	$199,704

The calculations/support workpapers for the $152,808 are shown on HECO-WP-1051, page 8 of 35 (about two-thirds of the way down the page).

The calculations/support workpapers for the $46,896 is shown on HECO-WP-1051, page 5 of 35 at the bottom of the page in the EBusiness Allocation section. Pages 1-2 of

HECO-WP-1051 provides a description of the ITS Costing System allocation methodology. Details regarding the IT charges allocated through the ITS Costing System are provided in response to CA-IR-2, HECO T-10, Attachment 13.

Breakdown of Test Year DSM-Related Labor Expense by RA and Position

CA-IR-360 (a)

NARUC	*Act #	Lbr/NLbr	*RA #	*Proj #	Project	*EE #	2007 Test Year	Hours	Reference	Position	Hours
LABOR											
909	713	Labor	P1W	NPASVP7Z	VP-Cust Solutions	150	$18,834	172	CA-IR-1, Attachment C, page 3	VP - Customer Solutions	172
909	713	Labor	P1W	NPASVP7Z	VP-Cust Solutions	421	$733				
909	713	Labor	P1W	NPASVP7Z	909 Labor		**$19,567**				
LABOR											
910	713	Labor	PSA	NPSZZZZZ	Energy Services	150	$163,187	4,784	CA-IR-1, Attachment C, page 6	Manager, Energy Services	1,336
910	713	Labor	PSA	NPSZZZZZ	Energy Services	421	$20,380		CA-IR-1, Attachment C, page 9	Planning Analyst	1,584
910	713	Labor	PSA	NPSZZZZZ			$183,567		CA-IR-1, Attachment C, page 10	Secretary	1,864
910	713	Labor	PSD	NPSZZZZZ	Energy Services	150	$60,106	1,828	CA-IR-1, Attachment C, page 11	Director, CEP	934
910	713	Labor	PSD	NPSZZZZZ	Energy Services	421	$7,787		CA-IR-1, Attachment C, page 19	Clerk	894
910	713	Labor	PSD	NPSZZZZZ			$67,894				
					910 Admin.Labor		**$251,461**				
910	713	Labor	PSD	P0001366	Pay As You Save	150	$19,943	614	CA-IR-1, Attachment C, page 20	CEP Analyst	614
910	713	Labor	PSD	P0001366	Pay As You Save	421	$2,616				
910	713	Labor	PSD	P0001366	910 Pays Labor		**$22,558**				
					TOTAL LABOR		**$293,586**				

HECO-922 (Revised 6/28/07)

Hawaiian Electric Company, Inc.

Test Year DSM-Related Expenses
($1,000s)

Line		2005	2006	2007 Test Year*	Difference Test Year and 2005	5/12 x 2007 TY	YTD 5/31/2007	TY Less Actual
1	**Labor**							
2	Account 909 - Admin	0	1	20	20	8	1	7
3	Account 910							
4	Administration	187	217	252	65	105	109	-4
5	PAYS	0	0	23	23	10	14	-4
6	Total Labor	187	218	295	108	123	124	-1
7	**Non-Labor**							
8	Account 909 - Admin	0	0	4	4	2	0	2
9	Account 910							
10	Administration	85	98	130	45	54	55	-1
11	PAYS	0	0	11	11	5	7	-2
12	ITS	251	174	200	-51	83	79	4
13	Total Non-Labor	336	272	345	9	144	141	3
14	**Labor/Non-Labor Total**	**523**	**490**	**640**	**117**	**267**	**265**	**2**

* Test year estimates revised per response to CA-IR-122, page 6.

CA-IR-360
DOCKET NO. 2006-0386
PAGE 5 OF 8

HECO-922
DOCKET NO. 2006-0386
PAGE 1 OF 1
Revised 6/28/07

HECO-911 (Revised 6/28/07)

HAWAIIAN ELECTRIC COMPANY, INC.
ACCOUNT 910 - CUSTOMER ASSISTANCE EXPENSE
RECORDED 2005 and 2007 EXPENSE COMPARATIVE
($1000s)

Line		Recorded 2005	**Test Year 2007**		Change
	Demand-Side Management Expense *				
1	Labor	$656	$1,104		$448
2	Nonlabor	$670	$1,984		$1,314
3	Total	$1,326	$3,088		$1,762
	Non-DSM				
4	Labor	$2,168	$2,207		$39
5	Nonlabor	$1,795	$2,281		$486
6	Total	$3,963	$4,488		$525
7	**GL Code (Nonlabor)**	($1,028)	($1,758)	**	($730)
	Total Customer Assistance Expense				
8	Labor	$2,824	**$3,311**		$487
9	Nonlabor	$1,437	**$2,507**		$1,070
10	Total	$4,261	**$5,818**		$1,557

* Base DSM expenses only. Incremental DSM program costs (Activity 714) have been excluded.
** GL Code of ($1,720,000) is net of initial GL Code amount of ($2,059,000), ($339,000) of DSM incremental on-costs (EE's 406, 422, 423), and ($38,000) of on-costs for the additional two DSM staff added per CA-IR-122. Rate Case adjustments related to the transfer of the ($339,000) and ($38,000) Expense Elements have been made directly to the end NARUC account.

HECO-913 (Revised 6/28/07)

Hawaiian Electric Company, Inc.

Test Year DSM Expense
($1,000s)

Line		Labor	Non-Labor	TOTAL
1	**Account 910**			
2	DSM Program Costs	829	1,643	2,472
3	DSM-Related Costs			
4	Administration	252	130	382
5	PAYS	23	11	34
6	ITS		200	200
7	Total Acct 910 DSM Expenses	1,104	1,984	3,088
8	**Other Than Account 910**			
9	DSM Program Costs			
10	Account 920 - Regulatory	5	0	5
11	Account 921 - Regulatory	1	3	4
12	Account 931 - Rents	0	15	15
13	DSM-Related Costs			
14	Account 909 - Admin	20	4	24
15	Total Other Than Acct 910 Expenses	26	22	48
16	**Total DSM Expenses**	**1,130**	**2,006**	**3,136**

HECO-924 (Revised 6/28/07)

Hawaiian Electric Company, Inc.

PAYS PROGRAM COST SUMMARY
($000)

2007 Test Year Estimate

Line		Base
1	INCENTIVES	0
	DIRECT LABOR	
2	Account 910 (150, 421)	23
3	Nonlabor OH	11
4	DIRECT LABOR TOTAL	34
5	OUTSIDE SERVICES (incl Tracking/Eval)	0
6	ADVERTISING/MARKETING	0
7	MATERIALS, TRAVEL, MISC.	0
8	TOTAL BASE PROGRAM COSTS	34

CA-IR-361 **Ref: Response to CA-IR-264, part c (DSM Staffing).**

Please provide a detailed explanation of each reason HECO believes "It is not clear that HECO will necessarily need to adjust its DSM-related staffing when the energy efficiency programs transition to a 3rd party administrator." Provide complete copies of all studies, reports, analyses, workpapers, calculations and other information supportive of your response. Include in your response a discussion of how 3rd party administration of DSM, as ordered by the Commission, can be cost-effective if HECO maintains full staffing to support DSM after transition occurs (with labor and benefit costs included in electric rates).

HECO Response:

While the Commission's Decision and Order in the Energy Efficiency Docket ordered the transition of the energy efficiency DSM programs to a non-utility, third-party, administrator by January 2009, it also stated that,

> As it may be beneficial for the HECO Companies to be allowed to compete for implementation of the Energy Efficiency DSM Programs and the RCEA Program, the commission does not foreclose such possibility at this time. However, because the third-party administrator has yet to be selected, and the bidding process for program implementation has yet to be developed, the commission makes no determination at this time as to any of the parameters of the HECO Companies' eligibility or the selection criteria that will be used in awarding program implementation. (Page 40.)

Therefore, based on the Commission's D&O, HECO may be able compete for and be awarded some portion of the DSM Program implementation. If so, it would be premature to suggest that HECO will necessarily need to adjust its DSM-related staffing when the energy efficiency programs transition to the 3rd party administrator.

If the Commission determines that some portion of the DSM programs should be transitioned to a new program implementer, one of the main objectives during the transition period from utility-administered to non-utility administered DSM programs should be to ensure that the programs continue to run smoothly without negatively affecting program participants, program implementation, market infrastructure, and industry participants. Thus, duplicate costs

during the transition are unavoidable because there would have to be two parallel efforts for at least part of the time to transition the existing DSM programs and to get the new programs established.

Even when the transition is completed, the third party administrator may initially call upon the utility to provide assistance in its DSM program provisioning. Therefore, while cost-effectiveness of third-party administration is important, HECO maintains that it must be available to assist with the smooth transition of DSM programs to that administrator. Should HECO assistance not be necessary, then, as indicated in its response to CA-IR-263, parts g. and h., HECO will place the DSM staff in areas within the company that can best use their skills and expertise.

CA-IR-362 **Ref: Response to CA-IR-2, HECO T-9, Attachment B, page 21 (BTL HPWH Program Costs).**

Please provide a detailed explanation of the Company's incentive program to promote all electric heat pumps, including a description of specific program terms and conditions, HPUC review and approval requested/received, and the number and amounts of incentives actually paid in each of the past three years.

HECO Response:

The Customer Technology Applications Division's BTL Heat Pump incentive program is designed to promote the efficient usage of electricity by encouraging customers to install highly efficient electric heat pump systems. To encourage the installation of these systems, HECO agrees to aid selected customers by providing financial assistance to support these installations. A key objective of this program is to increase the market penetration of highly efficient electric heat pump systems with HECO's customers.

Heat pump incentive payments are treated as BTL expenses since these costs are deemed to be promotional in nature and contribute to the increased adoption of energy efficient electric heat pumps. HECO's rationale for treating these promotional expenses as BTL transactions is based on Commission policy presented in PUC Docket No. 7261, filed February 4, 1994, which stated that these type of promotional expenses should be paid for by shareholders and may not be recovered from ratepayers.

HECO has not sought or obtained Commission approval for this BTL activity. Refer to response to CA-IR-271(c). Section 6-60-9 of Title 6, Chapter 60 (Standards of Electric and Gas Services in the State of Hawaii) further states that a utility may not "recover from any person other than the shareholders of such utility, any expenditures for promotional or political advertising."

HECO has incurred $125,118 in BTL heat pump program expenditures for the period 2004 through YTD May 31, 2007 as indicated below:

Period	Amount Paid
2006 thru May 31, 2007*	$18,333
2005	$93,357
2004	$13,428
Total	$125,118

These BTL heat pump program expenditures provided financial assistance to three large commercial customers in support of five heat pump system installations.

* YTD May 31, 2007 results were limited to a credit adjustment (-$1,563) related to a 2006 transaction and other minor costs. As such 2006 and YTD May 31, 2007 results were combined.

CA-IR-363

Ref: T-10 Responses to HECO CA-IR-2, Attachment 13, page 3 & CA-IR-275 (ITS Costs).

CA-IR-275 specifically referred to Note D on CA-IR-2, Attachment 13, page 10 *[sic]* and requested forecast support for the $190,000 (2007 enterprise software maintenance fees) and for the $142,000 (2007 additional third party software maintenance fees). The 2007 test year forecast of $384,000 was based on "prior year actuals" plus the sum of these amounts ($332,000). Please provide the following:

a. Please provide additional documentation supporting the derivation of the $190,000 for 2007 enterprise software maintenance fees.

b. Please provide additional documentation supporting the derivation of the $142,000 for 2007 additional third party software maintenance fees.

c. Please provide additional documentation supporting the derivation of the "prior year actuals" to which the $332,000 was added.

HECO Response:

a. The $190,000 budgeted for enterprise software maintenance was to cover items listed in response to CA-IR-275. At the time the 2007 budget was developed in early 2006, the specific quantities, software products, and costs were not identified. However, HECO was aware of a need to purchase these items in 2007, because of software that had been installed and were being installed, and estimated amounts for such items were included in the budget. At this point in 2007, actual software maintenance requirements have become clearer, and more details can be provided. Actual 2007 expenses for enterprise software maintenance are expected to exceed the $190,000 budgeted for such costs. Actual expenses through June 28 2007 for enterprise software maintenance fees are as follows:

Business Objects Licenses (2)	$ 82,352
Business Objects Maintenance (2)	$ 14,630
Quest Toad software	$ 972
Hummingbird Exceed/Connectivity Secure Shell software and maintenance	$ 646
Camelia Software Corp Batch Job Server support maintenance	$ 679
Microsoft Enterprise Agreement license/maintenance allocation	$ 377
Total	$ 99,656

In addition, during the remainder of 2007, HECO will be incurring $116,904 of Websphere software maintenance expenses as follows:

	IBM Passport Advantage Software Maintenance on:	LAST PAID	ESTIMATED PAYMENT DATE	Disc Price
EAI3	D56MHLL WEBSPHERE DATA INTERCH (1 @ 100 points) - EAI Ph3	Incl in lic price	9/30/07	$8,374.10
EAI3	D56P3LL WEBSPHERE BUSINESS INTEGRATION MSG BRKR (1 @ 100 points) - EAI ph3	Incl in lic price	9/30/07	$7,964.60
EAI3	E00N5LL IBM WEBSPHERE MQ PROCESSOR (2 @ 100 points each) - EAI ph3	Incl in lic price	9/30/07	$1,201.20
OMS	E00N5LL IBM WEBSPHERE MQ PROCESSOR (10) – OMS	Incl in lic price	6/30/07	$8,008.00
OMS	E00N5LL IBM WEBSPHERE MQ PROCESSOR (1 @ 100 points each) – OMS	Incl in lic price	10/31/07	$534.10
	New maintenance total			$26,082.00
	RECURRING			
1	E00JULL IBM WEBSPHERE DATA INTERCHANGE PROCESSOR (2)	$20,045.34	6/30/07	$22,330.00

2	E01CFLL IBM WEBSPHERE BUSINESS INTEGRATION SERVER PER PER PROCESSOR (3)	$34,319.58	6/30/07	$38,852.10
3	E01TTLL IBM WEBSPHERE ADAPTER FOR JDBC ESTABLISHMENT (1)	$10,548.90	6/30/07	$12,016.90
4	E01TVLL IBM WEBSPHERE ADAPTER FOR FLAT FILES ESTABLISHMENT (fka JTEXT) (1)	$10,548.92	6/30/07	$12,016.90
5	E00N5LL IBM WEBSPHERE MQ PROCESSOR (3)	$1,999.38	6/30/07	$2,402.40
6	E00N5LL IBM WEBSPHERE MQ PROCESSOR (4)	$1,999.40	6/30/07	$3,203.20
	Recurring Total	$79,461.52		$90,821.50
	Grand Total			$116,903.50

The discounted prices for the Webshere software maintenance listed above were based on IBM's Level E standard pricing less a [redacted] discount which was granted to HECO for a three year period, when Websphere software was first installed at HECO 2 years ago. Note that in 2008 and in the years to follow, the discount will no longer apply and HECO will pay maintenance at the standard IBM Level E rates. For reference the prediscount price for the above software items was $[redacted].

b. The $142,000 budgeted for additional third party software maintenance fees was to cover the items listed in the response to CA-IR-275. At the time the 2007 budget was developed in early 2006, the specific quantities, software products, and costs were not identified. However, HECO was aware of a need to purchase these items in 2007, because of the on-

going work in the IT area and amounts were included in the budget. At this point in 2007, actual requirements become clearer, and actual expenses for third party software maintenance fees are expected to be higher that the $142,000 included in the budget. HECO expects to sign a contract shortly to purchase Reports Management System software (mentioned as the SAR replacement in CA-IR-275) for $161,000. Annual maintenance in future years for this item will be approximately $30,000 a year. While this particular software may not be purchased in the future, other software to address other requirements will be purchased. For example, in 2008, the following software licenses will be purchased:

1. MSDN Universal Select Subscriptions @$10,000 - HECO is largely a Microsoft shop when it comes to Windows based applications. The item above is a tool used to develop and maintain Windows based applications and we currently have more developers than tools available. This software will be used to close that gap.
2. Mincom Webservices purchase two at @$20,000 each - HECO purchased a 10-pack of web services from Mincom in 2005 to support the integration of its various systems (CIS, OMS, MWM, etc.) with Ellipse. 14 web services will be placed into production in early 2008 and many more will be required as the interfaces into HRMS, OMS phase 3, and others are identified. Since the price for a 10-pack is equivalent to 5 individually licensed web services we can conservatively estimate that it's most cost effective to purchase two 10-packs.
3. Also, the following additional software maintenance items are expected to be paid in 2008:
    a. Tomcat - $10,000 - Tomcat is open source application server software. Application server software is needed by our Vignette software (for the Internet and

Collaboration tool), Bentley's Projectwise product, Axiom's Microstation training software, and we anticipate using it with future Java based application deployments. Because it's open source we avoided a license fee (which would have been much greater than the $10K) but opted to pick up support from a company that specializes in that business.

b. Subversion - $5,000 - HECO used a product called Endevor on the mainframe for source code management. An analogous product will be needed in the Unix environment and we're currently investigating whether or not Subversion will work for us. If it does then we will need to pick up support and thus budgeted for it.

c. MDM Software Maintenance - $36,000 - It is likely the company will purchase a Meter Data Management system in the near future. We would pick up the maintenance for such a system when it is purchased to entitle the company to future upgrades and to secure vendor support if we ran into a problem.

c. Prior year actuals refer to charges captured in workorder IT000006. In 2005, the non-labor charges to the workorder included $49,933 for software purchases and maintenance, $65,308 for websphere annual software maintenance and $8,357 for costs to recruit development staff. $52,000 for recurring software was added to the $190,000 and $142,000 to derive the total $384,000 for the 2007 budget for Workorder IT000006. The costs incurred in 2005 for software purchases and maintenance, which would continue to be incurred in 2007 are follows:

$15,310 – Bowe Bell and Howell software maintenance (for Transformer)
18,200 – Hostbridge Software annual maintenance (for mainframe to application communications)
7,754 – BEA Systems (for Weblogic software maintenance)
1,364 – Sybase PowerBuilder Enterprise software maintenance
1,173 – Quest Toad software maintenance

572 – Camelia Software Corp Bath Job Server support maintenance
909 – IBM Tivoli Software maintenance
652 - Compusa Rational Robot Software maintenance
3,824 – Software Spectrum & Insight Direct software purchases
175 - software on-costs/use tax

$49,933 - Total

These costs continue to be incurred in 2007.

Costs related to recruiting for developer analysts were not specifically included in determining the budget, however, HECO incurs such costs (advertising for vacant positions) as required, and an amount should be included in the budget. Costs related to recurring Websphere annual software maintenance, was inadvertently excluded from the 2007 budget estimate. However, a current assessment of additional Websphere maintenance charges that are due to new systems implemented in 2006/2007 and recurring Websphere maintenance are included in the description of charges that will be incurred in relation to the $190,000 included in the budget for Enterprise Software Maintenance fee discussed in part a above.

CA-IR-364

Ref: T-10 Responses to HECO CA-IR-2, Attachment 13, page 3 & CA-IR-275 (ITS Costs).

The response to CA-IR-275(a) indicates that the $190,000 for enterprise software maintenance fees was associated with some software (e.g., middleware and business objects) installed in 2006. Note D on CA-IR-2, Attachment 13, page 3, indicated that the 2007 test year forecast of $384,000 was based on "prior year actuals" plus the sum of $190,000 (2007 enterprise software maintenance fees) and $142,000 (2007 additional third party software maintenance fees). Please provide the following:

a. Does the amount of "prior year actuals" include any maintenance fees for the middleware software installed in 2006? Please explain.

b. Does the amount of "prior year actuals" include any maintenance fees for the business objects software installed in 2006? Please explain.

c. If the response to parts (a) or (b) above is affirmative, please provide the amount of the maintenance fees for middleware or business objects software embedded in the "prior year actuals" amount.

HECO Response:

a. No. As the budget estimates for 2007 budget were developed in early 2006, the prior year actuals refer to 2005 expenses. Middleware software installed in 2006 was not paid for in 2005, and not included in the 2005 expenses. See the response to CA-IR-363 (part c) for the details of the prior year actuals (2005 costs) included in the 2007 budget.

b. No. As the budget estimates for 2007 budget were developed in early 2006, the prior year actuals refer to 2005 expenses. Business Objects software installed in 2006 was not paid for in 2005, and not included in the 2005 expenses. See the response to CA-IR-363 (part c) for the details of the prior year actuals (2005 costs) included in the 2007 budget.

c. None.

CA-IR-365

Ref: T-10 Responses to HECO CA-IR-2, Attachment 13, page 3 & CA-IR-275 (ITS Costs).

The response to CA-IR-275(b)(3) indicates that the $142,000 for third party software maintenance was associated with software purchased in 2006. Note D on CA-IR-2, Attachment 13, page 3, indicated that the 2007 test year forecast of $384,000 was based on "prior year actuals" plus the sum of $190,000 (2007 enterprise software maintenance fees) and $142,000 (2007 additional third party software maintenance fees). Please provide the following:

a. Does the amount of "prior year actuals" include any third party software maintenance fees for software purchased in 2006? Please explain.

b. If the response to part (a) above is affirmative, please provide the amount of the maintenance fees for embedded in the "prior year actuals" amount.

HECO Response:

a. No. As the budget estimates for 2007 budget were developed in early 2006, the prior year actuals refer to 2005 expenses. Third party software purchased in 2006 was not paid for in 2005, and not included in the 2005 expenses. See the response to CA-IR-363 (part c) for the details of the prior year actuals (2005 costs) included in the 2007 budget.

b. None.

CA-IR-366

Ref: HECO T-10 Responses to CA-IR-2, Attachment 13, page 11 & CA-IR-276 (ITS Costs).

In response to parts (a), (b) and (c) of CA-IR-276, the Company indicated that the referenced forecast amounts were based on an hourly rate of $120 times 3750 hours for CIS, 970 hours for HRMS, and 3000 hours for TYC (legacy CIS). Please provide the following:

a. Please provide the basis for the $120 outside services hourly rate.

b. Please provide additional support for the following outside service hour needs:

   1. 3750 hours for CIS;

   2. 970 hours for HRMS; and

   3. 3000 hours for TYC (legacy CIS).

HECO Response (Protective Order requested):

a. The $120/hour is the approximate anticipated rate for IT outsourced labor. Rates vary among different outsourcers used by HECO. A copy of invoices which indicate the hourly rates charged by three of the outsourcers used by HECO as a basis for the anticipated rate are provide as Attachment 1 to this response. Attachment 1 is being submitted under Amended Protective Order No. 23378 dated June 4, 2007 as the specific rates charged by the outsourcers are confidential.

b. The reference in CA-IR-276 and in this information request relates to the budget for outsourced IT applications support services. The outsourced IT applications support services supplement the work of the Company's IT Development Services staff. The budget for this item assumed that $450,000 would be required for a half year of full outsourcing for applications maintenance pertaining to the new CIS system, $116,000 was budgeted for a half year of full outsourcing for applications maintenance pertaining to the new HR Suites system, and $360,000 was budgeted for outsourcing for applications maintenance pertaining

to the legacy CIS (ACCESS) system. Full outsourcing for applications maintenance involve the following work activities:

- Responding to HECO application users inquiries on software.
- Implementing enhancement requests to applications from customers.
- Installing and testing software patches to application from software providers.
- Upgrading application software with new versions/releases.

Due to the current schedule for implementation of the CIS and HRMS projects, we do not expect to incur the $450,000 for the new CIS and $116,000 for the HR Suites System as originally budgeted for 2007. However, HECO expects to incur the full budget amount of $1,726,000 for outsourced IT applications outside services support in 2007, and in subsequent years (2008 and beyond).

For 2007, the total budget estimate for outsourced IT applications outside services in workorder IT000014/IT000017/IT000124 amounts to $1,726,000 (ref: Item I on HECO T-10 Response to CA-IR-2, Attachment 13, page 11). HECO has spent $430,996 to date for these applications outside services support and expects to spend <u>at least</u> an additional $1,224,200 for the remainder of the year.

The charges for outsourced services by month thus far in 2007 total to $430,996:

Jan -	$139,481
Feb –	0
Mar -	$154,658
Apr -	$ 68,410
May -	$ 68,447
	$430,996

Thus far, for this year, the outsourced application support costs were for work on the legacy CIS system, maintenance of DARS (enterprise reporting system), contract work for building, enhancing, and supporting HECO applications such as the new Records

Management System, an application that will be used to identify applications that exist out in the user community, employee benefits statement modification, support for Quality Assurance work to test IT controls, SQL Server (database) support, and Benefits systems (Flex, HEIRS, LTC, Pension) support.

The additional $1,224,200 expenditures expected during the remainder of 2007 are for:

$331,800	for legacy CIS system (ACCESS) as well as several front-end systems such as the meter reading and field services systems support (7 months x $47.4k May YTD monthly average)
$ 95,900	for DARS maintenance and support (7 months x $13.7K May YTD monthly average). DARS is a home grown application which provides customized reports based off information from our ERP system, Ellipse.
$418,000	to supplement our existing IT development staff work load for building, enhancing, and supporting applications. . Some examples are the new Records Management System, an application that will be used to identify applications that exist in our user community, employee benefits statement modification, and a succession planning tool.
$ 40,000	Vendor for Filenet Support. Filenet is a document management tool used primarily by Accounts Payable to record invoices and another department to record joint pole drawings. HECO's qualified support person transferred to another position a while back.
$ 64,800	Vendor for Quality Assurance work. This is item is for assistance with quality assurance work and SOX compliance work.
$ 73,700	Database Administration support. The amount of database work needed, both for our existing systems as well as a number of new systems, has exceeded the capacity of our existing Database Administrators to support. An outsourcer has been providing such work during the first five months of this year as necessary and will continue to do so during the remainder of 2007 and beyond.
$ 20,000	Subversion System support HECO used a product called Endevor for source code management on the mainframe. A similar product will be required and maintained in the Unix environment.
$180,000	Enterprise Reporting system support. HECO uses a product called CA-View on the mainframe for report distribution and archiving. That

same function needs to be available in HECO's Unix environment. In 2007, the consultants will be required to install the product and make the necessary ties to Business Objects and appropriate distribution channels.

The outsourced IT applications outside services described above are required in 2007 as significant ITS Development Services staff have been assigned to major project implementation efforts. In 2007, approximately 10.8 regular HECO ITS Department Development Services staff were assigned to the following major implementation projects:

11,472 – New CIS System
7,702 – Ellipse to UNIX
2,546 – HR/Benefits/Comp Suite (HRMS)
763 – Outage Management System (OMS)
22,483 - Total hours resourced to projects

/ 2080 – Hours per FTE (Full time equivalent)

10.8 FTEs

After 2007, the requirement for annual outsourced outside labor will continue. While regular Development Services staff will return from the implementation work to maintain the newly installed systems, the application support requirements are expected to exceed the Development Services staff resources. Support for the new Outage Management System/Mobile Work Force Management System (OMS/MWM), CIS, HRMS and other new applications will be greater than with the prior legacy systems. As examples, the following new applications will need support in 2007 and beyond as these are either new installations (installed in 2007) or are not yet in operation:

1. OMS (Outage Management System)/ MWM (Mobile Workforce Management System) System with the capability to resource, schedule and dispatch work orders, such as trouble orders, to the field and functions to manage field personnel addressing the outage.

2. EAI-WBI (Enterprise Application Integration-Websphere Business Integration). This is a middleware product purchased from IBM that is used to send, receive, and transform messages between systems.
3. EAI-WDI (Enterprise Application Integration-Websphere Data Integration) This is another middleware product purchased from IBM that provides many standard message transformations out of the box, of specific interest were the EDI (Electronic Data Interchange) transformations that are commonly used to share information with banks and benefits carriers.
4. EAI-WAS (Enterprise Application Integration-Websphere Application Server) This is yet another middleware product from IBM, although purchased through Mincom. Mincom requires this software as part of their Enterprise Services Framework purchased as part of the last Ellipse upgrade.
5. Business Objects. This software is the foundation of the company's standard reporting platform which is used by the EMS, OMS, and CIS, along with many other systems in the future.
6. Vignette Collaboration. This is a tool that was purchased from Vignette to facilitate online collaboration between employees working on various projects.
7. Intergraph Geomedia. This software is used to provide graphical information in a web browser, making data much more readily available with a minimal amount of client side tools.
8. Web Logic & Apache. These two products are application servers and are needed by other products to run.

Confidential Information
Deleted Pursuant To
Amended Protective Order No. 23378

Attachment 1 contains confidential information and is being provided subject to

Amended Protective Order No. 23378, dated June 4, 2007.

CA-IR-367

Ref: HECO Response to CA-IR-279 (Account 920 & Incentive Compensation).

Page 2 of the response to CA-IR-279 provides a breakdown of the 2005, 2006 and 2007 test year "PIC" amounts between "LTIP/EICP" and "Other Awards." Please provide the following:

a. Please identify and describe the forms of compensation that fall into the "Other Awards" category.

b. For 2005 and 2006 (actuals) and the 2007 test year forecast, please provide the amounts associated with each "Other Awards" item identified in response to part (a) above.

HECO Response:

a. Merit Key Contributor Awards: cash awards granted to recognize and reward merit employees for special achievement in specific innovative planning or implementation of a major project or business process. The accomplishment must exceed normal job responsibilities or goals.

Merit Team Awards: cash awards granted to recognize and reward merit employees for contributing positively to key projects and initiatives, through teams that are established to accomplish specific goals.

Ho'ola'a Awards: non-monetary, tangible gifts which recognize and reward employees for increments of 5 years of continuous service and dedication to HECO.

Other Recognition Awards: non-monetary, tangible gifts which reward and acknowledge exceptional employee performance and contributions to the organization.

b.

	2005 Actual	2006 Actual	2007 Budget
NARUC 920:			
Service Awards	8,774.43	5,697.97	
Merit Key Contributor Awards[1]	284,460.00	(210,600.00)	239,000.00
Merit Team Awards[1]	148,915.00	(105,300.00)	119,000.00
	442,149.43	(310,202.03)	358,000.00
NARUC 921:			
Service Awards	42,477.83	43,026.63	38,000.00
Other Recognition Awards	1,205.80	1,282.05	
	43,683.63	44,308.68	38,000.00

[1] The credits in 2006 reflect the reversal of amounts accrued in 2005, which were not granted.

CA-IR-368

Ref: HECO-1007 & Response to CA-IR-282 (HEI Billings).

Confidential page 38 of the response to CA-IR-282 shows the 2007 forecast of total HEI expenses and the related amount of Intercompany Billing to Subsidiary operations. Please provide the following:

a. Please provide a breakdown of the total confidential amount of Intercompany Billing, broken down by subsidiary.

b. If HECO's portion of the response to part (a) above does not tie to the $1,794,532 calculated on HECO 1007, please provide the following:

   1. Please explain and reconcile the primary factors contributing to the difference.

   2. Please provide additional supporting documentation showing the derivation of the confidential amount of Intercompany Billing set forth on page 38 of the response to CA-IR-282, by subsidiary.

HECO Response:

a. See page 3 for the breakdown of the total amount of HEI Intercompany Billings by HEI subsidiary. The information contains confidential forecast information, and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

b.

   1. See page 4 for the explanation and reconciliation of the primary factors contributing to the difference between the $1,794,532 calculated on HECO-1007 and the response to part a. above.

   2. See page 3 for additional supporting information regarding the amount of HEI Intercompany Billings set forth on page 38 of the response to CA-IR-282, by subsidiary. The 2007 forecast and HECO's 2007 test year estimate where both derived from the 2005 actual charges to subsidiaries adjusted for estimated inflation increases and other changes as described in Notes 3 through 26 on HECO-1007. However, the

2007 forecast to the subsidiaries was not produced at the same level of detail (Activity code level) for forecast purposes as it was for purposes of developing the test year estimate for HECO. Hence, only total charges by category as shown on page 3 is available by subsidiary.

Page 3 contains confidential information and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

Reconciliation of HECO's 2007 Test Year Estimate to the 2007 Forecast

	HECO	
2007 Test Year Estimate in Account No. 921 (per HECO-1007)	1,794,532	
Amounts included in the 2007 Forecast but not in the 2007 Test Year Estimate for purposes of this rate case only:		
Incentive compensation	379,286	
HEI Retirement Savings Plan charges (PEN005)	33,281	
Amounts forecasted to be billed to HECO but not included in $1,794,532 above:		
Rent - Office Space/Training Rooms - ASB Tower (included in ADM category)	74,000	Note a
Rent - Central Pacific Plaza (included in ADM category)	101,568	Note b
Internet	60,941	Note c
Other	6,133	
2007 Forecast	2,449,741	

Notes:

a. Rent for office space and training rooms included in rent expense under Account No. 931.00
Note that amount included in the test year estimate for rent expense has been updated to reflect subsequent changes as discussed in HECO's response to CA-IR-299.

b. Rent for Central Pacific Plaza included in rent expense under Account No. 931.00
Note that amount included in the test year estimate for rent expense has been updated to reflect subsequent changes as discussed in HECO's response to CA-IR-299.

c. Internet charges included as part of the IT costs that are allocated under the IT costing system.
See the response to CA-IR-2, HECO T-10, Attachment 13, page 10.

CA-IR-369

Ref: HECO-1007 & Response to CA-IR-282 (HEI Billings).

HECO-1007 employs the 2006 allocation factors, which are based on 2005 actual results as set forth in the response to CA-IR-282. Please provide the 2007 allocation factors and underlying documentation in a format similar to the response to CA-IR-282.

HECO Response:

See pages 2 through 6 of this response for the workpapers supporting the derivation of the 2007 allocation factors which are based on 2006 actual results in a format similar to the response to CA-IR-282. The source documents for the allocation factors labeled Source A through J are provided on pages 7 through 33.

Equity Allocation Factors
Actual results as of 12/31/06 used for HEI's 2007 billing to its subsidiaries

(in thousands of dollars, except as noted)

	Ref	Source	HECO	RHI	HELCO	MECO	ASB	TOOTS	HEIDI	HEIII	HEIPI	PECS	TOTAL
Publicly-traded company related:													
Common equity	(1)	(A)	590,608	265	175,099	192,231	559,896	2,126	17,529	36,601	4,757	23	1,579,135
Common equity %			37.4%	0.0%	11.1%	12.2%	35.5%	0.1%	1.1%	2.3%	0.3%	0.0%	100.0%
Preferred equity (publicly held)	(2)	(B)	8,793										8,793
Preferred equity %			100.0%										100.0%
Common + pref. (publicly held) equity	(1) + (2)		599,401	265	175,099	192,231	559,896	2,126	17,529	36,601	4,757	23	1,587,928
Common + pref. (publicly held) equity %			37.8%	0.0%	11.0%	12.1%	35.3%	0.1%	1.1%	2.3%	0.3%	0.0%	100.0%
Common + pref. (publicly held) equity	(1) + (2)		599,401	265	175,099	192,231							966,996
Common + pref. (publicly held) equity %			62.0%	0.0%	18.1%	19.9%							100.0%

AUD004 & AUD005 ONLY

Source:

(A) Independent accountant's Consolidating Schedule - Balance Sheet Information.

(B) The publicly held preferred equity amount remained unchanged from the prior year actual. The amount was verified by the HECO Securities Administrator which agrees to the $8,793 shown on the schedule above.

Equity Allocation Factors
Actual results as of 12/31/06 used for HEI's 2007 billing to its subsidiaries
(in thousands of dollars)

	Ref	Source	HECO	RHI	HELCO	MECO	ASB	TOOTS	HEIDI	HEIII	HEIPI	PECS	HEIPC (Note 1)	HIG (Note 1)	TOTAL	Less: HEIPC & HIG	TOTAL (agrees to pg. 1)
Publicly-traded company related including discontinued operations:																	
Common equity	(1)	(A)	590,608	265	175,099	192,231	559,896	2,126	17,529	36,601	4,757	23	71,633	38,911	1,689,679	(110,544)	1,579,135
Common equity %			35.0%	0.0%	10.4%	11.4%	33.1%	0.1%	1.0%	2.2%	0.3%	0.0%	4.2%	2.3%	100.0%		
Preferred equity (publicly held)	(2)	(B)	8,793	-	-	-									8,793	-	8,793
Preferred equity %			100.0%	0.0%	0.0%	0.0%									100.0%		
Common + pref. (publicly held) equity	(1) + (2)		599,401	265	175,099	192,231	559,896	2,126	17,529	36,601	4,757	23	71,633	38,911	1,698,472	(110,544)	1,587,928
Common + pref. (publicly held) equity %			35.3%	0.0%	10.3%	11.3%	33.0%	0.1%	1.0%	2.2%	0.3%	0.0%	4.2%	2.3%	100.0%		

Note 1: The common equity of HEI Power Corp. (HEIPC) as of February 29, 2000 and of Hawaiian Insurance & Guaranty Company, Ltd. (HIG) as of September 30, 1992 (prior to any writedowns or writeoffs of its investments) adjusted for the income tax benefits of losses on common equity are included in the relative common equity calculations shown here. HEI had made a policy decision to include HEIPC and HIG in the calculations of shareholder dependent costs since HEI must still theoretically report to all of its shareholders even with the exit from the international power business engaged in by HEIPC and with the loss of HIG. Examples of shareholder dependent costs include printing and mailing costs for the annual report and proxy and stock transfer costs. See Source A for the support for HEIPC's adjusted equity and HIG's adjusted equity.

Source:

(A) Independent accountant's Consolidating Schedule - Balance Sheet Information.

(B) The publicly held preferred equity amount remained unchanged from the prior year actual. The amount was verified by the HECO Securities Administrator which agrees to the $8,793 shown on the schedule above.

CA-2007 allocation factors.xls 6/12/2007 9:10 AM

Allocation Factors

Actual results as of 12/31/06 (except as noted) used for HEI's 2007 billing to its subsidiaries

(in thousands of dollars, except as noted)

	Ref	Source	HECO	RHI	HELCO	MECO	ASB	TOOTS	HEIDI	HEIII	HEIPI	PECS	TOTAL	ADJ	HEI Corp. (and its financing sub HYCAP) & Elim	CONS.
Financing related:																
Short-term debt		(A)	113,107										113,107		63,165	176,272
Long-term debt		(A)	481,240		131,046	153,899							766,185		367,000	1,133,185
Total debt	(3)		594,347		131,046	153,899							879,292		430,165	1,309,457
Debt (Long-term & short-term) %			67.6%		14.9%	17.5%							100.0%			
Preferred equity	(4)	(A)	22,293		7,000	5,000							34,293			34,293
Preferred equity %			65.0%		20.4%	14.6%							100.0%			
Common equity	(5)	(A)	590,608	265	175,099	192,231	559,896	2,126	17,529	36,601	4,757	23	1,579,135	-	(483,895)	1,095,240
Common equity %			37.4%	0.0%	11.1%	12.2%	35.5%	0.1%	1.1%	2.3%	0.3%	0.0%	100.0%			
Debt + Equity (pref. & common)	(3)+(4)+(5)		1,207,248	265	313,145	351,130	559,896	2,126	17,529	36,601	4,757	23	2,492,720	-	(53,730)	2,438,990
Debt + Equity (pref. & common) %			48.4%	0.0%	12.6%	14.1%	22.4%	0.1%	0.7%	1.5%	0.2%	0.0%	100.0%			
Projected short-term borrowings		(H)	-										-		-	-
Projected short-term borrowings %			0.0%										0.0%		0.0%	0.0%
Employee related:																
Gross payroll (excluding incentive compensation)		(C)	109,156		26,942	24,811	55,296					111	216,316		4,747	221,063
Gross payroll (excluding incentive compensation) %			49.4%		12.2%	11.2%	25.0%					0.1%	97.9%		2.1%	100.0%
# of employees		(D)	1,438		340	307	1,318					3	3,406		41	3,447
# of employees %			41.7%		9.9%	8.9%	38.2%					0.1%	98.8%		1.2%	100.0%
# of employees (only HUM005)		(D)	1,438		340	307						3	2,088		41	2,129
# of employees (excluding ASB) %			67.6%		16.0%	14.4%						0.1%	98.1%		1.9%	100.0%
Tax-related																
Pretax income		(I)	79,725	153	11,260	30,555	88,558	126	225	3,358	2,809	68	216,837	(6,510)	(39,272)	171,055
Pretax income %			36.8%	0.1%	5.2%	14.1%	40.8%	0.1%	0.1%	1.5%	1.3%	0.0%	100.0%			
General (3 factor formula):																
Common equity			37.4%	0.0%	11.1%	12.2%	35.5%	0.1%	1.1%	2.3%	0.3%	0.0%	100.0%			100.0%
Pretax income			36.8%	0.1%	5.2%	14.1%	40.8%	0.1%	0.1%	1.5%	1.3%	0.0%	100.0%			100.0%
Gross payroll			49.4%	0.0%	12.2%	11.2%	25.0%	0.0%	0.0%	0.0%	0.0%	0.1%	97.9%	0.0%	2.1%	100.0%
Average			41.2%	0.0%	9.5%	12.5%	33.8%	0.1%	0.4%	1.3%	0.5%	0.0%	99.3%	0.0%	0.7%	100.0%

Note: Where the amount was negative, the absolute value was used since it would be illogical to allocate a negative amount.

Source:

(A) Independent accountant's Consolidating Schedule - Balance Sheet Information.
(B) Not used.
(C) Gross payroll amounts provided by subsidiaries from their payroll registers. Incentive compensation was excluded based upon discussions with subsidiaries.
(D) HECO Human Resources department report.
(E) Not used.
(F) Not used.
(G) Not used.
(H) Board of Director Approval for Short-term Borrowing Authority for the current year (not provided as there is no allocation to any subsidiary).
(I) Independent accountant's Consolidating Schedule - Income (Loss) Information

Allocation Factors
Actual results as of 12/31/06 (except as noted) used for HEI's 2007 billing to its subsidiaries

	Ref	Source	HECO	RHI	HELCO	MECO	ASB	TOOTS	HEIDI	HEIII	HEIPI	PECS	TOTAL	ADJ	HEI Corp. (and its financing sub HYCAP) & Elim	CONS.
Pension-related:																
# of HEIRS participants		(F)	1,530		299	302	1,041	5				3	3,180		58	3,238
PEN005 HEIRS Admin.			47.3%		9.2%	9.3%	32.1%	0.2%				0.1%	98.2%		1.8%	100.0%
HEI Retirement Plan (market value of plan assets - actual $)																
HEI Retirement plan	Pension Ref 1	(G)	574,234,996		113,443,337	96,484,445							784,162,778		17,414,567	801,577,345
Total			574,234,996		113,443,337	96,484,445	-	-	-			-	784,162,778	-	17,414,567	801,577,345
PEN007 HEI Retirement Plan%			71.6%		14.2%	12.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	97.8%	0.0%	2.2%	100.0%
Master pension trust calculation (market value of plan assets - actual $):																
HEI Retirement plan	Pension Ref 1	(G)	574,234,996		113,443,337	96,484,445		-				-	784,162,778		17,414,567	801,577,345
American Savings Bank Retirement plan	Pension Ref 3						73,700,297						73,700,297			73,700,297
Total			574,234,996		113,443,337	96,484,445	73,700,297	-	-			-	857,863,075	-	17,414,567	875,277,642
PEN009 Master Pension Trust %			65.6%	0.0%	13.0%	11.0%	8.4%	0.0%	0.0%	0.0%	0.0%	0.0%	98.0%	0.0%	2.0%	100.0%
OPEB PEN024 (market value of plan assets w/ the exception of the executive life trust (cost) - actual $)																
(Executive life trust - cost instead of market value of plan assets is being used due to HELCO's $0 balance since 12/31/97 in order to more fairly allocate administrative time/expenses to this activity, per J. Haraga, Administrator of Finance & Investments)																
HEI 401(h)	Pension Ref 5	(G)	17,295,867		5,166,765	3,553,040							26,015,672		1,368,948	27,384,620
HECO OPEB plan - NBU VEBA	Pension Ref 6		16,882,025		3,344,118	2,985,004							23,211,147		1,182,228	24,393,375
HECO OPEB plan - BU VEBA	Pension Ref 7		58,427,828		13,391,335	12,349,444							84,168,607			84,168,607
Postretirement Executive Life Trust	Pension Ref 10		862,439		103,331	96,896							1,062,666		161,264	1,223,930
HEI Electric Discount Trust	Pension Ref 11		237,909		113,784	68,072							419,765			419,765
Total			93,706,068		22,119,333	19,052,456	-	-	-			-	134,877,857	-	2,712,440	137,590,297
PEN024 OPEB plan %			68.1%	0.0%	16.1%	13.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.0%	0.0%	2.0%	100.0%
OPEB Funding PEN026 (market value of plan assets - actual $):																
HEI 401(h)	Pension Ref 5	(G)	17,295,867		5,166,765	3,553,040	-	-	-			-	26,015,672	-	1,368,948	27,384,620
HECO OPEB plan - NBU VEBA	Pension Ref 6		16,882,025		3,344,118	2,985,004	-	-	-			-	23,211,147	-	1,182,228	24,393,375
HECO OPEB plan - BU VEBA	Pension Ref 7		58,427,828		13,391,335	12,349,444	-	-	-			-	84,168,607	-	-	84,168,607
HEI Electric Discount Trust	Pension Ref 11		237,909		113,784	68,072	-	-	-			-	419,765		-	419,765
Total			92,843,629		22,016,002	18,955,560	-	-	-			-	133,815,191	-	2,551,176	136,366,367
PEN026 OPEB Funding %			68.1%	0.0%	16.1%	13.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.1%	0.0%	1.9%	100.0%

CA-2007 allocation factors xls 8/6/2007 4:42 PM

Allocation Factors
Actual results as of 12/31/06 (except as noted) used for HEI's 2007 billing to its subsidiaries

	Ref	Source	HECO	RHI	HELCO	MECO	ASB	TOOTS	HEIDI	HEIII	HEIPI	PECS	TOTAL	ADJ	HEI Corp. (and its financing sub HYCAP) & Elim	CONS.
HECO OPEB PEN028 (market value of plan assets - actual $):																
HEI 401(h)	Pension Ref 5	(G)	17,295,867		5,166,765	3,553,040	-	-	-			-	26,015,672		1,368,948	27,384,620
HECO OPEB plan - NBU VEBA	Pension Ref 6		16,882,025		3,344,118	2,985,004	-	-	-			-	23,211,147		1,182,228	24,393,375
HECO OPEB plan - BU VEBA	Pension Ref 7		58,427,828		13,391,335	12,349,444	-	-	-			-	84,168,607		-	84,168,607
Total			92,605,720		21,902,218	18,887,488	-	-	-			-	133,395,426	-	2,551,176	135,946,602
PEN028 HECO OPEB %			68.1%	0.0%	16.1%	13.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	98.1%	0.0%	1.9%	100.0%
HEI Electric Discount Trust (market value of plan assets - actual $):																
HEI Electric Discount Trust	Pension Ref 11	(G)	237,909		113,784	68,072	-	-	-			-	419,765		-	419,765
Total			237,909		113,784	68,072	-	-	-			-	419,765	-	-	419,765
PEN030 HEI Electric Discount Trust%			56.7%	0.0%	27.1%	16.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Postretirement Executive Life Trust Plan cost - actual $ (beg in 1997, cost should be used instead of plan assets since this plan is no longer being funded, per J. Haraga, Administrator of Finance & Investments)																
Postretirement Executive Life	Pension Ref 10	(G)	862,439		103,331	96,896	-	-	-			-	1,062,666		161,264	1,223,930
Total			862,439		103,331	96,896	-	-	-			-	1,062,666	-	161,264	1,223,930
PEN031 Postretirement Executive Life Plan Trust%			70.5%	0.0%	8.4%	7.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	86.8%	0.0%	13.2%	100.0%
Directors Retirement Plan participants		(E)	1										1		8	9
PEN 020 Directors Retirement Plan participants %			11.1%										11.1%		88.9%	100.0%
Supplemental Executive Retirement Plan		(E)	2										2		4	6
PEN 022 Sup. Executive Retirement Plan participants %			33.3%	0.0%	0.0%	0.0%							33.3%		66.7%	100.0%
@ 1/1/06 (projections only done @ 1/1)																
Excess Plans																
(Excess Pay SERP & Excess Benefit Plan combined)		(E)	24	-	5	4	2	1					36		7	43
PEN 027 Excess plan participants %			55.8%	0.0%	11.6%	9.3%	4.7%	2.3%					83.7%		16.3%	100.0%
@ 1/1/06 (projections only done @ 1/1)																

Source:
(A) Not used.
(B) Not used.
(C) Not used.
(D) Not used.
(E) HECO Benefits division, Phyllis Hanta.
(F) HECO Benefits division, Myra O'Brien.
(G) Final asset reconciliation statements and Watson Wyatt statements (received from Julie Haraga)

HAWAIIAN ELECTRIC INDUSTRIES, INC. AND SUBSIDIARIES
Consolidating Schedule - Balance Sheet Information
December 31, 2006
(Unaudited)
(in thousands)

	Hawaiian Electric Industries, Inc.	Hawaiian Electric Company, Inc. and subsidiaries	HEI Diversified, Inc.	American Savings Bank, F.S.B. and subsidiaries	HEI Investments, Inc.	HEI Properties, Inc.	Pacific Energy Conser-vation Services, Inc.	Hycap Manage-ment, Inc.	The Old Oahu Tug Services, Inc.	Reclassifi-cations and Eliminations Dr. (Cr.)	Consolidated
Assets											
Cash and equivalents	$ 984	3,859	48	172,370	291	58	9	-	11	-	$ 177,630
Federal funds sold	-	-	-	79,671	-	-	-	-	-	-	79,671
Notes receivable from affiliated companies	-	-	4,037	-	47,805	1,659	-	-	2,378	(55,879)	-
Accounts receivable and unbilled revenues, net	1,611	222,142	18	27,557	210	7	11	-	27	(2,944)	248,639
Available-for-sale investment and mortgage-related securities	-	-	-	2,367,427	-	-	-	-	-	-	2,367,427
Investment in stock of Federal Home Loan Bank of Seattle, at cost	-	-	-	97,764	-	-	-	-	-	-	97,764
Loans receivable, net	-	-	-	3,780,461	-	-	-	-	-	-	3,780,461
Property, plant and equipment, net	1,298	2,574,970	-	71,201	-	-	21	-	-	-	2,647,490
Regulatory assets	-	112,349	-	-	-	-	-	-	-	-	112,349
Other	34,277	149,814	14,079	124,908	17,586	2,959	-	-	137	(52,897)	290,863
Goodwill and other intangibles, net	-	-	-	87,140	-	-	-	-	-	-	87,140
Investment in consolidated subsidiaries, at equity	1,565,056	-	-	-	-	-	-	-	-	(1,579,135)	-
										14,079	
Net assets of disc ops-HEIPC	1,775	-	-	-	-	-	-	-	-	-	1,775
	$ 1,605,001	3,063,134	18,182	6,808,499	65,892	4,683	41	-	2,553	(1,676,776)	$ 9,891,209
Liabilities and stockholders' equity											
Liabilities											
Accounts payable	$ 7,827	113,535	783	46,231	20	4	3	-	46	2,944	$ 165,505
Deposit liabilities	-	-	-	4,575,548	-	-	-	-	-	-	4,575,548
Short-term borrowings--other than bank	119,044	113,107	-	-	-	-	-	-	-	55,879	176,272
Other bank borrowings	-	-	-	1,568,585	-	-	-	-	-	-	1,568,585
Long-term debt, net--other than bank	367,000	766,185	-	-	-	-	-	-	-	-	1,133,185
Deferred income taxes	-	118,055	7	-	27,536	-	-	-	-	38,818	106,780
Regulatory liabilities	-	240,619	-	-	-	-	-	-	-	-	240,619
Contributions in aid of construction	-	276,728	-	-	-	-	-	-	-	-	276,728
Other	15,890	442,409	(137)	58,239	1,735	(78)	15	-	381	-	518,454
	509,761	2,070,638	653	6,248,603	29,291	(74)	18	-	427	97,641	8,761,676
Minority interests											
Preferred stock of subsidiaries - not subject to mandatory redemption	-	34,293	-	-	-	-	-	-	-	-	34,293
Stockholders' equity											
Common stock	1,028,101	384,601	7,917	323,154	9,080	3,968	895	(369)	2,443	731,689	1,028,101
Retained earnings (deficit)	242,667	700,252	9,612	280,046	27,521	789	(872)	369	(315)	1,017,402	242,667
Accumulated other comprehensive loss, net of tax benefits	(175,528)	(126,650)	-	(43,304)	-	-	-	-	(2)	(169,956)	(175,528)
	1,095,240	958,203	17,529	559,896	36,601	4,757	23	-	2,126	1,579,135	1,095,240
	$ 1,605,001	3,063,134	18,182	6,808,499	65,892	4,683	41	-	2,553	1,676,776	$ 9,891,209

Source A

2006 Financials - 12-06 02-27-07 BS.xls HEI.BS 6/12/2007 7:44 AM

Source A
DW 2/20/07

HECO Consolidating Balance Sheet
As of December 31, 2006

	HECO	HELCO	MECO	RHI	ELIM	CONSOL
Land	$ 25,919	$ 4,977	$ 4,346			$ 35,242
Plant and equipment	2,428,155	807,474	767,300			4,002,929
Less accumulated depreciation	(953,187)	(298,590)	(307,136)			(1,558,913)
Plant acquisition adjustment	0	0	93			93
Construction in progress	80,298	9,745	5,576			95,619
Net utility plant	1,581,185	523,606	470,179			2,574,970
Investment in wholly owned subsidiaries, at equity	367,595	0	0		(367,595)	0
Current assets:						
Cash and equivalents	2,328	738	518	275		3,859
Advances to affiliate	54,400	0	0		(54,400)	0
Customer accounts receivable, net	81,912	24,228	19,384			125,524
Accrued unbilled revenues, net	64,235	14,437	13,523			92,195
Other accounts receivable, net	3,210	1,097	773		(657)	4,423
Fuel oil stock, at average cost	40,680	9,761	13,871			64,312
Materials and supplies, at average cost	13,959	4,892	11,689			30,540
Prepayments and other	7,537	1,463	695			9,695
	268,261	56,616	60,453	275	(55,057)	330,548
Other assets:						
Regulatory assets	82,116	15,349	14,884			112,349
Unamortized debt expense	9,323	2,282	2,117			13,722
Other	23,508	4,339	3,698			31,545
	114,947	21,970	20,699		0	157,616
	$ 2,331,988	$ 602,192	$ 551,331	$ 275	$ (422,652)	$ 3,063,134
* Common stock equity	① → 958,203	175,099	192,231	265	(367,595) ②	958,203
* Cumulative preferred stock:						
* Not subject to mandatory redemption	22,293	7,000	5,000			34,293
* Long-term debt, net	481,240	131,046	153,899		0	766,185
	1,461,736	313,145	351,130	265	(367,595)	1,758,681
* Short-term borrowings-nonaffiliates	113,107	0	0			113,107
Short-term borrowings-affiliate	0	49,400	5,000		(54,400)	0
Accounts payable	61,672	22,572	18,268			102,512
Interest and preferred dividends payable	7,269	1,907	1,717		(248)	10,645
Taxes accrued	96,846	26,981	28,355			152,182
Other	27,012	5,971	10,536	10	(409)	43,120
	305,906	106,831	63,876	10	(55,057)	421,566
Deferred income taxes	92,805	13,285	11,965			118,055
Regulatory liabilities, net	164,617	43,596	32,406			240,619
Unamortized tax credits	32,359	13,126	12,394			57,879
Other	110,473	52,274	26,859			189,606
	400,254	122,281	83,624		0	606,159
Contributions in aid of construction	164,091	59,936	52,701		0	276,728
	$ 2,331,987	$ 602,193	$ 551,331	$ 275	$ (422,652)	$ 3,063,134

← ① 958,203
← ② (367,595)
590,608
HECO Common equity

HEI POWER CORP. AND SUBSIDIARIES
Consolidating Schedule - Balance Sheet Information
February 29, 2000
(Unaudited)

Prepared by: [illegible]
Date printed: [illegible]
Filename: [illegible]

	HEI Power Corp.	HEI Power Corp. Guam	HEI Investments, Inc.	HEI Power Corp. International	Reclassifications and Eliminations Dr. (Cr.)	HEI Power Corp & Subs. Consolidated	Reclasses	HEIII	Combined HEIPC & HEIII	Grouped for HEI Fini Rptg
Assets										
Cash and equivalents	$ 30,086.51	$ 337,236.64	$ 87,700,000.00	$ 2,076,634.74	$ -	$ 90,143,957.89	$ (87,500,000.00)	177,363.29	2,821,321.18	2,821,321.18
Receivable(payable) with affiliated compa	99,400,267.56		(87,700,000.00)	(139,538.47)	(11,551,490.57) (2)	9,238.54	(9,238.54)	20,072.70	20,072.70	20,072.70
Accounts receivable and *unbilled revenues, net*	218,090.52	799,246.13	-	89,253.06		1,106,589.71	9,238.54	61,986.41	1,177,794.66	1,177,794.66
Inventories, at cost		218,590.51	-	-		218,590.51			218,590.51	
Loans receivable, net			-	-		-				
Marketable securities			-	-		-				
Other investments			-	9,710,260.35		9,710,260.35			9,710,260.35	
Property, plant and equipment, gross	970,163.55	16,561,406.89	-	23,212,487.04		40,744,057.48			40,744,057.48	
Accumulated depreciation, PP&E	(260,380.69)	(2,394,900.17)	-	(52,109.36)		(2,707,390.22)			(2,707,390.22)	38,036,667.26
Other, gross	7,389.16	908.75	-	56,443.32		64,741.23	87,500,000.00	52,654,498.63	140,219,239.86	150,140,337.91
Accumulated amortization, others	(7,389.16)	(363.75)	-	-		(7,752.91)			(7,752.91)	
Goodwill and other intangibles			-	-		-				
Investment in wholly owned subsidiaries, at equity	37,133,957.57	-	-	-	(37,133,957.57) (1)	-				
Total assets	$ 137,492,205.04	$ 15,522,105.00	$ -	$ 34,953,430.88	$ (48,685,448.14)	$ 139,282,292.58	$ -	$ 52,913,901.03	$ 192,196,193.61	$ 192,196,193.61
Liabilities and stockholders' equity										
Liabilities										
Accounts payable - trade	$ 103,951.44	$ 1,642.84	$ -	$ 193,982.13	$ -	$ 299,576.21				
Interest payable - HEI	14,231.85					14,231.85				
Interest payable - HEIDI	82,746.07					82,746.07				
Due to HEI	151,692.00					151,692.00				
Due to HECO	48,000.00	-	-	-	-	48,000.00				
Subtotal - Accounts payable	400,621.36	1,642.84	-	193,982.13	-	598,246.13				826,275.57
Short-term borrowings (HEI I/C)	2,955,359.37	11,551,490.57	-	-	11,551,490.57 (2)	2,955,359.37				2,955,359.37
Long-term debt (HEIDI Loan)	17,073,100.00		-	-		17,073,100.00				17,073,100.00
Deferred income taxes	-	(126,243.77)	-	-		(126,243.77)				43,229,920.10
Unamortized tax credits			-	-		-				
Other	641,286.86	884,027.86	-	-	-	1,525,314.74				1,867,636.49
Total liabilities	21,070,367.61	12,310,917.30	-	193,982.13	11,551,490.57	22,023,776.47				85,752,291.53
Stockholders' equity - minority interest			-	876,314.25		876,314.25				876,314.25
Common stock and paid-in capital	133,549,280.00	2,250,000.00	-	36,404,451.21	38,654,451.21 (1)	133,549,280.00				142,829,967.36
Retained earnings (deficits)	(17,127,442.57)	961,187.70	-	(2,521,316.91)	(1,520,493.64) I/S	(17,167,078.14)				(17,061,379.55)
Cumulative translation adjustment	-	-	-	-	-	-				
Total stockholders' equity	116,421,837.43	3,211,187.70	-	34,759,448.55	37,133,957.57	(1) 117,258,516.11				126,443,902.08
Total liabilities and stockholders' equity	$ 137,492,205.04	$ 15,522,105.00	$ -	$ 34,953,430.88	$ 48,685,448.14	$ 139,282,292.58				192,196,193.61

0 · *

1 · *

Rate per L. Ishii, 002 Director of Taxes

0·3891

0·6109 *

(1) 117,258,516·11 x

(2) 0·6109

71,633,227·4916*

Revised equity for interco. billing purposes

Source A

CA-IR-369
DOCKET NO. 2006-0386
PAGE 9 OF 33

THE HAWAIIAN INSUR[illegible] GUARANTY COMPANY, LIMITED
AN[illegible] [illegible]BSIDIARIES
CONSOLIDATED BALANCE SHEETS
SEPTEMBER 1992
($ Thousands)

	Balance	Inc/(Dec) Month	Inc/(Dec) Year To Date
ASSETS			
Investments other than investment in affiliates:			
Bonds, at market value	157,300.3	14,597.7	26,148.9
Preferred stocks, at market	0.0	0.0	(354.0)
Common stock, at market	11,178.8	51.9	(1,174.7)
Short-term investments, at market	1,264.6	(11,162.0)	(10,032.4)
Other	(181.0)	3.3	224.8
Total investments	169,562.7	3,490.9	14,812.6
Cash and cash equivalents	39,741.0	19,649.4	20,067.8
Accrued invesment income	2,344.4	(452.1)	(307.9)
Agent's balances, premium and other receivables, net of allowance for uncollectible accounts	19,242.4	(542.0)	(2,947.5)
Reinsurance recoverables on paid losses, net of allowance for uncollectible accounts			
Deferred policy acquisition costs			
Property, equipment and leasehold improvements, net of accumulated depreciation and amortization			
Other assets			
Goodwill			
Total assets	24		

1 · ×
Tax rate per L. Ishii, Director of taxes 002 0·3891 -
② 0·6109 ×

① 63,694·8 ×
② 0·6109=
38,911·15332×
Revised equity for intercompany billing purposes

	Balance	Inc/(Dec) Month	Inc/(Dec) Year To Date
LIABILITIES & STOCKHOLDERS' EQUITY			
Unpaid losses and loss expenses	137,029.3	27,637.7	31,100.0
Unearned premiums	33,214.4	(1,501.5)	(2,819.4)
Reinsurance premiums	3,829.2	1,797.5	1,206.2
Other policyholders' funds	9,578.2	903.4	3,399.5
Outstanding claim drafts	3,556.1	246.0	(913.4)
Other liabilities	(4,665.2)	(9,049.5)	(7,463.5)
Total liabilities	182,542.0	20,035.6	24,509.4
Stockholders' equity:			
Common stock	1,500.0	0.0	0.0
Additional paid-in capital	55,008.3	20,000.0	20,000.0
Retained earnings	3,580.5	(17,742.1)	(14,331.9)
Net unrealized investment gains	3,606.0	254.0	2,174.5
Total stockholders' equity	① 63,694.8	2,511.9	7,842.6
Total liabilities and stockholders' equity	246,236.8	22,547.5	32,352.0

Amt. invested in the company before writedown

SOURCE A

CA-IR-369
DOCKET NO. 2006-0386
PAGE 10 OF 33

Source B

INTEROFFICE CORRESPONDENCE

Hawaiian Electric Industries, Inc.

December 26, 2006

To: Cheryl Sakai

From: Carol Imai

Subject: Publicly-held preferred stock

Please confirm that as of 12/31/06 the following series (and its related amounts) are the only **publicly-held preferred stock for all utilities**:

		$000's
Series C	HECO	$3,000
Series D	HECO	$1,000
Series E	HECO	$3,000
Series I	HECO	$1,793
Series		
Series		
Total		$8,793

Carol, I can't verify whether C, D, E, and I are publicly held, but for intercompany billing purposes only you can assume that they are publicly held (based on the large number of holders for each of these series). Call me at ext. 7965 if you have any questions (QUIPS not included above.)

Reviewed and verified by: Cheryl Sakai
Cheryl Sakai, Securities Administrator
Date: 1/19/07

Please return this form to me by **Friday, January 19**. If you have any questions, please call me at 543-7920.

Source C
HECO

Req By: AUTO SUBMIT HEC
Run On: 12/27/06 at 13:27:32
Period: 12/06

HAWAIIAN ELECTRIC COMPANY, INC.
Tax and Balancing Report

Page: 2
Report: HWBTBRA
Version: 5.2.37.01HW

	AMOUNT Current	Year-To-Date	FICA YTD	SUTA YTD
Base Earnings	3,765,375.96	96,154,502.95	96,154,502.95	96,154,502.95
Police Earnings	6,735.00	231,802.50	0.00	0.00
Overtime Pay:				
Extra Straight Time	17,548.37	603,106.17	603,106.17	603,106.17
Time and a Half	236,631.79	5,835,299.29	5,835,299.29	5,835,299.29
Doubletime	74,515.68	2,225,390.85	2,225,390.85	2,225,390.85
Callout	52,403.09	2,313,376.19	2,313,376.19	2,313,376.19
Penalties	10,014.43	399,452.50	399,452.50	399,452.50
Total Overtime Pay	391,113.36	11,376,625.00	11,376,625.00	11,376,625.00
Exception Pay				
Shift	12,827.03	331,488.35	331,488.35	331,488.35
Higher Duty	32,416.62	842,994.67	842,994.67	842,994.67
Differentials	6,982.60	206,079.34	206,079.34	206,079.34
Total Exception	52,226.25	1,380,562.36	1,380,562.36	1,380,562.36
Total Productive Costs	4,215,450.57	109,143,492.81	108,911,690.31	108,911,690.31
Cash Adjustment	0.00	0.00	0.00	0.00
Instructor	120.00	12,960.00	12,960.00	12,960.00
GROSS PAY	4,215,570.57	109,156,452.81	108,924,650.31	108,924,650.31
Other Pay				
Meals	14,751.00	382,646.30	382,646.30	382,646.30
Tip Bonus	0.00	0.00	0.00	0.00
Exec Bonus	0.00	0.00	0.00	0.00
Cash Bonus	0.00	91,838.46	91,838.46	91,838.46
Total Other Pay	14,751.00	474,484.76	474,484.76	474,484.76
GROSS EARNINGS	4,230,321.57	109,630,937.57	109,399,135.07	109,399,135.07
Other Taxable Income:				
Flex Credits	110,772.31	2,658,952.33	2,658,952.33	2,658,952.33
Less: Flex Benf	147,634.75	3,555,193.11	3,555,193.11	
Less: Flex Spend	29,355.89	728,269.53	728,269.53	
Less: Transp Spend	3,620.04	292,793.38	292,793.38	292,793.38
Temp Disability Inc	920.00	14,775.25	14,775.25	
Meter Tampering	0.00	0.00	0.00	0.00
Reimb Class	0.00	937.52	937.52	937.52
Taxable Reimbursements	0.00	430.43	430.43	430.43
Retired Def Exec	0.00	0.00		
SERP	0.00	0.00		
Other Taxable	4,197.77	96,642.02	96,642.02	96,642.02
Total Other Tax Income	64,720.60-	1,804,518.47-	1,804,518.47-	2,464,168.92
Less: HEIRS	277,292.39	11,015,763.91		
Less: Deferred Exec Bonus	0.00	0.00		
Non-Cash Allowances				
Group Term Life	16,848.44	412,812.80	412,812.80	412,812.80

Source C
HELCO

Req.By YAMAUCHI,FAYE K
Run on: 01/02/07 at: 16:12:44
Period: 12/06

HAWAII ELECTRIC LIGHT COMPANY

Tax and Balancing Report

Page:
Report: HWBTBKR
Version: 5.2.37.01HW

	AMOUNT Current	Year-To-Date	FICA YTD	SUTA YTD
Base Earnings	811,794.88	20,901,695.84	20,901,695.84	20,901,695.84
Police Earnings	1,072.00	2,001.50	0.00	0.00
Overtime Pay:				
Extra Straight Time	11,575.41	249,211.07	249,211.07	249,211.07
Time and a Half	128,750.94	2,698,493.11	2,698,493.11	2,698,493.11
Doubletime	53,153.54	842,753.69	842,753.69	842,753.69
Callout	47,428.83	1,528,345.29	1,528,345.29	1,528,345.29
Penalties	14,603.94	294,331.99	294,331.99	294,331.99
Total Overtime Pay	252,512.66	5,613,135.15	5,613,135.15	5,613,135.15
Exception Pay				
Shift	3,962.77	117,584.99	117,584.99	117,584.99
Higher Duty	13,966.15	306,144.26	306,144.26	306,144.26
Differentials	60.00	1,437.78	1,437.78	1,437.78
Total Exception	17,988.92	425,167.03	425,167.03	425,167.03
Total Productive Costs	1,083,368.46	26,941,999.52	26,939,998.02	26,939,998.02
Cash Adjustment	0.00	0.00	0.00	0.00
Instructor	0.00	0.00	0.00	0.00
GROSS PAY	1,083,368.46	26,941,999.52	26,939,998.02	26,939,998.02
Other Pay				
Meals	9,037.00	180,119.00	180,119.00	180,119.00
Tip Bonus	0.00	0.00	0.00	0.00
Exec Bonus	0.00	84,674.00	84,674.00	84,674.00
Cash Bonus	0.00	122,600.00	122,600.00	122,600.00
Total Other Pay	9,037.00	387,393.00	387,393.00	387,393.00
GROSS EARNINGS	1,092,405.46	27,329,392.52	27,327,391.02	27,327,391.02
Other Taxable Income:				
Flex Credits	25,055.94	599,867.86	599,867.86	599,867.86
Less: Flex Benf	35,439.77	856,608.81	856,608.81	
Less: Flex Spend	3,592.33	81,016.75	81,016.75	
Less: Transp Spend	0.00	0.00	0.00	0.00
Temp Disability Inc	0.00	5,965.94	5,965.94	
Meter Tampering	0.00	0.00	0.00	0.00
Reimb Class	1,192.75	4,622.04	4,622.04	4,622.04
Taxable Reimbursements	0.00	0.00	0.00	0.00
Retired Def Exec	0.00	0.00		
SERP	0.00	0.00		
Other Taxable	350.00	8,400.00	8,400.00	8,400.00
Total Other Tax Income	12,433.41-	318,769.72-	318,769.72-	612,889.90
Less: HEIRS	62,905.03	1,978,792.87		
Less: Deferred Exec Bonus	0.00	0.00		
Non-Cash Allowances				
Group Term Life	3,655.00	96,560.48	96,560.48	96,560.48

Source C
HECO

Req By: YOKOTE,DEBBIE
Run on: 12/22/06 at 10:26:52
Period: 11/06

MAUI ELECTRIC COMPANY, LTD.
Tax and Balancing Report

Page: 2
Report: HWBTBRA
Version: 5.2 37.01HW

	AMOUNT Current	Year-To-Date	FICA YTD	SUTA YTD
Base Earnings	732,058.71	20,223,996.01	20,223,996.01	20,223,996.01
Police Earnings	0.00	0.00	0.00	0.00
Overtime Pay				
Extra Straight Time	22,295.82	420,999.63	420,999.63	420,999.63
Time and a Half	110,706.22	2,398,518.24	2,398,518.24	2,398,518.24
Doubletime	53,389.79	573,735.02	573,735.02	573,735.02
Fallout	42,531.59	825,259.52	825,259.52	825,259.52
Penalties	3,988.47	119,030.54	119,030.54	119,030.54
Total Overtime Pay	232,911.89	4,337,542.95	4,337,542.95	4,337,542.95
Exception Pay				
Shift	4,395.59	113,697.81	113,697.81	113,697.81
Higher Duty	5,565.65	125,912.64	125,912.64	125,912.64
Differentials	247.47	6,833.72	6,833.72	6,833.72
Total Exception	10,208.71	246,444.17	246,444.17	246,444.17
Total Productive Costs	1,035,179.31	24,807,983.13	24,807,983.13	24,807,983.13
Cash Adjustment	0.00	0.00	0.00	0.00
Instructor	0.00	3,217.50	3,217.50	3,217.50
GROSS PAY	1,035,179.31	24,811,200.63	24,811,200.63	24,811,200.63
Other Pay				
Meals	8,762.00	132,775.90	132,775.90	132,775.90
Tip Bonus	0.00	0.00	0.00	0.00
Exec Bonus	0.00	114,177.00	114,177.00	114,177.00
Cash Bonus	3,000.00	169,500.00	169,500.00	169,500.00
Total Other Pay	11,762.00	416,452.90	416,452.90	416,452.90
GROSS EARNINGS	1,046,941.31	25,227,653.53	25,227,653.53	25,227,653.53
Other Taxable Income:				
Flex Credits	-3,105.50	557,376.32	557,376.32	557,376.32
Less: Flex Benf	32,718.38	797,084.90	797,084.90	
Less: Flex Spend	2,864.28	70,865.05	70,865.05	
Less: Transp Spend	0.00	0.00	0.00	0.00
Temp Disability Inc	1,840.00	2,555.20-	2,555.20-	
Meter Tampering	0.00	0.00	0.00	0.00
Reimb Class	0.00	0.00	0.00	0.00
Taxable Reimbursements	0.00	0.00	0.00	0.00
Retired Def Exec	0.00	0.00		
SERP	0.00	0.00		
Other Taxable	0.00	0.00	0.00	0.00
Total Other Tax Income	30,637.16-	313,128.83-	313,128.83-	557,376.32
Less: HEIRS	61,448.44	2,085,629.18		
Less: Deferred Exec Bonus	0.00	0.00		
Non Cash Allowances				
Group Term Life	3,734.45	97,829.64	97,829.64	97,829.64

Source C
ASB

American Savings Bank

ASB 2006 Payroll (excluding fringe benefits/imputed income/bonuses/incentive pay)

Company	2006 Payroll
American Savings Bank (consolidated)	
includes Bishop Ins. for 5/06 - 12/06	$ 54,930,573.01
Bishop Insurance Agency (1/06 - 4/06)	$ 365,815.25
Total	$ 55,296,388.26

Source C
PECS

Req.By: AUTO SUBMIT PEC
Run on: 12/27/06 at: 10:46:11
Period: 01/99

HAWAIIAN ELECTRIC INDUSTRIES

Tax and Balancing Report

Page: 2
Report: HWBTBRA
Version: 5.2.37.01HW

	AMOUNT Current	Year-To-Date	FICA YTD	SUTA YTD
Base Earnings	4,676.92	110,233.90	110,233.90	110,233.90
Police Earnings	0.00	0.00	0.00	0.00
Overtime Pay:				
Extra Straight Time	0.00	0.00	0.00	0.00
Time and a Half	0.00	24.88	24.88	24.88
Doubletime	0.00	0.00	0.00	0.00
Callout	0.00	0.00	0.00	0.00
Penalties	0.00	0.00	0.00	0.00
Total Overtime Pay	0.00	24.88	24.88	24.88
Exception Pay				
Shift	0.00	0.00	0.00	0.00
Higher Duty	0.00	0.00	0.00	0.00
Differentials	0.00	546.00	546.00	546.00
Total Exception	0.00	546.00	546.00	546.00
Total Productive Costs	4,676.92	110,804.78	110,804.78	110,804.78
Cash Adjustment	0.00	0.00	0.00	0.00
Instructor	0.00	0.00	0.00	0.00
GROSS PAY	4,676.92	110,804.78	110,804.78	110,804.78
Other Pay				
Meals	0.00	0.00	0.00	0.00
Tip Bonus	0.00	0.00	0.00	0.00
Exec Bonus	0.00	0.00	0.00	0.00
Cash Bonus	0.00	3,500.00	3,500.00	3,500.00
Total Other Pay	0.00	3,500.00	3,500.00	3,500.00
GROSS EARNINGS	4,676.92	114,304.78	114,304.78	114,304.78
Other Taxable Income:				
Flex Credits	221.07	4,737.08	4,737.08	4,737.08
Less: Flex Benf	370.34	8,077.56	8,077.56	
Less: Flex Spend	0.00	0.00	0.00	
Less: Transp Spend	0.00	0.00	0.00	0.00
Temp Disability Inc	0.00	0.00	0.00	
Meter Tampering	0.00	0.00	0.00	0.00
Reimb Class	0.00	0.00	0.00	0.00
Taxable Reimbursements	0.00	0.00	0.00	0.00
Retired Def Exec	0.00	0.00		
SERP	0.00	0.00		
Other Taxable	0.00	0.00	0.00	0.00
Total Other Tax Income	149.27-	3,340.48-	3,340.48-	4,737.08
Less: HEIRS	87.77	2,211.99		
Less: Deferred Exec Bonus	0.00	0.00		
Non-Cash Allowances				
Group Term Life	14.63	280.56	280.56	280.56

HEI

	AMOUNT Current	Year-To-Date	FICA YTD	SUTA YTD
Base Earnings	178,791.53	4,737,716.95	4,737,716.95	4,737,716.95
Police Earnings	0.00	0.00	0.00	0.00
Overtime Pay:				
Extra Straight Time	24.90	1,519.42	1,519.42	1,519.42
Time and a Half	354.23	7,846.48	7,846.48	7,846.48
Doubletime	0.00	0.00	0.00	0.00
Callout	0.00	0.00	0.00	0.00
Penalties	0.00	0.00	0.00	0.00
Total Overtime Pay	379.13	9,365.90	9,365.90	9,365.90
Exception Pay				
Shift	0.00	0.00	0.00	0.00
Higher Duty	0.00	0.00	0.00	0.00
Differentials	0.00	0.00	0.00	0.00
Total Exception	0.00	0.00	0.00	0.00
Total Productive Costs	179,170.66	4,747,082.85	4,747,082.85	4,747,082.85
Cash Adjustment	0.00	0.00	0.00	0.00
Instructor	0.00	0.00	0.00	0.00
GROSS PAY (excl. vehicle allowance)	179,170.66	4,747,082.85	4,747,082.85	4,747,082.85
Other Pay				
Meals	0.00	0.00	0.00	0.00
Tip Bonus	0.00	0.00	0.00	0.00
Exec Bonus	0.00	1,425,230.00	1,425,230.00	1,425,230.00
Cash Bonus	2,000.00	111,000.00	111,000.00	111,000.00
Total Other Pay	2,000.00	1,536,230.00	1,536,230.00	1,536,230.00
GROSS EARNINGS	181,170.66	6,283,312.85	6,283,312.85	6,283,312.85
Other Taxable Income:				
Flex Credits	3,290.42	79,820.89	79,820.89	79,820.89
Less: Flex Benf	5,110.97	125,907.56	125,907.56	
Less: Flex Spend	2,401.24	57,473.76	57,473.76	
Less: Transp Spend	2,879.76	37,312.12	37,312.12	37,312.12
Temp Disability Inc	0.00	0.00	0.00	
Meter Tampering	0.00	0.00	0.00	0.00
Reimb Class	0.00	0.00	0.00	0.00
Taxable Reimbursements	0.00	1,200.00	1,200.00	1,200.00
Retired Def Exec	0.00	0.00		
SERP	0.00	225,852.26		
Other Taxable	1,800.00	47,500.00	47,500.00	47,500.00
Total Other Tax Income	5,301.55-	133,679.71	92,172.55-	91,208.77
Less: HEIRS	8,749.14	539,377.20		
Less: Deferred Exec Bonus	0.00	63,919.39		
Non-Cash Allowances				
Group Term Life	761.09	20,085.96	20,085.96	20,085.96

Source C
HEI

HAWAIIAN ELECTRIC INDUSTRIES, INC.

EMPLOYEES AT MONTH-END
(Excludes All Leaves, Part Time, and Temporaries)
2006

	Dec 2005	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Utility:													
HECO	1,432	1,434	1,429	1,436	1,428	1,423	1,421	1,411	1,416	1,417	1,416	1,419	1,438
HELCO	330	331	332	337	345	344	346	343	344	341	343	336	340
MECO	304	304	308	311	309	308	308	308	309	306	309	305	307
	2,066	**2,069**	**2,069**	**2,084**	**2,082**	**2,075**	**2,075**	**2,062**	**2,069**	**2,064**	**2,068**	**2,060**	**2,085**
Diversified:													
Financial - ASB	1,272	1,274	1,283	1,268	1,277	1,316	1,326	1,333	1,314	1,328	1,330	1,318	1,318
Alternative Energy - PECS	2	2	2	2	3	3	3	3	3	3	3	3	3
IPP - HEI Power Corp	1	-	-	-	-	-	-	-	-	-	-	-	-
	1,275	**1,276**	**1,285**	**1,270**	**1,280**	**1,319**	**1,329**	**1,336**	**1,317**	**1,331**	**1,333**	**1,321**	**1,321**
HEI Corporate	**42**	**42**	**42**	**42**	**42**	**42**	**41**	**41**	**41**	**41**	**41**	**41**	**41**
	3,383	**3,387**	**3,396**	**3,396**	**3,404**	**3,436**	**3,445**	**3,439**	**3,427**	**3,436**	**3,442**	**3,422**	**3,447**

For standardization purposes across all companies, all figures represent the number of full-time regular employees or equivalent. Actual number of employees on payroll may differ.

Source D

Source E

HEI Participant Counts as of 1/1/2006

Plan	Comp.	Active Vested	Active PartVst	Active NonVst	Active Total	Trf Out	LTD	VT	Retired Empl	Retired Benef[1]	Retired Total	Grand Total
Qualified Retirement Plans												
HEI	HECO	1,048	0	369	1,417	2	8	191	990	128	1,118	2,736
	HELCO	226	0	80	306	0	1	28	172	16	188	523
	MECO	235	0	63	298	0	1	45	148	16	164	508
	HEI	38	0	5	43	3	0	9	13	1	14	69
	Total	1,547	0	517	2,064	5	10	273	1,323	161	1,484	3,836
ASB	ASB	678	0	459	1,137	6	0	418	150	12	162	1,723
Non-Qualified Retirement Plans												
HEI SERP	HECO	1	0	0	1	0	0	0	1	0	1	2
	HEI	3	0	0	3	0	0	0	1	0	1	4
	Total	4	0	0	4	0	0	0	2	0	2	6
ASB SERP	ASB	12	0	1	13	0	0	1	5	0	5	19
Excess Plan/ Ex Pay SERP	HECO	6	0	12	18	0	0	0	6	0	6	24
	HELCO	1	0	4	5	0	0	0	0	0	0	5
	MECO	1	0	3	4	0	0	0	0	0	0	4
	HEI	3	0	1	4	0	0	0	3	0	3	7
	TOOTS	0	0	0	0	0	0	0	1	0	1	1
	ASB	0	0	0	0	0	0	0	2	0	2	2
	Total	11	0	20	31	0	0	0	12	0	12	43
Directors	HECO	0	0	0	0	0	0	0	1	0	1	1
	HEI	2	0	0	2	0	0	0	6	0	6	8
	Total	2	0	0	2	0	0	0	7	0	7	9
OPEB Plan												
HECO OPEB	HECO	222	118	1,077	1,417	0	8	0	970	31	1,001	2,426
	HELCO	65	28	213	306	0	1	0	174	6	180	487
	MECO	64	20	214	298	0	1	0	146	5	151	450
	HEI	3	9	31	43	0	0	0	12	0	12	55
	Total	354	175	1,535	2,064	0	10	0	1,302	42	1,344	3,418
ELEC DISC	HECO	222	118	1,077	1,417	0	8	0	787	0	787	2,212
	HELCO	65	28	213	306	0	1	0	155	0	155	462
	MECO	64	20	214	298	0	1	0	123	0	123	422
	Total	351	166	1,504	2,021	0	10	0	1,065	0	1,065	3,096

[1] Excluding alternate payees (QDROs).

Source F

HEIRS Participants with balances > $0.00

Group Feed	Division	Charged to	Q1 2006	Q2 2006	Q3 2006	Q4 2006	End of 2006	
ASB	ASB		1,076	1,081	1,074	1,041	**1,041**	
HE	HE(HECO)		1,534	1,538	1,546	1,530	**1,530**	
HE	HI(HEI)		51	51	51	ⓐ ⓘ 50	≤ⓐ **63**	
HL	HL(HELCO)		294	300	301	299	**299**	
HE	HP(HEPC)	HI	7	7	7	ⓐ ⓘ 7		disc ops
HE	HTBYB(TOTS)	HI	6	6	5	ⓐ 5		
ME	ME(MECO)		301	303	303	302	**302**	
HE	PE(PECS)		4	4	4	3	**3**	
HE	PV(PVT)	HI	1	1	1	ⓐ ⓘ 1		sold in 2003
			3,274	3,291	3,292	3,238	**3,238** ⓑ	

Inactive companies' participants are allocated to HEI

Σⓘ = 58

Source G
Ref 1

HEI RET PLAN
Asset Reconciliation
(based on The Bank of New York's final trust & financial statements)
2006

		HECO	HELCO	MECO	HEI	TOTAL
(1)	Market value, 1/1/06	535,956,354	105,513,224	89,841,819	15,954,089	747,265,486
(2)	Income					
	(a) Contributions	0	0	0	0	0
	(b) Int, div & other income	13,757,668	2,716,989	2,316,936	412,562	19,204,155
	(c) Adjustments	0	0	0	0	0
	(d) Total	13,757,668	2,716,989	2,316,936	412,562	19,204,155
(3)	Disbursements					
	(a) Benefit payments	(31,429,081)	(5,520,835)	(4,506,940)	(602,106)	(42,058,962)
	(b) Investment mgt / trustee fees	(2,696,655)	(531,224)	(452,823)	(79,962)	(3,760,664)
	(c) Other expenses	(284,459)	(55,476)	(49,674)	(7,925)	(397,534)
	(d) Total	(34,410,195)	(6,107,535)	(5,009,437)	(689,993)	(46,217,160)
(4)	Transfers	659,668	(178,481)	(481,187)	0	0
(5)	Net realized & unrealized gains (losses)	58,271,501	11,499,140	9,816,314	1,737,909	81,324,864
(6)	Adjustment to beginning market value	0	0	0	0	0
(7)	Market value, 12/31/06	574,234,996	113,443,337	96,484,445	17,414,567	801,577,345
		573,575,328	113,621,818	96,965,632	17,414,567	801,577,345
		659,668	(178,481)	(481,187)	0	0

Prepared by Julie Haraga Date 2/15/07

Reviewed by Alma Lee Date 2/15/07

HEIRetPlanfinal06 2/15/2007 2:45 PM

Source G
Ref 3

AMERICAN SAVINGS BANK RETIREMENT PLAN
Asset Reconciliation
(based on The Bank of New York's final trust & financial statements)
2006

(1)	Market value, 1/1/06	64,027,251
(2)	Income	
	(a) Contributions	3,022,000
	(b) Interest, dividends & other income	1,694,548
	(c) Adjustments	0
	(d) Total	4,716,548
(3)	Disbursements	
	(a) Benefit payments	(1,623,488)
	(b) Investment mgt / trustee fees	(332,069)
	(c) Other expenses	(316,199)
	(d) Total	(2,271,756)
(4)	Adjustment to beginning market value	0
(5)	Net realized & unrealized gains (losses)	7,228,254
(6)	Market value, 12/31/06	73,700,297
		73,700,297
		0

Prepared by Julie Haraza Date 2/15/07

Reviewed by [illegible] Date 2/15/07

Source G
Ref 5

HEI 401(h)
Asset Reconciliation
(based on The Bank of New York's final trust & financial statements)
2006

		HECO	HELCO	MECO	HEI	TOTAL
(1)	Market value, 1/1/06	15,277,406	4,629,080	3,232,182	1,223,883	24,362,551
(2)	Income					
	(a) Contributions	773,571	0	101,096	0	874,667
	(b) Int, div & other income	399,242	121,308	83,865	31,987	636,402
	(c) Adjustments	0	0	0	0	0
	(d) Total	1,172,813	121,308	184,961	31,987	1,511,069
(3)	*Disbursements*					
	(a) Benefit payments	(822,809)	(65,480)	(156,728)	(15,154)	(1,060,171)
	(b) Investment mgt / trustee fees	(77,588)	(23,442)	(16,294)	(6,163)	(123,487)
	(c) Other expenses	(12,913)	(3,918)	(2,726)	(1,024)	(20,581)
	(e) Total	(913,310)	(92,840)	(175,748)	(22,341)	(1,204,239)
(4)	Transfers	53,470	(6,816)	(46,654)	0	0
(5)	Net realized & unrealized gain (loss)	1,705,488	516,033	358,299	135,419	2,715,239
(6)	Adjustment to beginning market value	0	0	0	0	0
(7)	Market value, 12/31/06	17,295,867	5,166,765	3,553,040	1,368,948	27,384,620
		17,242,397	5,173,581	3,599,694	1,368,948	27,384,620
		53,470	(6,816)	(46,654)	0	0

Prepared by Julie Haraga Date 2/15/07

Reviewed by [signature] Date 2/15/07

401hfinal06.2/15/2007.2:53 PM

HECO OPEB PLAN - NBU VEBA
Asset Reconciliation
(based on The Bank of New York's final trust & financial statements)
2006

		HECO	HELCO	MECO	HEI	TOTAL
(1)	Market value, 1/1/06	12,026,240	2,325,758	2,289,101	1,051,406	17,692,505
(2)	Income					
	(a) Contributions	5,543,616	1,119,882	881,144	101,119	7,645,761
	(b) Int, div & other income	325,596	62,358	60,253	26,275	474,482
	(c) Adjustments	0	0	0	0	0
	(d) Total	5,869,212	1,182,240	941,397	127,394	8,120,243
(3)	Disbursements					
	(a) Benefit payments	(1,785,170)	(286,364)	(325,655)	(48,066)	(2,445,255)
	(b) Investment mgt / trustee fees	(66,585)	(12,725)	(12,334)	(5,303)	(96,947)
	(c) Other expenses	(710,605)	(135,591)	(133,633)	(59,140)	(1,038,969)
	(d) Total	(2,562,360)	(434,680)	(471,622)	(112,509)	(3,581,171)
(4)	Transfers	67,745	(19,962)	(47,783)	0	0
(5)	Net realized & unrealized gain (loss)	1,481,188	290,762	273,911	115,937	2,161,798
(6)	Adjustment to beginning market value	0	0	0	0	0
(7)	Market value, 12/31/06	16,882,025	3,344,118	2,985,004	1,182,228	24,393,375
		16,814,280	3,364,080	3,032,787	1,182,228	24,393,375
		67,745	(19,962)	(47,783)	0	0

Prepared by [signature] Date 2/15/07

Reviewed by [signature] Date 2/15/07

Source G
Ref 6

NBUVEBAfinal06.2/15/2007.3:10 PM

HECO OPEB PLAN - BU VEBA
Asset Reconciliation
(based on The Bank of New York's final trust & financial statements)
2006

		HECO	HELCO	MECO	TOTAL
(1)	Market value, 1/1/06	54,012,567	12,351,839	11,190,048	77,554,454
(2)	Income				
	(a) Contributions	142,520	210,481	97,000	450,001
	(b) Int, div & other income	1,341,060	308,160	281,254	1,930,474
	(c) Adjustments	0	0	0	0
	(d) Total	1,483,580	518,641	378,254	2,380,475
(3)	Disbursements				
	(a) Benefit payments	(2,737,418)	(734,030)	(399,248)	(3,870,696)
	(b) Investment mgt / trustee fees	(270,714)	(62,113)	(56,571)	(389,398)
	(c) Other expenses	(24,840)	(5,668)	(5,172)	(35,680)
	(e) Total	(3,032,972)	(801,811)	(460,991)	(4,295,774)
(4)	Transfers	31,007	(31,007)	0	0
(5)	Net realized & unrealized gain (loss)	5,933,646	1,353,673	1,242,133	8,529,452
(6)	Adjustment to beginning market value	0	0	0	0
(7)	Market value, 12/31/06	58,427,828	13,391,335	12,349,444	84,168,607
		58,396,821	13,422,342	12,349,444	84,168,607
		31,007	(31,007)	0	0

Prepared by Julie Harada Date 2/15/07

Reviewed by [illegible] Date 2/15/07

BUVEBA.final06.2/15/2007.2:58 PM

Source G
Pg 7

Retiree Medical Plans: 2006 OPEB Postretirement Benefit Cost under SFAS 106

Exhibit 3C

	BU VEBA (1)	NBU VEBA (2)	401(h) (3)	Elec Disc (4)	Exec Life (5)	Total (6)
HEI						
HECO	$ 988,433	$ 2,623,229	$ 954,195	$ 1,192,011	$ 862,439	$ 6,620,307
HELCO	533,818	376,751	(42,095)	397,967	103,331	1,369,772
MECO	313,441	391,630	80,876	189,297	96,896	1,072,140
HEI	0	70,918	30,201	0	161,264	262,383
Total	**1,835,692**	**3,462,528**	**1,023,177**	**1,779,275**	**1,223,930**	**9,324,602**
ASB[1]	**0**	**0**	**0**	**0**	**0**	**35,000**
TOOTS[1]	**0**	**0**	**0**	**0**	**0**	**4,000**
Grand Total	**1,835,692**	**3,462,528**	**1,023,177**	**1,779,275**	**1,223,930**	**9,363,602**

[1] Estimated.

Trend Rates:	
Medical:	10.0 --> 5.0%
Dental :	5.0%
Vision :	4.0%
Discount Rate	5.75%

Long term asset return rate:	
BU VEBA, 401(h) Account:	9.0%
NBU VEBA	5.0%
Elec Disc Trust	5.5%

Source G
Ref 10

Source G
Ref 11

HEI ELECTRIC DISCOUNT TRUST
Asset Reconciliation
(based on The Bank of New York's final trust & financial statements)
2006

		HECO	HELCO	MECO	TOTAL
(1)	Market value, 1/1/06	40,532	46,014	42,785	129,331
(2)	Income				
	(a) Contributions	600,000	200,000	120,000	920,000
	(b) Int, div & other income	3,295	1,896	1,619	6,810
	(c) Adjustments	0	0	0	0
	(d) Total	603,295	201,896	121,619	926,810
(3)	Disbursements				
	(a) Benefit payments	(417,978)	(126,617)	(88,820)	(633,415)
	(b) Investment mgt / trustee fees	(3,760)	(2,356)	(2,187)	(8,303)
	(c) Other expenses	(235)	(176)	(187)	(598)
	(d) Total	(421,973)	(129,149)	(91,194)	(642,316)
(4)	Transfers	13,520	(6,827)	(6,693)	0
(5)	Net realized & unrealized gain (loss)	2,535	1,850	1,555	5,940
(6)	Adjustment to beginning market value	0	0	0	0
(7)	Market value, 12/31/06	237,909	113,784	68,072	419,765
		224,389	120,611	74,765	419,765
		13,520	(6,827)	(6,693)	0

Prepared by Julie Hanza Date 2/15/07

Reviewed by [illegible] Date 2/15/07

ElecDiscfinal06.2/15/2007.3:25 PM

HAWAIIAN ELECTRIC INDUSTRIES, INC. AND SUBSIDIARIES
Consolidating Schedule - Income (Loss) Information
Year ended December 31, 2006
(Unaudited)
(in thousands)

	Hawaiian Electric Industries, Inc. *	Hawaiian Electric Company, Inc. and subsidiaries	HEI Diversified, Inc.	American Savings Bank, F.S.B. and subsidiaries	HEI Investments, Inc.	HEI Properties, Inc.	Pacific Energy Conservation Services, Inc.	Hycap Management, Inc.	The Old Oahu Tug Services, Inc.	Reclassifications and Eliminations Dr. (Cr.)	Consolidated
Revenues											
Electric utility	$ -	2,054,890	-	-	-	-	-	-	-	-	$ 2,054,890
Bank	-	-	-	408,365	-	-	-	-	-	-	408,365
Other	(456)	-	213	-	3,559	(2,667)	127	-	139	3,266	(2,351)
Equity in net income of subsidiaries	132,584	-	-	-	-	-	-	-	-	132,584	-
	132,128	2,054,890	213	408,365	3,559	(2,667)	127	-	139	135,850	2,460,904
Expenses											
Electric utility	-	1,888,172	-	-	-	-	-	-	-	-	1,888,172
Bank	-	-	-	319,807	-	-	-	-	-	-	319,807
Other	12,925	-	438	-	201	142	195	-	29	(401)	13,529
	12,925	1,888,172	438	319,807	201	142	195	-	29	(401)	2,221,508
Operating income (loss)											
Electric utility	-	166,718	-	-	-	-	-	-	-	-	166,718
Bank	-	-	-	88,558	-	-	-	-	-	-	88,558
Other	119,203	-	(225)	-	3,358	(2,809)	(68)	-	110	135,449	(15,880)
	119,203	166,718	(225)	88,558	3,358	(2,809)	(68)	-	110	135,449	239,396
Interest expense--other than bank	(25,891)	(52,563)	-	-	-	-	-	-	16	(2,760)	(75,678)
Allowance for borrowed funds used during construction	-	2,879	-	-	-	-	-	-	-	-	2,879
Preferred stock dividends of subisidiaries	-	(915)	-	-	-	-	-	-	-	1,080	(1,890)
										(105)	
Allowance for equity funds used during construction	-	6,348	-	-	-	-	-	-	-	-	6,348
* **Income (loss) from continuing operations before income taxes and minority interest**	93,312	122,467	(225)	88,558	3,358	(2,809)	(68)	-	126	133,664	171,055
Income taxes (benefit)	(14,689)	46,440	(274)	32,776	(189)	(1,055)	-	-	45	-	63,054
Income (loss) from continuing operations before minority interest	108,001	76,027	49	55,782	3,547	(1,754)	(68)	-	81	133,664	108,001
Minority interest in net income of subsidiaries	-	-	-	-	-	-	-	-	-	-	-
Income from continuing operations	108,001	76,027	49	55,782	3,547	(1,754)	(68)	-	81	133,664	108,001
Preferred stock dividends of parent	-	1,080	-	-	-	-	-	-	-	(1,080)	-
Income from continuing operations for common stock	108,001	74,947	49	55,782	3,547	(1,754)	(68)	-	81	132,584	108,001
Income (loss) from discontinued operations	-	-	-	-	-	-	-	-	-	-	-
Net income (loss) for common stock	$ 108,001	74,947	49	55,782	3,547	(1,754)	(68)	-	81	132,584	108,001

HEI pretax income
HEI 93,312 +
elim 133,664 −
Pref. dividend 1,080 +
(39,272)

* Includes HEI Power Corp.

Source I

Prepared by Sandra Horita, 2006 Financials - 12-06 02-19-07 xls HEI.IS, 2/20/2007

CA-IR-369
DOCKET NO. 2006-0386
PAGE 28 OF 33

Source I

HECO IN HEI FORMAT
Twelve months ended December 31, 2006

	HECO	HELCO	MECO	RHI	TOTAL	
Revenues						
OPERATING REVENUES TOTAL	1,365,593,403	339,553,649	345,265,165	0	2,050,412,217	
Investment income & other income/gain	2,671,364	521,020	1,185,070	0	4,377,454	
Equity in Earnings of Heco Cap Trusts *	100,516	0	0	0	100,516	
	1,368,365,283	340,074,669	346,450,235	0	2,054,890,187	CIS
Expenses						
Fuel and purchased power	874,353,311	207,553,250	206,726,352	0	1,288,632,913	
Other operations	126,300,391	29,906,726	30,242,192	0	186,449,309	
Maintenance	56,732,499	19,668,695	13,816,285	0	90,217,479	
Depreciation	74,797,964	29,722,210	25,644,288	0	130,164,462	
Taxes other than income	126,848,589	31,553,094	32,011,313	0	190,412,996	
Other A & G (& other taxes)	1,998,332	43,749	99,978	153,256	2,295,315	
	1,261,031,086	318,447,724	308,540,408	153,256	1,888,172,474	CIS
Operating income	107,334,197	21,626,945	37,909,827	(153,256)	166,717,713	
Interest expense	(32,403,840)	(10,118,125)	(10,040,838)		(52,562,803)	CIS
AFUDC-debt	1,816,338	89,745	973,177		2,879,260	CIS
Preferred stock dividends (HELCO & MECO)		(533,750)	(381,250)		(915,000)	CIS
AFUDC-equity	4,058,659	194,965	2,094,493		6,348,117	CIS
* Income before income taxes /preferred (a)	80,805,354	11,259,780	30,555,409	(153,256)	122,467,287	
Income taxes	30,361,525	4,312,792	11,766,226		46,440,543	CIS
Income before preferred	50,443,829	6,946,988	18,789,183	(153,256)	76,026,744	
* Preferred stock of HECO (b)	1,079,907				1,079,907	CIS
Net income	49,363,922	6,946,988	18,789,183	(153,256)	74,946,837	
				Check total should = 0	0	

HECO pretax income

(a) 80,805,354 +
(b) 1,079,907 -
79,725,447

Prepared by D Ueda Dec06heiformat revised 021707 (2).xls is 2/21/2007

2007 Executive Allocation for Compensation Plans

Charge Code			HEI	HECO	HELCO	MECO	ASB	Total
HUM002	Comp consulting services		5	15	1	1	13	35
HUM010	Comp Comm meetings	(R)	14.3%	42.9% +(.01) 42.8%	2.9%	2.9%	37.1%	100.0%
HUM011	LTIP		5	5	1	1	8	20
		(R)	25.0%	25.0%	5.0%	5.0%	40.0%	100.0%
	(pending approval by HEI Compensation Committee on 2/12/07)							
HUM012	EICP		5	15 +(.01) = 42.8%	1	1	13	35
HUM017	EIC consulting services	(R)	14.3%	42.9%	2.9%	2.9%	37.1%	100.0%
	(pending approval by HEI Compensation Committee on 2/12/07)							
	Less C Shirai, same L. Ukimori							
HUM013	Stock options with DE		8 +.01 = 19.6%	16	1	1	15	41
HUM014	Stock options	(R)	19.5%	39.0%	2.4%	2.4%	36.6%	100.0%
	(Used NQSO/SARs active participants, see attached 409A Payout listing)							
	Less E. Shiraki							
HUM015	Exec Deferred Comp		1	2	0	0	0	3
		(R)	33.3%	66.7%	0.0%	0.0%	0.0%	100.0%
	(2007 participants confirmed with D. Kitamura)							
HUM016	Dir. Deferred Comp		1	0	0	0	0	1
		(R)	100.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	(2007 participant confirmed with D. Kitamura)							

Prepared by

Approved by JAN 18 2007

Reviewed by

(R) - Recalculated.

2007 Executive Allocation for Compensation Plans
New Charge Code beginning April 2006

Charge Code		HEI	HECO	HELCO	MECO	ASB	Total
HUM023	Restricted Stock	6	1.33	1	1	3.33	12.66
	(R)	47.4%	10.5%	7.9%	7.9%	26.3%	100.0%

(Used RS active participants)

Prepared by

Approved by

Reviewed by

(R) - Recalculated.

2007 Executive Allocation for Compensation Plans
New Charge Code beginning May 2007

Charge Code		HEI	HECO	HELCO	MECO	ASB	Total
HMH 024	Directors Compensation	11	5	0	0	5	21
	(BASED UPON # OF DIRECTORS IN EACH COMPANY)	52.4%	23.8%	0.0%	0.0%	23.8%	100.0%

Prepared by

Approved by

Reviewed by

2007 Internet Billing Budget
Last Update 09/11/06

	2007 Annual Allocation Factors				Allocated Amount					
	Expense	HEI	HECO	ASB	HEI	HECO	ASB	GL Acct.	ICB activity code	ICB company code
HEI Only										
Verisign:										
Digital Certificate SSL Kahala Annual Fee	0	100%	0%	0%	0	0	0	Z6-59317-D31-N	NONBIL	NOCHG
Domain Name Annual Fee (various)	200	100%	0%	0%	200	0	0	Z6-59317-D31-N	NONBIL	NOCHG
STHI Bluecoat Maintenance	4,000	100%	0%	0%	4,000	0	0	Z6-59317-A70-N	NONBIL	NOCHG
DNA Hawaii SmartFilter Annual Subscription	4,000	100%	0%	0%	4,000	0	0	Z6-59317-A70-N	NONBIL	NOCHG
NetEnforcer Maintenance	1,400	100%	0%	0%	1,400	0	0	Z6-59317-A70-N	NONBIL	NOCHG
Network Associates Sniffer Maintenance	0	100%	0%	0%	0	0	0	Z6-59317-A70-N	NONBIL	NOCHG
Tumbleweed EMS (aka WorldSecure):										
EMF Server SW Maint	4,160	100%	0%	0%	4,160	0	0	Z6-59317-A70-N	NONBIL	NOCHG
Dell 2650 Server & MS SQL WIN Maint	1,500	100%	0%	0%	1,500	0	0	Z6-59317-A70-N	NONBIL	NOCHG
V-One VPN Server Maint (50 seat)	2,000	100%	0%	0%	2,000	0	0	Z6-59317-A70-N	NONBIL	NOCHG
NetEnterprise:										
Engineering Support	1,500	100%	0%	0%	1,500	0	0	Z6-59317-A70-N	NONBIL	NOCHG
Commercial Data Systems Off-Hour Support	2,500	100%	0%	0%	2,500	0	0	Z6-59317-A70-N	NONBIL	NOCHG
	21,260				21,260	0	0			
HEI+HEIPC+HECO+ASB (1)										
Commercial Data Systems:										
Sun Firewall Hardware/SW Maint 7x24 Gold	8,000	68%	32%	0%	5,440	2,560	0	Z6-59317-D32-Y	INT002 ✓	ALLOC
2-Sunfire 280R SN:135CO43A, SN:122CO66B8)	0	68%	32%	0%	0	0	0	Z6-59317-D32-Y	INT002	ALLOC
Enterprise 250 SN:041H2CA0	0	68%	32%	0%	0	0	0	Z6-59317-D32-Y	INT002	ALLOC
Secure Technologies Hawaii Inc (STHI):										
Firewall Software Maint (Stonesoft (1/2 yr), Checkpoint, ISS)	15,000	68%	32%	0%	10,200	4,800	0	Z6-59317-D32-Y	INT002	ALLOC
Firewall Security Maintenance (include 24 hours T&M)	22,000	68%	32%	0%	14,960	7,040	0	Z6-59317-D32-Y	INT002	ALLOC
	45,000				30,600	14,400	0			
HEI+HECO+ASB										
NetEnterprise:										
2xT1 Internet Circuit & Port Chg (3)	18,500	6.4%	58.6%	35.0%	1,184	10,841	6,475	Z6-59317-D31-Y	INT004 ✓	ALLOC
Cisco Router Maintenance (2)	2,000	34%	33%	33%	680	660	660	Z6-59317-A70-Y	INT003 ✓	ALLOC
Router Management (2)	3,000	34%	33%	33%	1,020	990	990	Z6-59317-A70-Y	INT003	ALLOC
Sprint:										
2xT1 Internet Circuit & Port Chg (3)	20,000	6.4%	58.6%	35.0%	1,280	11,720	7,000	Z6-59317-D31-Y	INT004 ✓	ALLOC
TimeWarner 10MB Ethernet Internet Bandwidth Install	0	6.4%	58.6%	35.0%	0	0	0	Z6-59317-A70-Y	INT003 ✓	ALLOC
TimeWarner 10MB Ethernet Internet Bandwidth MRC	20,000	6.4%	58.6%	35.0%	1,280	11,720	7,000	Z6-59317-D31-Y	INT004 ✓	ALLOC
ARIN ASN Maintenance (2)	100	34%	33%	33%	34	33	33	Z6-59317-A70-Y	INT003 ✓	ALLOC
	63,600				5,478	35,964	22,158			
HEI+HECO										
FTP Server - Dell 2650 Hdwr/sw Maint (4)	1,000	10%	90%	0%	100	900	0	Z6-59317-A80-Y	INT005 ✓	ALLOC
EMF Secure Email S/W Maint	2,000	10%	90%	0%	200	1,800	0	Z6-59317-A80-Y	INT005	ALLOC
	3,000				300	2,700	0			
Total Expense	**132,860**				**57,638**	**53,064**	**22,158**			
Capital Depreciation Expense										
HEI Only	12,546	100%	0%	0%	12,546	0	0	Z6-60000-D35-N	NONBIL	NOCHG
HEI+HEIPC+HECO+ASB (1)	3,333	68%	32%	0%	2,266	1,067	0	Z6-60000-D36-Y	INT002 ✓	ALLOC
HEI+HECO+ASB (2)	6,091	34%	33%	33%	2,071	2,010	2,010	Z6-60000-D37-Y	INT003 ✓	ALLOC
HEI+HECO (4)	5,333	10%	90%	0%	533	4,800	0	Z6-60000-D38-Y	INT005 ✓	ALLOC
Total Depreciation	**27,303**				**17,416**	**7,877**	**2,010**			
TOTAL INTERNET	**160,163**				**75,054**	**60,941**	**24,168**			
FrontBridge (Bigfish) Email & Virus filtering service (5)	900	100%	0%	0%	900	0	0	Z6-59317-D32-Y	INT001 (5)	ALLOC
TOTAL INTERNET + FRONTBRIDGE	**161,063**				**75,954**	**60,941**	**24,168**			

(1) Allocation factors include upgades and higher security requirements to support HEIPC international communications requirements.
(2) Fixed allocation costs split equally
(3) Allocation based on internet traffic study
(4) Allocation based on FTP and EMF secure email account ratio
(5) Allocation based on FrontBridge e-mail traffic study (100% to HEI in 2007 since HECO pays for their own service).

✓ - Agreed to prior year. Per HEI IT manager, factors for the current year should be the same as prior year based upon his review of internet traffic.

CA-IR-370

Ref: HECO-1019 & Response to CA-IR-286 (Abandoned Projects).

HECO has proposed to include $224,000 of abandoned project costs in test year expense, based on a five-year average (i.e., calendar years 2001-2005). Under the five-year averaging approach, the BP NAS Privatization (Barber's Point Naval Air Station Privatization) and the ACD/IVR Project (Automatic Call Center Distribution Project) represent approximately $123,200 of HECO's $224,000 proposed amount. Please provide the following:

a. Please explain why the BP NAS project should not be considered aberrational and excluded from the five-year average calculation.

b. Please explain why the ACD project should not be considered aberrational and excluded from the five-year average calculation.

HECO Response:

a. HECO's methodology for determining the test year estimate for abandoned projects is based on an agreement between HELCO and the Consumer Advocate in Docket No. 99-0207 regarding "canceled" and abandoned projects. See Attachment 1 of this response for a letter submitted to the commission regarding the implementation of the settlement agreement regarding "canceled"/abandoned projects. In the settlement agreement, HELCO and the Consumer Advocate agreed that the amounts for "canceled" projects included in future rate making proceedings will take into consideration the analysis of the historical experience at the time to determine a reasonable level of expenditures for "canceled" projects for rate setting purposes.

The test year estimate for abandoned projects was based on the historical five-year average of actual abandoned project cost write-offs for 2001 through 2005, which included the BP NAS Privatization and the ACD/IVR project. Both projects were included in determining the test year estimate for the HECO 2005 test year case in Docket No. 05-0315, and the Consumer Advocate and the Department of Defense did not object to HECO's

estimate. The two projects may be larger in amount than some of the other abandoned projects over the historical period, however that is the nature of projects that are "canceled"; some projects may be larger than others.

b. See response to part a. above.

Hawaii Electric Light Company, Inc. • PO Box 1027 • Hilo, HI 96721-102

June 7, 2001

FILED
2001 JUN -7 P 3:39
PUBLIC UTILITIES COMMISSION

The Honorable Chairman and Members of the
Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Docket No. 99-0207
HELCO 2000 Test Year Rate Case

This is to inform the Commission that, with respect to canceled projects, HELCO, as well as HECO and MECO, have implemented the settlement agreement[1] between HELCO and the Consumer Advocate in the above referenced docket. In accordance with the settlement agreement, the Companies changed the method of accounting for canceled projects effective October 1, 2000, the date specified in the agreement. Attachment A includes the applicable pages of the settlement agreement letter dated August 14, 2000.

Change in Accounting

As a result of the agreement, effective October 1, 2000, HECO, HELCO and MECO have been charging to expense the costs of projects in construction work in progress that are "canceled", instead of allocating the costs to various capital projects and O&M expenses through clearing accounts.

Background

HELCO's (as well as HECO's and MECO's) practice had been to expense the cost associated with "abandoned" projects, and to allocate "canceled" projects costs to various capital projects and O&M expense accounts through clearing accounts. HECO, HELCO and MECO classified projects that were not completed as either canceled or abandoned, depending on whether the projects were stopped before (canceled) or after (abandoned) significant costs were incurred for material purchases and/or construction. (See HELCO RT-10, pages 32-34).

[1] The settlement agreement letter was filed with the Commission on August 14, 2000.

The Consumer Advocate disagreed with HELCO's differentiation between "canceled" and "abandoned" projects. (See CA-T-6, page 41, and HELCO RT-10, pages 33-34.)[2]

Settlement Agreement

As part of the settlement agreement, the Consumer Advocate and HELCO agreed to include $30,000 in Account No. 930-Miscellaneous General Expense for "abandoned and canceled projects" in determining HELCO's 2000 test year revenue requirements. The Commission accepted the settlement on this issue and included $30,000 in Account No. 930 in determining HELCO's revenue requirements in Docket No. 99-0207.

HELCO and the Consumer Advocate further agreed that the amounts for canceled projects included in future ratemaking proceedings will take into consideration the analysis of the historical experience at that time to determine a reasonable level of expenditures for canceled projects for rate setting purposes on a prospective basis.

If you have any questions regarding this change in accounting, please call ann Yamamoto at 543-4757.

Sincerely,

William A. Bonnet
Vice President

Attachment

cc: Division of Consumer Advocacy
Clifford K. Higa, Esq.
Gail S. Gilman
George T. Aoki, Esq.

[2] The Consumer Advocate raised this issue in MECO's 1999 test year rate case in Docket No. 97-0346. As part of the settlement negotiations in that docket, MECO (as well as HECO and HELCO) agreed to work with the Consumer Advocate, outside of a rate case, on the appropriate modification of the accounting treatment of abandoned and canceled projects to address the Consumer Advocate's concerns. See pages 13-14 of the Settlement Letter dated October 23, 1998 in Docket No. 97-0346.

Hawaii Electric Light Company, Inc. • PO Box 1027 • Hilo, HI 96721-1027

FILED
2000 AUG 14 A 11: 04
PUBLIC UTILITIES COMMISSION

Warren H. W. Lee, P.E.
President

August 14, 2000

RECEIVED
2000 AUG 14 A 10: 56

Mr. Gregg J. Kinkley
Department of Commerce and
Consumer Affairs
Division of Consumer Advocacy
250 South King Street, 8th Floor
Honolulu, Hawaii 96813

Dear Mr. Kinkley:

Subject: Docket No. 99-0207
HELCO Rate Case - 2000 Test Year

This letter is written to document certain agreements HELCO and the Consumer Advocate (the "Parties")[1] have reached regarding the following matters in this proceeding:

I) the areas in which HELCO and the Consumer Advocate have reached agreement in this proceeding,

II) areas in which HELCO and the Consumer Advocate have been unable to reach agreement and would like to address in the evidentiary hearing,

III) areas in which HELCO and the Consumer Advocate have not been able to reach agreement but are willing to have the Commission decide based upon written briefs without the need for an evidentiary hearing, and

IV) the scheduling of the evidentiary hearing, subject to Commission approval.

[1] The participation of The Gas Company is limited to the Standby Charge issue, and The Gas Company is not a signatory to this agreement letter.

The $30,000 increase in Account No. 930 – Miscellaneous General Expense for "abandoned and canceled projects" is the result of an agreement between the Parties to change the way the Company accounts for canceled projects in the future, effective October 1, 2000 unless the interim increase is delayed beyond September 30, 2000 in which event the change shall be effective no later than after the end of the first full calendar month following an interim increase in this proceeding. HELCO will expense the costs of projects "canceled", instead of allocating the costs to various capital projects and O&M expenses through clearing accounts.[6] HELCO and the Consumer Advocate agree to increase test year A&G expenses by $30,000 to reflect this additional expense.[7]

The amounts for canceled projects included in revenue requirements in future ratemaking proceedings will take into consideration an analysis of the historical experience at that time to determine a reasonable level of expenditures for rate setting purposes on a prospective basis.

HELCO and the Consumer Advocate agree that the Consumer Advocate will drop its proposal to exclude $2.6 million from test year rate base and $129,000 from test year depreciation expense with respect to the portion of the costs of four projects canceled by HELCO and allocated to various capital projects in prior years.

The above agreement was reached in the interest of compromise in order to settle the differences between the parties and is not to be construed as an admission by either Party as to the merits of the other Party's position. Furthermore, the Parties reserve their right to take different positions in other dockets.

Based on on-going discussions between HELCO, HECO, MECO and the Consumer Advocate regarding accounting for canceled project costs, HECO and MECO have agreed to make the same change in accounting practice, i.e., to expense the costs of canceled projects on a prospective basis, at the same time the change is made for HELCO. HECO, HELCO, MECO and the Consumer Advocate agree that the

[6] HELCO's current practice is to expense the cost associated with "abandoned" projects and to allocate "canceled" project costs to various capital projects and O&M expense accounts through clearing accounts. (See HELCO RT-10.) The CA disagrees with HELCO's differentiation between "canceled" and "abandoned" projects. (See CA-T-6, and HELCO RT-10, pages 33-34.)

[7] For purposes of this docket, the full $30,000 is included in Account No. 930.

implementation of appropriate changes in accounting practices need not necessarily be timed with decision and orders in rate case proceedings for each respective company.

In addition, the Parties agree to continue discussions to resolve the mechanics of the change in accounting and to determine a basis by which the costs can be reviewed for reasonableness in future rate proceedings. It is the intent of the Parties to continue such discussions in order to reach resolution by the end of the 2000 calendar year.

note: With respect to the APPRISE and Property Insurance issues, please see discussion later in this letter.

Wage Rollback

The Parties continue to disagree on the Consumer Advocate's proposal to include an adjustment amounting to $200,000 to reflect wage and salary expenses at the year-end level, consistent with its proposal to determine the test year revenue requirements for the instant proceeding using a year-end concept.

Depreciation & Amortization

Except for differences related to the Consumer Advocate's year-end concept and differences related to the Plant-in-Service amounts discussed later in this letter, there are no remaining differences in this area.

Taxes Other Than Income Taxes

The parties agree on the methodology for the calculation of Taxes other than Income Taxes. Except for differences related to the Consumer Advocate's year-end concept and differences in other areas, there are no remaining differences in this area.

County Property Taxes

The Parties have agreed to the inclusion of $152,000 in the test year for County Property Taxes. This is the amount HELCO will be paying based only on the first County assessment referenced in HELCO RT-13. The parties have agreed that the $3.8 million included in the County's second assessment, which has been

CA-IR-371

Ref: HECO-1019 & Response to CA-IR-286 (Abandoned Projects).

The PIF provided as Attachment 2 to the response to CA-IR-286 explains the need to install a modern Automatic Call Distribution system. Please provide the following:

a. Please confirm that this project was approved in October 2000. If this cannot be confirmed, please explain.

b. Please explain why HECO decided to abandon this project, identifying and describing any subsequent project that served to replace or supersede this project.

HECO Response:

a. The PIF for the installation of a new ACD was approved by management in October 2000, and an application for approval of the project under General Order No. 7 paragraph 2.3.g.2. (GO7) was filed with the Commission in August 2001 in Docket No. 01-0273. However, based on informal comments provided by the Consumer Advocate, the Company withdrew its application in January 2002, and the project was cancelled. (The Commission approved the withdrawal of the application, without prejudice in January 2002.) A new project was initiated to install a new telecommunications system and network, including among other things, new ACD, PBX, Integrated Voice Response, and voice mail systems. In May 2003, an application for approval under GO7 of a new Telecommunications System and Network project was filed in Docket No. 03-0124, and was approved by the Commission in Decision and Order No. 20407, filed August 29, 2003.

b. See the response to subpart a.

CA-IR-372

Ref: HECO T-10 Responses to CA-IR-2 (Attachment 26, page 2) & CA-IR-288 (Outside Services-General).

The response to CA-IR-288(a) indicates that the $660,000 included in the 2007 test year forecast (Account 921) for outside services general was approximately based on amounts spent in 2005 and 2006. According to the response to CA-IR-288(b), the 2005 and 2006 amounts were $614,000 and $616,000, respectively. Please provide the following:

a. Please provide a breakdown of the 2005 and 2006 amounts by project or initiative, specifically identifying the scope of any consulting services retained.

b. Please provide actual expenditures through May 2007 for each comparable project undertaken thus far.

HECO Response:

a. The approximate amounts for 2005 and 2006 as stated in Hawaiian Electric's response to CA-IR-288(b) should be revised as follows, 2005 $580,000 and 2006, $559,000. As set forth in Hawaiian Electric's response to CA-IR-288(d), and reemphasized here, energy-related issues have been a strong and growing interest to the Legislature, Administration, and the general public. In recent years, the number of energy bills introduced/passed by the Legislature and signed by the Governor are reflective of the State's interest in this issue. With the State's policy to look at more renewable energy sources, become less reliant on fossil fuels, and address global warming and greenhouse gases, among many other issues, the Company expects that its work scope will increase exponentially. Being the sole electric utility provider on Oahu, Hawaiian Electric is a major party to these discussions and it is our responsibility to be prepared to address these issues, along with balancing the sensitivities of our Oahu communities who will be affected as a result of these State

policies. This higher level of political and community involvement requires a 2007 test year estimate of $660,000.

In response to subpart a., as set forth in Hawaiian Electric's response to CA-IR-2, HECO T-10, Attachment 26, Page 3 of 4, the Company has used a baseline of outside services that provide specific expertise and an outside viewpoint which are critical for the Company to be prepared to address a number of issues. This has been quite effective and an efficient substitute for retaining a larger staff. In 2005, the Company retained three outside consultants. One consulting company assisted the Company on a number of projects in 2005, including the coordination of speakers' bureau events with business and community organizations to share information about electricity usage in Hawaii and the various ways to meet future demand for electricity, with an emphasis on energy conservation and efficiency measures and renewable energy options. The consulting company also provided assistance in the communication planning for projects such as the Company's new unit to be built in the Campbell Industrial Park in West Oahu, community benefits process, and the proposed wind farm at Kahe. These services amounted to approximately $160,000. Another consultant provided expertise on various community issues, in particular, understanding the viewpoint of communities located in the West Oahu/Waianae area. The consultant also assisted the Company on various projects, examples which include, the proposed wind farm at Kahe, the community benefits process, developing a community-based wind education program, potential Native Hawaiian burial issues for Hawaiian Electric's properties around O'ahu, researched cultural and archaeological issues associated with Hawaiian Electric properties and potential projects, and a potential wind farm in the Kahuku area. These services amounted to approximately

$48,000. The two consultants described above were used on an on-going basis. In 2005, the Company also hired a third consulting company to specifically look at potential ratemaking options for customers. Outside service expenses for this consulting company were approximately $124,000.

In 2006, the Company utilized two outside consultants on an on-going basis. One consultant assisted Hawaiian Electric with projects such as the development of an agricultural energy workshop to provide information on the various technologies for processing fuels using agricultural crops and the potential biofeedstocks available which might be applicable to Hawaii's climate and economy. They also continued to provide coordination of speakers' bureau engagements with business and community organizations to share information about electricity usage in Hawaii and the various ways to meet future demand for electricity, with an emphasis on energy conservation and efficiency measures and renewable energy options. Communications assistance was also provided regarding grants provided to Ka Papa O Kakuhihewa, a community organization on the West Oahu Coast, for community conservation education programs. Preliminary research and planning was done for a future Energy for Islands conference to highlight specific issues and challenges for electrical systems on isolated islands, such as policy, funding, culture and infrastructure issues. These services in 2006 amounted to approximately $172,000.

Another consultant was used to provide expertise in the following areas: potential Native Hawaiian burial issues for Hawaiian Electric's properties around Oahu, cultural and archaeological issues associated with Hawaiian Electric properties and potential projects, initial discussions with the Honolulu Board of Water Supply on developing the proposed

RO Water Pipeline and recycled water use at the Kahe Power Plant and the potential to develop pumped hydro-storage projects, the community benefits process, community considerations for a potential wind farm in the Kahuku area, the building of a resource conservation education program for the West Oahu community, and community involvement with ocean energy development. These outside services amounted to approximately $49,000.

b. As of May 2007, Hawaiian Electric utilized three outside consultants on an on-going basis to provide specific expertise and an outside viewpoint in dealing with a number of issues. Examples of the assistance provided by one consulting company include continuing coordination of speakers bureau engagements with business and community organizations on energy issues to share information about electricity usage in Hawaii and the various ways to meet future demand for electricity, with an emphasis on energy conservation and efficiency measures and renewable energy options, assistance in the development of a Company public environmental and corporate sustainability report which will discuss the Company's position on global warming and the Company's actions to address the issue, including the Company's progress on actions such as renewable energy projects, air and water quality monitoring, the use of biofuels, recycling efforts, and the Company's efforts to encourage sustainability through community programs. The consulting company also conducted additional assessment and planning for the possible conference on island energy issues. As of May, 2007, these outside services amounted to approximately $63,000. Another outside consultant has assisted the Company in its discussion with key stakeholders on ocean energy development as well as continuing to assist with potential Native Hawaiian burial issues for Hawaiian Electric's properties around Oahu, potential

cultural and archaeological issues associated with Hawaiian Electric properties and potential projects, discussions with the Honolulu Board of Water Supply on developing the proposed RO Water Pipeline and recycled water use at the Kahe Power Plant and the potential to develop pumped hydro-storage projects, the community benefits process, the potential Kahuku area wind farm, and the building of a resource conservation education program for the West Oahu community. As of May 2007, these services amounted to approximately $21,000. A third outside consultant has also been retained to provide expertise on the development of communication plans on various Company energy issues (e.g., global warming, renewable energy, conservation), as well as the development of Company advertising plans. As of May 2007, approximately $2,000 had been incurred on these outside services.

CA-IR-373

Ref: HECO T-10 Responses to CA-IR-2 (Attachment 26, page 2) & CA-IR-288 (Outside Services-General).

The response to CA-IR-288(a) indicates that approximately $250,000 of the $660,000 included in the 2007 test year forecast for outside services-general is allocated to support the "Community Process." Please provide the following:

a. When was the "Community Process" initiated?

b. Referring to the response to part (a) above, please provide a description and the related amount for each project involving the "Community Process" in calendar years 2005, 2006 or 2007.

c. Please provide a copy of any written narratives, presentations or other documentation discussing any specific "Community Process" projects or initiatives undertaken during 2005, 2006 or 2007.

HECO Response:

a. The "Community Process" as described in Hawaiian Electric's response to CA-IR-2 (HECO T-10 Attachment 26, Page 3) was initiated by the Company in mid-2001.

b. As described in Hawaiian Electric's response to CA-IR-2, HECO T-10 Attachment 26, Pages 3 and 4, and Hawaiian Electric's response to CA-IR-288a, "Community Process" is difficult to describe by project. However, in general, there are four areas involving "Community Process" which the Company is actively involved in. First, "Community Process" includes a willingness to be guided by the community not only in the final product but also in the means to achieve that product. The Company recognizes its constituencies are diverse and as a result the process requires active listening on the part of the Company through engagement with neighborhood communities as well as organizations and business partners that are attuned to cross sections of the Oahu community. The Company as the sole electric utility for the entire island, supports organizations, activities, and events which

benefit the Oahu community in general. Being one of the largest corporate entities and employers on the island of Oahu, we have been asked to assist and support various organizations which reach out to the residents and communities on Oahu. These actions demonstrate responsible corporate leadership and citizenship which are vital to building and sustaining healthy communities. Second, Hawaiian Electric also works with the film programs of the high schools in the impacted areas (West Oahu/Waianae Coast) to find appropriate projects for them to help educate either specific public audiences or the general public on energy related issues. The Company has actively worked with and supported the West Oahu/Waianae Coast high schools to engage the students in reaching out to the community and their peers to learn more about energy, renewable energy, and energy conservation. The students from these high schools have created through their own work, creativity and ideas, video presentations on key energy issues. Their presentations have been shown as public service announcements, at Hawaiian Electric's Live Energy Lite community fair (held yearly in the fall), and at Sunset on the Beach festivities on the Leeward Coast. The Company has also supported events which encourage youth involvement and promote the exchange of ideas through various media vehicles. Third, the Company creates its own targeted message paths through special meetings, regional newspapers, "infomercials/advertorials" as part of its effort to engage the various segments of the community in the importance of the role everyone plays in conserving energy, understanding sustainability and dealing with energy issues for Hawaii. Fourth, the Company supports the funding for special needs in the impacted areas (West Oahu/Waianae Coast), which is critical in order to maintain the relationships and ongoing communications and dialogue with residents in the impacted areas.

2005 In 2005, the Company spent approximately $229,000 to support the "Community Process" in the four respective areas. For example, in 2005, approximately $65,000 was spent to support various events for organizations located in the impacted areas and organizations that support groups living in the impacted area. One example is Hawaiian Electric's support to the Hawaiian Railway Society, to help replace railroad ties that were damaged in the 2005 brushfire near Honokai Hale (located in the impacted area). The Hawaiian Railway Society, located in Ewa Beach, operates the only active railroad on Oahu and provides tourists, school children and seniors a historical look at Oahu Railway and Land Company and its impact on Leeward/West Oahu. This company has been an integral part of the west Oahu community and contributes to the economic health of West Oahu. The Company's fuel line from the Campbell Industrial Park Tank Farm to Kahe runs along one side of the railway's right of way and the proposed Reverse Osmosis water pipeline, which is addressed in the Community Benefits docket, will run along the other side of the railroad's right of way. Another example is the Company's sponsorship of Nanakuli High School's student selection for outstanding public school graduate in the 2005 Annual Citizenship award program. Higher education for many Waianae coast students from low income families continues to be an elusive goal and helping to support scholarship programs is one way Hawaiian Electric can help to meet a critical need in the community. The Company has supported the Waianae Coast Comprehensive Health Center in its efforts to recognize key leaders in the community and support their mission of providing health care that is in dire need in the impacted area. Hawaiian Electric also supported events that were sponsored by schools in the impacted areas, such as Nanakuli Elementary and Kapunahala Elementary. The Company supported the Nanakuli Pop Warner Football team which made

it to the National Championship. Hawaiian Electric has helped to sponsor events which have honored key community leaders from the West Oahu area, such as "Aunty Aggie" Kalanihookaha Cope from the Waianae Coast Culture and Arts Society. With respect to creating targeted messages, in 2005, Hawaiian Electric and KHON2 partnered television spots promoting renewable energy and conservation, which cost approximately, $25,000. In 2005, Hawaiian Electric spent approximately $65,000 to support video projects prepared by Nanakuli, Kapolei, Campbell, and Waianae High Schools and helped to sponsor a youth video competition which was put together by Olelo Community Television. In 2005, approximately $73,000 was spent to support various community organizations, events and activities benefiting the Oahu community in general. A few examples are Kanu Hawaii, an organization (made up of individuals in their 20's and 30's) whose goal is to build a healthy, sustainable future for Hawaii, through concrete individual commitments to a preferred future, presenting sponsor of the annual Christmas Electric Light Parade, Pacific Justice and Reconciliation Center and the East West Center. As noted earlier, the Company's active participation and support of these organizations and activities are important in building strong communities throughout Oahu as our ratepayers cover the entire island.

<u>2006</u> In 2006, approximately $224,000 was spent in support of the "Community Process". In the special needs area, the Company spent approximately $63,000. One example was support of Koa Ike, an organization located in Waianae which operates the Koa Ike Learning Center and the Koa Ike Head Start Program. Koa Ike provides critical services to Waianae coast children, adults and families. Hawaiian Electric assisted in covering the cost of designing and constructing a new sanitation receptacle in order to meet upgraded EPA specifications. Another example was support for Aha Punana Leo, which is

an umbrella organization for the Native Hawaiian immersion schools to support its mission and the programs it offers to Native Hawaiians on the Waianae Coast. Another example of support made by the Company was to the Hawaii Health Foundation ("HHF"). One area of focus for HHF is the native Hawaiian community, because of the high rate of diabetes and heart disease among Native Hawaiians. Hawaiian Electric provided support to Ka`ala Farms which is a cultural learning center in Waianae which provides opportunities for Native Hawaiians and non-Hawaiians to develop marketable skills and gain a healthy sense of what it is to be Native Hawaiian or of this place. Copying and mailing costs were incurred for distribution of an annual West Oahu Community Report. With respect to creating targeted message paths in 2006, the Company spent approximately $50,000. A few examples included our continuing partnership with KHON2 on the renewable/ energy conservation television spots and our support of "Go Green Hawaii" segments which were produced for the OC16 television station. In 2006, approximately, $111,000 was spent to support various community events and activities benefiting the general community. A few examples include: College Connections of Hawaii which provides an array of services to improve higher education opportunities to students that are typically underserved. These services include college counseling, SAT prep classes, tutoring, scholarship search and a Native Hawaiian Scholars program. The Company has also supported many other key organizations that benefit the general community, such as the Hawaii Regional Science Bowl, Pacific Justice and Reconciliation Center, and the University of Hawaii Foundation Environmental Fellowship Program.

<u>2007</u> As of May, 2007, the Company has spent approximately $56,000 on various activities and events relating to the Community Process. Some examples include support of

the Native Hawaiian Chamber of Commerce, the University of Hawaii's Earth Day Sustainability and the Pacific Justice and Reconciliation Center. The Company is committed to engage the various segments of the community in the importance of the role everyone plays in conserving energy, understanding sustainability and dealing with energy issues for Hawaii. Hawaiian Electric has also partnered with McDonalds of Hawaii (through the Ronald McDonald House Charities) to help educate the general public on the hazards of mylar balloons by using McDonald's trayliners to convey the message. The Company continues to provide targeted messages on energy issues through various media vehicles to reach the general public.

c. Copies of presentations, documentation, and narratives responsive to this request are voluminous, but will be made available to the Consumer Advocate for review and inspection at Hawaiian Electric's Regulatory Affairs Division Office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements for inspection of the documents. A few examples that are responsive to this request include video presentations prepared by West Oahu high schools (Nanakuli, Kapolei, Waianae, Campbell), the purpose of which was to engage the community and students in learning more about energy and energy conservation and aired as public service announcements, documentation on the community processes the Company engaged in for a proposed wind farm in Kahe, a proposed generating unit to be located in the Leeward Coast, and ocean energy development, efforts through public service announcements, newspapers, and other media-related vehicles to educate the public as well as specific impacted areas on energy related issues.

CA-IR-374

Ref: HECO T-10 Response to CA-IR-2 (Attachment 26, page 3) & CA-IR-289 (Outside Services-General).

In describing the Company's past incurrence of costs that "may not be needed on an ongoing basis" (see Item 2 of Attachment 26, page 3), the Company identified three examples that ranged from $15,000 to $30,000 since 2004. Please provide the following:

a. Please explain how the Company determined that $100,000 was the appropriate amount to include in the 2007 test year forecast.

b. Please explain why HECO did not reflect $15,000 to $30,000 in the 2007 test year forecast.

c. If the response to part (b) above indicates that HECO funded additional projects in each calendar year that caused total expenditures to materially increase above the 15,000 to $30,000 range, please identify and describe all additional projects and list the amount incurred each year.

HECO Response:

a. As set forth in Hawaiian Electric's response to CA-IR-289(a), the amount of costs in prior years has varied and was dependent on the issues or projects that the Company was faced with for that particular year. There are a number of issues which simply cannot be anticipated. However, the Company still needs to be prepared to address these issues when the need arises.

b. As set forth in Hawaiian Electric's response to CA-IR-289(b), a number of new issues arose in 2006 and 2007 which the Company needed to address that were not an issue in previous years. Accordingly, the test year forecast should not be based solely on prior years' costs as it would not be an accurate reflection of the new issues that the Company must be prepared to address. Please see Hawaiian Electric's response to part c below, as the amounts expended in 2006 were greater than the amounts reflected in its response to CA-IR-289(a).

c. In addition to Hawaiian Electric's response to CA-IR-289(a), with the increased attention and focus on energy issues and biofuels, there was a need to expand the discussion in this area with key stakeholders in the State. Approximately $85,000 in 2006 and $25,000 in 2007 for outside services were incurred to assist in the facilitation of discussion with stakeholders on a variety of energy issues, which included biofuels. In addition, approximately $1,500 was incurred in 2006 to address potential burial and archaeological issues. Accordingly, in 2006, Hawaiian Electric spent $114,500 for outside services (Item 2 of Attachment 26, page 3 to response to CA-IR-2, HECO T-10). (The $30,000 mentioned in Hawaiian Electric's response to CA-IR-289 should be revised to indicate $114,500 was spent in 2006 for these types of services.) Approximately $17,000 has been incurred thus far for outside services in 2007, to assist in the facilitation of discussion among key stakeholders in the community on the development of ocean energy technologies on Oahu. We expect to incur additional amounts during the remainder of 2007 since this process with key stakeholders has not been completed. Also, in 2007, $10,000 has been spent to support an international energy conference on Oahu on Energy Ocean. Accordingly, in 2007, thus far, approximately $52,000 has been incurred for outside services (Item 2 of Attachment 26, page 3 to response to CA-IR-2, HECO T-10).

CA-IR-375

Ref: HECO T-10 Responses to CA-IR-2 (Attachment 28, page 2) & CA-IR-290 (Consultants).

In describing the $144,000 for "Consultant-Dr. P" and $50,000 for "Other Consultants" in the 2007 test year forecast by the Vice President Corporate Excellence (Account 921), the response to CA-IR-290 provided historical annual costs and indicated that the "2007 budget amount was based on anticipated consulting work expected for 2007 as well as approximately $50,000 for late billings from 2006." Please provide the following:

a. Recognizing that HECO plans to reduce its test year estimate for the $50,000 of late billings, please identify and describe the specific consulting work expected for 2007 that was included in the remaining $144,000 amount.

b. Please explain how the Company determined that $144,000 was the appropriate amount to include in the 2007 test year forecast, since prior year amounts only exceeded $100,000 in one year during the 2001-2006 period.

HECO Response:

a. In responding to parts a. and b. of CA-IR-290, the information provided for 2001 through 2006 related to one of the consultants only. Since 2001, annual consulting costs for all ongoing corporate workforce and organizational planning, consulting and related work for the Vice President Corporate Excellence Office were as follows:

2001	$74,000
2002	$59,000
2003	$72,000
2004	$122,000
2005	$99,000
2006	$92,000

Total consultation work for 2007 includes work for ongoing and new workforce, organizational, leadership and related planning and consulting. As discussed in

CA-IR-290, the scope of work for consultants for 2007 was increased in light of higher fees charged by consultants and the Company's need to develop and execute, or update and revisit, plans / programs and initiatives anticipated to address and meet changing or anticipated business needs and objectives. The Company also expects to incur higher consultant fees for workforce planning, programs and initiatives, due to the industry-wide, national and local challenge of our aging and shrinking workforce, competition for skilled professionals and employees, and global impacts of ever changing technology, information, culture and other similar factors. Thus far, through May 2007, the VP Corporate Excellence office has spent approximately $37,000 for consulting fees for the items described above. This amount excludes the portion related to late billings for 2006.

b. See response to part a.

CA-IR-376

Ref: HECO T-10 Responses to CA-IR-2 (Attachment 17, page 4) & CA-IR-291 (Corporate Costs).

In response to CA-IR-291(a), HECO indicated that the $51,566 included in the 2007 test year forecast identified as "Restricted Stock" represents the amortization of restricted HEI stock granted to Mike May in April 2006 over the vesting period ending May 2010. Please provide the following:

a. Please confirm that the $51,566 "Restricted Stock" amortization was not removed from the 2007 test year forecast via the incentive compensation elimination adjustment. If this cannot be confirmed, please explain.

b. If the response to part (a) above indicates that the $51,566 "Restricted Stock" amortization has been included in the 2007 test year forecast, please provide the following:

   1. Please explain why the Company has sought to recover this restricted stock amortization in test year expense.

   2. Please provide the amount of the total restricted stock grant, showing the calculation of the annual amortization and any allocation to HECO, MECO and other operating entities.

   3. Please provide a copy of any formal documentation of the restricted stock grant.

   4. Please provide a copy of any summary or explanatory material provided to Mr. May or the Board of Directors regarding the restricted stock grant.

HECO Response:

a. Yes. The $51,566 "Restricted Stock" amortization was inadvertently not removed from the 2007 test year estimate via the incentive compensation elimination adjustment. In addition, the "restricted stock" amortization for the Senior Vice President Energy Solutions of $9,000 was also inadvertently not removed from the test year estimate. These amounts, totaling $61,000 have been removed as part of the June 2007 updates. See HECO T-10 June 2007 update. Note that the amount of the restricted grant or the amortization was not allocated to HELCO and MECO.

b. Not applicable. As indicated in response to part (a), this amount has been removed as part of the HECO T-10 June 2007 Update.

CA-IR-377

Ref: HECO Responses to CA-IR-69 & CA-IR-297 (Ho'okina & Targeted Compensation Program).

Referring to the response to CA-IR-297, Confidential Exhibit 1 provided two forecast amounts for the Engineering Retention, by position. Please provide the following:

a. Please explain the difference between the amounts in each column (e.g., partial year prorate).

b. The first column heading refers to an "Effective" date. Were these retentions actually effective for the engineering positions on that date? Please explain.

c. Were all of the listed engineering positions "filled" as of the "effective" date? If not, please provide the following:

   1. Please indicate the number of filled vs. vacant positions as of the "effective" date.
   2. Please indicate the number of filled vs. vacant positions as of the most recent date for which information is available.

HECO Response:

a. The column headed "Adjusted Compensation Effective 4/2/07" includes the annualized increase in salary, and the column headed "Forecast for 2007" is the pro-rated portion of the annual increase for the test year.

b. Yes. The increases were effective on April 2, 2007, which is the beginning of the pay period after the program was approved.

c. All positions were filled as of the effective date.

   1. Not applicable.

   2. Not applicable.

CA-IR-378

Ref: HECO T-13, page 26 & Response to CA-IR-300 (Ward Avenue Parking Repair).

CA-IR-300(a) asked the Company to confirm that the following summary accurately reflected the referenced testimony:

> Beginning at line 15, HECO T-13 indicates that the Company budgeted for four non-recurring preventative maintenance projects relating to the Ward Avenue parking structure totaling $764,000. Some of this work had been scheduled in prior years, but was deferred due to budget constraints. Because not all of the projects may be completed in 2007, the Company has proposed a normalization adjustment and included one-half of the total cost, or $382,000, in the 2007 test year forecast.

In response to CA-IR-300(a), the Company stated that the summary was "inaccurate" and referred to Note (1) of HECO-1306 for explanation of the normalization adjustment. The following passage was excerpted from page 26, lines 15-21, of HECO T-13:

> HECO has budgeted four non-recurring preventive maintenance projects relating to the Ward Avenue parking structure, totaling $764,000. The Company had originally intended to complete some of these projects in prior years, however due to budget constraints, these projects were deferred to future years. It is possible that not all of these projects will be done in 2007, therefore only one-half of the total costs of these projects were included in the test year, resulting in a normalization adjustment of $382,000.

Please provide the following:

a. Referring solely to the two quoted passages above, please provide a detailed explanation as to how the "summary" set forth in CA-IR-300 inaccurately characterizes or portrays the excerpt from HECO T-13, page 26.

b. Is it the intent of HECO T-13, via the response to CA-IR-300(a), to communicate that the cited testimony does not accurately portray the basis for the Company adjustment set forth on HECO-1306? Please explain.

c. Is it the intent of HECO T-13 to revise the quoted testimony via the response to CA-IR-300(a)? Please explain.

HECO Response:

a. The summary set forth in CA-IR-300 accurately characterizes the excerpt from page 26, lines 15-21, of HECO T-13.

b. Yes, that is correct. The basis for the normalization adjustment is not due to an inability to complete these nonrecurring projects in 2007 since the Company plans to complete these nonrecurring projects by the end of 2007. The Company proposed a normalization adjustment to provide a more reasonable level of non-recurring project costs estimated to be incurred in the next several years.

c. Yes, that is correct.

CA-IR-379

Ref: HECO-1306 & HECO T-13 Response to CA-IR-3 Attachment 1, page 2 (General Plant Maintenance).

HECO-1306 normalizes certain Ward Parking Facility Improvement Projects, in quantifying 2007 test year maintenance of general plant. The four Ward Parking amounts set forth on HECO-1306 generally tie to the response of HECO T-13 to CA-IR-3 (Attachment 1, page 2). Please provide the following:

a. Please provide forecast support for the $566,000 (Recurring) and $154,000 (Office Equipment) maintenance amounts set forth on HECO-1306. [Note: If the requested information is contained in the response of HECO T-13 to CA-IR-2, please provide a pinpoint reference to such information.]

b. The response to HECO T-13 to CA-IR-3 (Attachment 1, page 2) identifies four additional 2007 R&M Projects that are not associated with the Ward Parking Facility Project. Please provide a brief description of each project listed below, indicating whether (and how) each project was included in the 2007 test year expense (i.e., not treated as a capital project) and whether such amounts are considered to be annually recurring:

1. P0001116 – Archer Roof: $198,000.
2. HF PM17 – Ward Warehouse – Replace Fire Doors: $53,000.
3. Ward Café Roof: $85,000.
4. P0000852 – Ward 04 Warehouse Roof: $113,000.

HECO Response:

a. Refer to Attachment 13, pages 1-3, of the Company's (T-13) response to CA-IR-2 for support for the $154,000 office equipment maintenance amount. Refer to Attachment 1 for an index supporting the $566,000 building and grounds maintenance amount.

b. 1. P0001116 – Archer Roof: $198,000. This project is related to repair work on the roof of the Archer Substation located at the Ward Avenue facility. This non-recurring O&M project is included in account NARUC 921 as described in P. Nanbu's testimony (T-10). Refer to the Company's response (T-10) to CA-IR-2 at Attachment 35, page 27 of 30, for more information.

2. HF PM17 – Ward Warehouse – Replace Fire Doors: $53,000. This project is related to the replacement of the fire doors of the Ward Warehouse/Parking Facility located at Ward Avenue. This non-recurring capital project is now scheduled for 2008.
3. Ward Café Roof: $85,000. This project is related to repair work on the roof over the employee cafeteria located at Ward Avenue. This non-recurring O&M project is included in account NARUC 921 as described in P. Nanbu's testimony (T-10). Refer to the Company's response (T-10) to CA-IR-2 at Attachment 35, pages 20 of 30, for more information.
4. P0000852 – Ward 04 Warehouse Roof: $113,000. This project is related to sealing of the roof of the Company's warehouse located on the Cooke Street side of the Ward Avenue property. This non-recurring O&M project is included in account NARUC 921 as described in P. Nanbu's testimony (T-10). Refer to the Company's response (T-10) to CA-IR-2 at Attachment 35, pages 26 of 30, for more information.

Description	Dept	RA	Loc	Project	EE	Amount	Reference - HECO T-13
King St. Building/Grounds Maintenance	Safety, Sec, & Fac	PHF	KNG	NPHZZZZZ	150	$ 34,277	CA-IR-1, Attachment 1, Page 6.
King St. Building/Grounds Maintenance	Supp Svcs	PVL	KNG	NPVZZZZZ	150	6,083	CA-IR-1, Attachment 1, Page 9.
Ward Building and Grounds Maintenance	Safety, Sec, & Fac	PHF	WRD	NPHZZZZZ	150	21,423	CA-IR-1, Attachment 1, Page 7.
Ward Building and Grounds Maintenance	Sys Op	PRX	WRD	NPRZZZZZ	150	12,426	CA-IR-1, Attachment 1, Page 8.
Ward Building and Grounds Maintenance	Supp Svcs	PVL	WRD	NPVZZZZZ	150	849	CA-IR-1, Attachment 1, Page 8.
Ward Building and Grounds Maintenance	Supp Svcs	PVL	WRD	NPVZZZZZ	150	27,724	CA-IR-1, Attachment 1, Page 9.
Ward Building and Grounds Maintenance	Supp Svcs	PVL	WRD	NPVZZZZZ	205	18,450	CA-IR-2, Attachment 1, Page 7.
Ward Building and Grounds Maintenance	Supp Svcs	PVL	WRD	NPVZZZZZ	301	39,000	CA-IR-2, Attachment 1, Page 7.
Ward Building and Grounds Maintenance	Supp Svcs	PVL	WRD	NPVZZZZZ	501	6,000	CA-IR-2, Attachment 1, Page 7.
Ward Building and Grounds Maintenance	Supp Svcs	PVL	WRD	NPVZZZZZ	501	22,056	CA-IR-2, Attachment 1, Page 7.
Other Buildings and Grounds Maintenance	Safety, Sec, & Fac	PHF	PHE	NPHZZZZZ	150	17,805	CA-IR-1, Attachment 1, Page 7.
Other Buildings and Grounds Maintenance	Safety, Sec, & Fac	PHF	PHE	NPHZZZZZ	501	36,000	CA-IR-2, Attachment 1, Page 6.
King Street A/C Maintenance	Safety, Sec, & Fac	PHF	KNG	P0000346	150	393	CA-IR-1, Attachment 1, Page 6.
King Street A/C Maintenance	Safety, Sec, & Fac	PHF	KNG	P0000346	501	42,305	CA-IR-2, Attachment 1, Page 5.
Ward Building A/C Maintenance	Safety, Sec, & Fac	PHF	WRD	P0000346	150	1,967	CA-IR-1, Attachment 1, Page 7.
Ward Building A/C Maintenance	Safety, Sec, & Fac	PHF	WRD	P0000346	501	195,318	CA-IR-2, Attachment 1, Page 5.
Other Facilities A/C Maintenance	Safety, Sec, & Fac	PHF	PHE	P0000346	150	262	CA-IR-1, Attachment 1, Page 7.
Other Facilities A/C Maintenance	Safety, Sec, & Fac	PHF	PHE	P0000346	501	30,757	CA-IR-2, Attachment 1, Page 5.
Other Misc Maintenance	VP-Corp. Excel	P6V	PHE	NPAVP6ZZ	600	1,820	CA-IR-2, Attachment 1, Page 5.
Other Misc Maintenance	Legal	PNC	PHE	NPNCZZZZ	600	200	CA-IR-2, Attachment 1, Page 6.
Other Misc Maintenance	Corp Comm	PQC	PHE	NPQCZZZZ	600	2,500	CA-IR-2, Attachment 1, Page 6.
Misc Labor Oncost						20,171	HECO-WP-101(H), Page 1107
Misc Nonlabor Oncost						35,713	HECO-WP-101(I), Page 1418
Excluding Estimated Labor/Nonlabor Oncost Related To Non-Recurring Projects						(7,000)	Note (1)
Total Building and Grounds Maintenance						$566,499	

Note (1): Primarily comprised of estimated oncost related to the Ward Parking facility improvement projects as shown on HECO-1306.

CA-IR-380

Ref: HECO T-13, page 38; Response to CA-IR-257, Attachment 2 and Attachment 3, page 7 (Payment Protection Program CSI Revenues).

Referring to summary of "Payment Protection Program Financial Results," please provide the following information:

a. Please explain how HECO accounts for each line item of activity in the summary of Financial Results.

b. Please identify where the corresponding amounts for each line item of CSI Program Financial Results can be found in the test year income statement, with reference to Exhibits, Workpapers and CA-IR-1 and IR-2 responsive workpapers, as applicable.

c. Explain how the Attachment 2 amounts can be compared and reconciled to the Attachment 3, page 7 values.

d. The amounts on Attachment 2 for YTD Apr-07, if annualized using a 12/4 months factor, appear to support a much higher annual revenue level than has been included in the test year at T-13, page 33, line 17. Please explain this apparent discrepancy.

HECO Response:

a. HECO accounts for the following Payment Protection Program Financial Results line items, as shown in CA-IR-257, Attachment 3, Page 7, as follows:

- Line 1, HECO Service Fees (20%) – Recorded as Miscellaneous Operating Revenues, in NARUC Account 932, in the month that premiums are billed. See line "Payment Protection Insurance" in HECO-1312 of B. Tamashiro's (T-13) testimony.
- Line 2, Payable to CSI (80%) – Originally recorded as Miscellaneous Operating Revenues in the month that premiums are billed. However, in the following month, it is reclassified as a payable to CSI and paid via a wire transfer.
- Line 4, HECO 50% Net Revenue Sharing – Recorded as Miscellaneous Operating Revenues, in NARUC Account 932, in the month that the check is received from CSI.

See line "Payment Protection Insurance" in HECO-1312 of B. Tamashiro's (T-13) testimony.

- Line 5, HECO Service Fees – Same as Line 1 above.
- Line 6, Paid Claims Received – Recorded as cash upon receipt from CSI. Note that the customer files its own claim directly with CSI.
- Line 9, Customer Account & Billing – Monthly labor charges recorded as Miscellaneous Operating Revenues, in NARUC Account 932, in the month incurred. The cost referenced in Attachment 3, page 7, was primarily associated with the filing of annual reports (e.g., Attachment 3 of HECO's response to CA-IR-257) for the first 5 years of the program. HECO is no longer required to file annual reports to the PUC for the CSI program.
- Line 10, Payment Process & Support Center – This cost was primarily associated with the initial set-up of the CSI program and the manual processing of the enrollment forms. Since then, the processing of the enrollment forms for eligible customers has been automated and HECO no longer incurs these costs.
- Line 11, Administrative & Regulatory Affairs – This cost was primarily associated with the filing of annual reports (e.g., Attachment 3 of HECO's response to CA-IR-257) for the first 5 years of the program. HECO is no longer required to file annual reports to the PUC for the CSI program.
- Line 12, PSC Taxes & PUC Fees – Recorded as Revenue Taxes. See L. Okada's testimony at T-15 for the 2007 test year estimate of revenue taxes.
- Line 13, State Insurance License (Annual) – CSI files (and pays) for its own insurance license. HECO no longer incurs this cost.

b. See response to a. above.

c. A reconciliation between Attachment 2 and page 7 of Attachment 3 is not possible since the Attachments provide financial results for different 12-month periods (Page 7 of Attachment 3 is based on CSI's fiscal year ended September 30 for years 1998-2003, while Attachment 2 is based on HECO's calendar year ended December 31 for years 2004-2006 and year-to-date April 2007). However, a general comparison could be made between the sum of Lines 4 and 5 on page 7 of Attachment 3 and the Revenues on Attachment 2. Similarly, Line 9 on page 7 of Attachment 3 would be comparable to the Expenses shown on Attachment 2.

d. The YTD April 2007 amount includes: 1) approximately $20,000 of YTD actual monthly HECO service fees (20% of billed premiums); and 2) approximately $76,000 of shared revenues (50%), related to the 2006 Net Revenue Sharing program year, received in early 2007. Therefore, annualizing the YTD April 2007 amount, which includes the profit sharing revenues from the 2006 program year, would not provide a reasonable Test Year CSI revenue estimate. In fact, the sum of: 1) annualized YTD April 2007 HECO service fees of $60,000 ($60,000 = $20,000/4 months x 12 months), and 2) the 5-year average of profit sharing revenues ($58,000 = [$42,000 (2002) + $29,000 (2003) + $66,000 (2004) + $75,000 (2005) + $76,000 (2006)] ÷ 5), would result in a lower estimated CSI miscellaneous revenue amount of $118,000 when compared to the estimated $128,000 included in the 2007 test year.

CA-IR-381

Ref: HECO-1302, (Amortization of Deferred Gains).

Regarding the listed "Property Sold" line items, please provide the following information:

a. The starting and ending dates of the PUC-approved amortization periods.

b. Monthly per-books amortization amounts recorded to-date for each month of 2007.

c. Explain any differences between the monthly amortizations being recorded in 2007 and the corresponding annual amount shown in HECO-1302.

d. State whether any other properties have been sold by HECO and indicate the status of any pending PUC Dockets associated with such sales, indicating total gain and monthly amortizations being proposed.

HECO Response:

The response below refers to revised HECO-1312, filed on June 8, 2007, in the Company's (T-13) June 2007 Update.

a. The starting and ending dates of the amortization periods approved by the PUC (except for Aiea Park Place which is pending PUC approval) for the following properties are as follows:

Property Sold	Amort Start Date	Amort End Date	Monthly Amort	TY 2007 Amort
Queen Emma	Feb 2005	Jan 2010	23,331	279,972
Iolani Court Plaza:				
Unit 1708	Feb 2006	Jan 2011	1,686	20,232
Unit 1603	Apr 2006	Mar 2011	1,333	15,996
Unit 2704	Oct 2005	Sep 2010	834	10,008
Unit 1104	Jan 2006	Dec 2010	834	10,008
Unit 3306	Jan 2006	Dec 2010	834	10,008
Unit 3004	Jan 2006	Dec 2010	834	10,008
Unit 2706	Jan 2005	Dec 2009	834	10,008
Unit 3109	Dec 2004	Nov 2009	2,032	24,384
Unit 1700	Jul 2002	Jun 2007	858	10,296
Unit 1009	Jan 2004	Dec 2008	1,831	21,972
Kuliouou	Aug 2004	Jul 2009	3,327	39,924
Waianae	Sep 2005	Aug 2010	1,854	22,248
Aiea Park Place	Aug 2007	Jul 2012	2,255	11,275

Property Sold	Amort Start Date	Amort End Date	Monthly Amort	TY 2007 Amort
Palolo	Oct 2006	Sep 2011	735	8,820
Total				500,011

b. Please see response to a. above.

c. There are no differences between the amortization amounts contained in the response to item a above and revised HECO-1312.

d. On May 3, 2007, the Company signed a purchase agreement with Scott McCoy for the sale of the Company's Waianae Substation remnant property, subject to PUC approval, for $234,000. The Company is currently drafting an application to the PUC seeking approval of the sale, including approval to amortize the gain on the sale of the property over 5 years. Upon a favorable and timely PUC decision, the Company expects to close the sale by the end of the first quarter of 2008. The gain on the sale of the Waianae Substation remnant property is estimated at approximately $50,000, but will ultimately be dependent on the amount of closing and other miscellaneous costs yet to be incurred.

On May 25, 2007, the Company signed a purchase agreement with ROIZ, LLC for the sale of the Company's Barbers Point Substation site, subject to PUC approval, for $409,578. The Company is currently drafting an application to the PUC seeking approval of the sale, including approval to amortize the gain on the sale of the property over 5 years. Upon a favorable and timely PUC decision, the Company expects to close the sale by the end of the first quarter of 2008. The gain on the sale of the of the Barbers Point Substation site is estimated at approximately $47,000, but will ultimately be dependent on the amount of closing and other miscellaneous costs yet to be incurred.

CA-IR-382

Ref: HECO-1302, (Property Licenses and Leases).

Regarding each of the listed "Property Licenses and Leases" line items, please provide the following information:

a. The starting and ending dates of each underlying license or lease agreements.

b. Monthly amounts payable to HECO in connection with each of the agreements set forth in your response to part (a) of this information request.

c. Provide a schedule of monthly recorded revenues by lease/contract for 2006 and 2007, to date, with comparisons to related amounts included in the test year for each listed item.

HECO Response:

The response below refers to revised HECO-1312, filed on June 8, 2007, in the Company's

(T-13) June 2007 Update.

a. Refer to Attachment 1.

b. Refer to Attachment 1.

c. Refer to Attachment 2.

Lessee/Licensee	HECO Property Location	Term	Monthly Amount		
HEI	4th Floor King Street Building	12/1/94 - 11/30/21	$	23,342	Note (1)
Various	Iolani Court Plaza land fees	4/1/80 - 3/31/10		975	
Chevron USA	Waiau power plant property	7/1/60 - 6/30/10		585	
Seizun Kobashigawa	Waiau (watercress farm location)	12/1/92 - month-to-month		76	
Harue Watabu	Waiau (watercress farm location)	5/1/01 - month-to-month		42	
Chrysler Realty Co.	Iwilei substation property	2/1/06 - 1/31/07 2/1/07 - 1/31/08		11,515	Note (2)
M. Dyer & Sons	Waiau access road	7/19/88 - month-to-month		812	
Market City Ltd.	Kapiolani substation property	10/1/01 - month-to-month		854	
Kenneth Roy Gfroerer	Ohua Ave property	6/1/97 - month-to-month		160	
High Technology Development Corporation	Keawe substation property	9/30/06 - month-to-month		5,334	
Hawaii Natural Energy Institute	Ward warehouse space	12/1/2001 - month-to-month		2,630	

Note (1): Beginning June 1, 2007, HEI's monthly lease rent will decrease to $14,140 due to revised square footage occupied in the King Street Building. Refer to Attachment 2 of B. Tamashiro's June 2007 Update (T-13) for more information.

Note (2): The Chrysler Realty lease which expired on January 31, 2007 was extended for one year to January 31, 2008 at the same terms.

Lessee/Licensee	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Recorded 2006 Total	Test Year 2007		Jan-07	Feb-07	Mar-07	Apr-07	Recorded 2007 YTD
HEI	23,342	23,342	23,342	23,342	23,342	23,342	23,342	23,342	23,342	23,342	23,342	17,370	274,132	216,000	(A)	23,342	23,342	23,342	23,342	93,368
Various	(81)	(51)	1,016	1,698	861	861	-	2,583	861	861	861	861	10,331	11,700		961	861	861	861	3,544
Chevron USA	-	-	-	-	-	-	7,023	-	-	-	-	-	7,023	7,023		-	-	-	-	-
Seizun Kobashigawa	76	76	76	76	76	76	76	76	76	76	76	76	912	908		76	76	76	76	304
Harue Watabu	42	42	42	42	42	42	42	42	42	42	42	42	504	507		42	42	42	42	168
Chrysler Realty Co.	11,515	11,515	11,515	11,515	11,515	11,515	11,515	53,875	11,515	11,515	11,515	11,515	180,540	138,180	(C)	11,515	11,515	11,515	11,515	46,060
M. Dyer & Sons	-	-	2,436	-	-	2,436	-	-	2,436	-	-	2,436	9,744	9,742		-	-	2,436	-	2,436
Market City Ltd.	854	854	854	854	854	854	854	854	854	854	854	854	10,248	10,248		854	854	854	854	3,416
Kenneth Roy Gfroerer	160	160	160	160	160	160	160	160	160	160	160	160	1,920	1,920		160	160	160	160	640
High Technology Development Corporation	5,334	5,334	14,363	-	-	-	-	41,033	(6,624)	6,623	6,623	6,623	79,309	16,002	(B)	6,623	6,623	6,623	6,623	26,492
Hawaii Natural Energy Institute	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	31,560	31,560		2,630	2,630	2,630	2,630	10,520
Total													606,223	443,790						

Notes:

(A): Beginning June 2007, total square footage occupied by HEI will decrease due to HEI Accounting and Treasury departments relocating to another office building. Accordingly, monthly lease rent will decrease from $23,342 to approximately $14,140. Refer to the Company's June 2007 update testimony for B. Tamashiro (T-13) and the Company's response (T-13) to CA-IR-299 for more information.

(B): The variance between 2006 recorded versus 2007 Test Year is primarily due to the 2007 Test Year including 3 months of rent from the lessee due to HECO's intention to terminate the lease in April 2007 in order to use the Keawe property for warehouse and yard space.

(C): The variance between 2006 recorded versus 2007 Test Year is primarily due to the misposting of $42,360 of cash receipts in August 2006 unrelated to the Chrylser Realty lease.

CA-IR-383

Ref: HECO-1302, (Parking, Telecom Rent and Other Revenues).

Regarding each of the listed "Parking, Telecom Rent and Other" line items, please provide the following information:

a. The starting and ending dates of each underlying license or lease agreements.

b. Monthly amounts payable to HECO in connection with each of the agreements set forth in your response to part (a) of this information request.

c. Provide a schedule of monthly recorded revenues by in each listed category for 2006 and 2007, to date, with comparisons to related amounts included in the test year for each listed item.

HECO Response:

a. The starting and ending dates of the master lease agreements contained in the Telecom Rent line item is as follows:

Telecom	Start Date	End Date	2007 Monthly Avg. Payable
AT&T	Dec 13, 1996	Dec 12, 2021	$ 161
Time Warner	Dec 28, 2005	Dec 27, 2015	20
Pacific Lightnet	Dec 3, 1996	Mar 25, 2016	12,325
T-Mobile	Mar 5, 2002	Mar 4, 2012	3,155

The Parking revenues line item refers to employee parking revenues. Employees pay their parking dues on a monthly basis and are not required to enter into a formal or separate parking agreement with the Company. However, employees are required to adhere to the Company's general parking rules and regulations.

As mentioned in B. Tamashiro's testimony on page 39 of HECO T-13, other revenues line item contains revenues from: 1) the reimbursement of minor or incidental engineering

services provided to customers under the Company's Minor T&D Customer programs, and 2) the amortization of the Iolani Court Plaza lease premiums. Revenues under the Company's Minor T&D Customer programs are recorded upon customer billing. See P. Nanbu's testimony at page 58 of HECO T-10 for amortization terms of the Iolani Court Plaza lease premiums.

b. See response to a. above.

c. Refer to Attachment 1.

CA-IR-383
Attachment 1

Line Item per HECO-1312	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06	Dec-06	Recorded 2006 Total	Test Year 2007	Jan-07	Feb-07	Mar-07	Apr-07	Recorded 2007 YTD
Parking Revenues	21,948	21,245	20,763	21,343	21,033	21,253	23,713	21,193	21,108	21,450	21,330	21,253	257,628	261,000	21,610	21,050	21,625	21,298	85,583
Telecom Rent	12,319	32,558	11,956	12,319	12,319	12,319	12,319	12,319	12,319	12,319	12,319	15,936	171,319	214,000	15,325	12,325	56,715	12,325	96,690
Other - Minor T&D Customer Program	(2,718)		2,860	50,303		89,537		3,600					143,582	73,000	1,365	2,165	-	23,655	27,186
Other - Iolani Court Plaza	305	303	303	301	301	301	301	301	301	301	301	301	3,622	4,000	301	301	301	301	1,204
Total Parking, Telecom Rent, and Other													576,150	552,000					

CA-IR-384

Ref: HECO WP-1502, page 2; Response to CA-IR-25, page 9 (Interest Expense/Deduction).

According to the 2006 per books income statement, HECO incurred "Interest on Long Term Debt, Amort on Net Bond Prem & Exp, Interest to Assoc Cos. and Other Interest Charges" that totaled $35,164,165. Please provide the following:

a. Explain each known reason why total "Net Interest Expense" on WP-1502, page 2 is $4.6 million lower than recorded interest in 2006.

b. Provide explain how ratepayers are afforded the tax deductions associated with bond premium and expense costs under the Company's methodology to calculate tax deductible interest expense for ratemaking purposes.

c. Provide a detailed monthly statement of actual HECO Interest Charges in the format used for financial reporting for each available month of 2007, to-date.

d. In the event the Company intends to update rate base inputs and the estimated 12/31/2006 capital structure rate case values and/or the estimated 2007 sources of uses of cash values sponsored by HECO T-19, please provide corresponding updated WP-1502 interest deduction calculations.

HECO Response:

a. See page 3 of this response for a comparative schedule. Net interest expense on HECO-WP-1502 includes AFUDC debt of $2,688,018. Interest expense per the income statement does not include AFUDC debt. In March 2007, HECO borrowed proceeds (up to $100 million) from the issuance of special purpose revenue bonds. The proceeds will be used to finance capital expenditures, including reimbursement to the electric utilities for previously incurred capital expenditures which, in turn, will be used to repay short-term borrowings. Therefore, interest on short-term debt will substantially decrease in 2007, while interest on long-term debt will increase slightly for the new 2007 revenue bond issuance.

b. Bond premiums are deductible when incurred for tax purposes. For book and regulatory purposes, these costs are amortized into income. This amount is shown on page 3 of this

response on the line entitled "Amortization & Ins Prem."

c. See page 4 of this response. Page 4 contains confidential financial information, and will be submitted pursuant to Amended Protective Order No. 23378, dated June 4, 2007.

d. The Company does not plan to update interest expense.

	A DIRECT TY 2007	B ACTUAL 2006	A - B Difference
Interest	27,667,000	24,916,279	2,750,721
Amortization & Ins Prem	1,600,000	1,378,419	221,581
Interest Expense on Long-Term Debt	29,267,000	26,294,698	2,972,302
Interest Expense on Short-Term Debt	1,948,550	7,015,171	(5,066,621)
Interest Expense on Hybrid Securities	2,059,000	2,050,516	8,484
Other items reflected in 2006 actual:			
Interest on Keyman Insurance		656,711	(656,711)
Interest on Customer Deposit		353,491	(353,491)
Int Assoc. Co		39,106	(39,106)
Other Int Exp - Primarily RAR		(1,245,528)	1,245,528
Subtotal	33,274,550	**35,164,165**	(1,889,615)
Less: AFUDC Debt	(2,688,018)	(1,816,338)	(871,680)
NET INTEREST EXPENSE	**30,586,532**	33,347,827	(2,761,295)

**Confidential Information Deleted
Pursuant to Amended Protective Order
No. 23378**

Page 4 contains confidential information and is being provided subject to
Amened Protective Order No. 23378.

CA-IR-385

Ref: Response to CA-IR-28, Confidential page 3 (Schedule C, line 18 Deduction).

The HECO tax return reflects an adjustment at line 18 of Schedule C. Please explain the IRC code/regulation support for this special deduction and indicate how it has been treated for ratemaking purposes by HECO, MECO and HELCO, explaining the basis for such treatment.

HECO Response:

IRC §247 allows a deduction for dividends paid on certain preferred stock of public utilities. In this case, "preferred stock" refers to stock issued before October 1, 1942. Under IRC §247(b)(2)(B), stock issued on or after October 1, 1942 shall be deemed to have been issued before October 1, 1942 if it was issued to refund or replace bonds, debentures or other preferred stock issued before that date, but only to the extent that the par or stated value of the new stock does not exceed the par, stated, or face value of the old stock. The tax effect of this deduction has not been considered for ratemaking purposes and will be factored into our income tax calculation at the next opportunity. HELCO and MECO do not have preferred stock qualifying for this special deduction.

Internal Revenue Code

§ 247 Dividends paid on certain preferred stock of public utilities.

(a) Amount of deduction.
In the case of a public utility, there shall be allowed as a deduction an amount computed as follows:

(1) First determine the amount which is the lesser of—

(A) the amount of dividends paid during the taxable year on its preferred stock, or

(B) the taxable income for the taxable year (computed without the deduction allowed by this section).

(2) Then multiply the amount determined under paragraph (1) by the fraction—

(A) the numerator of which is 14 percent, and

(B) the denominator of which is that percentage which equals the highest rate of tax specified in section 11(b) .

For purposes of the deduction provided in this section , the amount of dividends paid shall not include any amount distributed in the current taxable year with respect to dividends unpaid and accumulated in any taxable year ending before October 1, 1942. Amounts distributed in the current taxable year with respect to dividends unpaid and accumulated for a prior taxable year shall for purposes of this subsection be deemed to be distributed with respect to the earliest year or years for which there are dividends unpaid and accumulated.

(b) Definitions.
For purposes of this section and section 244 —

(1) Public utility.
The term "public utility" means a corporation engaged in the furnishing of telephone service or in the sale of electrical energy, gas, or water, if the rates for such furnishing or sale, as the case may be, have been established or approved by a State or political subdivision thereof or by an agency or instrumentality of the United States or by a public utility or public service commission or other similar body of the District of Columbia or of any State or political subdivision thereof.

(2) Preferred stock.

(A) In general. The term "preferred stock" means stock issued before October 1, 1942, which during the whole of the taxable year (or the part of the taxable year after its issue) was stock the dividends in respect of which were cumulative, limited to the same amount, and payable in preference to the payment of dividends on other stock.

(B) Certain stock issued on or after October 1, 1942. Stock issued on or after October 1, 1942, shall be deemed for purposes of this paragraph to have been issued before October 1, 1942, if it was issued to refund or

replace bonds or debentures issued before October 1, 1942, or to refund or replace other preferred stock (including stock which is preferred stock by reason of this subparagraph or subparagraph (D)), but only to the extent that the par or stated value of the new stock does not exceed the par, stated, or face value of the bonds or debentures issued before October 1, 1942, or the other preferred stock, which such new stock is issued to refund or replace.

(C) Determination under regulations. The determination of whether stock was issued to refund or replace bonds or debentures issued before October 1, 1942, or to refund or replace other preferred stock, shall be made under regulations prescribed by the Secretary.

(D) Issuance of stock. For purposes of subparagraph (B), issuance of stock includes issuance either by the same or another corporation in a transaction which is a reorganization (as defined in section 368(a)) or a transaction subject to part VI of subchapter O as in effect before its repeal (relating to exchanges in SEC obedience orders), or the respectively corresponding provisions of the Internal Revenue Code of 1939.

CA-IR-386

Ref: Response to CA-IR-28, Confidential page 8 (Alternative Minimum Tax).

Please explain whether alternative minimum taxes have any impact upon HECO's asserted ratemaking income tax expenses or its accumulated deferred income tax balances recognized in rate base. If your response is affirmative, please explain and quantify each such impact and describe the basis for such treatment of AMT.

HECO Response:

For ratemaking purposes, HECO assumes that it is not subject to Alternative Minimum Taxes ("AMT"), and income tax expense and accumulated deferred income tax balances recognized in rate base do not assume any AMT liability, either in the test year or prior years.

CA-IR-387

Ref: HECO-WP-1502, page 2; Responses to CA-IR-303 and CA-IR-307, (AFUDC Debt).

a. Please explain whether the procedures employed to estimate the debt component of the AFUDC rate (multiplication by the debt ratio) on WP-1502 are reasonable in light of how the AFUDC Rate of 8.3167% is calculated.

b. Provide an updated calculation of test year interest deduction amounts as on WP-1502, including AFUDC updates as necessary, reflective of each adjustment to the proposed capital structure/costs or to capital spending that is proposed to be made by HECO (see CA-IR-307).

HECO Response:

a. The procedures employed to estimate the debt component of the AFUDC rate are reasonable in light of how the AFUDC rate is calculated. The AFUDC rate is the weighted average of the costs of all the components of capital including common equity, preferred stock, hybrid preferred stock, revenue bonds and short term borrowings. The debt ratio of 30.72% represents that portion of the AFUDC rate related to Company debt, including hybrid debt, which finances the Company's capital project costs for the test year. See pages 3 and 4 of this response for the details of the AFUDC rate calculation.

b. The test year interest expense has not been updated since there have been no changes to the cost of capital in this case. As indicated in the response to CA-IR-307, the HECO capital budget has been updated. This update utilized an AFUDC rate used for financial recording purposes, which was adjusted for the 2006 charge to equity for the recognition of HECO's Pension and OPEB liability under SFAS 158 (See Ms. Sekimura's direct testimony T-19 on pages 27 through 33).

As a result of this charge to equity, the total AFUDC rate decreased and the ratio of AFUDC debt to total AFUDC increased. These two factors essentially offset each other,

and the difference between the original and revised adjustments to interest expense was only $27,000. The schedule on page 5 of this response shows the revised debt portion of AFUDC adjustment to interest expense.

HAWAIIAN ELECTRIC CO., INC.
AFUDC RATE
TEST YEAR 2007

Average Balances		Reference
Common Equity	682,443	estimate made at beginning of 2006
Preferred Stock	22,293	HECO-1905
Hybrid Preferred Stock	30,000	rounded from $31,546 HECO-1904
New financing	100,000	estimate made at beginning of 2006
Revenue Bonds (1998A)	42,580	HECO-1903
-1999B	30,000	HECO-1903
-1999D	16,000	HECO-1903
-2000	46,000	HECO-1903
-1993	50,000	HECO-1903
-2005A	40,000	HECO-1903
-1996A	48,000	HECO-1903
-1996B	14,000	HECO-1903
-1997A	50,000	HECO-1903
-1999C	35,000	HECO-1903
- 2002A	39,695	rounded to $40,000 HECO-1903
- 2003B	40,000	HECO-1903
S/T Borrowings	0	estimate made at beginning of 2006
Total Capitalization	1,286,011	

Capitalization Ratios	
Common Equity	53.1%
Preferred Stock	1.7%
Hybrid Preferred Stock	2.3%
New financing	7.8%
Revenue Bonds (1998A)	3.3%
-1999B	2.3%
-1999D	1.2%
-2000	3.6%
-1993	3.9%
-2005A	3.1%
-1996A	3.7%
-1996B	1.1%
-1997A	3.9%
-1999C	2.7%
- 2002A	3.1%
- 2003B	3.1%
S/T Borrowings	0.0%
Total Capitalization	100.0%

HAWAIIAN ELECTRIC CO., INC.
AFUDC RATE
TEST YEAR 2007

Avg Rate/Req Return	
Common Equity	10.70%
Preferred Stock	4.85%
Hybrid Preferred Stock	6.50%
New financing	6.00%
Revenue Bonds (1998A)	4.95%
-1999B	5.75%
-1999D	6.15%
-2000	5.70%
-1993	5.45%
-2005A	4.80%
-1996A	6.20%
-1996B	5.88%
-1997A	5.65%
-1999C	6.20%
- 2002A	5.10%
- 2003B	5.00%
S/T Borrowings	4.800%

Weighted After-Tax Cost	
Common Equity	5.68%
Preferred Stock	0.08%
Hybrid Preferred Stock	0.15%
New Financing	0.47%
Revenue Bonds (1998A)	0.16%
-1999B	0.13%
-1999D	0.08%
-2000	0.20%
-1993	0.21%
-2005A	0.15%
-1996A	0.23%
-1996B	0.06%
-1997A	0.22%
-1999C	0.17%
- 2002A	0.16%
- 2003B	0.16%
S/T Borrowings	0.00%
Total After-Tax Cost	8.3167%
Split: Equity	0.6928
Debt	0.3072

HAWAIIAN ELECTRIC CO., INC.
CALCULATION OF INTEREST EXPENSE FOR USE IN INCOME TAX EXPENSE CALCULATION FOR TEST YEAR 2007

Interest Expense on Long-Term Debt	29,267,000
Interest Expense on Short-Term Debt (A)	1,948,550
Interest Expense on Hybrid Securities	2,059,000
Less: AFUDC Debt (B)	(2,661,026)
NET INTEREST EXPENSE	30,613,524

(A) Average Short-Term Debt $38,971,000 x 5.0% = $1,948,550 (Per HECO-1901)

(B) AFUDC Debt Computation:

AFUDC Incurred	8,132,719
Ratio of Debt to Total	32.72%
	2,661,026

CA-IR-388

Ref: Original HECO-WP-1601, pages 4-6 & CA-IR-307, Attachment 1, pages 4-6 (2007 Plant Additions).

CA-IR-307 (Attachment 1, pages 4-6) provides an update of 2007 plant addition forecast by project. A comparison of these revised Company workpapers with the original workpapers identified five (5) construction projects expected to be completed during 2007 in excess of $900,000 that were not included 2007 additions in HECO's original test year forecast. Two projects (i.e., P0000640 & P0001047) appear to have been delayed from 2006 to 2007 while three appear to be new projects (i.e., P0001321, P0001356 & P0001364). Please provide the following:

a. For each project, please provide the most current and complete Project Initiation Authorization (PIA) or Project Identification Form (PIF) packet.

b. If the response to part (a) above does not contain project feasibility studies, cost savings estimates, estimated construction and project completion dates, identification of retirements or related costs of removal, please provide the following:

   1. Does such information exist for each of the projects in addition to the information requested in part a. above?

   2. If so, please provide such information for each of the projects in addition to the information requested in part a. above.

   3. If not, please explain why such information is not available for each project.

HECO Response:

a. Attached are the Project Identification Forms (PIF) for two of the five construction projects expected to be completed during 2007 in excess of $900,000 that were not included in 2007 additions in HECO's original test year forecast. PIFs for the three remaining projects were submitted in Attachment 5 of the Company's response to CA-IR-307.

Project#	**Project Title**	**PIF**
P0001321	K1 Kahe 11&12 ACW Heat Exchange	Attachment 1
P0001356	Mamala Phase 2 – Mamala	Attachment 2

b. The need for a feasibility study or retirement estimates is dependent on the complexity, requirements, or constraints that may be associated with a project. For example, if it is anticipated that a project appears technically complex, then a study or analysis may be warranted. The study would typically address the need for the project, feasibility of implementing the project in terms of scope, timing, constructability, and permitting, and may evaluate alternatives and associated cost savings. If a project is small scale, routine, or needed for an emergency situation, a study is usually not conducted. In addition, for customer requested projects like Mamala Phase 2, where the customer is paying the entire cost, no studies are conducted to evaluate the feasibility or cost savings.

1. & 2. The following is a listing of documentation related to project feasibility studies or cost savings estimates:

Project#	**Project Title**	**Documentation**
P0000640	H0 Honolulu Demin Upgrade	Honolulu Demineralizer Evaluation of Alternatives (Attachment 3)
P0001047	HECO Vault 15 Relocate	A feasibility and cost savings study was not done because this project involves the installation of standard transformers and distribution cables and did not require major government permits or approvals.
P0001321	K1 Kahe 11&12 ACW Heat Exchange	Initial Cause Assessment by HECO's subject matter expert, Mike DeCaprio. (Attachment 4)
P0001364	Ewa Nui & Kamokila Ckt Rearrange	Ewa Nui and Kamokila 12kV Circuit Rearrangements Project Initiation Meeting Minutes and Area Reviews for Ewa Nui Kamokila Project (Attachment 5)

3. Not applicable.

GENPP 10-14
YA/G

INTEROFFICE CORRESPONDENCE

Hawaiian Electric Company

July 13, 2006

Route in Turn: L. Ornellas
D. Giovanni
T. Simmons
Property Accounting (KS3-AT)
Management Accounting (KS3-KC)

From: B. Munger

Subject: Kahe Nos. 11 & 12 Auxiliary Cooling Heat Exchanger Replacements Project Initiation and Authorization Request

Please find attached for your review and approval a Project Identification Form (PIF), Production Change Request (PCR), and Pillar files to **initialize** and **authorize** replacements of the Kahe Nos. 11 & 12 Auxiliary Cooling Water (ACW) heat exchangers (chillers):

Project	Pillar Temp. I.D.	Cost	Service Date
Kahe 11 & 12 ACW Heat Exch	GPasco54_	$807,000	February 2007

The existing Kahe Nos. 11 & 12 ACW chillers are undersized and one chiller cannot adequately handle the heat loads from Kahe 1 & 2 as originally designed. Recent single-chiller operation resulted in fretting damage due to flow induced vibrations. The ACW chillers have already been retubed once, and heat exchanger experts have informed HECO that it is not practical to retube again without risk of tubesheet failure. This project involves replacing the two chillers with properly sized and upgraded heat exchangers. The structural supports for this equipment will also be strengthened.

The chillers are recognized property units (Account 314-K01-035-03). To include this unbudgeted project in the 5-year capital budget and be within the approved forecast limits, lower priority projects may be cancelled or deferred.

If the PIF is acceptable, please initial or sign as appropriate and forward the attached forms for further processing. If there are any questions or comments, please contact Michael DeCaprio at extension 4203.

MANAGEMENT ACCOUNTING
JUL 26 2006

GFP:
Attachments

cc: J. Vaughn
G. Oliva
A. Yagi
J. Itai
M. DeCaprio
M. Yuen (w/att)

INITIALIZE &

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

Project Title: Kahe 11 & 12 ACW Heat Exch
Plant Addition Date: 2007-02
Project Number: GPASCO54_
(Temporary)
Commitment Date: 2006-07
Primary Corporate Goal: Capital Exp
Stategic Plan Linkage: Reliable & Adequate Pwr Sup
(Primary)
Impact on Goal: Low

Project Forecast (Thousand $)

(Attach the "PR9105-P: For PIF" report obtained from the estimators' Pillar file.)

Prior Years	2006	2007	2008	2009	2010	Future Years	Total
$0	$543	$264	$0	$0	$0	$0	$807

Assessment Factors

Compliance	Competitive Advantage	Financial Impact	Reliability	Corporate Image	Total Score
0	0	0	33	0	33

Purpose/Objectives:

Provide reliable and properly sized Kahe Nos. 11 & 12 Auxiliary Cooling Water (ACW) heat exchangers (chillers).

Scope Description:

Replace the existing Kahe Nos. 11 & 12 ACW chillers with properly sized and upgraded heat exchangers. Strengthen the existing structural supports for this equipment.

PU - Auxiliary Cooling System
Heat exchanger Device (Chiller)

INITIALIZE &

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

Resource Needs:

Refer to attached Pillar Project Labor Hour report "PR9105-PH: For PIF (labor hours)".

Justification:

Kahe Unit 1 was constructed with two ACW chillers which were commissioned in 1963. These two heat exchangers utilize seawater as a cooling medium to remove heat from treated distilled water in the auxiliary cooling water system. This treated fresh water cools critical plant components including the hydrogen coolers, turbine lube oil coolers, air compressors and aftercoolers, air preheater lube oil coolers, boiler feed pumps, heater drip pumps, sample coolers, furnace doors, and bearings for the boiler forced draft and gas recirculation fans.

The ACW chillers were designed with each chiller having the capacity to provide auxiliary cooling of both Kahe Units 1 & 2. It was found, however, that in practice two chillers are always needed to cool both generating units. When a chiller is taken out of service, such as for tube cleaning or inspection, the remaining chiller lacks adequate capacity and components subsequently overheat. Recently, after extended single chiller operation, audible noise was detected from the operating chiller. Examination revealed flow-induced vibrations had excited the internal tubes and caused fretting damage.

Replacement of the damaged chillers with properly sized heat exchangers are vital to reliable operation of two baseloaded generating units.

INITIALIZE &

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

Relation to overall management operational objectives and consistency with IRP:

The Kahe Nos. 11 & 12 ACW Heat Exchangers upgrade project supports HECO's IRP-2 objective No. 5.6, which is to "improve the quality of electrical products and services." Since a key consideration of this objective is to "maintain generating system reliability," the Kahe Nos. 11 & 12 ACW Heat Exchangers upgrade project supports this objective since it will help to ensure maximum reliability and availability for Kahe Units 1 and 1.

Issues, Impacts, Considerations:

These two existing ACW chillers have already been re-tubed once in the field. Heat exchanger experts have informed HECO that it is not practical to retube these type of heat exchangers again without risk of tubesheet damage.

Project costs are based on replacement ACW chillers with sufficient cooling capacity and added internal tube supports to prevent fretting during single-chiller operations. Preliminary review of the existing foundation indicates that strengthening of the support structure will be necessary due to the heavier weight of these upgraded chillers. The structural activities are also reflected in the project scope and cost.

This work needs to be performed during the Kahe 1 outage scheduled for November 2006 thru February 2007.

INITIALIZE &

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

Contributions:

Contributions in aid of construction (CIAC):

- **In Kind** NONE

- **In Cash** NONE

Cash Advance NONE

Cost Sharing
(under HECO Policy UG Lines, October 2000)

NONE

Other type of payment (cash, non-cash) by outside party

NONE

INITIALIZE &

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has not been established in MIMS

PUC Approved: ◯ Approval Required ● Not Required

◯ Approved, Date of Decision & Order: - - Docket Number:

◯ Awaiting PUC Approval, Application Filed - -

Authorization for: ☐ Engineering ☐ Materials ☐ Construction

Initialize &

Approval Option: Authorize expenditures that are unbudgeted

Submitted by: GUY PASCO **Phone/Ext #:** 4451

Originator's Name: M. DeCaprio

Responsible Estimator: G. Pasco
(Pillar UserID)

Resp. Estimator Dept: Power Supply Engineering
(Pillar Department Folder)

Project Manager: M. DeCaprio

Date: 07/13/2006

Initialize &

Required Approvals to Authorize a Project:

7/17/06

Responsible Manager **Date**

7/18/06

Responsible Vice President **Date**
(not required for budgeted projects $1 million and less)

VP, Government and Community Affairs **Date**
(not required if PUC approval is obtained

7/24/06

Controller **Date**

If project exceeds $5 million ($1M unbudgeted), additional approvals are required. Please call Management Accounting at x7729

*Project #	Project	*In...	Cost Categ...	Curr Upd New Total $	Update 2006 $	FY07 Update06	FY08 Update06	FY09 Update06	FY10 Update06
GPasco54_	Temp Proj GPasco54_	_	AFUDC	$18,260	$8,069	$10,191	$0	$0	$0
			MATERIAL	$75,570	$57,024	$18,546	$0	$0	$0
			OVERHEADS	$31,815	$21,540	$10,274	$0	$0	$0
				$125,645	$86,633	$39,011	$0	$0	$0
		NI	LABOR	$28,378	$15,798	$12,580	$0	$0	$0
			MATERIAL	$585,000	$403,000	$182,000	$0	$0	$0
			O/S SVCS	$58,725	$29,000	$29,725	$0	$0	$0
				$672,103	$447,798	$224,305	$0	$0	$0
		NR	LABOR	$8,813	$8,813	$0	$0	$0	$0
				$8,813	$8,813	$0	$0	$0	$0
				$806,561	$543,244	$263,317	$0	$0	$0
				$806,561	$543,244	$263,317	$0	$0	$0

*Project #	Project	*RA #	*Lbr Class	YTD Mar 06 Actual Hrs	FY06 Update06	FY07 Update06	FY08 Update06	FY09 Update06	FY10 Update06	FY11 Update11
GPasco54_	Temp Proj GPasco54_	PBT	B_STRDFT	0	8	0	0	0	0	0
GPasco54_	Temp Proj GPasco54_	PBT	B_STRENG	0	24	0	0	0	0	0
GPasco54_	Temp Proj GPasco54_	PIP	I_PPPLAN	0	90	10	0	0	0	0
GPasco54_	Temp Proj GPasco54_	PIT	I_TVLBLR	0	540	300	0	0	0	0
GPasco54_	Temp Proj GPasco54_	PIT	I_TVLTCH	0	10	10	0	0	0	0
GPasco54_	Temp Proj GPasco54_	PYG	Y_PPDRAF	0	2	2	0	0	0	0
GPasco54_	Temp Proj GPasco54_	PYM	Y_PPMECH	0	5	3	0	0	0	0
GPasco54_				0	679	325	0	0	0	0
				0	679	325	0	0	0	0

PRODUCTION CHANGE REQUEST (PCR) FORM

District:	P-HECO
Temporary Project Number:	GPASCO54_
Project Number:	
Project Title: (28 characters)	Kahe 11 & 12 ACW Heat Exch
Short Project Title: (10 characters)	K1 ACW HXs
Originator Employee's Number:	34591
Person Assigned To:	M. DeCaprio
Person Assigned to Employee Number:	34591
Responsibility Area:	PYM
Activity:	211
Location:	K01
Indicator:	NI mk 7/24/06
Apply AFUDC (yes or no):	Yes mk
Existing Grandparent Project Number: or **New Grandparent Project Description:**	
Pillar Temporary Projects or 5th Segment Projects to link to Grandparent Project above:	
Plant Addition Date:	2007-02
Plant Functional Category:	Steam Production mk
Project or Program:	Project

For Admin use only:
Date updated MIMS Prod files: _____
Copy given to Pillar Admin: _____

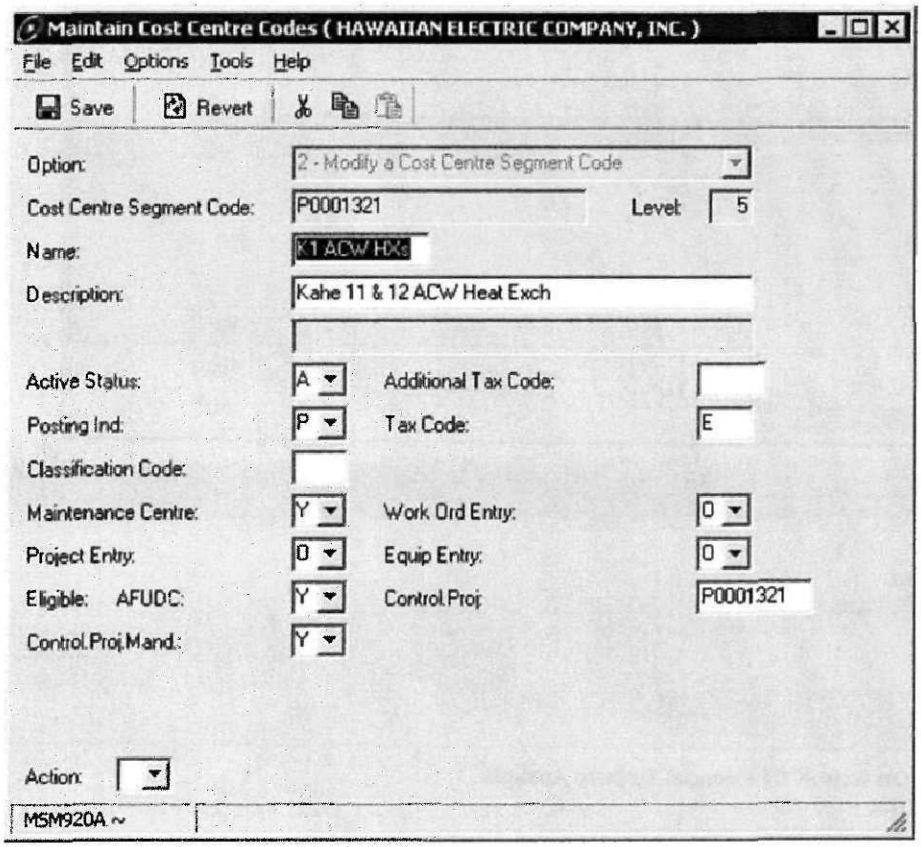
AN-A

Date: 07/13/2006

Shimabukuro, Gail

From: Miyamoto, Allison on behalf of Financial Systems Analysts
Sent: Wednesday, July 19, 2006 3:58 PM
To: Shimabukuro, Gail; Okazaki, Lori
Cc: Financial Systems Analysts
Subject: FW: Scan from a Xerox WCP-C2636 prnt260 KS3-Copy rm
Attachments: Scan001.PDF; FW: Kahe 11 & 12 ACW Heat Exch PIF

Completed, please note that employee number was corrected as per the attached email.



Modify Project - General Information (HAWAIIAN ELECTRIC COMPANY, INC.)

File Edit Tools Help

Save | Revert

Project Number: P0001321 Kahe 11 & 12 ACW Heat Exch

Project Details | Project Costing | Project Codes

Authorised By:

Authorised Date:

Project Approval No:

Parent Project Number:

Originator: 0000034591 MANASAS,CLINETTE N

Date Raised: 7/18/2006

Assigned To: 34591

Action:

MSM660B ~ 0757 - EMPLOYEE TERMINATED

Allison Miyamoto
Financial Systems Analyst
HECO - General Accounting
email: allison.miyamoto@heco.com
Office: 808.543.7992
Fax: 808.203.1638

-----Original Message-----
From: prnt260wcp2636@KS3-copy-rm [mailto:prnt260wcp2636@KS3-copy-rm]
Sent: Tuesday, July 18, 2006 12:30 PM
To: Financial Systems Analysts
Subject: Scan from a Xerox WCP-C2636 prnt260 KS3-Copy rm

Please open the attached document. It was scanned and sent to you using a WCP-C2636 prnt260 SK3-Copy rm

Sent by: Guest [prnt260wcp2636@KS3-copy-rm] Number of Images: 1 Attachment File Type: PDF

WorkCentre Pro Location: KS307 Copy/Printer Room Device Name: prnt260 KS3 Donna H. x7952 Device Serial Number: TFN674199

For more information on Xerox products and solutions, please visit http://www.xerox.com

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Project Title: Mamala Phase 2

Plant Addition Date: 2007-10

Project Number: GRAND01
(Permanent)

Commitment Date: -

Primary Corporate Goal: Major Cust Rel

Stategic Plan Linkage: Customer Connectivity & Choi
(Primary)

Impact on Goal: High

Project Forecast (Thousand $)

(Attach the "PR9105-P: For PIF" report obtained from the estimators' Pillar file.)

Prior Years	2006	2007	2008	2009	2010	Future Years	Total
$0	$360	$1,017	$0	$0	$0	$0	$1,377

Assessment Factors

Compliance	Competitive Advantage	Financial Impact	Reliability	Corporate Image	Total Score
0	30	50	0	24	104

Purpose/Objectives:

Support the Air Force's efforts to install new switchgear at the Hickam Front Switching Station.

Support the Air Force's request to purchase and install the second transformer and associated switchgear equipment for the Phase 2 work on the Mamala Substation.

NOV 5 2006

Scope Description:

Extend the HECO 11.5kV feeders at the Hickam Substation from the existing transformers to the new switchgear buses in the new extended Air Force Front Switching Station adjacent to the Hickam Substation. Work shall also include provisions for a future protection scheme, and the design and installation of associated metering work for the new switchgear buses.

Purchase and install the second transformer and associated switchgear for the Mamala Substation to support load increases as established by the Air Force.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Resource Needs:

See attached Pillar files.

Justification:

The Air Force needs to upgrade its electrical system at Hickam Air Force Base in anticipation of the C-17 cargo plane transport mission and related projects. Presently, Hickam's load is approximately 26MVA. The three existing transformers at the Hickam Substation provide approximately 30MVA of transformer capacity (including redundant capacity) under normal conditions. (Note: One of three transformers is for redundancy). By the year 2007, the load for Hickam Air Force Base is estimated to increase by 13MVA to 39MVA.

In the event that one of the three transformers at Hickam Substation fails, the two remaining transformers do not have adequate capacity to serve the entire base load of 39MVA. Therefore, in this event, additional transformer capacity is required elsewhere (Mamala Substation) to serve the ultimate load at Hickam Air Force Base.

The Air Force plans to have both the Hickam and Mamala Substations able to carry the entire Hickam base load individually, in the event that either substation is totally disabled.

The second transformer at the Mamala Substation will provide a redundant source and capacity in case of emergency or peak loading.

The work associated with this PIF is to support the electrical upgrades necessary to address the anticipated load increases as projected by the Hickam Air Force Base.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Relation to overall management operational objectives and consistency with IRP:

This project is consistent with the Company's IRP. Transmission and distribution (T&D) projects generally are not explicitly considered in the IRP process. However, HECO's IRP assumes that HECO's transmission and distribution system will continue to operate reliably. The general assumption is that new customers will be connected to the system in accordance with HECO's plans for its transmission and distribution system. In this case, HECO is extending it's 11.5kV feeders to the Air Force's new switchgear, and installing a second transformer and switchgear at the request of the Air Force.

Issues, Impacts, Considerations:

The entire Mamala Phase 2 project consists of 2 distinct subprojects. The Hickam subproject and the Mamala subproject. The Hickam subproject consists of extending the HECO 11.5kV feeders at the Hickam Substation to the new switchgear buses in the new extended Air Force Front Switching Station. The Mamala subproject involves the installation of a second 10/12.5MVA transformer at the Mamala Substation.

This grandparent PIF covers both the Hickam subproject work (extending 11.5kV feeders to new switchgear buses), and the purchase and installation of the second transformer and associated switchgear for the Mamala subproject.

Due to Air Force administrative delays in funding approvals, the Air Force requested that the Mamala Phase 2 project be split into subprojects to assist in maintaining project timeframes to meet anticipated critical load projections.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Contributions:

Contributions in aid of construction (CIAC):

- **In Kind**	$1,376,620.00	GET is calculated at 4.166% in 2006 and 4.712% in 2007.
GET Included	$62,902.00	The Air Force will be paying for the entire project costs.

- **In Cash** NONE

Cash Advance NONE

Cost Sharing
(under HECO Policy UG Lines, October 2000)

NONE

Other type of payment (cash, non-cash) by outside party

NONE

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

PUC Approved: ◯ Approval Required ● Not Required

◯ Approved, Date of Decision & Order: - - Docket Number:

◯ Awaiting PUC Approval, Application Filed - -

Authorization for: ☐ Engineering ☐ Materials ☐ Construction

Approval Option: Authorize expenditures that are unbudgeted 11-3-06

Submitted by: Kathy Yonamine **Phone/Ext #:** 7194

Originator's Name: Kathy Yonamine

Responsible Estimator: Kathy Yonamine (Pillar UserID) **Resp. Estimator Dept:** Engineering (Pillar Department Folder)

Project Manager: Kathy Yonamine

Date: 10/18/2006

REVIEWED AND RECOMMENDED FOR APPROVAL:

10/25/2006
Chairman, CEM Core Group Date

10/26/06
Chairman, EDP Managers Group Date

Required Approvals to Authorize a Project:

10/26/06
Responsible Manager **Date**

10/30/06
Responsible Vice President **Date**
(not required for budgeted projects $1 million and less)

VP, Government and Community Affairs **Date**
(not required if PUC approval is obtained

11/3/06
Controller **Date**

If project exceeds $5 million ($1M unbudgeted), additional approvals are required. Please call Management Accounting at x7729

*Project #	Project	*In...	Cost Categ...	Curr Upd Total $	PTD 12/05 Act $	Update 2006 $	FY07 Update06	FY08 Update06	FY09 Update06	FY10 Update06	FY11 UPDATE11
KYonamin06_	Temp Proj KYonamin06_	_	MATERIAL	$65,061	0	$0	$65,061	$0	$0	$0	0
			OVERHEADS	$145,269	0	$16,331	$128,938	$0	$0	$0	0
				$210,330	0	$16,331	$194,000	$0	$0	$0	0
		NI	LABOR	$88,263	0	$10,860	$77,404	$0	$0	$0	0
			MATERIAL	$588,790	0	$0	$588,790	$0	$0	$0	0
			O/S SVCS	$156,753	0	$0	$156,753	$0	$0	$0	0
			OTHER	$1	0	$0	$0	$1	$0	$0	0
				$833,807	0	$10,860	$822,947	$1	$0	$0	0
				$1,044,138	0	$27,190	$1,016,946	$1	$0	$0	0
P0001319	Mamala Phase 2-Hickam	_	MATERIAL	$4,803	0	$4,803	$0	$0	$0	$0	0
			OVERHEADS	$58,040	0	$58,040	$0	$0	$0	$0	0
				$62,843	0	$62,843	$0	$0	$0	$0	0
		NI	LABOR	$90,040	0	$90,040	$0	$0	$0	$0	0
			MATERIAL	$58,623	0	$58,623	$0	$0	$0	$0	0
			O/S SVCS	$48,000	0	$48,000	$0	$0	$0	$0	0
			OVERHEADS	$69,826	0	$69,826	0	0	0	0	0
				$266,489	0	$266,489	$0	$0	$0	$0	0
		NR	LABOR	$1,261	0	$1,261	0	0	0	0	0
			OVERHEADS	$1,889	0	$1,889	0	0	0	0	0
				$3,150	0	$3,150	0	0	0	0	0
				$332,482	0	$332,482	$0	$0	$0	$0	0
				$1,376,620	0	$359,673	$1,016,946	$1	$0	$0	0

*Project #	Project	*Ind #	*RA #	*Lbr Class	Proj to Date Act Hrs	10/06-12/06 Update Hrs	FY07 Update06	FY08 Update06	FY09 Update06	FY10 Update06	FY11 UPDATE11	FY12 UPDATE11	FY13 UPDATE11	FY14 UPDATE11	FY15 UPDATE11	10/06-12/10 Curr Upd Hrs
KYonamin06_	Temp Proj KYonami...	NI	PBA	__BUOCB	0	0	24	0	0	0	0	0	0	0	0	24
KYonamin06_	Temp Proj KYonami...	NI	PBE	B_TNDDFT	0	0	40	0	0	0	0	0	0	0	0	40
KYonamin06_	Temp Proj KYonami...	NI	PBE	B_TNDENG	0	0	100	0	0	0	0	0	0	0	0	100
KYonamin06_	Temp Proj KYonami...	NI	PBP	B_PRJMGT	0	40	105	0	0	0	0	0	0	0	0	145
KYonamin06_	Temp Proj KYonami...	NI	PBT	__BUOCB	0	8	4	0	0	0	0	0	0	0	0	12
KYonamin06_	Temp Proj KYonami...	NI	PBT	B_STRDFT	0	20	20	0	0	0	0	0	0	0	0	40
KYonamin06_	Temp Proj KYonami...	NI	PBT	B_STRENG	0	40	12	0	0	0	0	0	0	0	0	52
KYonamin06_	Temp Proj KYonami...	NI	PBY	__BUOCB	0	0	24	0	0	0	0	0	0	0	0	24
KYonamin06_	Temp Proj KYonami...	NI	PBY	B_PROTEC	0	0	0	0	0	0	0	0	0	0	0	0
KYonamin06_	Temp Proj KYonami...	NI	PBY	B_SSENG	0	200	62	0	0	0	0	0	0	0	0	262
KYonamin06_	Temp Proj KYonami...	NI	PBY	B_SUBDFT	0	0	100	0	0	0	0	0	0	0	0	100
KYonamin06_	Temp Proj KYonami...	NI	PDF	D_PTM	0	0	40	0	0	0	0	0	0	0	0	40
KYonamin06_	Temp Proj KYonami...	NI	PDS	D_UGC...	0	0	268	0	0	0	0	0	0	0	0	268
KYonamin06_	Temp Proj KYonami...	NI	PRI	R_INSCRW	0	0	184	0	0	0	0	0	0	0	0	184
KYonamin06_	Temp Proj KYonami...	NI	PRI	R_INSENG	0	0	9	0	0	0	0	0	0	0	0	9
KYonamin06_	Temp Proj KYonami...	NI	PRI	R_INSSUP	0	0	9	0	0	0	0	0	0	0	0	9
KYonamin06_	Temp Proj KYonami...	NI	PRR	R_REL...	0	0	184	0	0	0	0	0	0	0	0	184
KYonamin06_	Temp Proj KYonami...	NI	PRR	R_RELENG	0	0	92	0	0	0	0	0	0	0	0	92
KYonamin06_	Temp Proj KYonami...	NI	PRR	R_RELSUP	0	0	14	0	0	0	0	0	0	0	0	14
KYonamin06_	Temp Proj KYonami...	NI	PRS	R_SUB...	0	0	728	0	0	0	0	0	0	0	0	728
KYonamin06_	Temp Proj KYonami...	NI	PRS	R_SUBENG	0	0	7	0	0	0	0	0	0	0	0	7
KYonamin06_	Temp Proj KYonami...	NI	PRS	R_SUBPLN	0	0	15	0	0	0	0	0	0	0	0	15
KYonamin06_	Temp Proj KYonami...	NI	PRS	R_SUBSUP	0	0	15	0	0	0	0	0	0	0	0	15
KYonamin06_	Temp Proj KYonami...	NI	PWX	W_MTE...	0	0	40	0	0	0	0	0	0	0	0	40
KYonamin06_	Temp Proj KYonami...	NI	PWX	W_MTE...	0	0	8	0	0	0	0	0	0	0	0	8
KYonamin06_	Temp Proj KYonami...	NI			0	308	2,104	0	0	0	0	0	0	0	0	2,412
P0001319	Mamala Phase 2-Hi...	NI	PBA	__BUOCB	15.00	17	0	0	0	0	0	0	0	0	0	17
P0001319	Mamala Phase 2-Hi...	NI	PBE	B_DISPLN	49.00	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI	PBE	B_TNDDFT	36.00	80	0	0	0	0	0	0	0	0	0	80
P0001319	Mamala Phase 2-Hi...	NI	PBE	B_TNDENG	174.00	41	0	0	0	0	0	0	0	0	0	41
P0001319	Mamala Phase 2-Hi...	NI	PBP	B_PRJMGT	188.50	20	0	0	0	0	0	0	0	0	0	20
P0001319	Mamala Phase 2-Hi...	NI	PBT	B_STRENG	28.00	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI	PBY	B_SSENG	493.00	11	0	0	0	0	0	0	0	0	0	11
P0001319	Mamala Phase 2-Hi...	NI	PBY	B_SUBDFT	0	16	0	0	0	0	0	0	0	0	0	16
P0001319	Mamala Phase 2-Hi...	NI	PBY	B_TCENGR	33.00	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI	PDF	D_PTM	3.00	37	0	0	0	0	0	0	0	0	0	37
P0001319	Mamala Phase 2-Hi...	NI	PDL	D_UGC...	24.50	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI	PDS	__TCS-ED	2.00	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI	PDU	D_UGC...	239.00	536	0	0	0	0	0	0	0	0	0	536
P0001319	Mamala Phase 2-Hi...	NI	PDU	R_CONSUP	0	31	0	0	0	0	0	0	0	0	0	31
P0001319	Mamala Phase 2-Hi...	NI	PRI	R_INSCRW	0	32	0	0	0	0	0	0	0	0	0	32
P0001319	Mamala Phase 2-Hi...	NI	PRI	R_INSENG	0	16	0	0	0	0	0	0	0	0	0	16
P0001319	Mamala Phase 2-Hi...	NI	PRI	R_INSSUP	0	8	0	0	0	0	0	0	0	0	0	8
P0001319	Mamala Phase 2-Hi...	NI	PRR	R_REL...	0	48	0	0	0	0	0	0	0	0	0	48
P0001319	Mamala Phase 2-Hi...	NI	PRR	R_RELENG	0	32	0	0	0	0	0	0	0	0	0	32
P0001319	Mamala Phase 2-Hi...	NI	PRR	R_RELSUP	0	16	0	0	0	0	0	0	0	0	0	16
P0001319	Mamala Phase 2-Hi...	NI	PRS	R_SUB...	0	104	0	0	0	0	0	0	0	0	0	104
P0001319	Mamala Phase 2-Hi...	NI	PRS	R_SUBENG	0	8	0	0	0	0	0	0	0	0	0	8
P0001319	Mamala Phase 2-Hi...	NI	PRS	R_SUBPLN	0	8	0	0	0	0	0	0	0	0	0	8
P0001319	Mamala Phase 2-Hi...	NI	PRS	R_SUBSUP	0	8	0	0	0	0	0	0	0	0	0	8
P0001319	Mamala Phase 2-Hi...	NI	PVL	__BUTCED	1.00	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI	PWX	W_MTE...	9.67	48	0	0	0	0	0	0	0	0	0	48
P0001319	Mamala Phase 2-Hi...	NI	PWX	W_MTE...	85.50	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NI			1,381.17	1,117	0	0	0	0	0	0	0	0	0	1,117
P0001319	Mamala Phase 2-Hi...	NR	PDL	D_UGC...	4.00	0	0	0	0	0	0	0	0	0	0	0
P0001319	Mamala Phase 2-Hi...	NR	PDU	D_UGC...	32.00	0	0	0	0	0	0	0	0	0	0	0

*Project #	Project	*Ind #	*RA #	*Lbr Class	Proj to Date Act Hrs	10/06-12/06 Update Hrs	FY07 Update06	FY08 Update06	FY09 Update06	FY10 Update06	FY11 UPDATE11	FY12 UPDATE11	FY13 UPDATE11	FY14 UPDATE11	FY15 UPDATE11	10/06-12/10 Curr Upd Hrs
P0001319	Mamala Phase 2-Hi...	NR			36.00	0	0	0	0	0	0	0	0	0	0	0
					1,417.17	1,425	2,104	0	0	0	0	0	0	0	0	3,529

PRODUCTION CHANGE REQUEST (PCR) FORM

District:	P-HECO
Temporary Project Number:	KYONAMIN06_
Project Number:	
Project Title: (28 characters)	Mamala Phase 2-Mamala
Short Project Title: (10 characters)	
Originator Employee's Number:	34332
Person Assigned To:	Kathy Yonamine
Person Assigned to Employee Number:	34332
Responsibility Area:	PBP
Activity:	417
Location:	OAH
Indicator:	NI mk 11/3/06
Apply AFUDC (yes or no):	No mk Project 100% funded by Air Force
Existing Grandparent Project Number: or **New Grandparent Project Description:**	
Pillar Temporary Projects or 5th Segment Projects to link to Grandparent Project above:	P0001319
Plant Addition Date:	2007-10
Plant Functional Category:	Distribution mk
Project or Program:	Project

For Admin use only:
Date updated MIMS Prod files: _____
Copy given to Pillar Admin: _____

AU-A

Date: 10/18/2006

Maintain Cost Centre Codes (HAWAIIAN ELECTRIC COMPANY, INC.)

File Edit Options Tools Help

Save Revert

Option:	2 - Modify a Cost Centre Segment Code		
Cost Centre Segment Code:	P0001356	Level:	5
Name:	MamalaPh2M		
Description:	Mamala Phase 2 - Mamala		
Active Status:	A	Additional Tax Code:	
Posting Ind:	P	Tax Code:	E
Classification Code:			
Maintenance Centre:	Y	Work Ord Entry:	0
Project Entry:	0	Equip Entry:	0
Eligible: AFUDC:	N	Control.Proj:	P0001356
Control.Proj.Mand.:	Y		

MSM920A

Allison Miyamoto
Financial Systems Analyst
HECO - General Accounting
email: allison.miyamoto@heco.com
Office: 808.543.7992
Fax: 808.203.1638

-----Original Message-----
From: Shimabukuro, Gail
Sent: Friday, November 03, 2006 2:12 PM
To: Financial Systems Analysts
Subject: PCR

Please assign a grandparent number to this project. Also please link P0001319 to this new grandparent. Thanks

Scan001.PDF (18 KB)

Honolulu Demineralizer
Evaluation of Alternatives

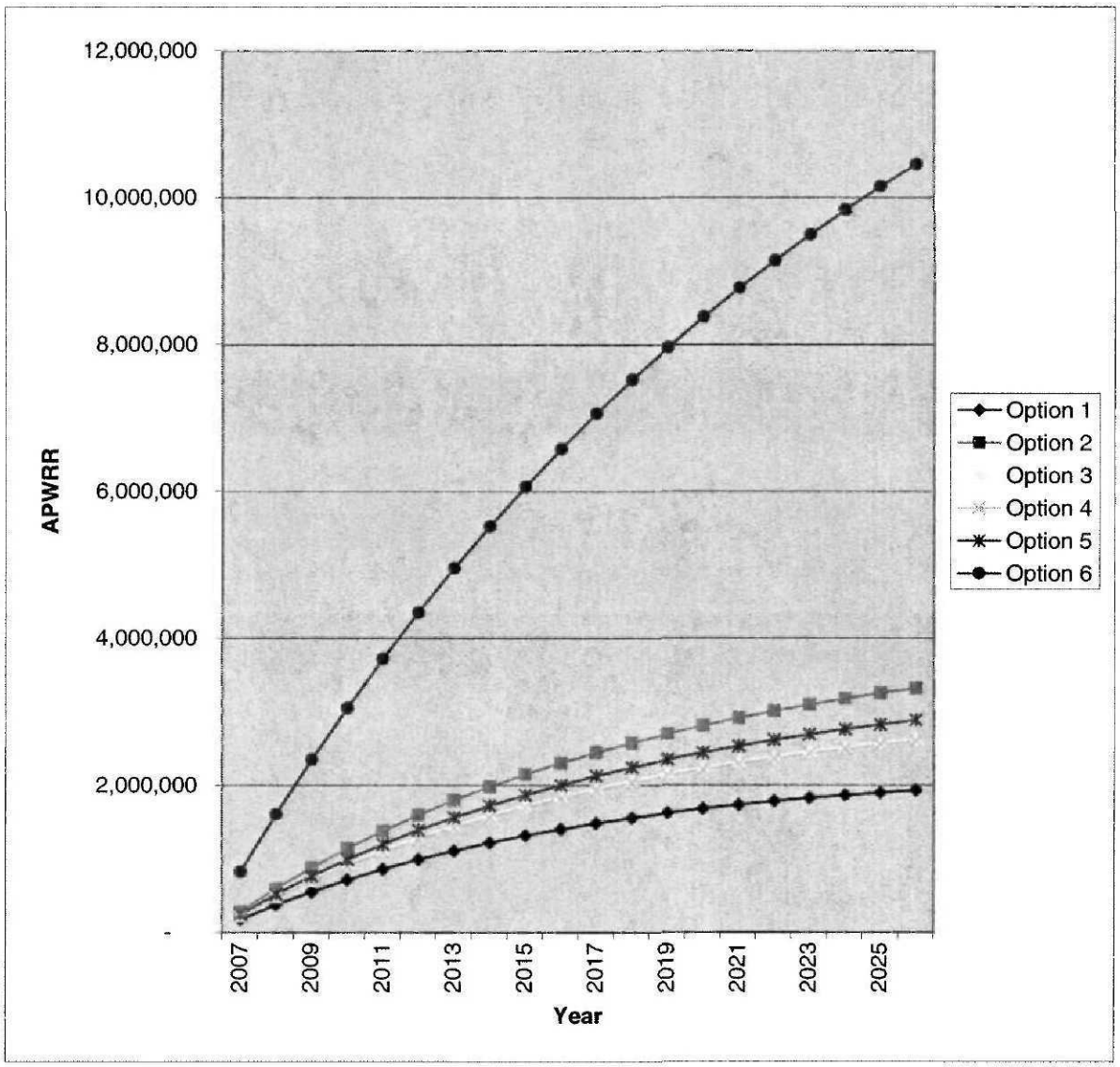
Hon PP Demineralizer
60 GPM instantaneous
1,000,000 gal/month

	OPTION 1: RO / EDI with mixed bed backup		OPTION 2: Ion exchange - onsite regeneration		OPTION 3: RO / mixed bed -- onsite regeneration		OPTION 4: RO / mixed bed -- off site regeneration		OPT. 5: Packed bed / mixed bed -- onsite regeneration		OPTION 6: Do nothing. Run till failure. Truck water	
	Desc	Cost	Desc	Cost	Desc	Cost	Desc	Cost	Desc	Cost	Desc	Cost
Equipment cost												
Pre-filtering												
Raw water pumps	2 x 100%	$4,000	2 x 100%	$4,000	2 x 100%	$4,000	2 x 100%	$4,000	2 x 100%	$4,000		
Media filters	2 x 100%	$40,000			2 x 100%	$40,000	2 x 100%	$40,000				
Roughing												
RO	yes	$80,000			yes	$80,000	yes	$80,000				
RO chemical injection skid	yes	$2,500			yes	$2,500	yes	$2,500				
CIP	yes	$4,000			yes	$4,000	yes	$4,000				
Ion exchange - anion, cation			2 trains	$180,000								
Packed bed									2 trains	$120,000		
Acid, caustic storage			yes	$50,000	yes	$50,000			yes	$50,000		
Regeneration skids			yes	$4,000	yes	$4,000			yes	$4,000		
Hot water heater			yes	$1,000	yes	$1,000			yes	$1,000		
Polishing												
EDI	60 gpm	$50,000										
Mixed bed	2 vessels	$20,000	2 trains	$20,000	2 vessels	$20,000	8 vessels	$80,000	2 trains	$20,000		
Instrumentation and Controls	yes	$80,000	yes	$80,000	yes	$80,000	yes	$40,000	yes	$80,000		
Sub-total Equipment cost		$280,500		$339,000		$285,500		$250,500		$279,000		$0
Installation cost												
Equipment and piping inst		$150,000		$180,000		$180,000		$150,000		$150,000		
Structural		$80,000		$80,000		$80,000		$80,000		$80,000		
Electrical		$100,000		$100,000		$100,000		$100,000		$100,000		
Engineering		$15,000		$15,000		$15,000		$15,000		$15,000		
Overheads (20%)		$125,100		$142,800		$132,100		$119,100		$124,800		
Contingency (10%)		$62,550		$71,400		$66,050		$59,550		$62,400		
AFUDC (5%)		$31,275		$35,700		$33,025		$29,775		$31,200		
Sub-total Installation cost		$563,925		$624,900		$606,175		$553,425		$563,400		$0
Capital Cost		$844,425		$963,900		$891,675		$803,925		$842,400		$0
O&M costs, annual (est. 10,000,000 gal DW / yr)												
BWS water charges	18 Mgal/ yr	$36,000	12 Mgal/ yr	$24,000	18 Mgal/ yr	$36,000	18 Mgal/ yr	$36,000	12 Mgal/ yr	$24,000		
Chemicals												
injection		$3,000				$3,000		$3,000				
regeneration	(CIP)	$500		$80,000		$20,000	(CIP)	$500		$60,000		6000 gal/truck
Offsite regeneration (mixed bed)							12 per year	$60,000				$400/truck
												165 trucks/mth
Waste water treatment		$2,000		$20,000		$20,000		$2,000		$20,000		
Operating cost		$41,500		$124,000		$79,000		$101,500		$104,000		$792,000
Maint cost, annual		$15,000		$25,000		$25,000		$10,000		$25,000		

Honolulu Demineralizer
Evaluation of Alternatives

OPTION 1: RO / EDI
OPTION 2: ION EXCHANGE, on-site regeneration
OPTION 3: RO / MIXED BED, on-site regeneration
OPTION 4: RO / MIXED BED, off-site regeneration
OPTION 5: PACKED BED / MIXED BED, on-site regeneration
OPTION 6: Do nothing, truck water

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
	$ 1,932,762	$ 3,322,203	$ 2,626,442	$ 2,602,176	$ 2,887,347	$ 10,459,100
Difference ($)	Base	1,389,441	693,680	669,414	954,585	8,526,338
Difference (%)	Base	+ 72%	+ 36%	+ 35%	+ 49%	+ 441%



Kahe 11 & 12 Chiller Incidents of April/May 2006
Initial Cause Assessment

Background

Kahe 1 & 2 chillers tubes are aluminum brass, 22' long, ¾" O.D., .065" wall thickness (16BWG). There are 1442 straight tubes.

On October 24, 2005 Eddy Current Testing (ECT) was performed on the Kahe 12 Chiller (AKA Kahe 21 Chiller). This testing was performed during the Kahe 2 overhaul and was a routine inspection.

The company performing the ECT (Testex inc.) stated that the chiller consisted of mostly I.D. flaws ranging from 25-59% wall loss. This accounted for about 30% of the tubes. Nine (9) tubes were found to have I.D. indications greater than 80%. The unit was also reported to have tubes with OD indications along the free span of the tube and also near the baffle/tube support plats. The vender suggested some type of tube support plate fretting. Six (6) tubes were reported with OD indications greater than 80%.

Tubes with greater than 80% wall loss were plugged as a result of the ECT. Following this plugging K12 chiller had 18 tubes (2.5%) plugged in the top half and 32 tubes (4.4%) plugged in the bottom half of the heater.

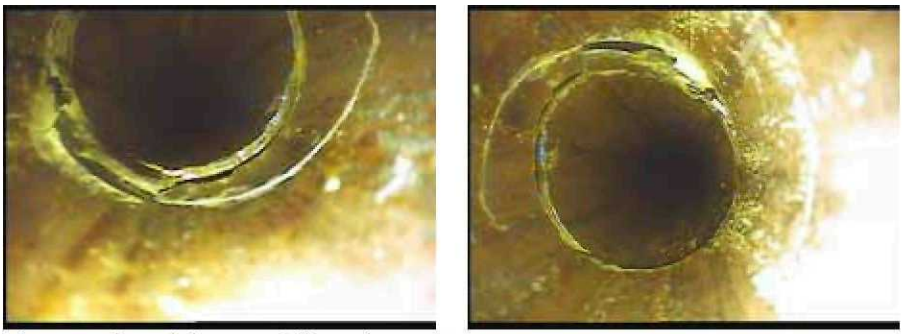
Kahe 11 chiller has not yet been examined via ECT or any other non-destructive exam. Prior to the recent leak in the K11 chiller there were 26 tubes (3.6%) plugged in the top half and 16 tubes (2.2%) plugged in the bottom half. Kahe 11 chiller had been scheduled to undergo ECT during the K1 2006 overhaul.

Events

On April 20, 2006 a K12 chiller tube leak was reported (PR054676). The heater was tested and one tube was found leaking. The leak was plugged and compared to the ECT performed in October 2005. The tube that failed had a 75% ID indication during the 2005 ECT. The failed tube was plugged and the heater was returned to service.

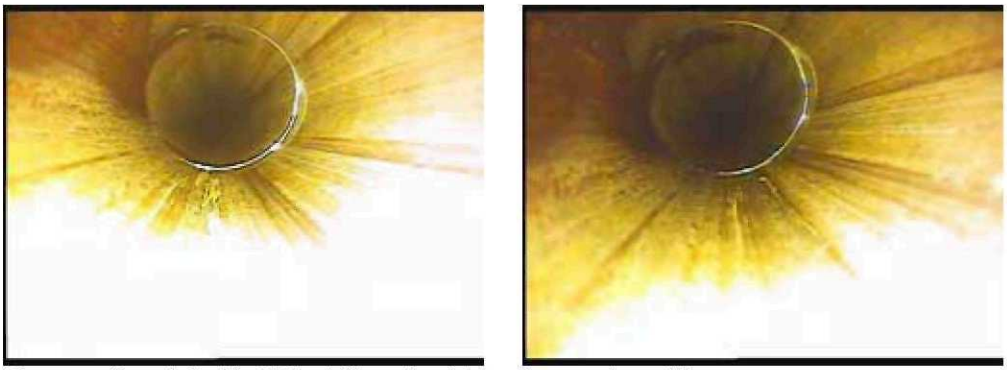
On May 10, 2006 another K12 chiller tube leak was reported (PR055426). Condenser crew identified two tubes leaking. The tubes were inspected using a boroscope. One tube (13-21) was found to have a circumferential crack. This circumferential crack was believed to be a fatigue failure and occurred at 82" from the tube sheet. No flaw was found in the other leaking tube (23-3). The second leaking tube might have been miss called by the condenser crew but was plugged anyway. It was noted at this time that the K11 chiller (in service) was very loud. Tube 13-21 had a 25% OD indication during the 2005 ECT. Tube 23-3 had a 40% ID indication during the 2005 ECT. Leaking tubes were plugged and the heater returned to service.

Kahe 11 & 12 Chiller Incidents of April/May 2006
Initial Cause Assessment



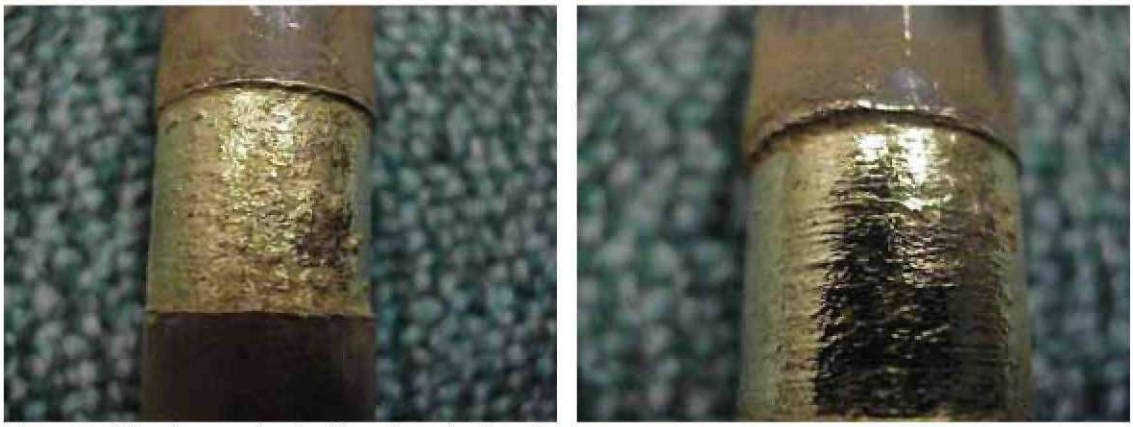
Pictures of crack in K12 chiller tube 13-21

On May 13, 2006 K11 chiller was reported to have a tube leak (PR055519). The heater was removed from service, covers removed and inspected on May 16, 2006. One tube was found to be leaking (4-13). Boroscope inspection found a circumferential crack (fatigue failure) in tube 4-13 81" from the tube sheet. Being that this was the same distance from the tube failure in K12 chiller and same failure appearance I decided to have the tube pulled for closer examination. At this point it was noted that the K12 chiller was just as loud as the K11 chiller was during the May 10th inspection. When a listening to the K12 chiller up close you could here what believe to be tubes rattling and banging into each other. Inspection of the pulled tube showed severe fretting at all baffles. The area where the tube failed was a clean circumferential crack in an area of severe fretting. Along the midspan of the tubes there is shinny, slightly flat areas where the tubes had been banging together.



Pictures of crack inside K11 chiller tube 4-13, prior to tube pulling.

Picture of fatigue crack area with associated fretting.



Pictures of fretting at other baffles along the length.

Pictures of areas where tube was colliding with other tubes.

Suspected Root Cause

According to the Kahe 1 data books, one chiller and one ACW pump should be able to handle the loads of both units. However, this has not been the case. In the past two ACW pump and two chillers were in service at the same time in order to meet the cooling loads required by both units. Cleaning was a big reason for this. Recently the chillers were put on routine cleaning schedule. This kept the chillers in better operating condition and allowed for one chiller to be removed from service. However, two ACW pumps were still required.

The ACW side of the chillers were rated for 40psig inlet with a 6psi pressure drop. With two pumps in service ACW pump discharge pressure was about 66psig. The outlet pressure of the K12 chiller was 48psig and fluctuating. This was a 17psi pressure drop. In addition the K12 chiller was very loud. When listening to the chiller closely it does sound like tubes colliding with baffles and other tubes.

Based on the above information and failure appearance it appears that the ACW velocities in the chiller are too great. This is causing excessive vibration leading to severe fretting, tube collisions, and failures.

It is possible that the many years of operating with two ACW pumps and one chiller while the other chiller was OOS for cleaning or maintenance coupled with the recent operation of two ACW pumps and one chiller has caused this damaged to the chillers.

I would than say that the root cause is the inability to operate the ACW system as designed.

Added ACW loads and inadequate chiller design are the likely reasons that this problem occurred.

Recommendations

Chiller tube leaks are reportable violations as the closed cooling water system leaks into the ocean. With that said, I believe that it is important to address this issue in a way that will reduce the chance of future failures and eliminate the root cause.

1) Kahe 1 and 2 should return to two ACW pump, two chiller operations. This seems to eliminate the bulk of the vibration and will help reduce time to next failure.
2) When one chiller is taken out of service K1/2 load reduction should be considered based on system needs and risk of tube leak. If possible to go to one pump, one chiller this should be done. If this cannot be accomplished the outage time of the OOS chiller should be minimized.
3) An ACW system flow balance should be performed. Valves should be throttled so that only required ACW flow is supplied to components. It is possible to be able to restore some system capacity if current flow balances are not set.
4) Chillers should have an ECT exam performed to determine the amount of damage in the heaters.
5) Instead of performing item 4, we should consider retubing, rebundling or replacing both chillers. These options are currently being explored and further recommendations will be forthcoming. In rebundling we would be able to design the new bundle so that two pumps, one chiller operation could be performed safely. In replacement (and possible rebundle) we could also increase the heat transfer capability of the heaters by increasing the heat transfer surface area.

Additional recommendations will be forthcoming.

Ewa Nui and Kamokila 12k V Circuit Rearrangements
PROJECT INITIATION MEETING
MINUTES

Date: August 8, 2006
Time: 2:00 PM
Place: Ward 301

Attendees
M. Lum – Transmission & Distribution Engineer
R. Kaneshiro – Transmission & Distribution Engineer
S. Uechi – CSA Engineer
N. Wong – CSA Engineer
R. Chun – Construction & Maintenance Representative
M. Ho – Construction & Maintenance Engineer
N. Liang – Planning Engineer
S. Chow – Planning Engineer
K. Fukuda – Public Affairs Representative
E. Oshiro – Project Management

Project Need
This project is required to address overloads in the Kamokila area and to defer the Ko Olina Substation project.

Scope
See attached scope statement.

Schedule
See attached schedule.

Action Items
1. Review and finalize scope by September 7, 2006 (All)
2. Review and finalize schedule September 7, 2006 (All)
3. Assign T&D Engineers August 31, 2006 (M. Lum)
4. Research land ownership and permitting requirements August 31, 2006 (E. Oshiro)
5. Determine construction sequencing August 31, 2006 (S. Chow)
6. Prepare preliminary cost estimates September 14, 2006 (M. Lum)
7. Prepare and submit PIF September 15, 2006 (E. Oshiro)

Ewa Nui and Kamokila 12k V Circuit Rearrangements
SCOPE STATEMENT

BACKGROUND/SUMMARY OF THE PROJECT

This project is required to address projected overloads in the Kamokila area from Kapolei to Ko Olina and to defer the Ko Olina Substation project.

The following components are required:

1. Reconnections within the 12 kV handhole within Ewa Nui Substation.
2. Reconductor the 12 kV circuit along Farrington Highway from Ewa Nui Substation to Pole 72.
3. Underground cable installation along Farrington Highway and Kamokila Boulevard including several cuts and taps.
4. Install new 12 kV switch at Farrington Highway and Alii Nui Drive.
5. Install underground cable on Alii Nui Drive.

PROJECT GOALS/OBJECTIVES

1. Shift loads from the Ko Olina area to Kamokila Substation.
2. Shift loads form the Kamokila area to Ewa Nui Substation.
3. Relieve forecasted overloads in the Kamokila area.
4. Defer the need for Ko Olina Substation.
5. Utilize capacity on the Ewa Nui 46-12 kV 10/12.5 MVA transformer #2 being installed with DG #4, 5 and 6.

KEY DELIVERABLES/MILESTONES

Service date: April 30, 2007

Submit PIF: September 15, 2006
Complete Ewa Nui 46-12 kV 10/12.5 MVA Tsf Installation: February 28, 2007
Complete Engineering Design: November 30, 2006

STAKEHOLDERS

1. Residents and businesses in the Kamokila Boulevard area.

ASSUMPTIONS

1. No discretionary permits are required.
2. No new ductline construction is required except for a short stretch (less than one block) near the new Honolulu Advertiser facility on Kalaeloa Boulevard.
3. PUC approval is not required.
4. Ewa Nui distribution transformer #2 installations are completed by February 2007.

POTENTIAL RISKS

1. DOT District office requires DOT Design review and approval for project which triggers a lengthy State DOT review and approval process and UOA.
2. Steel poles are required due to pole loadings.
3. There are insufficient spare ductlines requiring new ductline construction.
4. PUC approval is required delaying the project significantly.
5. There is community opposition to the project.
6. The Ewa Nui #2 distribution transformer installation is delayed.

COMMUNICATION REQUIREMENTS

1. Makakilo Neighborhood Board.
2. Businesses in the Kapolei Shopping Center area.

Based on 2005 Actual Loads
Load in year: 2007

CIRCUIT/TRANSFORMER		Kamkl 2	Kamkl 1	KAMKL 1	Kamkl 3	Kamkl 4	KAMKL 2
Emergency Ratings (KVA)		11,663	11,663	16156	11,663	11,663	16156
Normal Ratings		9,806	9,806	14560	9,806	9,806	14560
Conductor/Cable Type		1000 Al 3/dct	1000 Al 3/dct		1000 Al 3/dct	1000 Al 3/dct	
Emergency Ratings (AMPS)		547	547		547	547	
Normal Ratings (AMPS)		454	454		454	454	
Growth Rate		4%	4%	4%	4%	4%	4%
	Load (KVA)	3811	7170	10981	4623	2352	6975
Kamokila 1 Tsf Fails:							
V7089	3929		-3929	-3929	3929		3929
Kamokila 1 => Kamokila 3			3241	7052	8552		10904
V7713	839		-839	-839	839		839
Kamokila 1=>Kamokila 3			2402	6213	9391		11743
V6852	1083		-1083	-1083	1083		1083
Kamokila 1=>Kamokila 3			1319	5130	10473		12825
V7265	1133		-1133	-1133	1133		1133
Kamokila 1=>Kamokila 3			186	3997	11606		13958
V8304	186		-186	-186	186		186
Kamokila 1 => Kamokila 3			0	3811	11792		14144
ALL VLTS ON Kamokila 2 => Kamokila 4	3811	-3811		-3811		3811	3811
		0		0		6163	17955
		0	0	0	11792	6163	17955
% OVERLOAD					1.1	0.0	11.1
Kamokila 2 Tsf Fails:							
ALL VLTS ON Kamokila 4 => Kamokila 2	2352	2352		2352		-2352	-2352
		6163		13333		0	4623
V8646	2048		2048	2048	-2048		-2048
Kamokila 3 => Kamokila 1			9218	15381	2575		2575
V7091	951		951	951	-951		-951
Kamokila 3 => Kamokila 1			10169	16332	1624		1624
V8023	432		432	432	-432		-432
Kamokila 3 => Kamokila 1			10601	16764	1192		1192
V8701, V8657	1192		1192	1192	-1192		-1192
			11792	17955	0		0
		6163	11792	17955	0	0	0
% OVERLOAD		0	1.1	11.1			

LOAD (KVA)	YEAR	CIRCUIT	PROJECT
New load of 210 KVA	2007	Kamokila 4	Village 5 (Parcel 3) Phase 1
New load of 105 KVA	2007	Kamokila 4	Village 5 (Parcel 3) Phase 2
New load of 375 KVA	2006	Kamokila 2	Kapolei Village 8
New load of 500 KVA	2007	Kamokila 2	Kapolei Village 8
New load of 328 KVA	2007	Kamokila 2	Villages at Aeloa
New load of 278 KVA	2006	Kamokila 3	Island Pacific Academy Phase 2
Transfer load of 2037 KVA	2006	Kamokila 4	Kamokila 4 Circuit Extension
New load of 167 KVA	2006	Kamokila 3	Kamokila Blvd Shops
New load of 133 KVA	2006	Kamokila 2	Senior Residence at Kapolei
Transfer load of 756 KVA	2006	Kamokila 2 => Ewa Nui 2	V6160, V6161, V6269 Project

Based on 2005 Actual Loads

Year:	2007									
CIRCUIT/TRANSFORMER:		CEIP 3	CEIP 4	CEIP 2	Kahe	Barb Pt	KAHE 1	Mikilua 3	Mikilua 4	MIKILUA 2
EMERGENCY RATINGS (KVA)		11663	11663	15242	12851	12851	15242	12851	12851	15242
NORMAL RATINGS (KVA)		10843	10843	14250	11123	11123	13375	11123	11123	13375
CONDUCTOR/CABLE TYPE		1000 Al 2/dct	1000 Al 2/dct		336 AAC	336 AAC		336 AAC	336 AAC	
EMERGENCY RATINGS (AMPS)		595	595		595	595		595	595	
NORMAL RATINGS (AMPS)		502	502		515	515		515	515	
NORM LOADS (KVA)		6507	3787	10294	5053	6151	11204	4834	4055	8889
GROWTH RATE (%)		4%	4%	4%	1%	1%	1%	1%	1%	1%
KAHE 1 TSF fails:										
Close Rcl 8173	5053				-5053		-5053	5053		5053
					0		6151	9887		13942
AT to CEIP4:	5229		5229	5229		-5229	-5229			
			9016	15523		922	922			
Open SW7023,Close Sw 1296	922	922		922		-922	-922			
		7429		16445		0	0			
		7429	9016	16445	0	0	0	9887	4055	13942
% OVERLOAD		0.0	0.0	7.9				0.0	0.0	0.0

Note:

Load (KVA)	Year	Circuit	Project
New load of 1000 KVA	2006	CEIP3	Hoku Scientific
New load of 120 KVA	2006	CEIP3	FOPCO
New load of 926 KVA	2006	CEIP3	Kapolei Spectrum Business Park
New load of 1092 KVA	2006	CEIP4	Centex KoOlina Parcel 33
New load of 840 KVA	2006	Barbers Pt	KoOlina Parcel 50
New load of 394 KVA	2006	Barbers Pt	Marriot Timeshare Phase 2
New load of 450 KVA	2006	Barbers Pt	KoOlina Ph 4 & 5 (Temp Power)
New load of 500 KVA	2006	CEIP3	Kapolei Teleport
New load of 300 KVA	2007	Barbers Pt	Marriot Timeshare Phase 3 (building B)

CA-IR-389

Ref: Original HECO-WP-1601, pages 4-6 & CA-IR-307, Attachment 1, pages 4-6 (2007 Plant Additions).

CA-IR-307 (Attachment 1, pages 4-6) provides an update of 2007 plant addition forecast by project. A comparison of these revised Company workpapers with the original workpapers identified seven (7) construction projects originally expected to be completed during 2007 in excess of $900,000 that are not included as 2007 additions in HECO's revised test year forecast. The seven projects are: P0000677, P000794, P0000856, P0000946, P0000947, P0001167 & P0001304. Please provide the following:

a. For each project, please indicate whether the project was delayed, cancelled or consolidated with one or more other projects.

   1. If delayed, please explain why the project was delayed and provide the current planned completion date.

   2. If cancelled, please explain why the project was cancelled.

   3. If consolidated with another project, please identify and explain why the projects were consolidated.

b. Referring to the projects identified in response to part (a)(3) above, please provide the most current and complete Project Initiation Authorization (PIA) or Project Identification Form (PIF) packet.

HECO Response:

a. 1. The status of the referenced projects is described below. None of the projects were cancelled or consolidated with other projects.

- P0000677 (W7&8 Underground Utilities) was delayed to April 2008 due to budget prioritization.
- P0000794 (Call Center-1st Floor) was placed in service in December 2006. The project is part of Y00030, New Dispatch Center.
- P0000856 (W7 Main Transformer) was delayed to July 2008 due to a manufacturing backlog of transformers and the subsequent rescheduling of the W7 unit shut down.

- P0000946 (Ko Olina Tsf #1 Instl) was delayed to January 2008 due to Ko Olina Resort's projected electrical demands not materializing as originally scheduled. Based on a recent review of Ko Olina Resort's updated project and load demand schedules, the new substation will not be required until January 2008.
- Similar to P0000946 above, P0000947 (Ko Olina 46kV Lines) was delayed to January 2008 due to Ko Olina Resort's projected electrical demands not materializing as originally scheduled. Based on a recent review of Ko Olina Resort's updated project and load demand schedules, the new substation will not be required until January 2008.
- P0001167 (Waiau-Ewa Nui Fiber Optic Repl) was delayed to March 2008 due to engineering resource constraints and engineering reassignment of this project.
- P0001304 (Archer Sub Chiller) was delayed to January 2008 due to longer than expected lead times for ordering the materials.

2. None of the referenced projects were cancelled.
3. None of the referenced projects above were consolidated. Although P0000946 (Ko Olina Tsf #1 Instl) and P0000947 (Ko Olina 46kV Lines) are part of the same grandparent project Y00044, they are not "consolidated" together.

b. As noted in the response to item (a)(3) above, none of the projects were consolidated. However, the individual PIFs for all of the above referenced projects, except for P0000677, were provided in Attachment 5 of the Company's response to CA-IR-307. In order to provide the Consumer Advocate with complete information for all of the referenced projects, a copy of the PIF for P0000677 is attached.

PROJECT IDENTIFICATION FORM - INITIALIZE PROJECT

The Project identified below has not been established in MIMS

Project Title: W7/8 Underground Utilities

Project Number: AYOSHIDA05_
(Temporary)

Stategic Plan Linkage: Reliability
(Primary)

Plant Addition Date: 2006-07

Commitment Date: 2006-01

Primary Corporate Goal: EAF

Impact on Goal: Low

Project Forecast (Thousand $)

(Attach the "View - 5-Yr Proj Costs by Ind & Cost Cat" report obtained from the estimators' Pillar file.)

Prior Years	2002	2003	2004	2005	2006	Future Years	Total
$0	$0	$0	$0	$45	$304	$0	$349

Assessment Factors

Compliance	Competitive Advantage	Financial Impact	Reliability	Corporate Image	Total Score
0	0	0	33	0	33

Purpose/Objectives:

To replace the existing underground feeders that service Waiau 7/8 Circulating Water Pump (CWP) area with overhead feeders. *

Scope Description:

Install new overhead feeders and raceways for W7/8 CWP area.

* Per confirmation with Alan Yoshida, Engineer, represent primary electrical feed to system. and is a major component of the electrical system property unit Capital Treatment proper.

KY 4/25/02.

PROJECT IDENTIFICATION FORM - INITIALIZE PROJECT

The Project identified below has not been established in MIMS

Resource Needs:

Refer to attached project labor hour report.

Justification:

Salt water is causing many failures due to constant immersion of the cables. The cables tend to swell due to water intrusion.

Issues, Impacts, Considerations:

Additional failures are due to happen because of constant immersion of the cables in salt water. Loss of power or control to the CWP area could result in a potential large EAF hit.

PROJECT IDENTIFICATION FORM - INITIALIZE PROJECT

The Project identified below has not been established in MIMS

Contributions:

Contributions in aid of construction (CIAC):

- **In Kind**

- **In Cash**

Cash Advance

Cost Sharing
(under HECO Policy UG Lines, October 2000)

Other type of payment (cash, non-cash) by outside party

PROJECT IDENTIFICATION FORM - INITIALIZE PROJECT

The Project identified below has not been established in MIMS

PUC Approved: ○ Approval Required ● Not Required

○ Approved, Date of Decision & Order: - - Docket Number:

○ Awaiting PUC Approval, Application Filed - -

Authorization for: ☐ Engineering ☐ Materials ☐ Construction

Approval Option: Initialize project

Submitted by: Alan Yoshida **Phone/Ext #:** 7363

Originator's Name: A YOSHIDA

Responsible Estimator: A YOSHIDA
(Pillar UserID)

Resp. Estimator Dept: Engineering
(Pillar Department Folder)

Project Manager: A YOSHIDA

Date: 04/22/2002

Required Approvals to Initialize a Project:

Alan [illegible] 4/25/02
Responsible Manager **Date**

Thomas C. Simmons 4/25/02
Responsible Vice President **Date**

If project exceeds $5 million ($1M unbudgeted), additional approvals are required. Please call Management Accounting at x7729

PRODUCTION CHANGE REQUEST (PCR) FORM

District:	P-HECO
Temporary Project Number:	AYOSHIDA05_
Project Number:	P0000677
Project Title: (28 characters)	W7/8 Underground Utilities
Short Project Title: (10 characters)	W7/8 Und
Originator Employee's Number:	33759
Person Assigned To:	A YOSHIDA
Person Assigned to Employee Number:	33759
Responsibility Area:	PYA
Activity:	211
Location:	WST
Indicator:	NI
Apply AFUDC (yes or no):	Yes
Existing Grandparent Project Number: or **New Grandparent Project Description:**	
Pillar Temporary Projects or 5th Segment Projects to link to Grandparent Project above:	
Plant Addition Date:	2006-07
Plant Functional Category:	Steam Production
Project or Program:	Project

For Admin use only:
Date updated MIMS Prod files: 4/25/02 AY
Copy given to Pillar Admin:

AP-1

Date: 04/22/2002

» budget manager: PR9150-P: Cost Category $

*Project #	Project	*M-Proj #	Cost Category	Curr Upd New Total $	Proj to Date Act $	Apr-Dec 02 Update $	FY03 UPDATE02	FY04 UPDATE02	FY05 UPDATE02	FY06 UPDATE02
AYoshida05_	Temp Proj AYoshida05_		LABOR	$140,339	0	$0	$0	$0	$26,213	$114,126
			MATERIAL	$117,090	0	$0	$0	$0	$0	$117,090
			OVERHEADS	$91,648	0	$0	$0	$0	$18,497	$73,151
				$349,077	0	$0	$0	$0	$44,709	$304,367
				$349,077	0	$0	$0	$0	$44,709	$304,367
				$349,077	0	$0	$0	$0	$44,709	$304,367

» budget manager: PR9300-PH: RA Hrs

*Project #	Project	*M-Proj #	*RA #	*Lbr Class	YTD Mar 02 Actual Hrs	Apr-Dec 02 Update Hrs	FY03 UPDATE02	FY04 UPDATE02	FY05 UPDATE02	FY06 UPDATE02
AYoshida05_	Temp Proj AYoshida05_		PBT	B_STRDFT	0	0	0	0	80	120
				B_STRENG	0	0	0	0	248	80
					0	0	0	0	328	200
			PDU	D_UGC...	0	0	0	0	0	720
					0	0	0	0	0	720
			PIT	I_TVLBLR	0	0	0	0	0	720
				I_TVLELC	0	0	0	0	0	720
				I_TVLSPV	0	0	0	0	0	56
					0	0	0	0	0	1,496
			PRX	D_UGC...	0	0	0	0	0	360
					0	0	0	0	0	360
			PYF	Y_PPELEC	0	0	0	0	336	160
					0	0	0	0	336	160
			PYG	Y_PPDRAF	0	0	0	0	120	120
					0	0	0	0	120	120
					0	0	0	0	784	3,056
					0	0	0	0	784	3,056
					0	0	0	0	784	3,056

» budget manager: PR9300-P: RA $

*Project #	Project	*M-Proj #	*RA #	Curr Upd New Total $	Proj to Date Act $	Apr-Dec 02 Update $	FY03 UPDATE02	FY04 UPDATE02	FY05 UPDATE02	FY06 UPDATE02
AYoshida05_	Temp Proj AYoshida05_		_	$103,752	0	$0	$0	$0	$18,497	$85,256
			PBT	$17,694	0	$0	$0	$0	$11,107	$6,587
			PDU	$29,110	0	$0	$0	$0	$0	$29,110
			PIT	$77,872	0	$0	$0	$0	$0	$77,872
			PRX	$14,555	0	$0	$0	$0	$0	$14,555
			PYA	$81,655	0	$0	$0	$0	$0	$81,655
			PYF	$16,269	0	$0	$0	$0	$11,021	$5,248
			PYG	$8,170	0	$0	$0	$0	$4,085	$4,085
				$349,077	0	$0	$0	$0	$44,709	$304,367
				$349,077	0	$0	$0	$0	$44,709	$304,367
				$349,077	0	$0	$0	$0	$44,709	$304,367

CA-IR-390

Ref: Original HECO-WP-1601, pages 4-6 & CA-IR-307, Attachment 1, pages 4-6 (2007 Plant Additions)

CA-IR-307 (Attachment 1, pages 4-6) provides an update of 2007 plant addition forecast by project. A comparison of these revised Company workpapers with the original workpapers identified various new construction projects expected to be completed during 2007 that were not included as 2007 additions in HECO's original test year forecast. For each of the identified projects (i.e., P0001337, P0001338, P0001374, P0001396, P0001398 & P0001401), please provide the following:

a. For each project, please provide the most current and complete Project Initiation Authorization (PIA) or Project Identification Form (PIF) packet.

b. If the response to part (a) above does not contain project feasibility studies, cost savings estimates, estimated construction and project completion dates, identification of retirements or related costs of removal, please provide the following:

   1. Does such information exist for each of the projects in addition to the information requested in part a. above?

   2. If so, please provide such information for each of the projects in addition to the information requested in part (a) above.

   3. If not, please explain why such information is not available for each project.

HECO Response:

The information described in the response below (Attachments 1 through 3) is voluminous and is available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information.

a. The Project Identification Forms (PIF) for the six (6) construction projects expected to be completed during 2007 that were not included as 2007 additions in HECO's original test year forecast are included in Arrachment 1 as follows:

Project#	Project Title	PIF
P0001337	Spare 8% Tsf 2006 #1	Pages 1 - 9
P0001338	Spare 8% Tsf 2006 #2	Pages 10 – 18
P0001374	Behavior Analysis Mgmt	Pages 19 – 31
P0001396	UH Quarry Tsf Replacement	Pages 32 – 40
P0001398	Mamala Phase 3	Pages 41 – 49
P0001401	Spare 10% Tsf 2007 #`	Pages 50 – 58

b. The following is a listing of additional documentation related to project feasibility studies or cost savings estimates for the projects listed above that were not included in the PIFs.

Project#	Project Title	Documentation
P0001337	Spare 8% Tsf 2006 #1	Distribution Substation Transformer Presentation dated 7/28/05 (Attachment 2)
P0001338	Spare 8% Tsf 2006 #2	Distribution Substation Transformer Presentation dated 7/28/05 (Attachment 2)
P0001374	Behavior Analysis Mgmt	Rather than install a separate security system, one of the criteria for this project was to procure a Behavior Analysis system that would integrate with HECO's existing security systems. This limited the amount of different systems and vendors to evaluate, which made conducting a feasibility and cost savings study unnecessary.
P0001396	UH Quarry Tsf Replacement	PUC Application, Docket No. 7599 (For original project ST-492, UH requested dedicated transformer paid for by UH) (Attachment 3).
P0001401	Spare 10% Tsf 2007 #`	Distribution Substation Transformer Presentation dated 7/28/05 (Attachment 2)

Attachments 1 through 3 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. Electronic versions of the attachments are being provided on a compact disc.

CA-IR-391

Ref: CA-IR-307, Attachment 1, pages 4-6 & HECO-1306 (2007 Plant Additions).

CA-IR-307 (Attachment 1, pages 4-6) provides an update of 2007 plant addition forecast by project. HECO's revised 2007 test year forecast includes $219,428 for Project P0001402, Ward Roof Top Parking Improvement. In quantifying 2007 test year maintenance of general plant, HECO-1306 normalizes certain Ward Parking Facility Improvement Projects, including $520,000 for roof level improvements and $255,000 for covered level improvements. Please provide the following:

a. Please identify and describe the Ward parking improvement projects.

b. To what extent is P0001402 additive to or duplicative of the improvement projects HECO-1306 proposes to normalize and include in general plant maintenance expense? Please explain.

HECO Response:

a. The Ward Parking Facility is showing signs of deterioration due to water infiltration into the concrete. Currently, the exposed surfaces are not weather protected. Rain water continues to penetrate the exposed surfaces of the concrete. The following Ward Parking Facility projects serve to address these concerns:

P0001286, Ward Covered Level Parking Improvement, relates to concrete spalling and reinforcing steel repairs on the covered level deck, as well as coating the perimeter of the exterior deck and parapet walls to minimize further rain water infiltration. This is a non-recurring O&M project budgeted in NARUC Account 932 (see HECO-1306).

P0001402 (previously P0001291), Ward Roof Level Parking Improvement, relates to concrete spalling repair, sealing the entire rooftop level and parapet walls and replacing existing lighting due to safety concerns. This is both a capital project budgeted

as a 2007 plant addition (Attachment 1 of the Company's response to CA-IR-307), and a non-recurring O&M project budgeted in NARUC Account 932 (see HECO-1306).

HF PM15, Ward Ramp Wall Repairs, relates to concrete spalling repair, sealing the ramp and parapet walls and repairing the lighting fixtures on the ramp. This is a non-recurring O&M project budgeted in NARUC Account 932 (see HECO-1306).

HF PM16, Ward Stairwell Improvements, relates to sand blasting, caulking and sealing the internal and external stairwell walls of the Ward parking structure. This is a non-recurring O&M project budgeted in NARUC Account 932 (see HECO-1306).

b. P0001402 is not duplicative of the improvement projects HECO-1306 proposes to normalize and include in general plant maintenance expense. Project P0001402, as referenced in the plant additions list of Attachment 1 of the Company's response to CA-IR-307, and Project P0001286, as referenced as one of the Ward Parking Facility improvement projects in HECO-1306 (subsequently revised in B. Tamashiro's June 2007 Update, page 10) are the same project.

Originally, the roof level improvements to the Ward Parking Facility were budgeted in Project P0001291 as an O&M project. The replacement of the lighting fixtures was subsequently deemed capital work, and therefore the project was reassigned with a new project number – P0001402, which includes both O&M and capital work.

The capital portion of P0001402 amounting to approximately $219,000, which is scheduled to be completed in 2007, is properly included as a plant addition in the 2007 Test Year estimates, while the O&M portion of P0001402 amounting to approximately $445,000 is properly included in NARUC 932 as a non-recurring maintenance of general plant cost. The $520,000 for roof level improvements, as referenced above, has been

revised. See page 3 of B. Tamashiro's (T-13) June 2007 Update to Miscellaneous Administrative and General Expenses, which discusses the exclusion of the capital portion of the project from NARUC Account 932. Note, the difference between the budgeted repair work to the lighting fixtures embedded in the original $520,000 cost estimate and the $219,000 capital budget is primarily due to an underestimate of costs and an increase in the scope of the project with respect to the installation of significantly larger concrete lighting pole pads.

CA-IR-392

Ref: CA-IR-307, Attachment 1, pages 4-6 & HECO T-10, page 21 (2007 Plant Additions & Ellipse Migration).

CA-IR-307 (Attachment 1, pages 4-6) provides an update of 2007 plant addition forecast by project. HECO's revised 2007 test year forecast includes $407,588 for Project P0001341, Ellipse Migration to Unix. In quantifying 2007 test year charges to Account 921, HECO T-10 (beginning at line 11 of page 21) describes $509,000 of cost related to the Ellipse migration to the Unix platform. Please provide the following:

a. Please provide the most current and complete Project Initiation Authorization (PIA) or Project Identification Form (PIF) packet for Project P0001341, Ellipse Migration to Unix.

b. Please explain the relationship of the capital costs associated with Project P0001341 to the $509,000 in Account 921 related to the Ellipse migration to the Unix platform.

c. To what extent is P0001341 additive to or duplicative of the Ellipse migration costs included in Account 921? Please explain.

HECO Response:

a. Attached is the Project Identification Form (PIF) for project P0001341, Ellipse Migration to the Unix platform. Upon review of this project's estimated plant add in the test year of $407,588, the Company has identified the inclusion of the 2007 year-to-date recorded amount of $91,544. The total plant add estimate for this project in the test year should be $316,044. The Company will address the impact of the excess $91,544 in test year plant adds during settlement.

b. The estimated capital costs for project P0001341 are for the server hardware and Unix operating system needed for this Ellipse to Unix Migration project. The administrative expenses associated with this project is included in Account 921. A breakdown of the $509,000 in Account 921 related to the Ellipse Migration is described in the Company's response to CA-IR-133.

c. The associated P0001341 capital cost is additive to the Ellipse Migration costs included in Account 921.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Project Title: Ellipse Migration to Unix

Plant Addition Date: 2007-12

Project Number: P0001341
(Permanent)

Commitment Date: 2007-03

Primary Corporate Goal: CIS

Stategic Plan Linkage: Integrated Operating Systems
(Primary)

Impact on Goal: High

Project Forecast (Thousand $)

(Attach the "PR9105-P: For PIF" report obtained from the estimators' Pillar file.)

Prior Years	2007	2008	2009	2010	2011	Future Years	Total
$0	$2,438	$1,641	$0	$0	$0	$0	$4,079

Assessment Factors

Compliance	Competitive Advantage	Financial Impact	Reliability	Corporate Image	Total Score
15	30	0	0	0	45

Purpose/Objectives:

The purpose of this project is to migrate Ellipse 5.2.3 SP7 and interfaces to a Unix Platform. This will consolidate all enterprise applications on a common Unix platform.

MANAGEMENT ACCOUNTING

MAR 8 2007

Scope Description:

The scope of the project will involve:

- Acquisition/installation of a distributed Unix platform to support the new system.
- Rehosting Mincom's ERP software on said platform.
- Acquisition/installation of a new Enterprise scale Oracle database, moving off of IBM's DB2 product. This will align the ERP database with those of the other enterprise systems such as EMS, OMS, CIS and tentatively HRMS.
- Redevelopment of interfaces on the Unix Platform utilizing Middleware as appropriate

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Resource Needs:

1. External consulting from Mincom.
2. Hardware in the form of new servers and support equipment.
2a. Requires Storage Area Network (SAN) which was purchased under a separate project (P0001166). The Ellipse portion was estimated to be $907,200.
3. Software in the form of database licenses and software utilities for Unix
4. Internal ITS labor for software/hardware installation/configuration.
5. Internal labor for extensive testing of the new software.

Justification:

The move of Ellipse to a distributed Unix environment will be a substantial undertaking. By starting the migration in 2007 we plan to finish the work before the end of 2008. This way the completion of the project will align with similar migrations off the mainframe by the CIS and ideally Teserract, allowing HECO to retire the mainframe.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Relation to overall management operational objectives and consistency with IRP:

Issues, Impacts, Considerations:

Coordination between "S" projects is critical to minimize 1) redevelopment of interfaces to legacy systems 2) changes to project schedules that could impact other projects and 3) contention for ITS resources.

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

Contributions:

Contributions in aid of construction (CIAC):

- **In Kind** NONE

- **In Cash** NONE

Cash Advance NONE

Cost Sharing
(under HECO Policy UG Lines, October 2000)

NONE

Other type of payment (cash, non-cash) by outside party

NONE

PROJECT IDENTIFICATION FORM - AUTHORIZE PROJECT

The Project identified below has already been established in MIMS

PUC Approved: Approval Required ● Not Required

Approved, Date of Decision & Order: - - *Docket Number:*

Awaiting PUC Approval, Application Filed - -

Authorization for: ☐ Engineering ☐ Materials ☐ Construction

Approval Option: Authorize expenditures that are ~~less~~ more than budget Budget = $ 4,019,030 as of 3-8-07

Submitted by: Gilbert Ho **Phone/Ext #:** 7919

Originator's Name: Gilbert Ho

Responsible Estimator: Gilbert Ho
(Pillar UserID)

Resp. Estimator Dept: Management Accounting
(Pillar Department Folder)

Project Manager: Gilbert Ho

Date: 03/02/2007

Required Approvals to Authorize a Project:

Responsible Manager	**Date** 3/6/07
Responsible Vice President (not required for budgeted projects $1 million and less)	**Date** 3-7-07
VP, Government and Community Affairs (not required if PUC approval is obtained	**Date** 3/8/07
Controller	**Date** 3/8/07

If project exceeds $5 million ($1M unbudgeted), additional approvals are required. Please call Management Accounting at x7729

*Project #	Project	*In...	Cost Categ...	Curr Upd New Total $	Jan 07 Act$07	FY07 Update07	FY08 Update07	FY09 Update07	FY10 Update07	FY11 Update07	FY12 Update12
P0001341	Ellipse Migration to Unix	_	MATERIAL	$47,057	0	$33,828	$13,229	$0	$0	$0	0
			OTHER	$56,102	0	$51,171	$4,931	$0	$0	$0	0
			OVERHEADS	$918,102	0	$440,720	$477,382	$0	$0	$0	0
				$1,021,261	0	$525,719	$495,542	$0	$0	$0	0
		BE	LABOR	$149,338	0	$68,325	$81,013	$0	$0	$0	0
			O/S SVCS	$305,396	0	$185,003	$120,392	$0	$0	$0	0
			OTHER	$141,956	0	$127,397	$14,559	$0	$0	$0	0
				$596,690	0	$380,726	$215,965	$0	$0	$0	0
		NE	LABOR	$926,645	$8,878	$432,699	$485,068	$0	$0	$0	0
			O/S SVCS	$786,700	0	$505,785	$280,915	$0	$0	$0	0
			OTHER	$331,232	0	$297,260	$33,972	$0	$0	$0	0
			OVERHEADS	$5,882	$5,882	0	0	0	0	0	0
				$2,050,459	$14,760	$1,235,744	$799,955	$0	$0	$0	0
		NI	MATERIAL	$410,935	0	$280,727	$130,208	$0	$0	$0	0
				$410,935	0	$280,727	$130,208	$0	$0	$0	0
				$4,079,346	$14,760	$2,422,916	$1,641,669	$0	$0	$0	0
				$4,079,346	$14,760	$2,422,916	$1,641,669	$0	$0	$0	0

CA-IR-393

Ref: CA-IR-307, Attachment 1, pages 9-10 (2007 Plant Additions).

The referenced pages represent updates to HECO's 2007 forecast of program plant additions. Please provide additional documentation supporting the development of the 2007 forecast additions, including information similar to Project Initiation Authorization (PIA) or Project Identification Form (PIF) documentation or other forecast documentation, for each of the following capital Programs:

a. P0000122, Cor (Inc Emg) Mis Cable Rp, $5,237,332.

b. P1250000, Vehicle Purchases, $2,911,478.

c. P1680000, Tsf & Equip Pur (CID), $6,003,342.

d. P1700000, Misc UG Svc & Extn (CID), $12,313,921.

e. P3400000, Prev OH Dist Repl, $2,239,079.

HECO Response:

Project Initiation Authorization (PIA) or Project Identification Form (PIF) documentation for the referenced programs are not available for the test year period. As noted in Mr. Morikami's testimony, programs are collections of a specific category or type of small projects that individually are less than $100,000. Because of the hundreds or thousands of little projects that make up these programs, development of similar information to information contained in the PIAs or PIFs for individual projects is not possible.

a. As discussed in HECO-738 (Description of C&M Programs) provided in the testimony of Mr. Robert Young (T-7), the purpose of program P0000122, Cor (Inc Emg) Mis Cable Rp, is the corrective repair or replacement of underground primary, secondary,

service and transmission cables, including damages due to a dig-in by outside parties. The replacement cable may be of greater capacity and/or higher voltage rating to accommodate future conditions. Attachment 1 provides documentation supporting the development of the 2007 test year additions for this capital program. Pages 1 and 2 reflect the inputs used to develop the original test year cost estimate of $4,295,970. Labor hours were based on the five year average number of hours expended by each labor class, for years 2001 through 2005 (see pages 3 through 6). Inputs for materials and outside services were also based on the five year average of recorded amounts as reflected on page 7. These average amounts were then allocated to various activities based on recorded information for the same period (see page 8). Costs coded in these supporting documents as "NE", "NR" and "NI" represent expense, removal and installation (plant additions costs), respectively. Summaries of the monthly labor hours and other costs that resulted in the test year estimate of $4,295,970 submitted in Mr. Morikami's (T-16) direct testimony are shown on pages 9 and 10 of Attachment 1. The updated test year estimate of $5,237,332 is primarily a result of the replacement of the originally estimated January through April monthly program costs with the recorded January through April 2007 amounts. The updated monthly costs for the test year are shown on page 11.

b. P1250000, Vehicle Purchases, reflects the costs associated with the purchase of replacement vehicles for sedans, light pick-ups, crew cab trucks, passenger and cargo vans, substation and underground crew step vans, service bucket trucks, aerial line trucks, forklifts, electric carts, and other equipment such as cable reel trailers. Vehicles are replaced based on age, condition, and utilization. Data on the composition of the

Company's fleet, including average expected years of service, that are used as a guideline to develop a reasonable vehicle replacement forecast is included as Attachment 2. Attachment 3 lists the actual vehicles scheduled for replacement that comprise the updated 2007 test year plant additions estimate of $2,911,478.

c. Program P1680000, Tsf and Equip Pur, includes the purchasing and servicing of overhead and padmount distribution transformers, including associated switching cabinets, auto-tranformers, regulators, and padlocks for the padmount transformers. Attachment 4, pages 1 through 3, document the assumptions that underly the 2007 original and updated forecasts of five capital programs managed by HECO's Customer Installations Department. Program P1680000, Tsf and Equip Pur, is one of these capital programs with test year inputs and costs noted as either "P1680000" or "P1680". Recorded 2005 information provided the starting point for the test year estimates for service orders and unit costs (see pages 4, 5, and 8). Unit and efficiency assumptions noted on pages 9 and 10 were then applied to the historical units and costs. The only exception is the estimate for materials which was based on average transformer price assumptions provided by C. Barnes (see page 20). The allocations of the forecasted labor hours and costs were based on 2005 historical information provided on pages 12 through 19 and the inputs are summarized on page 11. These inputs, along with the inclusion of on-costs and the use of standard labor rates, resulted in the original test year estimate of $6,751,407. A budget decrease of $800,000 is the primary driver for the updated test year estimate of $6,003,342.

d. Program P1700000, Misc UG Serv & Extn, reflects the installation or replacement of underground services to new and existing customers. This program is also one of the

programs managed by HECO's Customer Installations Department. Documentation supporting inputs and costs for this program is noted as either "P1700000" or "P1700" in Attachment 4. Recorded 2005 information provided the basis for the test year estimates for service orders and unit costs (see pages 4 and 5). The number of historical labor costs and associated hours were then adjusted for a prior period true-up made in 2005 which is described on page 7, with the resulting calculation of "normalized" unit costs reflected on page 8. Based on these normalized unit costs and assumed service order and improvement efficiencies for the test year, noted on pages 9 and 10, inputs to generate the test year estimate were developed (see page 11). The allocations of the estimated labor hours and input costs were based on 2005 historical information provided on pages 12 through 19, and along with the addition of on-costs and other costs, the original test year estimate of $12,154,891 was generated. Other costs included plant additions that were estimated to be contributed to the Company by customers (in-kind CIAC of $2,300,000). With the reflection of January through April recorded costs and a revision of costs to the subsequent months, the test year update increased slightly to $12,313,921.

The Company has recently increased its test year estimate of in-kind CIAC associated with this program by $2,355,000 (see the Company's response to CA-IR-395). As a result, the plant additions for this program are increased by an identical amount to reflect the additional customer contributions. This treatment mirrors how the Company records the receipt of in-kind CIAC. Thus, the test year plant addition estimate for P3400000 now totals $14,668,921. As a result, the receipt of in-kind CIAC has no impact on the test year rate base.

e. As discussed in HECO-738 (Description of C&M Programs) provided in the testimony of Mr. Robert Young (T-7), the purpose of program P3400000, Prev OH Dist Repl, is the repair or replacement of overhead distribution poles and associated equipment, including anchors, aerial cables, conductors and fixtures prior to failure. Attachment 5 lists the 3 initiatives of "Lightning Arrester Repl", "Omni-rupter Inst/Repl", and "Pole Repl" that are the primary drivers of costs for P3400000. Also, Attachment 5 details the assumptions associated with these initiatives that underly the test year estimates. Detailed labor inputs for the development of the 2007 test year estimate are provided on page 1 of Attachment 6. These inputs were based on the calculation of required labor hours reflected on the lower half of page 2 of Attachment 6. The historical information on the top half of page 2, were used to allocate the labor hours by month and among the program's expense (NE), removal (NR), and installation (NI) activities. Inputs and costs coded as installation (NI) components in the attachment represent capital /plant addition costs. Material and other costs used to develop the test year estimate were based on historical information. Unfortunately, the supporting documentation for these costs could not be located. The labor hours and other costs that were used as inputs to develop the test year estimate submitted in Mr. Morikami's (T-16) direct testimony are shown on page 3, with the costs that comprise the original test year estimate of $2,487,272 reflected on page 4. The replacement of the January through April 2007 estimates with recorded amounts was the primary reason for the change of the test year estimate to $2,239,079 as reflected on page 5.

P0000122

			2007-2008 hrs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
__TCS-ED	478	NI	373	32	35	22	35	34	36	22	25	42	41	28	21
				9%	9%	6%	9%	9%	10%	6%	7%	11%	11%	8%	6%
__TCS-ED	478	NR	66	7	2	9	7	2	4	9	3	9	7	3	4
				11%	3%	14%	10%	3%	7%	14%	5%	14%	10%	5%	6%
D_OHCREW	478	NE	181	12	24	2	4	2	1	3	10	51	52	3	16
				7%	13%	1%	2%	1%	0%	2%	5%	28%	29%	2%	9%
D_OHCREW	478	NI	6,048	628	477	519	387	434	460	416	549	666	438	439	634
				10%	8%	9%	6%	7%	8%	7%	9%	11%	7%	7%	10%
D_OHCREW	478	NR	1,128	67	84	68	93	84	96	135	86	80	138	70	126
				6%	7%	6%	8%	7%	9%	12%	8%	7%	12%	6%	11%
D_OHCREW	501	NE	185	9	13	7	22	17	21	11	13	33	10	13	14
				5%	7%	4%	12%	9%	11%	6%	7%	18%	6%	7%	8%
D_OHCREW	501	NI	238	13	14	20	10	13	22	19	24	24	23	40	14
				6%	6%	8%	4%	6%	9%	8%	10%	10%	10%	17%	6%
D_OHCREW	501	NR	51	5	4	2	1	2	2	2	14	1	6	7	6
				10%	9%	4%	2%	4%	5%	3%	27%	1%	11%	14%	11%
D_PTM	478	NI	1,294	89	126	146	130	113	95	116	89	104	103	83	101
				7%	10%	11%	10%	9%	7%	9%	7%	8%	8%	6%	8%
D_PTM	501	NI	39	3	2	1	4	1	5	3	7	5	1	3	4
				7%	5%	3%	10%	3%	12%	9%	17%	12%	3%	8%	11%
D_OHCREW	347	NE	548	42	-	10	21	6	158	-	-	106	192	13	-
	Materials	NI	8,686	672	-	158	334	95	2,503	-	-	1,675	3,045	203	-
	O/S Svc-Gen	NI	2,153	167	-	39	83	24	621	-	-	415	755	50	-
	O/S Svc-Const	NI	46,553	3,601	-	849	1,792	510	13,417	-	-	8,976	16,322	1,087	-
	O/S Svc-Const	NR	505	39	-	9	19	6	146	-	-	97	177	12	-
				8%	0%	2%	4%	1%	29%	0%	0%	19%	35%	2%	0%
Maint UG Man/Handholes															
D_UGCREW	478	NE	1,920	160	160	160	160	160	160	160	160	160	160	160	160
D_UGCREW	478	NE	679	57	57	47	49	40	27	53	63	79	96	46	66
	Materials		28,466	2,374	2,376	1,971	2,067	1,665	1,120	2,206	2,644	3,326	4,043	1,908	2,768
	O/S Svc-Gen		32,354	2,698	2,700	2,240	2,350	1,892	1,273	2,507	3,005	3,780	4,595	2,169	3,146
	O/S Svc-Const		15,430	1,287	1,288	1,068	1,121	902	607	1,196	1,433	1,803	2,191	1,034	1,500
				8%	8%	7%	7%	6%	4%	8%	9%	12%	14%	7%	10%
D_UGCREW	478	NI	4,537	328	330	365	308	517	325	337	400	598	383	300	344
	Materials		421,289	30,491	30,639	33,929	28,597	47,987	30,222	31,299	37,157	55,557	35,607	27,899	31,906
	O/S Svc-Gen		104,414	7,557	7,594	8,409	7,088	11,893	7,490	7,757	9,209	13,770	8,825	6,915	7,908
	O/S Svc-Const		2,257,834	163,412	164,206	181,838	153,260	257,177	161,969	167,741	199,139	297,750	190,829	149,520	170,995

S:\ConstructionMaintenance\Administrative\Administrative\Budget Forms\2007\Corrective\P0000122 (hours).xls

P0000122

			2007-2008 hrs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	O/S Svc-Environ		**1,693**	123	123	136	115	193	121	126	149	223	143	112	128
				7%	7%	8%	7%	11%	7%	7%	9%	13%	8%	7%	8%
D_UGCREW	478	NR	**1,946**	169	137	137	188	181	166	145	185	152	120	117	247
	O/S Svc-Gen		**3,111**	271	220	219	301	289	265	232	296	244	192	188	395
	O/S Svc-Const		**24,485**	2,130	1,730	1,723	2,371	2,272	2,088	1,823	2,330	1,918	1,515	1,477	3,109
				9%	7%	7%	10%	9%	9%	7%	10%	8%	6%	6%	13%
D_UGCREW	501	NE	**163**	11	6	23	14	8	18	17	8	7	4	16	31
	Materials		**1,514**	104	56	218	131	76	171	157	72	63	33	147	287
	O/S Svc-Gen		**1,721**	118	63	248	149	86	195	178	82	72	38	167	326
	O/S Svc-Const		**821**	56	30	118	71	41	93	85	39	34	18	79	155
	Oth Oper Rev		**(39,588)**	(2,717)	(1,455)	(5,700)	(3,420)	(1,989)	(4,481)	(4,099)	(1,876)	(1,649)	(873)	(3,832)	(7,495)
				7%	4%	14%	9%	5%	11%	10%	5%	4%	2%	10%	19%
D_UGCREW	501	NI	**367**	37	4	36	32	-	37	33	39	68	25	24	32
	Materials		**4,343**	441	43	430	383	-	443	385	463	802	297	282	373
	O/S Svc-Gen		**1,076**	109	11	107	95	-	110	95	115	199	74	70	92
	O/S Svc-Const		**23,277**	2,363	228	2,306	2,053	-	2,376	2,066	2,481	4,299	1,594	1,512	2,000
	Oth Oper Rev		**(20,597)**	(2,091)	(202)	(2,041)	(1,817)	-	(2,102)	(1,828)	(2,195)	(3,804)	(1,410)	(1,338)	(1,770)
				10%	1%	10%	9%	0%	10%	9%	11%	18%	7%	6%	9%
D_UGCREW	501	NR	**113**	27	-	20	3	-	6	10	5	4	5	5	28
	O/S Svc-Const		**252**	60	-	45	8	-	12	23	10	9	12	10	62
	Oth Oper Rev		**(6,866)**	(1,623)	-	(1,222)	(210)	-	(340)	(632)	(280)	(255)	(331)	(282)	(1,690)
				24%	0%	18%	3%	0%	5%	9%	4%	4%	5%	4%	25%

Capital hours	150	1,113	980	947	1,133	1,507	1,015	918	1,149
Materials	201	$ 48,082	$ 33,168	$ 31,684	$ 37,620	$ 58,034	$ 38,949	$ 28,384	$ 32,279
O/S - General	501	$ 11,917	$ 8,221	$ 7,853	$ 9,324	$ 14,383	$ 9,653	$ 7,035	$ 8,000
O/S - Const	505	$ 257,687	$ 177,762	$ 169,806	$ 201,620	$ 311,025	$ 208,744	$ 152,118	$ 172,995
O/S - Env	508	$ 193	$ 121	$ 126	$ 149	$ 223	$ 143	$ 112	$ 128
Oth Oper Rev	905	$ -	$ (2,102)	$ (1,828)	$ (2,195)	$ (3,804)	$ (1,410)	$ (1,338)	$ (1,770)

_LbrClass	_Act	_Ind		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Avg
__TCS-ED	478	NI	2001	-	-	-	-	-	-	-	-	19	-	10	5		
			2002	19	31	11	10	45	22	20	27	33	71	17	15		
			2003	28	21	32	19	91	87	52	47	56	107	101	47		
			2004	47	55	35	96	25	50	38	51	83	29	10	37		37.27
			2005	67	71	33	52	7	20	1	2	18	-	2	2		18.40
__TCS-ED	478	NI		32	35	22	35	34	36	22	25	42	41	28	21	373	
				9%	9%	6%	9%	9%	10%	6%	7%	11%	11%	8%	6%		
__TCS-ED	478	NR	2001	-	-	-	-	-	-	-	-	10	-	3	-		
			2002	13	-	-	-	-	2	6	6	5	10	8	-		
			2003	6	-	3	-	-	4	4	-	-	8	3	7		
			2004	3	-	7	16	-	9	27	10	23	17	2	9		9.28
			2005	15	11	36	18	9	8	9	-	9	-	-	2		8.50
__TCS-ED	478	NR		7	2	9	7	2	5	9	3	9	7	3	4	66	
				11%	3%	14%	10%	3%	7%	14%	5%	14%	10%	5%	6%		
D_OHCREW	478	NE	2001	6	21	6	13	-	-	10	39	16	208	12	8		12.49
			2002	9	96	4	-	7	-	-	1	6	-	2	3		3.64
			2003	42	2	2	-	3	-	5	-	0	20	3	9		4.53
			2004	4	-	-	5	-	-	-	-	32	34	-	44		
			2005	-	-	-	5	-	3	1	9	201	-	-	20		
D_OHCREW	478	NE		12	24	2	4	2	1	3	10	51	52	3	16	181	
				7%	13%	1%	2%	1%	0%	2%	5%	28%	29%	2%	9%		
D_OHCREW	478	NI	2001	-	16	8	15	4	1	11	47	1,026	306	195	5		
			2002	613	919	810	216	382	275	334	363	166	678	191	374		
			2003	518	444	339	413	845	1,019	972	977	910	876	750	1,769		
			2004	1,497	559	972	838	865	710	630	1,074	951	-	768	681		680.54
			2005	514	446	469	457	76	293	137	285	277	331	291	343		277.25
D_OHCREW	478	NI		628	477	519	388	434	460	417	549	666	438	439	634	6,048	
				10%	8%	9%	6%	7%	8%	7%	9%	11%	7%	7%	10%		
D_OHCREW	478	NR	2001	-	15	4	6	-	-	31	22	10	33	36	18		
			2002	88	150	83	167	178	136	342	98	79	66	70	192		
			2003	107	139	28	89	51	69	73	42	54	258	129	131		
			2004	81	35	130	148	188	166	185	203	179	210	55	121		121.17
			2005	58	79	96	56	5	113	46	66	79	124	62	169		79.33

_LbrClass	_Act	_Ind		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Avg
D_OHCREW	478	NR		67	84	68	93	84	96	135	86	80	138	70	126	1,128	
				6%	7%	6%	8%	7%	9%	12%	8%	7%	12%	6%	11%		
D_OHCREW	501	NE	2001	-	-	-	-	-	-	-	-	-	-	-	-		
			2002	-	-	-	-	-	-	-	-	-	-	-	10		
			2003	3	10	24	76	51	32	17	17	22	17	6	9		16.97
			2004	30	4	3	11	25	62	4	2	10	10	20	4		10.00
			2005	15	52	9	23	11	10	36	47	135	25	37	50		25.36
D_OHCREW	501	NE		10	13	7	22	17	21	11	13	33	10	13	15	185	
				5%	7%	4%	12%	9%	11%	6%	7%	18%	6%	7%	8%		
D_OHCREW	501	NI	2001	-	-	-	7	14	-	20	3	25	11	-	-		
			2002	-	-	62	8	-	26	-	-	45	21	-	-		
			2003	19	-	-	-	-	15	19	60	32	64	83	17		
			2004	38	52	34	16	46	55	46	49	8	8	110	31		31.05
			2005	10	20	3	20	8	15	14	10	10	14	10	20		10.00
D_OHCREW	501	NI		13	14	20	10	14	22	20	24	24	24	41	14	238	
				6%	6%	8%	4%	6%	9%	8%	10%	10%	10%	17%	6%		
D_OHCREW	501	NR	2001	-	-	-	-	-	-	-	-	-	-	-	-		
			2002	-	-	-	-	-	-	-	-	-	-	-	-		
			2003	-	-	-	-	-	-	-	8	3	9	4	3		
			2004	5	3	9	5	8	9	4	58	-	11	4	5		5.00
			2005	20	20	2	-	1	3	4	2	-	8	28	21		7.94
D_OHCREW	501	NR		5	5	2	1	2	2	2	14	1	6	7	6	51	
				10%	9%	4%	2%	4%	5%	3%	27%	1%	11%	14%	11%		
D_PTM	478	NI	2001	-	-	-	-	-	-	30	8	5	-	-	-		
			2002	-	-	8	3	-	-	2	-	-	4	-	-		
			2003	62	161	155	125	129	92	166	163	206	214	206	321		
			2004	230	235	359	181	177	223	164	245	183	167	199	167		167.17
			2005	151	234	206	340	261	161	220	30	127	127	10	15		127.46
D_PTM	478	NI		88	126	146	130	113	95	116	89	104	103	83	101	1,294	
				7%	10%	11%	10%	9%	7%	9%	7%	8%	8%	6%	8%		
D_PTM	501	NI	2001	-	-	-	-	-	-	-	-	-	-	-	-		
			2002	-	-	-	3	-	-	-	-	-	-	-	-		
			2003	4	-	-	-	-	12	8	17	8	2	10	15		

_LbrClass	_Act	_Ind		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Avg
			2004	6	5	5	15	4	9	4	15	14	2	6	6		5.94
			2005	3	4	1	3	3	4	6	2	2	2	-	-		2.30
D_PTM	501	NI		3	2	1	4	1	5	3	7	5	1	3	4	39	
				7%	5%	3%	10%	3%	12%	9%	17%	12%	3%	8%	11%		
D_UGCREW	347	NI	2001	-	-	-	-	-	-	-	-	33	-	-	-		
			2002	-	-	-	-	-	-	-	-	-	-	-	-		
			2003	-	-	-	-	-	-	-	-	-	280	64	-		
			2004	-	-	-	106	30	259	-	-	284	682	-	-		
			2005	212	-	50	-	-	531	-	-	212	-	-	-		
D_UGCREW	347	NI		42	-	10	21	6	158	-	-	106	192	13	-	548	
				8%	0%	2%	4%	1%	29%	0%	0%	19%	35%	2%	0%		
D_UGCREW	478	NE	2001	45	60	21	21	38	42	85	95	84	215	49	70		49.00
			2002	62	-	50	-	-	-	-	-	-	-	-	-		
			2003	-	48	-	-	24	-	38	-	28	170	51	102		38.00
			2004	51	93	62	103	88	25	64	170	173	65	111	141		
			2005	126	82	102	123	49	67	76	51	112	34	18	18		
D_UGCREW	478	NE		57	57	47	49	40	27	53	63	79	96	46	66	679	
				8%	8%	7%	7%	6%	4%	8%	9%	12%	14%	7%	10%		
D_UGCREW	478	NI	2001	24	104	19	68	63	32	85	134	1,091	136	186	78		
			2002	91	294	529	99	318	219	102	176	302	573	184	329		
			2003	307	180	274	84	1,088	697	783	757	623	640	610	561		
			2004	822	613	617	653	560	396	424	569	679	356	436	449		449.45
			2005	399	459	389	637	555	285	293	366	296	214	87	301		296.45
D_UGCREW	478	NI		328	330	365	308	517	326	337	400	598	384	300	344	4,537	
				7%	7%	8%	7%	11%	7%	7%	9%	13%	8%	7%	8%		
D_UGCREW	478	NR	2001	24	43	6	14	56	38	121	105	37	37	49	332		
			2002	71	99	110	111	123	106	71	154	209	163	128	283		
			2003	171	69	140	119	160	89	77	83	210	136	101	212		
			2004	187	272	113	168	301	291	246	233	258	121	197	66		
			2005	395	205	317	530	264	307	210	352	49	145	112	343		
D_UGCREW	478	NR		169	137	137	188	181	166	145	185	152	120	117	247	1,946	
				9%	7%	7%	10%	9%	9%	7%	10%	8%	6%	6%	13%		
D_UGCREW	501	NE	2001	-	-	-	-	-	-	-	-	-	-	-	16		

_LbrClass	_Act	_Ind		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Avg
			2002	-	-	-	-	-	-	-	-	-	-	-	-		
			2003	14	-	87	30	29	20	29	20	-	-	19	37		20.36
			2004	24	8	23	12	12	41	40	18	17	12	23	63		18.32
			2005	19	22	8	29	-	32	16	-	18	6	38	39		
D_UGCREW	501	NE		11	6	24	14	8	18	17	8	7	4	16	31	163	
				7%	4%	14%	9%	5%	11%	10%	5%	4%	2%	10%	19%		
D_UGCREW	501	NI	2001	12	-	-	-	-	-	15	70	106	-	-	4		
			2002	-	-	114	162	-	44	-	-	131	58	-	-		
			2003	43	-	-	-	-	44	50	77	22	17	85	52		
			2004	24	18	36	-	-	87	48	15	47	6	-	23		23.31
			2005	108	-	33	-	-	14	50	34	34	45	34	79		34.29
D_UGCREW	501	NI		37	4	36	32	-	38	33	39	68	25	24	32	367	
				10%	1%	10%	9%	0%	10%	9%	11%	18%	7%	6%	9%		
D_UGCREW	501	NR	2001	46	-	-	-	-	-	-	-	-	-	-	12		
			2002	-	-	-	-	-	-	-	-	-	-	-	-		
			2003	-	-	-	-	-	-	-	8	14	-	-	61		
			2004	20	-	51	17	-	28	40	15	-	-	-	16		17.25
			2005	68	-	50	-	-	-	12	-	7	27	23	51		23.21
D_UGCREW	501	NR		27	-	20	3	-	6	10	5	4	5	5	28	113	
				24%	0%	18%	3%	0%	5%	9%	4%	4%	5%	4%	25%		

Note, as there were negative amounts incurred during some months, primarily due to transfer of costs.
Recalculated average hours for the year, by adding positive amount and removing high and low, then dividing by months.
Recalculated amounts were then substituted for negative amounts.

*Proj #	P0000122

		*EE #					
*Ind #	Data	201	205	501	505	508	Grand Total
NE	2001	719	-	-	9,917		10,636
	2002	57	-	-	1,840		1,897
	2003	14,112	3,748	21,747	5,936		45,543
	2004	47,052	14,251	62,910	24,607		148,820
	2005	61,056	10,419	87,441	39,777		198,693
NI	2001	190,426	-	11,640	156,320	-	358,386
	2002	296,317	181	9,061	371,233	-	676,792
	2003	513,397	834	12,338	722,939	417	1,249,925
	2004	638,026	150	435,683	6,311,487	8,726	7,394,072
	2005	532,081	180	69,497	4,076,343	(417)	4,677,684
NR	2001	(17,281)	189	1,019	8,968		(7,105)
	2002	1,231	98	5,104	13,181		19,614
	2003	(17,267)	-	579	5,136		(11,552)
	2004	4,080	-	5,917	197,994		207,991
	2005	(47)	-	3,415	(99,070)		(95,702)
Total 2001		173,864	189	12,659	175,205	-	361,917
Total 2002		297,605	279	14,165	386,254	-	698,303
Total 2003		510,242	4,582	34,664	734,011	417	1,283,916
Total 2004		689,158	14,401	504,510	6,534,088	8,726	7,750,883
Total 2005		593,090	10,599	160,353	4,017,050	(417)	4,780,675

Average							
	NE	24,599	5,684	34,420	16,415	-	81,118
	NI	434,049	269	107,644	2,327,664	1,745	2,871,372
	NR	(5,857)	57	3,207	25,242	-	22,649
	NE						
94%	478	23,123	5,343	32,354	15,430	-	76,251
5%	501	1,230	284	1,721	821	-	4,056
		24,353	5,627	34,075	16,251	-	80,307
	NI						
2%	347	8,681	5	2,153	46,553	35	57,427
97%	484	421,028	261	104,414	2,257,834	1,693	2,785,231
1%	505	4,340	3	1,076	23,277	17	28,714
		434,049	269	107,644	2,327,664	1,745	2,871,372
	NR						
2%	347	(117)	1	64	505	-	453
97%	484	(5,681)	56	3,111	24,485	-	21,970
1%	505	(59)	1	32	252	-	226
		(5,857)	57	3,207	25,242	-	22,649

Note <1>: Will not forecast EE 508 for NI Act 347 and 505 and EE 501 for NR Act 347 and 505, as amounts are immaterial.

Note <2>: Will not forecast EE 201 and 205 for NR activities, as amounts are historically negative.

*Proj #	P0000122

			*EE #									
*Ind #	*Act #	Data	201	205	301	501	505	508	905	Grand Total		
NE	347	2001					-			-		
		2002					-			-		
		2003					-			-		
		2004					-			-		
		2005					764			764	153	
	478	2001	706	-	-	-	9,917			10,623		
		2002	-	-	-	-	-			-		
		2003	13,444	3,748	(394)	19,584	4,432			40,814		
		2004	45,886	14,251	-	60,961	16,677			137,775		
		2005	60,621	10,419	89	85,798	34,678			191,605	76,163	94%
	501	2001	-			-	-		-	-		
		2002	57			-	-		-	57		
		2003	668			1,738	1,504		-	3,910		
		2004	1,166			1,949	7,930		-	11,045		
		2005	435			1,643	4,335		492	6,905	4,383	5%
NE 2001			706	-	-	-	9,917		-	10,623		
NE 2002			57	-	-	-	-		-	57		
NE 2003			14,112	3,748	(394)	21,322	5,936		-	44,724		
NE 2004			47,052	14,251	-	62,910	24,607		-	148,820		
NE 2005			61,056	10,419	89	87,441	39,777		492	199,274	80,700	
NI	347	2001	3,292			-	152			3,444		
		2002	-			-	-			-		
		2003	40,015			-	3,923			43,938		
		2004	112,049			503	49,691			162,243		
		2005	103,826			146	1,193			105,165	62,958	2%
	478	2001	169,841	-	332	7,486	145,948	-		323,607		
		2002	274,202	181	-	7,276	363,606	-		645,265		
		2003	419,040	834	1,012	10,909	719,016	417		1,151,228		
		2004	517,653	150	-	430,649	6,253,209	-		7,201,661		
		2005	419,101	-	-	65,575	4,063,609	(417)		4,547,868	2,773,926	97%
	501	2001	15,579	-	936	4,154	1,400	-	-	22,069		
		2002	21,642	-	-	1,785	1,108	-	-	24,535		
		2003	54,342	-	-	1,429	-	-	-	55,771		
		2004	8,324	-	-	4,531	8,587	8,726	(1,851)	28,317		
		2005	9,154	180	-	3,776	21,029	-	-	34,139	32,966	1%
NI 2001			188,712	-	1,268	11,640	147,500	-	-	349,120		
NI 2002			295,844	181	-	9,061	364,714	-	-	669,800		
NI 2003			513,397	834	1,012	12,338	722,939	417	-	1,250,937		
NI 2004			638,026	150	-	435,683	6,311,487	8,726	(1,851)	7,392,221		
NI 2005			532,081	180	-	69,497	4,085,831	(417)	-	4,687,172	2,869,850	
NR	347	2001	-			-				-		
		2002	-			-				-		
		2003	90			-				90		
		2004	-			1,851				1,851		
		2005	-			-				-	388	2%
	478	2001	(17,646)	189	(205)	1,019	8,968			(7,675)		
		2002	1,231	98	-	5,104	13,181			19,614		
		2003	(17,305)	-	(428)	579	5,136			(12,018)		
		2004	4,028	-	-	3,513	197,994			205,535		
		2005	(47)	-	-	3,415	(99,070)			(95,702)	21,951	97%
	501	2001	365			-				365		
		2002	-			-				-		
		2003	(52)			-				(52)		
		2004	52			553				605		
		2005	-			-				-	184	1%
NR 2001			(17,281)	189	(205)	1,019	8,968			(7,310)		
NR 2002			1,231	98	-	5,104	13,181			19,614		
NR 2003			(17,267)	-	(428)	579	5,136			(11,980)		
NR 2004			4,080	-	-	5,917	197,994			207,991		
NR 2005			(47)	-	-	3,415	(99,070)			(95,702)	22,523	
Total 2001			172,137	189	1,063	12,659	166,385	-	-	352,433		
Total 2002			297,132	279	-	14,165	377,895	-	-	689,471		
Total 2003			510,242	4,582	190	34,239	734,011	417	-	1,283,681		
Total 2004			689,158	14,401	-	504,510	6,534,088	8,726	(1,851)	7,749,032		
Total 2005			593,090	10,599	89	160,353	4,026,538	(417)	492	4,790,744		

Note, amounts will not total, as not all activities are showing. Totals calculated based off of actual amount (see "Total" tab).

_Proj	Project	_EE	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	FY07
P0000122	Cor (Inc Emg) Mis Cable Rpl	150	1,130	988	1,109	906	1,112	980	946	1,133	1,507	1,014	917	1,150	12,892
P0000122	Cor (Inc Emg) Mis Cable Rpl	201	31,604	30,682	34,517	29,314	48,082	33,168	31,684	37,620	58,034	38,949	28,384	32,279	434,317
P0000122	Cor (Inc Emg) Mis Cable Rpl	401	31,604	30,682	34,517	29,314	48,082	33,168	31,684	37,620	58,034	38,949	28,384	32,279	434,317
P0000122	Cor (Inc Emg) Mis Cable Rpl	404	1,130	988	1,109	906	1,112	980	946	1,133	1,507	1,014	917	1,150	12,892
P0000122	Cor (Inc Emg) Mis Cable Rpl	406	1,130	988	1,109	906	1,112	980	946	1,133	1,507	1,014	917	1,150	12,892
P0000122	Cor (Inc Emg) Mis Cable Rpl	421	1,130	988	1,109	906	1,112	980	946	1,133	1,507	1,014	917	1,150	12,892
P0000122	Cor (Inc Emg) Mis Cable Rpl	422	1,130	988	1,109	906	1,112	980	946	1,133	1,507	1,014	917	1,150	12,892
P0000122	Cor (Inc Emg) Mis Cable Rpl	423	43,906.98	38,604.50	43,491.05	35,632.96	44,144.60	38,384.44	37,233.86	44,439.47	59,506.23	39,901.12	35,815.77	44,744.92	505,805.90
P0000122	Cor (Inc Emg) Mis Cable Rpl	430	322,944.08	304,705.57	340,902.98	285,951.30	434,931.76	318,795.40	305,901.35	364,000.29	537,397.33	361,920.22	281,015.52	329,863.88	4,188,329.68
P0000122	Cor (Inc Emg) Mis Cable Rpl	501	7,833	7,605	8,555	7,266	11,917	8,221	7,852	9,324	14,384	9,654	7,035	8,000	107,646
P0000122	Cor (Inc Emg) Mis Cable Rpl	505	169,376	164,434	184,993	157,105	257,687	177,762	169,807	201,620	311,025	208,745	152,119	172,995	2,327,668
P0000122	Cor (Inc Emg) Mis Cable Rpl	508	123	123	136	115	193	121	126	149	223	143	112	128	1,692
P0000122	Cor (Inc Emg) Mis Cable Rpl	905	-2,091	-202	-2,041	-1,817	0	-2,102	-1,828	-2,195	-3,804	-1,410	-1,338	-1,770	-20,598
			610,950.06	581,574.07	650,616.03	547,411.26	850,597.36	612,417.84	587,190.21	698,242.76	1,042,334.56	701,921.34	536,112.29	624,269.80	8,043,637.58

_Proj	Project	_EE	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	FY07
P0000122	Cor (Inc Emg) Mis Cable Rpl	150	$43,906.98	$38,604.50	$43,491.05	$35,632.96	$44,144.60	$38,384.44	$37,233.86	$44,439.47	$59,506.23	$39,901.12	$35,815.77	$44,744.92	$505,805.90
P0000122	Cor (Inc Emg) Mis Cable Rpl	201	$31,604.00	$30,682.00	$34,517.00	$29,314.00	$48,082.00	$33,168.00	$31,684.00	$37,620.00	$58,034.00	$38,949.00	$28,384.00	$32,279.00	$434,317.00
P0000122	Cor (Inc Emg) Mis Cable Rpl	401	$3,331.06	$3,233.88	$3,638.09	$3,089.70	$5,067.84	$3,495.91	$3,339.49	$3,965.15	$6,116.78	$4,105.22	$2,991.67	$3,402.21	$45,777.01
P0000122	Cor (Inc Emg) Mis Cable Rpl	404	$43,312.90	$37,870.04	$42,507.97	$34,726.98	$42,622.96	$37,563.40	$36,260.18	$43,427.89	$57,763.31	$38,866.62	$35,148.81	$44,079.50	$494,150.36
P0000122	Cor (Inc Emg) Mis Cable Rpl	406	$3,243.10	$2,835.56	$3,182.83	$2,600.22	$3,191.44	$2,812.60	$2,715.02	$3,251.71	$4,325.09	$2,910.18	$2,631.79	$3,300.50	$37,000.04
P0000122	Cor (Inc Emg) Mis Cable Rpl	421	$4,825.10	$4,218.76	$4,735.43	$3,868.62	$4,748.24	$4,184.60	$4,039.42	$4,837.91	$6,434.89	$4,329.78	$3,915.59	$4,910.50	$55,048.84
P0000122	Cor (Inc Emg) Mis Cable Rpl	422	$13,910.30	$12,162.28	$13,651.79	$11,152.86	$13,688.72	$12,063.80	$11,645.26	$13,947.23	$18,551.17	$12,482.34	$11,288.27	$14,156.50	$158,700.52
P0000122	Cor (Inc Emg) Mis Cable Rpl	423	$3,569.64	$3,138.55	$3,535.82	$2,896.96	$3,588.96	$3,120.65	$3,027.11	$3,612.93	$4,837.86	$3,243.96	$2,911.82	$3,637.76	$41,122.02
P0000122	Cor (Inc Emg) Mis Cable Rpl	430	$8,299.66	$7,830.93	$8,761.21	$7,348.95	$11,177.75	$8,193.04	$7,861.66	$9,354.81	$13,811.11	$9,301.35	$7,222.10	$8,477.50	$107,640.07
P0000122	Cor (Inc Emg) Mis Cable Rpl	501	$7,833.00	$7,605.00	$8,555.00	$7,266.00	$11,917.00	$8,221.00	$7,852.00	$9,324.00	$14,384.00	$9,654.00	$7,035.00	$8,000.00	$107,646.00
P0000122	Cor (Inc Emg) Mis Cable Rpl	505	$169,376.00	$164,434.00	$184,993.00	$157,105.00	$257,687.00	$177,762.00	$169,807.00	$201,620.00	$311,025.00	$208,745.00	$152,119.00	$172,995.00	$2,327,668.00
P0000122	Cor (Inc Emg) Mis Cable Rpl	508	$123.00	$123.00	$136.00	$115.00	$193.00	$121.00	$126.00	$149.00	$223.00	$143.00	$112.00	$128.00	$1,692.00
P0000122	Cor (Inc Emg) Mis Cable Rpl	905	-$2,091.00	-$202.00	-$2,041.00	-$1,817.00	$0.00	-$2,102.00	-$1,828.00	-$2,195.00	-$3,804.00	-$1,410.00	-$1,338.00	-$1,770.00	-$20,598.00
			$331,243.74	$312,536.50	$349,664.19	$293,300.24	$446,109.51	$326,988.44	$313,763.01	$373,355.09	$551,208.44	$371,221.58	$268,237.62	$338,341.39	$4,295,969.76

*Proj #	Project	*EE #	Jan 07 Act07$RA	Feb 07 Act07$RA	Mar 07 Act07$RA	Apr 07 Act07$RA	May 07 Update07	Jun 07 Update07	Jul 07 Update07	Aug 07 Update07	Sep 07 Update07	Oct 07 Update07	Nov 07 Update07	Dec 07 Update07
P0000122	Cor (Inc Emg) Mis Cable Rpl	150	0	0	0	0	B2/2 1,112	980	946	1,133	1,507	1,014	917	1,150
			$18,452	$28,714	$23,804	$8,050	$43,922	$38,190	$37,048	$44,217	$59,207	$39,699	$35,636	$44,522
		155	0	0	0	0	0	0	0	0	0	0	0	0
			-$2,871	-$1,595	-$4,403	-$700	B2/2 0	0	0	0	0	0	0	0
		201	0	0	0	0	48,082	33,168	31,684	37,620	58,034	38,949	28,384	32,279
			$34,875	$30,910	$27,429	$29,298	$48,082	$33,168	$31,684	$37,620	$58,034	$38,949	$28,384	$32,279
		205	0	0	0	0	0	0	0	0	0	0	0	0
			$0	$0	$1,441	$0	0	0	0	0	0	0	0	0
		301	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0
		400	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0
		401	0	0	0	0	48,082	33,168	31,684	37,620	58,034	38,949	28,384	32,279
			0	0	0	0	$6,049	$4,173	$3,986	$4,733	$7,301	$4,900	$3,571	$4,061
		404	0	0	0	0	1,112	980	946	1,133	1,507	1,014	917	1,150
			$18,771	$26,539	$22,252	$7,286	$37,263	$32,840	$31,700	$37,967	$50,500	$33,979	$30,729	$38,537
		406	0	0	0	0	1,112	980	946	1,133	1,507	1,014	917	1,150
			$1,804	$2,759	$2,384	$904	$3,692	$3,254	$3,141	$3,762	$5,003	$3,366	$3,044	$3,818
		421	0	0	0	0	1,112	980	946	1,133	1,507	1,014	917	1,150
			$1,945	$3,169	$2,526	$821	$4,804	$4,234	$4,087	$4,895	$6,510	$4,380	$3,961	$4,968
		422	0	0	0	0	1,112	980	946	1,133	1,507	1,014	917	1,150
			$6,057	$9,136	$8,112	$2,752	$13,355	$11,770	$11,361	$13,607	$18,099	$12,178	$11,013	$13,812
		423	0	0	0	0	43,922.35	38,190.42	37,047.77	44,217.40	59,207.18	39,698.76	35,635.65	44,522.23
			$1,265	$2,219	$1,547	$438	$3,215	$2,796	$2,712	$3,237	$4,334	$2,906	$2,609	$3,259
		430	0	0	0	0	430,179.10	314,425.29	301,675.87	358,934.99	530,815.94	357,489.73	276,874.61	324,607.95
			$1,422	$1,528	$1,024	$1,284	$13,594	$9,936	$9,533	$11,342	$16,774	$11,297	$8,749	$10,258
		431	0	0	0	0	0	0	0	0	0	0	0	0
			$2,921	$3,142	$2,029	$2,632	B2/2 0	0	0	0	0	0	0	0
		501	0	0	0	0	11,917	8,221	7,852	9,324	14,384	9,654	7,035	8,000
			$6,605	$4,013	$26,251	-$6,740	$11,917	$8,221	$7,852	$9,324	$14,384	$9,654	$7,035	$8,000
		505	0	0	0	0	B2/2 257,687	177,762	169,807	201,620	311,025	208,745	152,119	172,995
			$490,553	$399,148	$379,669	$633,211	$257,687	$177,762	$169,807	$201,620	$311,025	$208,745	$152,119	$172,995
		508	0	0	0	0	B2/2 193	121	126	149	223	143	112	128
			0	0	0	0	$193	$121	$126	$149	$223	$143	$112	$128
		905	0	0	0	0	0	-2,102	-1,828	-2,195	-3,804	-1,410	-1,338	-1,770
			-$11,400	-$25	-$2,150	-$363	$0	-$2,102	-$1,828	-$2,195	-$3,804	-$1,410	-$1,338	-$1,770
			$570,398	$509,658	$491,916	$678,873	$443,773	$324,361	$311,209	$370,277	$547,590	$368,786	$285,624	$334,866

Σ ① = 5,237,331

vehicle type	total # in fleet	avg. utilization in years	avg. replacement units per year	avg. cost per unit	estimated annual repl. Cost
sedan	124	6	21	$17,920	$370,347
light truck	248	10	25	$44,800	$1,111,040
med. Truck	37	12	3	$112,000	$345,333
heavy truck	59	15	4	$280,000	$1,101,333
misc.	210	15	14	$33,600	$470,400
					$3,398,453

			2007 VEHICLE BUDGET				
				SUBJECT TO CHANGE			
	LIGHT TRUCKS						
	VEH#	USER	MAKE	DESCRIPTION	YEAR	VENDOR	COST
1	A035	IT	GMC	12 Pass Van	1994	Cutter Chevy	$27.00
2	A045	IT	GMC	12 Pass Van	1994	Cutter Chevy	$27.00
3	B021	DS	GMC	PTM Truck	1994	Cutter Ford	$67.00
4	B030	DS	GMC	PTM Truck	1997	Cutter Ford	$67.00
5	B035	DS	GMC	PTM Truck	1995	Cutter Ford	$67.00
6	B018	DS	CHEVY	4x4 exted cab & 6' bed	1989	HON FORD	$28.00
7	B073	WX	CHEVY	CARGO VAN	1992	Cutter Ford	$24.00
8	B083	WX	CHEVY	CARGO VAN	1996	Cutter Ford	$24.00
9	B612	RS	CHEVY	CARGO VAN	1989	Cutter Chevy	$24.00
10	B637	RS	GMC	STEP VAN	1991	Cum-INTL	$147.00
11	B651	RS	CHEVY	STEP VAN	1994	Cum-INTL	$147.00
12	C073	DD	CHEVY	12 Pass Van	1995	Cutter Chevy	$25.00
13	K087	POOL	CHEVY	Cargo Van	1992	Cutter Chevy	$25.00
14	K040	VF	CHEVY	4x4 Crew Cab	1995	Cutter Ford	$32.00
15	C305	DJ	FORD	4x4 exted cab & 6' bed	1995	HON FORD	$27.00
16	C308	DJ	CHEVY	4x4 exted cab & 6' bed	1992	HON FORD	$27.00
17	C481	DU	CHEVY	CARGO VAN	1992	Cutter Ford	$25.00
18	G518	DP	GMC	4x4 exted cab & 6' bed	1972	HON FORD	$32.00
19	H823	VL	CHEVY	CARGO VAN	1993	Cutter Ford	$25.00
20	H921	VF	GMC	4x4 Pick up Trk	1989		$26.00
21	K080	POOL	CHEVY	4x4PU/ Reg.Cab	1991	HON FORD	$33.00
22	K082	POOL	CHEVY	4x4PU/ Reg.Cab	1993	HON FORD	$33.00
	V100	JW	DODGE	15 PASS VAN	1993	Cutter Ford	$28.00
						TOTAL	$987.00
	MEDIUM AND HEAVY TRUCKS:					VENDOR	COST
1	A022	VM	INTERNATIONAL	CUSTOM STAKE TRUCK	1985	Cum-INTL	$122.00
2	C370	CM	INTERNATIONAL	AH 75' BUCKET	1992	Altec	$390.00
3	C470	DU	INTERNATIONAL	AH 75' BUCKET	1992	Altec	$390.00
4	C530	DT	INTERNATIONAL	Instead.	1983	PTM Truck Instead	$50.00
5	C670	DD	INTERNATIONAL	4x4, 65' AERIAL BUCKET	1990	TEREX	$230.00
						Total	$1,182.00

	OFF ROAD & TRAILER EQUIPMENT						
	VEH#	USER	MAKE	DESCRIPTION		VENDOR	COST
	F003	VL	HYSTER	5 TON FORKLIFT		CAT Pacific	$45.00
1	PP59	JC	TAYLOR DUNN	ELECTRIC CARRIER		Oahu Battery	$8.00
2	PP74	IT	TAYLOR DUNN	ELECTRIC CARRIER		Oahu Battery	$8.00
3	PP77	IT	TAYLOR DUNN	ELECTRIC CARRIER		Oahu Battery	$8.00
4	KP10	IL	TAYLOR DUNN	ELECTRIC CARRIER		Oahu Battery	$8.00
5	PP83	IX	TAYLOR DUNN	ELECTRIC CARRIER		Oahu Battery	$8.00
6	KP84	IT	TAYLOR DUNN	ELECTRIC CARRIER		Oahu Battery	$8.00
7	TR14	DU	HOGG DAVIS	HP650		TEREX	$110.00
8	V002	JW	Boston Whaler	Boat & Trailer		Windward Boats	$90.00
9	WH03	VM	TCM	5 TON FORKLIFT		CAT Pacific	$45.00
	T004	DU	Gorman/Rupp	UG SUMP PUMP			$28.00
	PP20	IX	Hyster Forklift	5 ton Forklift			$50.00
	F004	VL	Hyster Forklift	4Ton Forklift			$50.00
						Total	**$466.00**
				BUDGET SUMMARY			
				SEDANS & SUVs		**$0.00**	
				LIGHT TRUCKS		**$987.00**	
				MED. & HEAVY TRUCKS		**$1,182.00**	
				OFF ROAD EQUIPT.		**$466.00**	
				STORES Overhead		**$276.00**	
		PROPOSED 2007 BUDGET TOTAL				**$2,911.00**	

Capital Budget Assumptions (3/6/06)

2007

Project Assumptions

1. We assumed that we are going to receive the same number of service requests as 2005: 6238 requests; 949 transformers.
2. We assumed a 10% efficiency improvement for P1510, P1580, P1700, P1820. (This assumption reduces the unit costs by 10%.) We assumed that the Company's Process Optimization Team's recommendations would be implemented, improving our efficiency and affecting future years.
3. We assumed an 8% increase in transformer cost based on Cecily Barnes' email dated 2/28/06. We are aware that ABB requested for a price increase because their material and labor cost to make each distribution transformer exceeds the our price. We believe that the price increase will be effective January 1, 2007.

   S:\
   CustomerInstallations
4. We are going to order 10% less transformer, reflecting the improvement process for ordering transformers.
5. We normalized the 2005 budget by adding back $900,000 worth of labor hours across the 4 programs to account for the SOX Project Closings and Transfers Audit . They were prorated based on a sample study done by Admin.
6. We assumed that we are going to keep the same level of consultants: Wes (3 days a week), Billy (2 days a week), Linda (3 days a week)
7. We assumed that we are going to keep the same level of agency temps: Lewa (5 days a week), Lorenzo (5 days a week)

2007-2011 Budget Recycle Assumptions (5/12/06)

1. Instead of adding 8% increase to the P1680000 Program (as is reflected in the current budget), add 20% based on the expected price increase from ABB for 2007 only. The percentage is an estimate based on Tony Koyamatsu's recommendation and Lori Nagata's approval (email 5/9/06). For 2008 to 2011, we will assume that the per-unit cost of the transformer will be the same as 2006 and adjusted for the normal pillar escalations rates.

   S:\ CustomerInstallations S:\ CustomerInstallations C:\Documents and Settings\EChe\Deskt

2. Convert O&M forecast for transfers from NPWZZZZ (nonproject) to the programs. The O&M forecast was assumed to be $300,000.
3. Adjust the number of service requests to meet the target of $25,511,400 for 2007.
4. Add $188,000 for consulting work for 2007.
5. As part of the effort to better forecast for clearing and get closer to what we actually do, we are forecasting for an additional 5,200 hours for NI. This should lower the labor hours forecasted to clearing during the resource leveling.
6. Add the 5,200 CID labor hours to displace
7. Relook at forecast for NE, BT, NC and NR.
8. Keep with the assumption that we will have a full staff of 6XGrade 44s, 3XGrade 15s, 4XGrade 12s, 6XGrade10s, 2XEFT Researchers, 2XJr. Drafter, 3XSupervisors, 1XDirector.
9. Keep the assumption of a 10% efficiency improvement for P1510, P1580, P1700, P1820. (This assumption reduces the unit costs by 10%.) Continue to assume that the Company's Process Optimization Team's recommendations would be implemented, improving our efficiency and affecting future years.
10. Keep the assumption of a 10% reduction in the number of transformers ordered, reflecting the process improvements for ordering transformers.
11. Keep the same level of consultants: Wes (3 days a week), Billy (2 days a week), Linda (3 days a week)
12. Keep the same level of agency temps: Lewa (5 days a week), Lorenzo (5 days a week) and add an agency temp: Mark Onodera (5 days a week)
13. The number of service requests used is based on the number received. There may be some lag in the costs because some projects are not completed the same year that it is created.
14. The estimates, except for transformers in 2007, is not escalated to reflect the higher commodity prices.
15. The following are the Department targets from the CBC meeting: (The 2007 target includes the 20% adjustment for the increase in cost for the transformers.)

    S:\ CustomerInstallations

16. We took 7,200 labor hours from the Non Project/Non Program file and prorated it among P1510, P1580, P1700, and P1820. Although initially the programs will exceed the target by about $1 million, the overall program cost will closer to the target after the on-cost rate is recalculated. This should reflect more realistically on how the Planners charge to the projects and on the on-cost rate.

($ in 1,000)	**2007**	**2008**	**2009**	**2010**	**2011**	**5-yr total**
Revised CID Target	$25,512	$25,633	$26,244	$29,645	$26,505	$133,539
Meter	$1,450	$1,312	$1,226	$1,366	$1,366	$6,720
Planning & Design	$24,062	$24,321	$25,018	$28,279	$25,139	$126,819

Capital

Number of NI Service Requests from Each Blanket
For 1/1/05 to 12/31/05

Blanket	Project	# of Requests ending 12/31/05	Total
P1510000	C1510001	719	2397
	C1510002	297	
	C1510003	491	
	C1510004	890	
	L1510097		
P1530000	C1530001		0
	C1530002		
	C1530003		
	L1530099		
P1570000	C1570001		0
	C1570002		
P1580000	C1580001	1606	1782
	C1580002	69	
	C1580003	107	
	L1580099		
P1700000	C1700001	357	1168
	C1700002	462	
	C1700003	347	
	C1700004	2	
	L1700099		
P1800000	C1800002		0
	C1800003		
P1820000	C1820001	767	891
	C1820002	100	
	C1820003	24	
	L1820099		
P1680000		1054	1054

Total Service Requests = **6238**
Total Transformers = **1054**

UNIT COST CALCULATION

Acts as of December 2005

Description	RA		YTD 1820 Hours	YTD 1820 $$	Hr / REQ	$ / REQ	YTD 1700 Hours	YTD 1700 $$	Hr / REQ	$ / REQ	YTD 1680 Hours	YTD 1680 $$	Hr / REQ	$ / REQ	YTD 1580 Hours	YTD 1580 $$	Hr / REQ	$ / REQ	YTD 1510 Hours	YTD 1510 $$	Hr / REQ	$ / REQ
LABOR																						
C&M	D	Act	5,609	$ 185,843	6	$ 209	39,854	$ 1,346,172	34	$ 1,153	-	$ -			8,385	$ 259,724	5	$ 146	6,684	$ 210,732	3	$ 88
		Bud	3,874	$ 140,179	4	$ 157	45,449	$ 1,636,450	39	$ 1,401	-	$ -			3,771	$ 135,379	2	$ 76	13,747	$ 494,330	6	$ 206
CID	W	Act	2,405	$ 70,396	3	$ 79	8,740	$ 310,422	7	$ 266	-	$ -			3,324	$ 88,422	2	$ 50	950	$ 28,539	0	$ 12
		Bud	2,503	$ 77,081	3	$ 87	15,259	$ 479,589	13	$ 411	-	$ -			1,747	$ 50,924	1	$ 29	5,846	$ 158,889	2	$ 66
ENGR	B	Act	342	$ 10,328	0	$ 12	1,682	$ 48,396	1	$ 41		$ -			1,006	$ 27,943	1	$ 16	825	$ 25,205	0	$ 11
		Bud	200	$ 5,849	0	$ 7	2,592	$ 77,543	2	$ 66		$ -			465	$ 13,489	0	$ 8	1,407	$ 40,148	1	$ 17
LAND & R/W	NL	Act	-									$ -			-	$ -						
		Bud	-									$ -			-	$ -						
LEGAL	NC	Act	2	$ 108	0	$ 0	-	$ -				$ -			-	$ -			-	$ -		
		Bud	-	$ -			-	$ -				$ -			-	$ -			-	$ -		
SPPT SVCS	V	Act	(2)	$ (58)	0	$ (0)	16	$ 560	0	$ 0	231	$ 7,399	0	$ 7	22	$ 660	0	$ 0	-	$ -		
		Bud	-	$ -			26	$ 687	0	$ 1	251	$ 6,625	0	$ 6	-	$ -			-	$ -		
SYS OPS	R	Act	99	$ 2,373	0	$ 3	2,527	$ 73,306	2	$ 63	50	$ 1,668	0	$ 2	130	$ 3,545	0	$ 2	171	$ 4,635	0	$ 2
		Bud	260	$ 8,153	0	$ 9	2,404	$ 71,706	2	$ 61	-	$ -			75	$ 2,032	0	$ 1	81	$ 2,225	0	$ 1
OTHER		Act	-4	$ (96)	0	$ (0)	-7	$ (220)	0	$ (0)					0	$ -			-1	$ (10)	0	$ (0)
		Bud	113	$ 2,681	0	$ 3	841	$ 19,948	1	$ 17					105	$ 2,491	0	$ 1	-	$ 10,318	0	$ 4
TTL LBR		**Act**	**8,452**	**$ 268,894**	**9**	**$ 302**	**52,813**	**$ 1,778,636**	**45**	**$ 1,523**	**281**	**$ 9,067**	**0**	**$ 9**	**12,867**	**$ 380,294**	**7**	**$ 213**	**8,629**	**$ 269,101**	**4**	**112**
		Bud	**6,950**	**$ 233,943**	**8**	**$ 263**	**66,571**	**$ 2,285,923**	**57**	**$ 1,957**	**251**	**$ 6,625**	**0**	**$ 6**	**6,163**	**$ 204,315**	**3**	**$ 115**	**21,081**	**$ 705,910**	**9**	**294**
MATERIALS																						
C&M	D	Act		$ 121,103	0	$ 136		$ 2,038,167	0	$ 1,745		$ -				$ 81,623	0	$ 46		$ 141,249	0	$ 59
		Bud		$ 67,995	0	$ 76		$ 1,906,055	0	$ 1,632		$ -				$ 53,081	0	$ 30		$ 144,101	0	$ 60
CID	D	Act		$ (2,747)	0	$ (3)		$ 262,249	0	$ 225		$ 5,263,561	0	$ 4,994		$ 25,616	0	$ 14		$ 142,181	0	$ 59
		Bud		$ 1,742	0	$ 2		$ 243,244	0	$ 208		$ 5,127,591	0	$ 4,865		$ 34,317	0	$ 19		$ 159,283	0	$ 66
TTL MATLS		**Act**	**0**	**$ 118,356**	**-**	**$ 49**	**0**	**$ 2,300,416**	**-**	**$ 960**	**0**	**$ 5,263,561**	**-**	**$ 2,196**	**0**	**$ 107,239**	**-**	**$ 45**		**$ 283,430**	**-**	**118**
		Bud	**0**	**$ 69,737**	**-**	**$ 29**	**0**	**$ 2,149,299**	**-**	**$ 897**	**0**	**$ 5,127,591**	**-**	**$ 2,139**	**0**	**$ 87,398**	**-**	**$ 36**		**$ 303,384**	**-**	**127**
O/S SVCS																						
C&M		Act		$ 146,277	0	$ 164		$ 848,467	0	$ 726						$ 163,478	0	$ 92		$ 198,915	0	$ 83
		Bud		$ 225,785	0	$ 253		$ 396,049	0	$ 339						$ 63,217	0	$ 35		$ 147,860	0	$ 62
CID		Act		$ 55,617	0	$ 62		$ 233,269	0	$ 200		$ 19,476	0	$ 18		$ 5,753	0	$ 3		$ 208,832	0	$ 87
		Bud		$ 3,155	0	$ 4		$ 30,080	0	$ 26		$ -				$ 7,446	0	$ 4		$ 3,000	0	$ 1
ENGR		Act		$ 97	0	$ 0		$ 2,366	0	$ 2						$ 4,914	0	$ 3		$ 2,047	0	$ 1
		Bud		$ -				$ -								$ -				$ -		
SYS OPS		Act						$ -								$ -						
		Bud						$ -								$ -						
Legal		Act						$ -								$ -						
		Bud						$ -								$ -						
SPPT SVCS		Act						$ -				$ 67,550	0	$ 64		$ -						
		Bud						$ -				$ 132,522	0	$ 126		$ -						
TTL O/S SVCS		**Act**	**-**	**$ 201,991**	**-**	**$ 227**	**-**	**$ 1,084,102**	**-**	**$ 928**	**-**	**$ 87,026**	**-**	**$ 83**	**0**	**$ 174,145**	**-**	**$ 98**		**$ 409,794**	**-**	**$ 171**
		Bud	**-**	**$ 228,940**	**-**	**$ 257**	**-**	**$ 426,129**	**-**	**$ 365**	**-**	**$ 132,522**	**-**	**$ 126**	**0**	**$ 70,663**	**-**	**$ 40**		**$ 150,860**	**-**	**$ 63**
TOTAL		**Act**	**8,452**	**$ 589,241**	**9**	**$ 661**	**52,813**	**$ 5,163,154**	**45**	**$ 4,421**	**281**	**$ 5,359,654**	**0**	**$ 5,085**	**12,867**	**$ 661,678**	**7**	**$ 371**	**8,629**	**$ 962,325**	**4**	**$ 401**
		Bud	**6,950**	**$ 532,620**	**8**	**$ 598**	**66,571**	**$ 4,861,351**	**57**	**$ 4,162**	**251**	**$ 5,266,738**	**0**	**$ 4,997**	**6,163**	**$ 362,376**	**3**	**$ 203**	**21,081**	**$ 1,160,154**	**9**	**$ 484**
REQ RECEIVED			**891**				**1168**				**1054**				**1782**				**2397**			

Source: Pillar: Rpts00PED-Jun-Eche.CTL/manager: PR 9110-PH:Labor class breakout
Pillar: Rpts00PED-Jun- Eche.CTL/manager: PR9529-P:2000vsBud$ Dept - Blkt
Pillar: Rpts00PED-Jun- Eche.CTL/manager: PR9529-P:Mat/Trans/Osserv-Blkt

Normalize 2005

Normalize the data because some of the charges were transferred from capital to o&m as part of the SOX clean up for voided jobs and jobs with no material

Program	Add to Program
P1510000	109,658
P1580000	145,446
P1700000	393,569
P1820000	251,327
	900,000

		P1510			
CAT	**Dept**	**2005 ACTUAL**	**%**	**Prorate**	**Hrs**
LABOR	C&M	$ 210,732	78.31%	85,872.78	2,723.78
	CID	$ 28,539	10.61%	11,629.57	386.98
	ENGR	$ 25,205	9.37%	10,270.98	336.08
	LAND & R/W	$ -	0.00%	-	0
	LEGAL	$ -	0.00%	-	0
	SPPT SVCS	$ -	0.00%	-	0
	SYS OPS	$ 4,635	1.72%	1,888.75	69.61
	OTHER	$ (10)	0.00%	(4.07)	0
MAT	C&M	$ 141,249	0.00%	-	N/A
	CID	$ 142,181	0.00%	-	N/A
O/S	C&M	$ 198,915	0.00%	-	N/A
	CID	$ 208,832	0.00%	-	N/A
	ENGR	$ 2,047	0.00%	-	N/A
	SYS OPS	$ -	0.00%	-	N/A
	Legal	$ -	0.00%	-	N/A
	SPPT SVCS	$ -	0.00%	-	N/A
	Total	**$ 962,325**	**100.00%**	**109,658.00**	**3,516.46**

		P1580			
		2005 ACTUAL	**%**	**Prorate**	**Hrs**
LABOR	C&M	$ 259,724	68.30%	99,333.19	3,206.76
	CID	$ 88,422	23.25%	33,817.59	1,271.20
	ENGR	$ 27,943	7.35%	10,686.99	384.75
	LAND & R/W	$ -	0.00%	-	0
	LEGAL	$ -	0.00%	-	0
	SPPT SVCS	$ 660	0.17%	252.42	8.414048079
	SYS OPS	$ 3,545	0.93%	1,355.81	49.81
	OTHER	$ -	0.00%	-	0
MAT	C&M	$ 81,623	0.00%	-	N/A
	CID	$ 25,616	0.00%	-	N/A
O/S	C&M	$ 163,478	0.00%	-	N/A
	CID	$ 5,753	0.00%	-	N/A
	ENGR	$ 4,914	0.00%	-	N/A
	SYS OPS	$ -	0.00%	-	N/A
	Legal	$ -	0.00%	-	N/A
	SPPT SVCS	$ -	0.00%	-	N/A
	Total	**$ 661,678**	**100.00%**	**145,446.00**	**4,920.94**

		P1700			
		2005 ACTUAL	%	Prorate	Hrs
LABOR	C&M	$ 1,346,172	75.69%	297,875.21	8,818.82
	CID	$ 310,422	17.45%	68,688.86	1,934.05
	ENGR	$ 48,396	2.72%	10,708.86	372.19
	LAND & R/W	$ -	0.00%	-	-
	LEGAL	$ -	0.00%	-	-
	SPPT SVCS	$ 560	0.03%	123.91	3.54
	SYS OPS	$ 73,306	4.12%	16,220.84	559.11
	OTHER	$ (220)	-0.01%	(48.68)	-
MAT	C&M	$ 2,038,167	0.00%	-	N/A
	CID	$ 262,249	0.00%	-	N/A
O/S	C&M	$ 848,467	0.00%	-	N/A
	CID	$ 233,269	0.00%	-	N/A
	ENGR	$ 2,366	0.00%	-	N/A
	SYS OPS	$ -	0.00%	-	N/A
	Legal	$ -	0.00%	-	N/A
	SPPT SVCS	$ -	0.00%	-	N/A
	Total	**$ 5,163,154**	**100.00%**	**393,569.00**	**11,687.70**

		P1820			
		2005 ACTUAL	%	Prorate	Hrs
LABOR	C&M	$ 185,843	69.11%	173,701.77	5,242.64
	CID	$ 70,396	26.18%	65,796.99	2,247.95
	ENGR	$ 10,328	3.84%	9,653.27	319.19
	LAND & R/W	$ -	0.00%	-	-
	LEGAL	$ 108	0.04%	100.94	1.87
	SPPT SVCS	$ (58)	-0.02%	(54.21)	(1.40)
	SYS OPS	$ 2,373	0.88%	2,217.97	92.77
	OTHER	$ (96)	-0.04%	(89.73)	(3.27)
MAT	C&M	$ 121,103	0.00%	-	N/A
	CID	$ (2,747)	0.00%	-	N/A
O/S	C&M	$ 146,277	0.00%	-	N/A
	CID	$ 55,617	0.00%	-	N/A
	ENGR	$ 97	0.00%	-	N/A
	SYS OPS	$ -	0.00%	-	N/A
	Legal	$ -	0.00%	-	N/A
	SPPT SVCS	$ -	0.00%	-	N/A
	Total	**$ 589,241**	**100.00%**	**251,327.00**	**7,899.74**

UNIT + NORMILIZED COST CALCULATION

Acts as of December 2005

			YTD 1820				YTD 1700				YTD 1680				YTD 1580				YTD 1510			
Description	RA		Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ
LABOR																						
C&M	D	Act	10,852	$ 359,545	12	$ 404	48,673	$ 1,644,047	42	$ 1,408	-	$ -			11,591	$ 359,057	7	$ 201	9,408	$ 296,605	4	$ 124
CID	W	Act	4,653	$ 136,193	5	$ 153	10,674	$ 379,111	9	$ 325	-	$ -			4,595	$ 122,240	3	$ 69	1,337	$ 40,169	1	$ 17
ENGR	B	Act	661	$ 19,981	1	$ 22	2,054	$ 59,105	2	$ 51	-	$ -			1,391	$ 38,630	1	$ 22	1,161	$ 35,476	0	$ 15
LAND & R/W	NL	Act	-	$ -			-	$ -			-	$ -			-	$ -			-	$ -		
LEGAL	NC	Act	4	$ 110	0	$ 0	-	$ -			-	$ -			-	$ -			-	$ -		
SPPT SVCS	V	Act	(3)	$ (59)	0	$ (0)	20	$ 684	0	$ 1	231	$ 7,399	0	$ 7	30	$ 912	0	$ 1	-	$ -		
SYS OPS	R	Act	192	$ 4,591	0	$ 5	3,086	$ 89,527	3	$ 77	50	$ 1,668	0	$ 2	180	$ 4,901	0	$ 3	240	$ 6,524	0	$ 3
OTHER		Act	(7)	$ (186)	0	$ (0)	(7)	$ (269)	0	$ (0)	-	$ -			-	$ -			(1)	$ (14)	0	$ (0)
TTL LBR		**Act**	**16,352**	**$ 520,175**	**18**	**$ 584**	**64,501**	**$ 2,172,205**	**55**	**$ 1,860**	**281**	**$ 9,067**	**0**	**$ 9**	**17,788**	**$ 525,740**	**10**	**$ 295**	**12,145**	**$ 378,759**	**5**	**$ 158**
MATERIALS																						
C&M	D	Act	-	$ 121,103	0	$ 136	-	$ 2,038,167	0	$ 1,745	-	$ -				$ 81,623	0	$ 46		$ 141,249	0	$ 59
CID	D	Act	-	$ (2,747)	0	$ (3)	-	$ 262,249	0	$ 225	-	$ 5,263,561	0	$ 4,994		$ 25,616	0	$ 14		$ 142,181	0	$ 59
TTL MATLS		**Act**	**-**	**$ 118,356**	**-**	**$ 49**	**-**	**$ 2,300,416**	**-**	**$ 960**	**-**	**$ 5,263,561**	**-**	**$ 2,196**	**-**	**$ 107,239**	**-**	**$ 45**	**-**	**$ 283,430**	**-**	**$ 118**
O/S SVCS																						
C&M		Act	-	$ 146,277	0	$ 164	-	$ 848,467	0	$ 726	-	$ -			-	$ 163,478	0	$ 92	-	$ 198,915	0	$ 83
CID		Act	-	$ 55,617	0	$ 62	-	$ 233,269	0	$ 200	-	$ 19,476	0	$ 18	-	$ 5,753	0	$ 3	-	$ 208,832	0	$ 87
ENGR		Act	-	$ 97	0	$ 0	-	$ 2,366	0	$ 2	-	$ -			-	$ 4,914	0	$ 3	-	$ 2,047	0	$ 1
SYS OPS		Act	-	$ -			-	$ -			-	$ -			-	$ -			-	$ -		
Legal		Act	-	$ -			-	$ -			-	$ -			-	$ -			-	$ -		
SPPT SVCS		Act	-	$ -			-	$ -			-	$ 67,550	0	$ 64	-	$ -			-	$ -		
TTL O/S SVCS		**Act**	**-**	**$ 201,991**	**-**	**$ 227**	**-**	**$ 1,084,102**	**-**	**$ 928**	**-**	**$ 87,026**	**-**	**$ 83**	**-**	**$ 174,145**	**-**	**$ 98**	**-**	**$ 409,794**	**-**	**$ 171**
TOTAL		**Act**	**16,352**	**$ 840,522**	**18**	**$ 943**	**64,501**	**$ 5,556,723**	**55**	**$ 4,757**	**281**	**$ 5,359,654**	**0**	**$ 5,085**	**17,788**	**$ 807,124**	**10**	**$ 453**	**12,145**	**$ 1,071,983**	**5**	**$ 447**
REQ RECEIVED				**891**				**1168**				**1054**				**1782**				**2397**		

Source: Pillar: Rpts00PED-Jun-Eche.CTL/manager: PR 9110-PH:Labc
Pillar: Rpts00PED-Jun- Eche.CTL/manager: PR9529-P:2000vs
Pillar: Rpts00PED-Jun- Eche.CTL/manager: PR9529-P:Mat/Tr.

Forecasted Service Requests for each Blanket

3/7/2006

Blanket	Annual Forecast										
	2005[2]	%inc[1]	2006	%inc[1]	2007	%inc[1]	2008	%inc[1]	2009	%inc[1]	2010
P1510000	2397	-10.0%	2157	-5.0%	2277	-10.0%	2157	-10.0%	2157	-10.0%	2157
P1580000	1782	-10.0%	1604	-5.0%	1693	-10.0%	1604	-10.0%	1604	-10.0%	1604
P1700000	1168	-10.0%	1051	-5.0%	1110	-10.0%	1051	-10.0%	1051	-10.0%	1051
P1820000	891	-10.0%	802	-5.0%	846	-10.0%	802	-10.0%	802	-10.0%	802
P1680000	1054	-40.0%	632	-10.0%	949	-10.0%	949	-10.0%	949	-10.0%	949
Total	**7292**	**-16.0%**	**6247**	**-6.0%**	**6875**	**-10.0%**	**6563**	**-10.0%**	**6563**	**-10.0%**	**6563**

[1]Based on the number of permits issued and forecasted to be issued.

[2]Actual requests received ending December 2005

Note:

Blankets P1530000 and P1580000 were combined.

Blankets P1530000, P1570000 and P1800000 will be cancelled.

Forecasted Efficiencies for Various Improvements

3/7/2006

Blanket	Efficiencies					
	2006 Efficiency Improvements	2007 Efficiency Improvements	2008 Efficiency Improvements	2009 Efficiency Improvements	2010 Efficiency Improvements	20111 Efficiency Improvements
P1510000	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
P1580000	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
P1700000	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
P1820000	18.0%	18.0%	18.0%	18.0%	18.0%	18.0%
P1680000	-3.8%	-20.0000%	-8.0%	-8.0%	-8.0%	-8.0%
Total	**13.6%**	**10.4%**	**12.8%**	**12.8%**	**12.8%**	**12.8%**

[1]Positive numbers will reduce the unit costs across the board for each program.

[2]The improvements are carried forward to the future years.

CAPITAL BUDGET ANALYSIS
FORECAST 2007 (12/31/05)

			YTD 1820				YTD 1700				YTD 1680				YTD 1580				YTD 1510			
Description	RA		Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ	Hours	$$	Hr / REQ	$ / REQ
LABOR																						
C&M	D	fcst	8,454	$ 280,085	12	$ 404	37,916	$ 1,280,713	42	$ 1,408	-	$ -			9,030	$ 279,706	7	$ 201	7,329	$ 231,055	4	$ 124
CID	W	fcst	3,625	$ 106,094	5	$ 153	8,315	$ 295,327	9	$ 325	-	$ -			3,579	$ 95,225	3	$ 69	1,041	$ 31,291	1	$ 17
ENGR	B	fcst	515	$ 15,565	1	$ 22	1,600	$ 46,043	2	$ 51	-	$ -			1,083	$ 30,093	1	$ 22	904	$ 27,636	0	$ 15
LAND & R/W	NL	fcst	-	$ -			-	$ -			-	$ -			-	$ -			-	$ -		
LEGAL	NC	fcst	3	$ 86	0	$ 0	-	$ -			-	$ -			-	$ -			-	$ -		
SPPT SVCS	V	fcst	(2)	$ (46)	0	$ (0)	15	$ 533	0	$ 1	249	$ 7,991	0	$ 7	24	$ 711	0	$ 1	-	$ -		
SYS OPS	R	fcst	150	$ 3,576	0	$ 5	2,404	$ 69,741	3	$ 77	54	$ 1,801	0	$ 2	140	$ 3,818	0	$ 3	187	$ 5,082	0	$ 3
FINANCIAL/VP		fcst	(5)	$ (145)	0	$ (0)	(5)	$ (209)	0	$ (0)	-	$ -			-	$ -			(0)	$ (11)	(0)	$ (0)
TTL LBR		fcst	12,738	$ 405,216	15	479	50,246	$ 1,692,148	45	1525	303	$ 9,792	0	10	13,857	$ 409,551	8	242	9,461	$ 295,053	4	130
MATERIALS																						
C&M	D	fcst		$ 94,339	0	$ 136		$ 1,587,732	0	$ 1,745		$ -				$ 63,584	-	$ 46		$ 110,033	-	$ 59
CID	D	fcst		$ (2,140)	0	$ (3)		$ 204,292	0	$ 225		$ 5,684,646	-	$ 4,994		$ 19,955	-	$ 14		$ 110,759	-	$ 59
TTL MATLS		fcst		$ 92,199	0	40		$ 1,792,024	0	787		$ 5,684,646	-	2496		$ 83,539	-	37		$ 220,792	-	97
O/S SVCS																						
C&M		fcst		$ 113,950	0	$ 164		$ 660,956	0	$ 726		$ -				$ 127,349	-	$ 92		$ 154,955	-	$ 83
CID		fcst		$ 43,326	0	$ 62		$ 181,717	0	$ 200		$ 21,034	-	$ 18		$ 4,482	-	$ 3		$ 162,680	-	$ 87
ENGR		fcst		$ 76	0	$ 0		$ 1,843	0	$ 2		$ -				$ 3,828	-	$ 3		$ 1,595	-	$ 1
SYS OPS		fcst		$ -				$ -				$ -				$ -				$ -		
SPPT SVCS		fcst		$ -	0	$ -		$ -				$ 72,954	-	$ 64		$ -				$ -		
TTL O/S SVCS		fcst		$ 157,351	0	186		$ 844,515	0	761		$ 93,988	-	99		$ 135,659	-	80		$ 319,230	-	140
TOTAL		fcst	12,738	$ 1,696,877	15	2005	50,246	$ 8,312,848	45	7492	303	$ 6,372,849	0	6718	13,857	$ 1,692,145	8	1000	9,461	$ 1,474,060	4	647
REQ RECEIVED				846				1110				949				1693				2277		

Total Requests:	5,926	$ 19,548,779	3300000	$ 22,848,779
Transformers:	949			
	6,875			

2007-2011 Labor Class Breakout

*Project #	Dept	*Lbr Class	YTD Dec 05 Actual Hrs	Ratio	2007 Dept Forecast	Breakout
P1510000	C&M	__FS-ED	(4.00)	-0.06%	7,329	(4)
P1510000	C&M	__POLICE	314.25	4.70%		345
P1510000	C&M	__TCS-ED	153.00	2.29%		168
P1510000	C&M	D_OHCREW	6,171.83	92.34%		6,767
P1510000	C&M	D_PTM	53.58	0.80%		59
P1510000	C&M	D_UGCREW	(4.50)	-0.07%		(5)
P1510000	C&M		6,684.16	100.00%		7,329
P1510000	CID	__BUOCW	(22.33)	-2.35%	1,041	(24)
P1510000	CID	__I	2.50	0.26%		3
P1510000	CID	__POLICE	0.00	0.00%		-
P1510000	CID	D_OHCREW	0.00	0.00%		-
P1510000	CID	W_CUENGR	(184.50)	-19.43%		(202)
P1510000	CID	W_CUPLNR	509.42	53.64%		559
P1510000	CID	W_DEPLNR	172.50	18.16%		189
P1510000	CID	W_JRPLNR	393.30	41.42%		431
P1510001	CID	W_JRDFTR	7.50	0.79%		8
P1510000	CID	W_MTELEC	55.93	5.89%		61
P1510000	CID	W_MTENGR	20.50	2.16%		22
P1510000	CID	W_MTSUPV	5.00	0.53%		5
P1510000	CID	W_PDSUPV	(4.00)	-0.42%		(4)
P1510000	CID	W_RESHER	(6.17)	-0.65%		(7)
P1510000	CID		949.65	100.00%		1,041
P1510000	Engineering	__BUOCB	4.00	0.48%	904	4
P1510000	Engineering	__SUMMER	64.00	7.76%		70
P1510000	Engineering	B_DISPLN	10.50	1.27%		12
P1510000	Engineering	B_STRENG	11.50	1.39%		13
P1510000	Engineering	B_SURVBU	188.50	22.86%		207
P1510000	Engineering	B_SURVEY	557.75	67.63%		612
P1510000	Engineering	B_TNDENG	(11.50)	-1.39%		(13)
P1510000	Engineering		824.75	100.00%		904
P1510000	Sys Op	R_ENGMAP	2.83	1.66%	187	3
P1510000	Sys Op	R_RELCRW	2.00	1.17%		2
P1510000	Sys Op	R_SUBCRW	166.00	97.17%		182

2007-2011 Labor Class Breakout

*Project #	Dept	*Lbr Class	YTD Dec 05 Actual Hrs	Ratio	2007 Dept Forecast	Breakout
P1510000	Sys Op		170.83	100.00%		187
P1580000	C&M	__POLICE	353.97	4.22%	9,030	381
P1580000	C&M	__TCS-ED	121.00	1.44%		130
P1580000	C&M	D_OHCREW	7,872.17	93.89%		8,478
P1580000	C&M	D_PTM	11.50	0.14%		12
P1580000	C&M	D_UGCREW	26.00	0.31%		28
P1580000	C&M		8,384.64	100.00%		9,030
P1580000	CID	__BUOCW	(9.00)	-0.27%	3,579	(10)
P1580000	CID	__I	2.00	0.06%		2
P1580000	CID	D_OHCREW	1.00	0.03%		1
P1580000	CID	W_CUENGR	19.00	0.57%		20
P1580000	CID	W_CUPLNR	742.81	22.35%		800
P1580000	CID	W_DEPLNR	59.66	1.79%		64
P1580000	CID	W_JRPLNR	2,396.40	72.10%		2,581
P1580000	CID	W_JRDFTR	60.00	1.81%		65
P1580000	CID	W_MTELEC	43.91	1.32%		47
P1580000	CID	W_MTENGR	13.50	0.41%		15
P1580000	CID	W_MTSUPV	(2.00)	-0.06%		(2)
P1580000	CID	W_PDSUPV	(3.00)	-0.09%		(3)
P1580000	CID	W_RESHER	(0.50)	-0.02%		(1)
P1580000	CID		3,323.78	100.00%		3,579
P1580000	Engineering	__BUOCB	3.00	0.30%	1,083	3
P1580000	Engineering	__SUMMER	73.00	7.26%		79
P1580000	Engineering	B_DISPLN	2.00	0.20%		2
P1580000	Engineering	B_STRENG	28.50	2.83%		31
P1580000	Engineering	B_SURVBU	291.00	28.93%		313
P1580000	Engineering	B_SURVEY	608.50	60.49%		655
P1580000	Engineering		1,006.00	100.00%		1,083
P1580000	Supp Svcs	__BUTCED	22.00	100.00%	24	24
P1580000	Supp Svcs		22.00	100.00%		24
P1580000	Sys Op	R_ENGMAP	(10.50)	-8.06%	140	(11)

2007-2011 Labor Class Breakout

*Project #	Dept	*Lbr Class	YTD Dec 05 Actual Hrs	Ratio	2007 Dept Forecast	Breakout
P1580000	Sys Op	R_SUBCRW	140.75	108.06%		152
P1580000	Sys Op		130.25	100.00%		140
P1680000	C&M	__TCS-ED	12.00	100.00%	-	-
P1680000	C&M		12.00	100.00%		-
P1680000	Supp Svcs	__BUTCED	231.00	100.00%	249	249
P1680000	Supp Svcs		231.00	100.00%		249
P1680000	Sys Op	R_RELCRW	50.00	100.00%	54	54
P1680000	Sys Op		50.00	100.00%		54
P1700000	C&M	__FS-ED	(2.00)	-0.01%	37,916	(2)
P1700000	C&M	__POLICE	766.50	1.92%		729
P1700000	C&M	__TC-ED	(7.00)	-0.02%		(7)
P1700000	C&M	__TCS-ED	986.00	2.47%		938
P1700000	C&M	D_OHCREW	32,498.26	81.54%		30,918
P1700000	C&M	D_PTM	1,478.43	3.71%		1,407
P1700000	C&M	D_UGCREW	4,134.25	10.37%		3,933
P1700000	C&M		39,854.44	100.00%		37,916
P1700000	CID	__BUOCW	(61.00)	-0.70%	8,315	(58)
P1700000	CID	__I	27.50	0.31%		26
P1700000	CID	__TC	(1.00)	-0.01%		(1)
P1700000	CID	__TCS	7.00	0.08%		7
P1700000	CID	__TC-W	(845.17)	-9.67%		(804)
P1700000	CID	W_CUDGNR	159.00	1.82%		151
P1700000	CID	W_CUENGR	4,288.83	49.07%		4,080
P1700000	CID	W_CUPLNR	1,501.67	17.18%		1,429
P1700000	CID	W_DEPLNR	1,568.00	17.94%		1,492
P1700000	CID	W_JRPLNR	731.45	8.37%		696
P1700000	CID	W_JRDRFT	592.66	6.78%		564
P1700000	CID	W_MTELEC	185.84	2.13%		177
P1700000	CID	W_MTENGR	190.50	2.18%		181
P1700000	CID	W_MTSUPV	50.25	0.57%		48
P1700000	CID	W_PDSUPV	(11.50)	-0.13%		(11)

2007-2011 Labor Class Breakout

*Project #	Dept	*Lbr Class	YTD Dec 05 Actual Hrs	Ratio	2007 Dept Forecast	Breakout
P1700000	CID	W_RESHER	356.42	4.08%		339
P1700000	CID		8,740.45	100.00%		8,315
P1700000	Engineering	__BUOCB	1.00	0.06%	1,600	1
P1700000	Engineering	__FS-B	(7.00)	-0.42%		(7)
P1700000	Engineering	__SUMMER	130.00	7.73%		124
P1700000	Engineering	B_DISPLN	170.25	10.12%		162
P1700000	Engineering	B_PROTEC	9.00	0.54%		9
P1700000	Engineering	B_SSENG	(39.50)	-2.35%		(38)
P1700000	Engineering	B_STRDFT	(102.50)	-6.09%		(98)
P1700000	Engineering	B_STRENG	85.50	5.08%		81
P1700000	Engineering	B_SURVBU	336.50	20.01%		320
P1700000	Engineering	B_SURVEY	1,165.75	69.31%		1,109
P1700000	Engineering	B_TECENG	24.00	1.43%		23
P1700000	Engineering	B_TNDDFT	(4.00)	-0.24%		(4)
P1700000	Engineering	B_TNDENG	(87.00)	-5.17%		(83)
P1700000	Engineering		1,682.00	100.00%		1,600
P1700000	Supp Svcs	__BUTCED	16.00	100.00%	15	15
P1700000	Supp Svcs		16.00	100.00%		15
P1700000	Sys Op	R_CONCRW	12.00	0.47%	2,404	11
P1700000	Sys Op	R_CONSUP	4.00	0.16%		4
P1700000	Sys Op	R_ENGMAP	306.58	12.13%		292
P1700000	Sys Op	R_OPEDIS	(2.00)	-0.08%		(2)
P1700000	Sys Op	R_RELCRW	70.00	2.77%		67
P1700000	Sys Op	R_SUBCRW	2,136.16	84.54%		2,032
P1700000	Sys Op		2,526.74	100.00%		2,404
P1820000	C&M	__POLICE	94.50	1.68%	8,454	142
P1820000	C&M	__TCS-ED	83.50	1.49%		126
P1820000	C&M	D_OHCREW	4,579.84	81.65%		6,902
P1820000	C&M	D_PTM	150.75	2.69%		227
P1820000	C&M	D_UGCREW	700.50	12.49%		1,056
P1820000	C&M		5,609.09	100.00%		8,454

2007-2011 Labor Class Breakout

*Project #	Dept	*Lbr Class	YTD Dec 05 Actual Hrs	Ratio	2007 Dept Forecast	Breakout
P1820000	CID	__BUOCW	(25.08)	-1.04%	3,625	(38)
P1820000	CID	__I	19.50	0.81%		29
P1820000	CID	__TC	(2.00)	-0.08%		(3)
P1820000	CID	W_CUENGR	41.00	1.70%		62
P1820000	CID	W_CUPLNR	638.34	26.54%		962
P1820000	CID	W_DEPLNR	198.42	8.25%		299
P1820000	CID	W_JRPLNR	1,368.91	56.92%		2,063
P1820000	CID	W_JRDFTR	88.33	3.67%		133
P1820000	CID	W_MTELEC	22.15	0.92%		33
P1820000	CID	W_MTENGR	16.50	0.69%		25
P1820000	CID	W_MTSUPV	2.50	0.10%		4
P1820000	CID	W_PDSUPV	(15.00)	-0.62%		(23)
P1820000	CID	W_RESHER	51.50	2.14%		78
P1820000	CID		2,405.07	100.00%		3,625
P1820000	Engineering	__SUMMER	14.00	4.10%	515	21
P1820000	Engineering	B_DISPLN	63.00	18.45%		95
P1820000	Engineering	B_STRDFT	32.00	9.37%		48
P1820000	Engineering	B_STRENG	49.75	14.57%		75
P1820000	Engineering	B_SURVBU	34.50	10.10%		52
P1820000	Engineering	B_SURVEY	144.25	42.24%		217
P1820000	Engineering	B_TECENG	10.00	2.93%		15
P1820000	Engineering	B_TNDENG	(6.00)	-1.76%		(9)
P1820000	Engineering		341.50	100.00%		515
P1820000	Legal	__F	2.00	100.00%	3	3
P1820000	Legal		2.00	100.00%		3
P1820000	Supp Svcs	__BUTCED	(1.50)	100.00%	(2)	(2)
P1820000	Supp Svcs		(1.50)	100.00%		(2)
P1820000	Sys Op	R_ENGMAP	7.75	7.81%	150	12
P1820000	Sys Op	R_RELENG	4.00	4.03%		6
P1820000	Sys Op	R_SUBCRW	87.50	88.16%		132
P1820000	Sys Op		99.25	100.00%		150

2007-2011 Material and Outside Services Breakout

*Project #	Cost Category	Dept	*EE #	YTD Dec 05 Actual $	Ratio	Department Forecast	Breakout
P1510000	MATERIAL	C&M	201	141,249	100.00%	$ 110,033	$ 110,033
P1510000	MATERIAL	C&M	401	0	0.00%		$ -
P1510000	MATERIAL	C&M		141,249	100.00%		$ 110,033
P1510000	MATERIAL	CID	201	142,181	100.00%	$ 110,759	$ 110,759
P1510000	MATERIAL	CID	401	0	0.00%		$ -
P1510000	MATERIAL	CID		142,181	100.00%		$ 110,759
P1510000	O/S SVCS	C&M	501	40,619	20.42%	$ 154,955	$ 31,642
P1510000	O/S SVCS	C&M	505	158,295	79.58%		$ 123,312
P1510000	O/S SVCS	C&M		198,914	100.00%		$ 154,955
P1510000	O/S SVCS	CID	501	205,041	98.19%	$ 162,680	$ 159,728
P1510000	O/S SVCS	CID	505	3,790	1.81%		$ 2,952
P1510000	O/S SVCS	CID		208,831	100.00%		$ 162,680
P1510000	O/S SVCS	Engineering	501	(105)	-5.13%	$ 1,595	$ (82)
P1510000	O/S SVCS	Engineering	506	2,152	105.13%		$ 1,676
P1510000	O/S SVCS	Engineering		2,047	100.00%		$ 1,595
P1580000	MATERIAL	C&M	201	81,608	99.98%	$ 63,584	$ 63,573
P1580000	MATERIAL	C&M	205	15	0.02%		$ 12
P1580000	MATERIAL	C&M	401	0	0.00%		$ -
P1580000	MATERIAL	C&M		81,623	100.00%		$ 63,584
P1580000	MATERIAL	CID	201	25,461	99.39%	$ 19,955	$ 19,834
P1580000	MATERIAL	CID	205	155	0.61%		$ 121
P1580000	MATERIAL	CID	401	0	0.00%		$ -
P1580000	MATERIAL	CID		25,616	100.00%		$ 19,955
P1580000	O/S SVCS	C&M	501	62,921	38.49%	$ 127,349	$ 49,016
P1580000	O/S SVCS	C&M	505	100,556	61.51%		$ 78,334
P1580000	O/S SVCS	C&M		163,477	100.00%		$ 127,349
P1580000	O/S SVCS	CID	501	909	15.80%	$ 4,482	$ 708
P1580000	O/S SVCS	CID	505	4,844	84.20%		$ 3,773

2007-2011 Material and Outside Services Breakout

*Project #	Cost Category	Dept	*EE #	YTD Dec 05 Actual $	Ratio	Department Forecast	Breakout
P1580000	O/S SVCS	CID		5,753	100.00%		$ 4,482
P1580000	O/S SVCS	Engineering	501	88	1.78%	$ 3,828	$ 68
P1580000	O/S SVCS	Engineering	506	4,826	97.85%		$ 3,746
P1580000	O/S SVCS	Engineering		4,932	100.00%		$ 3,828
P1680000	MATERIAL	CID	201	5,254,744	100.00%	$ 5,684,646	$ 5,684,578
P1680000	MATERIAL	CID	205	63	0.00%		$ 68
P1680000	MATERIAL	CID	401	0	0.00%		$ -
P1680000	MATERIAL	CID		5,254,807	100.00%		$ 5,684,646
P1680000	O/S SVCS	CID	501	19,476	100.00%	$ 21,034	$ 21,034
P1680000	O/S SVCS	CID		19,476	100.00%		$ 21,034
P1700000	MATERIAL	C&M	201	2,030,977	99.65%	$ 1,587,732	$ 1,582,130
P1700000	MATERIAL	C&M	205	7,191	0.35%		$ 5,602
P1700000	MATERIAL	C&M	401	0	0.00%		$ -
P1700000	MATERIAL	C&M		2,038,168	100.00%		$ 1,587,732
P1700000	MATERIAL	CID	201	261,801	99.83%	$ 204,292	$ 203,943
P1700000	MATERIAL	CID	205	448	0.17%		$ 349
P1700000	MATERIAL	CID	401	0	0.00%		$ -
P1700000	MATERIAL	CID		262,249	100.00%		$ 204,292
P1700000	O/S SVCS	C&M	501	183,255	21.60%	$ 660,956	$ 142,756
P1700000	O/S SVCS	C&M	505	665,212	78.40%		$ 518,200
P1700000	O/S SVCS	C&M		848,467	100.00%		$ 660,956
P1700000	O/S SVCS	CID	501	218,039	93.47%	$ 181,717	$ 169,852
P1700000	O/S SVCS	CID	505	9,707	4.16%		$ 7,562
P1700000	O/S SVCS	CID	508	5,523	2.37%		$ 4,302
P1700000	O/S SVCS	CID		233,269	100.00%		$ 181,717
P1700000	O/S SVCS	Engineering	501	205	8.66%	$ 1,843	$ 160
P1700000	O/S SVCS	Engineering	506	2,161	91.34%		$ 1,683
P1700000	O/S SVCS	Engineering		2,366	100.00%		$ 1,843

2007-2011 Material and Outside Services Breakout

*Project #	Cost Category	Dept	*EE #	YTD Dec 05 Actual $	Ratio	Department Forecast	Breakout
P1820000	MATERIAL	C&M	201	121,103	100.00%	$ 94,339	$ 94,339
P1820000	MATERIAL	C&M	401	0	0.00%		$ -
P1820000	MATERIAL	C&M		121,103	100.00%		$ 94,339
P1820000	MATERIAL	CID	201	(2,747)	100.00%	$ (2,140)	$ (2,140)
P1820000	MATERIAL	CID	401	0	0.00%		$ -
P1820000	MATERIAL	CID		(2,747)	100.00%		$ (2,140)
P1820000	O/S SVCS	C&M	501	58,525	40.01%	$ 113,950	$ 45,591
P1820000	O/S SVCS	C&M	505	87,752	59.99%		$ 68,359
P1820000	O/S SVCS	C&M		146,277	100.00%		$ 113,950
P1820000	O/S SVCS	CID	501	47,166	84.81%	$ 43,326	$ 36,742
P1820000	O/S SVCS	CID	505	8,451	15.19%		$ 6,583
P1820000	O/S SVCS	CID		55,617	100.00%		$ 43,326
P1820000	O/S SVCS	Engineering	501	97	100.00%	$ 76	$ 76
P1820000	O/S SVCS	Engineering		97	100.00%		$ 76

2007 Pre-Capitalized Tranformers - Reclass Entry

	Issues*	OH/UG Weighting Factor **	Weighted Issues	Allocation %	Total	Breakout
PWP415OAHNIP1680000900	335 OH	1	335	2.9%	5,684,645.88	164,854.73
PWP416OAHNIP1680000901	44 UG	4.280285779	188.3326	1.6%		90,954.33
PWP440OAHNIP1680000902	44 OH	1	44	0.4%		22,738.58
PWP441OAHNIP1680000903	279 UG	4.280285779	1194.2	10.2%		579,833.88
PWP442OAHNIP1680000904	361 OH	1	361	3.1%		176,224.02
PWP443OAHNIP1680000905	815 UG	4.280285779	3488.433	29.9%		1,699,709.12
PWP479OAHNIP1680000906	1157 OH	1	1157	9.9%		562,779.94
PWP481OAHNIP1680000907	1016 OH	1	1016	8.7%		494,564.19
PWP482OAHNIP1680000908	484 UG	4.280285779	2071.658	17.8%		1,011,866.97
PWP484OAHNIP1680000909	423 UG	4.280285779	1810.561	15.5%		881,120.11
PWP842PHENIP1680000900	4958		11666.18	100.0%		5,684,645.88

* Per MIMS run from D. Kanja (QUANTITY_ISS_S) for 1999-2002.

** Average Transformer Price per C. Barnes, 12/30/02.

Underground	4511.25
Overhead	1053.96
Weighting Factor (OH/UG)	4.280285779

*** Activity 850/Proj P1680000 amount to allocate
Jan 2002 per MIMS. -

Labor Class	Ind	Program	RA	Act#	Loc	EE#	Supply FY07	Demand FY07	Difference FY07	Allocation (NI)	Prorate (NI)	Capital (NI) Total	Supply FY08	Demand FY08	Difference FY08	Allocation (NI)	Prorate (NI)	Capital (NI) Total
							A	B	C	D	E	F	G	H	I	J	K	L
							4,176		3,415	2,450			4,192		3,431	2,450		
W_JRDRFT	NE	P1510000	PWP	425	OAH	150		4						4				
W_JRDRFT	NI	P1510000	PWP	425	OAH	150		8		1.10%	27	35		8		1.10%	27	35
W_JRDRFT	NI	P1580000	PWP	445	OAH	150		61		8.37%	205	266		61		8.37%	205	266
W_JRDRFT	NI	P1700000	PWP	426	OAH	150		534		73.25%	1,795	2,329		534		73.25%	1,795	2,329
W_JRDRFT	NI	P1820000	PWP	432	OAH	150		126		17.28%	423	549		126		17.28%	423	549
W_JRDRFT	NR	P1510000	PWP	425	OAH	150		28						28				
Subtotal								761	20%	100%	2,450	3,179		761	20%	100%	2,450	3,179
							12,528		5,808	3,063			12,576		5,856	3,063		
W_JRPLNR	BT	P1510000	PWP	425	OUT	150		510						510				
W_JRPLNR	BT	P1700000	PWP	428	OUT	150		160						160				
W_JRPLNR	NE	P1510000	PWP	425	OAH	150		49						49				
W_JRPLNR	NE	P1580000	PWP	429	OAH	150		33						33				
W_JRPLNR	NE	P1700000	PWP	428	OAH	150		45						45				
W_JRPLNR	NE	P1820000	PWP	430	OAH	150		12						12				
W_JRPLNR	NI	P1510000	PWP	425	OAH	150		409		7.48%	229	638		409		7.48%	229	638
W_JRPLNR	NI	P1580000	PWP	429	OAH	150		2,445		44.71%	1,369	3,814		2,445		44.71%	1,369	3,814
W_JRPLNR	NI	P1700000	PWP	426	OAH	150		659		12.05%	369	1,028		659		12.05%	369	1,028
W_JRPLNR	NI	P1820000	PWP	430	OAH	150		1,955		35.75%	1,095	3,050		1,955		35.75%	1,095	3,050
W_JRPLNR	NR	P1510000	PWP	425	OAH	150		316						316				
W_JRPLNR	NR	P1700000	PWP	428	OAH	150		127						127				
Subtotal								6,720	25%	100%	3,063	8,531		6,720	25%	100%	3,063	8,531
TOTAL							**43,848**	**18,422**	**25,426**		**12,197**	**27,825**		**18,394**			**12,202**	
											EFT Res Adj	395						
												28,220						
		Available Hours		12,250 (3)														

* Manually adjusted the distribution of the additional labor hours to balance it among all the labor classes.

(1) Total NI in col B = 15,625 (Note EFT Res missing 375 hrs) Adj total 16,023
(2) 2007-B Expected Hours in NI assuming 27 employees @ 5% OT = 23,207 (See attached W/S)
(3) Adjustment to hours say 12,250

Date:5/27/06
File:Labor Allocation-Upd06PNED-Apr06-ECheZZZa Rev 2.xls

Allocation of Additional labor

Labor Class	Ind	Program	RA	Act#	Loc	EE#	Supply FY07	Demand FY07	Difference FY07	Allocation (NI)	Prorate (NI)	Capital (NI) Total	Supply FY08	Demand FY08	Difference FY08	Allocation (NI)	Prorate (NI)	Capital (NI) Total
							12,528		8,370	2,765			12,576		8,418	2,769		
W_CUENGR	BT	P1700000	PWP	428	OUT	150		127						127				
W_CUENGR	NE	P1510000	PWP	427	OAH	150		30						30				
W_CUENGR	NE	P1580000	PWP	429	OAH	150		8						8				
W_CUENGR	NE	P1700000	PWP	428	OAH	150		169						169				
W_CUENGR	NE	P1820000	PWP	432	OAH	150		72						72				
W_CUENGR	NI	P1510000	PWP	427	OAH	150		-192						-192				
W_CUENGR	NI	P1580000	PWP	429	OAH	150		19		0.48%	13	32		19		0.48%	13	32
W_CUENGR	NI	P1700000	PWP	428	OAH	150		3,866		98.02%	2,710	6,576		3,866		98.02%	2,714	6,580
W_CUENGR	NI	P1820000	PWP	432	OAH	150		59		1.50%	41	100		59		1.50%	41	100
Subtotal								4,158	23%	100%	2,765	6,709		4,158	23%	100%	2,769	6,713
							8,352		3,966	1,838			8,384		3,998	1,838		
W_CUPLNR	BT	P1510000	PWP	425	OUT	150		279						279				
W_CUPLNR	BT	P1700000	PWP	428	OUT	150		82						82				
W_CUPLNR	NE	P1510000	PWP	425	OAH	150		25						25				
W_CUPLNR	NE	P1580000	PWP	429	OAH	150		29						29				
W_CUPLNR	NE	P1700000	PWP	428	OAH	150		84						84				
W_CUPLNR	NE	P1820000	PWP	430	OAH	150		56						56				
W_CUPLNR	NI	P1510000	PWP	425	OAH	150		529		14.90%	274	803		529		14.90%	274	803
W_CUPLNR	NI	P1580000	PWP	429	OAH	150		758		21.35%	392	1,150		758		21.35%	392	1,150
W_CUPLNR	NI	P1700000	PWP	428	OAH	150		1,353		38.10%	700	2,053		1,353		38.10%	700	2,053
W_CUPLNR	NI	P1820000	PWP	430	OAH	150		911		25.65%	471	1,382		911		25.65%	471	1,382
W_CUPLNR	NR	P1510000	PWP	425	OAH	150		66						66				
W_CUPLNR	NR	P1580000	PWP	429	OAH	150		50						50				
W_CUPLNR	NR	P1700000	PWP	428	OAH	150		164						164				
Subtotal								4,386	15%	100%	1,838	5,389		4,386	15%	100%	1,838	5,389
							6,264		3,867	2,083			6,288		3,919	2,083		
W_DEPLNR	BT	P1510000	PWP	427	OUT	150		128						128				
W_DEPLNR	BT	P1700000	PWP	428	OUT	150		120						120				
W_DEPLNR	NE	P1510000	PWP	427	OAH	150		19						19				
W_DEPLNR	NE	P1580000	PWP	429	OAH	150		27						27				
W_DEPLNR	NE	P1700000	PWP	428	OAH	150		86						86				
W_DEPLNR	NE	P1820000	PWP	432	OAH	150		53						53				
W_DEPLNR	NI	P1510000	PWP	427	OAH	150		179		9.25%	193	372		179		9.25%	193	372
W_DEPLNR	NI	P1580000	PWP	429	OAH	150		61		3.15%	66	127		61		3.15%	66	127
W_DEPLNR	NI	P1700000	PWP	428	OAH	150		1,413		72.99%	1,520	2,933		1,413		72.99%	1,520	2,933
W_DEPLNR	NI	P1820000	PWP	432	OAH	150		283		14.62%	304	587		283		14.62%	304	587
W_DEPLNR	NR	P1510000	PWP	427	OAH	150		28						0				
Subtotal								2,397	17%	100%	2,083	4,019		2,369	17%	100%	2,083	4,019

Date:5/27/06
File:Labor Allocation-Upd06PNED-Apr06-ECheZZZa Rev 2.xls

Relibility Initiatives

Task	Cycle	Resource Requirements	Stakeholders	Schedule	Comments
138kV OH Flying Insp	Quarterly	5 T&D Insp/5 days/qtr	DRT, Asset Owners	Mar, Jun, Sep, Dec	
138kV OH Climbing Insp (Line Energized)	7 yrs	2 - 5 EE crews/10 days/mo	DRT, Asset Owners	Apr - Oct	3 circuits per year/or 210 structures
138kV UG Insp (Cathodic Prot Incl)	Monthly	1 - 2 EE UG crew/3 days	DRT, Asset Owners	2nd week of each mo	Check for excavation/construction in area
OH Subtrans/Dist Insp (DRT Driven)	4 yrs	5 - T&D Insp/10 days/mo	DRT, Asset Owners	Monthly- week 1 & 2	DRT Driven
UG Insp/IR/VLF (DRT Driven)	4Yrs	4-T&D Insp& 2-3 EE crew/10 days/mo	DRT, Asset Owners	Monthly-week 3 & 4	DRT Driven
Network Insp	Quarterly	3 - 2 person UG crews/10 days	DRT, Asset Owners	Jan, Apr, Jul, Oct	Gen Insp; Sec load readings
Test and Treat	Daily	Contractor	DRT, Asset Owners	Daily	
Pad Mounted TFMR Inspection	Daily	Contractor	DRT, Asset Owners	Daily	
Lightning Arrester Repl	30 per month	1 - 3 EE crew/20 days/mo	DRT, Asset Owners	Daily (until complete)	
Cable Repl	Daily	2 - 3 EE crew/20 days/mo	DRT, Asset Owners	Daily	Contigent on prints and infrastructure
Omni-rupter Inst/Repl	NA	1 - 3 EE & 1 Tk Op/1 day/mo	DRT, Asset Owners	Daily (until complete)	Contingent on availability of interrupters
138 Insulator Repl & Maint/Rprs	7 yrs	2 - 5 EE crews/10 days/mo	DRT, Asset Owners	Apr - Oct	2 circuits (140) per year
DRT Pole Hit Repl	Per DRT goal	1-3 Twr/1-3 EE Line/Op 5 days/repl	DRT, Asset Owners	Per DRT goal	
Pole Repl	300 per year	1-3 Twr/1-3 EE Line/Op 2 days/rpl	DRT, Asset Owners	25/Month	1/day (from severity rating)
Tsf Repl	200/year	1-3 EE crew & 1 Op/repl	DRT, Asset Owners	8/Month (avg)	
Reclosers	NA		DRT, Asset Owners		
Sw. Vlt/Trayer Repl	NA		DRT, Asset Owners		

		2007 hrs	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
D_OHCREW	473 NE	4,776	398	398	398	398	398	398	398	398	398	398	398	398	36%
	Materials	27,840	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	2,320	
	O/S - General	5,360	447	447	447	447	447	447	447	447	447	447	447	447	
	O/S - Const	40,435	3,370	3,370	3,370	3,370	3,370	3,370	3,370	3,370	3,370	3,370	3,370	3,370	
			10%	9%	11%	10%	10%	7%	8%	5%	6%	8%	8%	7%	
D_OHCREW	473 NI	6,060	505	505	505	505	505 A	505	505	505	505	505	505	505	45%
	Light Arrester	4,608	384	384	384	384	384	384	384	384	384	384	384	384	
	Omni-rupter	384	32	32	32	32	32	32	32	32	32	32	32	32	
	Materials	377,025	31,419	31,419	31,419	31,419	31,419 C	31,419	31,419	31,419	31,419	31,419	31,419	31,419	13,440
	O/S - General	9,587	799	799	799	799	799	799	799	799	799	799	799	799	
	O/S - Const	433,767	36,147	36,147	36,147	36,147	36,147 B	36,147	36,147	36,147	36,147	36,147	36,147	36,147	
			10%	10%	9%	9%	11%	8%	7%	6%	7%	8%	7%	8%	
D_OHCREW	473 NR	2,604	217	217	217	217	217	217	217	217	217	217	217	217	19%
	Light Arrester	1,152	96	96	96	96	96	96	96	96	96	96	96	96	
	Omni-rupter	72	6	6	6	6	6	6	6	6	6	6	6	6	
	Materials	9,007	751	751	751	751	751	751	751	751	751	751	751	751	
	O/S - General	4,789	399	399	399	399	399	399	399	399	399	399	399	399	
	O/S - Const	71,171	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	5,931	
			9%	9%	12%	9%	12%	10%	7%	5%	6%	8%	6%	7%	
			9%	8%	8%	8%	15%	11%	11%	6%	6%	6%	7%	4%	

Note, as plan is to perform the same amount of maintenance, labor hours remained the same as 2006.

Σ A = 921
223 PTM time
11 CID Planner
8 Survey
1,163 C

61,147 C
B < 36,147 >
25,000 = Pole Restorations

S:\ConstructionMaintenance\Administrative\Administrative\Budget Forms\2007\Preventive\p3400000.xls

_LbrClass	_Act	_Ind	_Proj		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
D_OHCREW		473 NE	P3400000	2000	647	807	2,086	1,559	1,609	1,746	1,919	1,257	1,556	1,845	1,944	1,782	
				2001	2,776	2,085	2,050	1,723	2,033	1,038	1,209	1,030	811	1,179	1,201	1,090	
				2002	1,140	1,324	951	1,296	1,178	1,110	945	587	1,057	1,277	760	898	
				2003	793	858	1,095	767	492	117	360	41	142	207	370	288	
				2004	109	116	426	140.5	166	265.5	255	1167	361.5	344	141	322.75	
D_OHCREW		473 NE	P3400000		1,093	1,038	1,322	1,097	1,096	855	938	816	785	970	883	876	11,769
					9%	9%	11%	9%	9%	7%	8%	7%	7%	8%	8%	7%	36%
D_OHCREW		473 NI	P3400000	2000	1,067	1,064	1,792	1,297	1,899	2,013	2,055	1,323	2,043	1,910	2,613	3,131	
				2001	4,165	3,160	1,973	1,807	2,515	1,578	1,112	1,283	612	1,170	1,033	861	
				2002	911	1,012	1,583	1,714	1,235	1,194	775	1,203	1,008	1,017	942	878	
				2003	931	1,252	829	1,184	1,778	707	717	485	957	1,553	335	423	
				2004	865.5	571.5	624.25	1242.5	652.5	668.5	391.5	42.17	453	594.25	153	174	
D_OHCREW		473 NI	P3400000		1,588	1,412	1,360	1,449	1,616	1,232	1,010	867	1,014	1,249	1,015	1,093	14,905
					11%	9%	9%	10%	11%	8%	7%	6%	7%	8%	7%	7%	45%
D_OHCREW		473 NR	P3400000	2000	606	503	1,303	928	1,239	1,193	904	490	643	703	843	807	
				2001	1,079	976	735	422	1,002	830	664	491	317	615	488	661	
				2002	559	470	791	696	597	516	349	334	455	563	393	335	
				2003	468	607	572	533	498	193	225	58	350	493	60	86	
				2004	305	232	123	665.5	330.5	451.5	322.5	363.25	278.5	245	86	9.17	
D_OHCREW		473 NR	P3400000		603	558	705	649	733	636	493	347	408	524	374	380	6,410
					9%	9%	11%	10%	11%	10%	8%	5%	6%	8%	6%	6%	19%

120 OH Dist Repl	Dist Repl	EE	Hrs	Hrs/month		
Approx. 10/month	10	7	16	1,120	Total	33,084
			NI	505		
			NE	398		
			NR	217		

Lightning Arrester Repl	Days	EE	Hrs	Hrs/month
Approx. 30/month	20	3	8	480
			NI	384
			NR	96

Per discussion w/Kaanoi, will use 80% NI and 20% NR. Changeover costs are relatively minimum, so will not forecast.

Omni-rupter Inst/Repl	Days	EE	Hrs	Hrs/month
Approx. 15/month	1	4	8	32
			NI	26
			NR	6

_Proj	Project	_EE	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	FY07
P3400000	Prev OH Dist Repl	150	1,216.34	1,291.34	1,185.34	1,172.34	1,163.34	1,309.34	1,288.34	1,159.34	1,138.34	1,083.34	1,148.34	1,129.34	14,285.08
P3400000	Prev OH Dist Repl	201	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	377,028.00
P3400000	Prev OH Dist Repl	401	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	31,419.00	377,028.00
P3400000	Prev OH Dist Repl	404	1,216.34	1,259.34	1,134.34	1,124.34	1,152.34	1,223.34	1,245.34	1,097.34	1,117.34	1,083.34	1,148.34	1,129.34	13,931.08
P3400000	Prev OH Dist Repl	406	1,216.34	1,291.34	1,185.34	1,172.34	1,163.34	1,309.34	1,288.34	1,159.34	1,138.34	1,083.34	1,148.34	1,129.34	14,285.08
P3400000	Prev OH Dist Repl	407	0.0	32.0	51.0	48.0	11.0	86.0	43.0	62.0	21.0	0.0	0.0	0.0	354.0
P3400000	Prev OH Dist Repl	421	1,216.34	1,291.34	1,185.34	1,172.34	1,163.34	1,309.34	1,288.34	1,159.34	1,138.34	1,083.34	1,148.34	1,129.34	14,285.08
P3400000	Prev OH Dist Repl	422	1,216.34	1,291.34	1,185.34	1,172.34	1,163.34	1,309.34	1,288.34	1,159.34	1,138.34	1,083.34	1,148.34	1,129.34	14,285.08
P3400000	Prev OH Dist Repl	423	45,596.42	48,150.13	43,691.81	43,215.50	43,347.43	48,150.67	47,885.64	42,514.45	42,222.98	40,317.65	42,897.50	42,143.39	530,133.57
P3400000	Prev OH Dist Repl	430	188,843.58	198,922.98	189,657.74	188,679.93	183,009.44	205,018.41	203,504.53	192,054.98	187,753.76	178,965.80	187,305.43	184,475.95	2,288,192.53
P3400000	Prev OH Dist Repl	501	799.00	799.00	799.00	799.00	799.00	799.00	799.00	799.00	799.00	799.00	799.00	799.00	9,588.00
P3400000	Prev OH Dist Repl	505	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	61,147.00	733,764.00
P3400000	Prev OH Dist Repl	905	-27,452.49	-26,006.15	-25,239.26	-24,806.69	-28,321.23	-23,547.13	-21,494.04	-20,595.43	-21,397.24	-23,937.59	-22,143.26	-23,059.50	-288,000.01
			337,853.21	352,307.66	338,820.99	337,734.44	328,636.34	360,952.65	361,121.83	344,554.70	339,055.20	325,546.56	338,585.37	333,990.54	4,099,159.49

_Proj	Project	_EE	Jan 07	Feb 07	Mar 07	Apr 07	May 07	Jun 07	Jul 07	Aug 07	Sep 07	Oct 07	Nov 07	Dec 07	FY07
P3400000	Prev OH Dist Repl	150	$45,596.63	$48,150.34	$43,692.02	$43,215.71	$43,347.64	$48,150.88	$47,885.85	$42,514.66	$42,223.19	$40,317.86	$42,897.71	$42,143.60	$530,136.15
P3400000	Prev OH Dist Repl	201	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$31,419.00	$377,028.00
P3400000	Prev OH Dist Repl	401	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$3,311.56	$39,738.75
P3400000	Prev OH Dist Repl	404	$46,622.31	$48,270.50	$43,479.25	$43,095.95	$44,169.19	$46,890.62	$47,733.88	$42,061.04	$42,827.64	$41,524.42	$44,015.87	$43,287.60	$533,978.30
P3400000	Prev OH Dist Repl	406	$3,490.90	$3,706.15	$3,401.93	$3,364.62	$3,338.79	$3,757.81	$3,697.54	$3,327.31	$3,267.04	$3,109.19	$3,295.74	$3,241.21	$40,998.18
P3400000	Prev OH Dist Repl	407	$0.00	$2,764.80	$4,406.40	$4,147.20	$950.40	$7,430.40	$3,715.20	$5,356.80	$1,814.40	$0.00	$0.00	$0.00	$30,585.60
P3400000	Prev OH Dist Repl	421	$5,193.77	$5,514.02	$5,061.40	$5,005.89	$4,987.46	$5,590.88	$5,501.21	$4,950.38	$4,860.71	$4,625.86	$4,903.41	$4,822.28	$60,997.29
P3400000	Prev OH Dist Repl	422	$14,973.15	$15,896.40	$14,591.54	$14,431.51	$14,320.72	$16,117.98	$15,859.47	$14,271.48	$14,012.97	$13,335.92	$14,136.07	$13,902.18	$175,849.33
P3400000	Prev OH Dist Repl	423	$3,706.99	$3,914.81	$3,552.14	$3,513.42	$3,524.15	$3,914.65	$3,893.10	$3,456.42	$3,432.73	$3,277.82	$3,487.57	$3,426.26	$43,099.86
P3400000	Prev OH Dist Repl	430	$16,429.39	$17,306.30	$16,500.22	$16,415.15	$15,921.82	$17,836.60	$17,704.89	$16,708.78	$16,334.58	$15,570.02	$16,295.57	$16,049.41	$199,072.75
P3400000	Prev OH Dist Repl	501	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$835.35	$10,024.25
P3400000	Prev OH Dist Repl	505	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$61,147.00	$733,764.00
P3400000	Prev OH Dist Repl	905	-$27,452.49	-$26,006.15	-$25,239.26	-$24,806.69	-$28,321.23	-$23,547.13	-$21,494.04	-$20,595.43	-$21,397.24	-$23,937.59	-$22,143.26	-$23,059.50	-$288,000.01
			$205,273.57	$216,229.88	$206,158.56	$205,095.68	$198,931.85	$222,855.61	$221,210.02	$208,764.37	$204,088.93	$194,536.43	$203,601.60	$200,525.95	$2,487,272.46

*Proj #	Project	*EE #	Jan 07 Act07$RA	Feb 07 Act07$RA	Mar 07 Act07$RA	Apr 07 Act07$RA	May 07 Update07	Jun 07 Update07	Jul 07 Update07	Aug 07 Update07	Sep 07 Update07	Oct 07 Update07	Nov 07 Update07	Dec 07 Update07
P3400000	Prev OH Dist Repl	150	0	0	0	0	D 1,163	1,309	1,288	1,159	1,138	1,083	1,148	1,129
			$59,677	$49,448	$55,039	$33,573	$43,125	$47,905	$47,642	$42,296	$42,006	$40,110	$42,678	$41,927
		155	0	0	0	0	0	0	0	0	0	0	0	0
			$4,548	-$4,396	-$3,311	-$4,601	0	0	0	0	0	0	0	0
		201	0	0	0	0	D 31,419	31,419	31,419	31,419	31,419	31,419	31,419	31,419
			$62,425	$40,344	$82,912	$16,907	$31,419	$31,419	$31,419	$31,419	$31,419	$31,419	$31,419	$31,419
		205	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0
		301	0	0	0	0	0	0	0	0	0	0	0	0
			$48	$0	$0	$0	0	0	0	0	0	0	0	0
		400	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0
		401	0	0	0	0	31,419	31,419	31,419	31,419	31,419	31,419	31,419	31,419
			0	0	0	0	$3,953	$3,953	$3,953	$3,953	$3,953	$3,953	$3,953	$3,953
		404	0	0	0	0	1,152	1,223	1,245	1,097	1,117	1,083	1,148	1,129
			$55,608	$42,624	$46,381	$28,619	$38,604	$40,983	$41,720	$36,760	$37,431	$36,291	$38,469	$37,833
		406	0	0	0	0	1,163	1,309	1,288	1,159	1,138	1,083	1,148	1,129
			$5,373	$4,428	$4,804	$2,783	$3,861	$4,346	$4,276	$3,848	$3,778	$3,596	$3,811	$3,748
		407	0	0	0	0	11	86	43	62	21	0	0	0
			0	0	0	0	$880	$6,880	$3,440	$4,960	$1,680	$0	$0	$0
		421	0	0	0	0	1,163	1,309	1,288	1,159	1,138	1,083	1,148	1,129
			$6,120	$5,115	$5,578	$3,589	$5,024	$5,655	$5,564	$5,007	$4,916	$4,679	$4,959	$4,877
		422	0	0	0	0	1,163	1,309	1,288	1,159	1,138	1,083	1,148	1,129
			$17,770	$14,646	$15,952	$10,043	$13,968	$15,721	$15,469	$13,920	$13,667	$13,007	$13,787	$13,559
		423	0	0	0	0	43,125.27	47,905.27	47,641.65	42,296.11	42,006.17	40,110.03	42,677.53	41,927.03
			$4,675	$3,173	$3,611	$1,870	$3,157	$3,507	$3,487	$3,096	$3,075	$2,936	$3,124	$3,069
		430	0	0	0	0	177,651.37	198,803.38	197,458.03	186,645.87	182,510.26	174,034.23	182,040.07	179,308.59
			$1,242	$1,283	$1,373	$1,178	$16,646	$18,628	$18,502	$17,489	$17,101	$16,307	$17,057	$16,801
		431	0	0	0	0	0	0	0	0	0	0	0	0
			$2,552	$2,638	$2,823	$2,417	0	0	0	0	0	0	0	0
		501	0	0	0	0	D 799	799	799	799	799	799	799	799
			$4,068	$1,903	$2,059	$14,628	$835	$835	$835	$835	$835	$835	$835	$835
		505	0	0	0	0	D 61,147	61,147	61,147	61,147	61,147	61,147	61,147	61,147
			$49,852	$41,136	$61,912	$61,719	$61,147	$61,147	$61,147	$61,147	$61,147	$61,147	$61,147	$61,147
		900	0	0	0	0	0	0	0	0	0	0	0	0
			0	0	0	0	0	0	0	0	0	0	0	0
		905	0	0	0	0	-28,321	-23,547	-21,494	-20,595	-21,397	-23,938	-22,143	-23,059
			$0	-$52,762	-$74,878	-$178,420	-$28,321	-$23,547	-$21,494	-$20,595	-$21,397	-$23,938	-$22,143	-$23,059
			$273,957	$149,580	$204,255	-$5,696	$194,297	$217,431	$215,960	$204,135	$199,611	$190,341	$199,097	$196,110

Ⓓ

Σ Ⓓ = 2,239,078

CA-IR-394

Ref: CA-IR-307, Attachment 2 (Property Held for Future Use).

Page 2 of Attachment 2 shows two land parcels associated with the Campbell Industrial Park Generating Station, which HECO proposes to include in rate base. Please provide the following:

a. Have both of these parcels already been purchased?

   1. If so, please provide the closing date and actual purchase price.

   2. If not, please provide the current best estimate of the closing date and any known revision to the purchase price.

b. Please explain why the land associated with this generating station should be included in rate base, rather than capitalized and included in the investment base on which AFUDC is calculated.

HECO Response:

a. Neither one of these parcels has yet been purchased. HECO and the current property owner (HRPT Properties Trust) continue to make progress in negotiations regarding the terms and conditions of the purchase. There are no known revisions to the purchase price at this time. Closing of this purchase is anticipated to occur in July 2007.

b. Since the property is expected to be placed in utility service under a definite plan within 10 years of acquisition, and thus meets the criteria of property held for future use. Property held for future use is property which is used or useful for utility purposes. Under HRS §269-16, rates established by the Commission shall provide a fair return on the property of the utility actually used or useful for public utility purposes. The Company will transfer the property to the land account in utility plant in service when improvements on the acquired land commences. The Company does not normally apply AFUDC on purchased land since the land is included in either property held for future use or utility plant in service and is included in its rate base.

CA-IR-395

Ref: CA-IR-307, Attachment 3 & 4 (CIAC & Customer Advances).

Please provide the following:

a. Do Attachments 3 and 4 identify all plant projects or programs completed in 2006 or expected to be completed in 2007 or 2008 for which HECO has collected or expects to collect customer advances and/or contributions in aid of construction prior to 2007, during 2007 or after 2007? Please explain.

   1. If so and the information is duplicative of the data sought by parts (b) through (d) below, please provide a copy of the documentation relied upon on in quantifying the CIAC and Customer Advance amounts set forth on Attachments 3 and 4.

   2. If not, please complete parts (b) through (d) below.

b. Please identify each plant project or program expected to be completed and closed to plant in service during 2007 for which HECO has collected or expects to collect customer advances and/or contributions in aid of construction.

   1. For each identified project or program, please provide the total amount collected or to be collected.

   2. Referring to part (b)(1) above, please provide a further breakdown of the said amounts between funds collected prior to 2007, during 2007 and after 2007.

c. Please identify each plant project or program completed and closed to plant in service prior to 2007 for which HECO has collected or expects to collect customer advances and/or contributions in aid of construction.

   1. For each identified project or program, please provide the total amount collected or to be collected.

   2. Referring to part (c)(1) above, please provide a further breakdown of the said amounts between funds collected prior to 2007, during 2007 and after 2007

d. Please identify each plant project or program completed and closed to plant in service after 2007 for which HECO has collected or expects to collect customer advances and/or contributions in aid of construction.

   1. For each identified project or program, please provide the total amount collected or to be collected.

   2. Referring to part (d)(1) above, please provide a further breakdown of the said amounts between funds collected prior to 2007, during 2007 and after 2007

e. If the information requested in parts (b) through (d) above are not available, please explain.

HECO Response:

a. No. Attachments 3 and 4 of CA-IR-307 represent the amounts of CIAC and Customer Advances collected in 2006 and anticipated to be collected in the 2007 test year, regardless of when the associated projects were recorded as plant in service. Attached on pages 4 and 5 are projects and programs which were completed prior to 2007 or are expected to be completed and closed to plant in service during 2007 or after 2007 for which HECO has collected or expects to collect CIAC in 2007 (a summary of the information is provided on page 3). As noted in Attachment 4 of the Company's response to CA-IR-307, the test year Customer Advances receipts estimate is based on a historical average and is not associated with any individual project or program.

The CIAC amounts that are reflected on pages 3 through 5 reflect increases to the amounts previously submitted as Attachment 3 in the Company's response to CA-IR-307. The revised test year estimate for In Kind CIAC is $8,833,000 and the estimate for Cash CIAC is $12,106,000, an increase of $2,366,000 and $266,000, respectively. Attachment 1 includes revised HECO-1608 and HECO-WP-1608 that reflect these updated CIAC amounts. These updated amounts are based on the latest information available at this point in time.

b. See pages 3 through 5 for the requested CIAC information. See the response to item a above for the requested Customer Advances information.

c. See the response to item b.

d. See the response to item b.

e. Not applicable.

Hawaiian Electric Company, Inc.
CONTRIBUTIONS IN AID OF CONSTRUCTION

($ thousands)

Contirbutions in aid of construction	Prior to 2007	During 2007	After 2007	
In-kind	$0	$8,833	$494	P. 4
Cash	$13,696	$12,106	$1,061	P. 5
Total	$13,696	$20,939	$1,555	

Hawaiian Electric Company, Inc.
CONTRIBUTIONS IN AID OF CONSTRUCTION
IN-KIND CIAC
($ thousands)

Project#	Project Description	Closed to Plant		Forecasted to Close		CIAC Collected		Forecasted to Collect		TOTAL
		Prior to 2007	During 2007	During 2007	After 2007	Prior to 2007	During 2007	During 2007	After 2007	
P0000507	KamHwy Resurfacing Waihole - Cr Lion	x						26		26
P0000530	Ka Iwi 12kV UG, Ph 1, Incr 2	x						129		129
P0000598	Kahekili Hwy Ltng OH/UG Conv	x						13		13
P0000611	Kaneohe Bay Dr Impvmt	x					86			86
P0000764	H1 Widening Waimalu Reloc	x						98		98
P0000834	46kV Fdrs to Mamala Substation			x			3,000			3,000
P0001037	Puuloa Rd Widening, UG			x					93	93
P0001046	Palehua East B 46kV UG, Ph. 2		x				162			162
P0001072	Kakaako ID-12		x					476		476
P0001075	Kam Hwy Kokololio Bridge Temp	x						2		2
P0001081	Auahi Street 12kV OH to UG				x				33	33
P0001268	Capitol Place - Relocate Vault 920			x				25		25
P0001306	Mililani Mauka Offsite Ph.16		x				137			137
P0001342	Walmart Manana OH Reloc			x				12		12
P0001357	Kapolei Pkwy Ext. OH to UG			x					55	55
P0001404	Kal Hwy at Makapuu 12kV UG				x				313	313
P1690000	Minor T&D Customer Programs *			x				12		12
P1700000	Misc UG Svc & Extn (CID)			x			240**	4,415		4,655
	TOTAL					**0**	**3,625**	**5,208**	**494**	**9,327**

TOTAL COLLECTED AND FORECAST FOR 2007 **8,833**

NOTE: Listed projects identified as having CIAC collected either during 2007 or placed into service in 2007 with CIAC collected or anticipated to be collected.

*Jun-Dec 07 Forecast

** For Program CIAC In-Kind - Recorded as of 5/26/07. Quarterly entry entered for first quarter 2007.

Hawaiian Electric Company, Inc.
CONTRIBUTIONS IN AID OF CONSTRUCTION
CASH CIAC
($ thousands)

		Closed to Plant		Forecasted to Close		CIAC Collected		Forecasted to Collect		
Project#	Project Description	Prior to 2007	During 2007	During 2007	After 2007	Prior to 2007	During 2007	During 2007	After 2007	TOTAL
Y00040	Ford Island Substation	x				12,507		225		12,732
P0000143	Salt Lake Blvd Widening, Ph. 2	x				504	1,100			1,604
P0000507	Kam Hwy Resurf, Waiahole to Crchng Lion	x						1,330		1,330
P0000530	Ka Iwi Scenic Shoreline Impvmt, Ph 1, Incr 2	x						122		122
P0000598	Kahekili Hwy Lighting Impvts	x						51		51
P0000575	Nimitz Hwy Rehab	x						71		71
P0000672	Kakaako Makai-Kewalo 25kV (VWL)				x	91			456	547
P0000833	Mamala Substation			x		256		2,215		2,471
P0001037	Puuloa Rd Widening, UG			x					387	387
P0001072	Kakaako ID-12		x					475		475
P0001075	Kam Hwy Kokololio Bridge Temp	x						231		231
P0001268	Capitol Place - Relocate Vault 920			x		33	131			164
P0001306	Mililani Mauka Offsite Ph.16		x			279				279
P0001342	Walmart Manana OH Reloc			x		26		106		132
P0001356	Mamala Phase 2 - Mamala			x				1,044		1,044
P0001357	Kapolei Pkwy Ext. OH to UG			x					77	77
P0001385	Fort St Mall-Campbell Ducts			x				50		50
P0001390	Whitmore Subst & 46kV Line				x				85	85
P0001398	Mamala Phase 3 - Mamala			x				208		208
P0001404	Kal Hwy at Makapuu 12kV UG				x				56	56
P1690000	Minor T&D Customer Programs *			x				70		70
P1690000	Waikiki Beach Walk Reloc V5920			x			74			74
P1690000	909 Kap Blvd Condo Reloc Pl, Waimano St			x			191			191
P1690000	Kam Hwy, Kii Bridge	x					109			109
P1690000	Best Buy - #852 Aiea, Hi			x			48			48
P1510000	Misc OH Svc & Extn (CID)***		x	x			28	21		49
P1580000	Minor OH Dist Addn (CID)***		x	x			81	165		246
P1700000	Misc UG Svc & Extn (CID)***		x	x			1,873	1,797		3,670
P1820000	Minor UG Addn (CID)***		x	x			81	209		290
	TOTAL					**13,696**	**3,716**	**8,390**	**1,061**	**26,863**

TOTAL COLLECTED AND FORECAST FOR 2007 **12,106**

NOTE: Listed projects identified as having CIAC collected either during 2007 or placed into service in 2007 with CIAC collected or anticipated to be collected. The exception is P0000672, Kakaako Makai-Kewalo 25kV(VWL), which is not anticipated to close until after 2007 with CIAC collected prior to 2007 and after 2007. This is the only identified project that will close after 2007 with CIAC collected before the test year.

*Jun-Dec 07 Forecast

*** Program Cash CIAC is made up of hundreds of projects, forecast is calculated by applying a historical factor of CIAC to the program's capital expenditure estimates for these same programs. Individual service/ work orders were not used as a basis for the 2007 CIAC estimate associated with programs. The methodology also assumed that the estimated CIAC associated with these programs would be billed, collected and closed within the test year, i.e., the year that the capital expenditures were made. Amounts shown under CIAC Collected-During 2007 reflect recorded as of 5/31/07.

Hawaiian Electric Company, Inc.

2006 and 2007

CONTRIBUTIONS IN AID OF CONSTRUCTION

($ Thousands)

	2006	2007	Reference
Contributions in aid of construction:			
In-Kind	$ 1,468	$ 8,833	HECO-WP-1608
Cash CIAC:			
Customer Installations	$ 3,835	$ 4,255	HECO-WP-1608
Energy Delivery	6,950	7,851	HECO-WP-1608
Total	$ 10,785	$ 12,106	HECO-WP-1608
Customer Advances:			
Receipts	$ 64	$ 115	
Refunds	(539)	(96)	
Transfers	(23)	(264)	

Hawaiian Electric Company, Inc.
Contributions in Aid of Construction

($ Thousands)

	2006	2007	Reference
Cash CIAC:			
Customer Installations	$ 3,835	$ 4,255	HECO-WP-1608, p2
Energy Delivery	6,950	7,851	HECO-WP-1608, p3
	$ 10,785	$ 12,106	
In-Kind CIAC	$ 1,468	$ 8,833	HECO-WP-1608, p4

Hawaiian Electric Company, Inc.

CASH CONTRIBUTIONS-IN-AID-OF-CONSTRUCTION

Customer Installations

PROJ #	DESCRIPTION	2006 Actual	2007 Update
P1510	Minor OH	$ 167,237	$ 48,500
P1580	Misc OH Addn	$ 108,195	$ 245,500
P1700 & Misc	Minor UG	$ 3,369,793	$ 3,670,500
P1820	Misc UG Addn	$ 189,474	$ 290,300
	TTL CASH CIAC	$ 3,834,699	$ 4,254,800

Totals may not add due to rounding.

CONTRIBUTIONS IN AID OF CONSTRUCTION
ENERGY DELIVERY - CASH CIAC
($ thousands)

Project No.	Project Description	2006 Actual	2007 Update
P0000836	Ford Island Substation	4,832	225
P0000143	Salt Lake Blvd Widening, Ph. 2	504	1,100
P0000507	Kam Hwy Resurf, Waiahole to Crchng Lion	---	1,330
P0000530	Ka Iwi Scenic Shoreline Impvmt, Ph 1, Incr 2	---	122
P0000598	Kahekili Hwy Lighting Impvts	---	51
P0000575	Nimitz Hwy Rehab	---	71
P0000833	Mamala Substation	256	2,215
P0000886	Walmart/Sam's Keeaumoku	(39)	---
P0000947	Ko'Olina Subst 46kV Lines	375	---
P0000951	Ocean Pointe 46kV Lines	100	---
P0001072	Kakaako ID-12	---	475
P0001075	Kam Hwy Kokololio Bridge Temp	---	231
P0001268	Capitol Place - Relocate Vault 920	33	131
P0001306	Mililani Mauka Offsite Ph. 16	279	---
P0001319	Mamala Phase 2 - Hickam	250	---
P0001342	Walmart Manana OH Reloc	26	106
P0001356	Mamala Phase 2 - Mamala	---	1,044
P0001385	Fort Street Mall - Campbell Ducts	---	50
P0001398	Mamala Phase 3 - Mamala	---	208
P1690000	Minor T&D Customer Programs	202	70
P1690000	Waikiki Beach Walk Reloc V5920	---	74
P1690000	909 Kap Blvd Condo Reloc Pl, Waimano St	---	191
P1690000	Kam Hwy, Kii Bridge	---	109
P1690000	Best Buy - #852 Aiea, Hi	---	48
P6640000	New Interchange Improvements	110	---
P9904000	H1 Widening Aiea	22	---
	TOTAL CASH CONTRIBUTIONS	6,950	7,850

Totals may not add due to rounding

HAWAIIAN ELECTRIC COMPANY, INC.

In-Kind CIAC

($ Thousands)

Project #	Project	2006 Actual	2007 Update
P0000507	**Kam Hy-Resurf Waiahole-Cr Ln**	**-**	**26**
P0000530	**Ka Iwi 12kV UG, Ph1 Inc 2**	**-**	**129**
P0000598	**Kahekili Hy Ltg OH/UG Conv**	**-**	**13**
P0000611	**Kaneohe Bay Dr Improvements**	**-**	**86**
P0000764	**H-1 Widening Waimalu Reloc**	**-**	**98**
P0000834	**46 kV Fdrs to Mamala Sub**	**-**	**3,000**
P0001046	**Palehua East B 46kV UG PH 2**	**-**	**162**
P0001072	**Kakaako ID 12**	**-**	**476**
P0001075	**Kam Hy-Kokololio Bridge Temp**	**-**	**2**
P0001268	**Capitol Place Relocation V920**	**-**	**25**
P0001306	**Mililani Mauka Offsite Phase 16**	**-**	**137**
P0001343	**Walmart Manana OH Relocation**	**-**	**12**
P0001357	**Kapolei Pkwy Ext. OH to UG**	**-**	**---**
P1690000	**Minor T&D Customer Programs**	**-**	**12**
P1700000	**Misc UG Svc & Extn (CID)**	**1,468**	**4,655**
		1,468	**8,833**

CA-IR-396 **Ref: Response to CA-IR-317 - (Schedule G Accounts).**

According to the response, "…in Schedule G…customers can and do have multiple Schedule G accounts." Please provide the following:

a. Provide available data indicating approximately how many HECO customers have more than one Schedule G account.

b. Explain whether HECO is aware of chain stores, military agencies or other large customers that aggregate many individual Schedule G accounts and provide available data quantifying this phenomena.

c. Describe whether and why HECO believes it more important to mitigate bill impacts upon small residential customers than upon small commercial customers

HECO Response:

a. In 2005, the Company had 3,456 customers with multiple Schedule G accounts totaling approximately 16,685 Schedule G accounts. In 2006, the Company had 3,429 customers with multiple Schedule G accounts totaling approximately 16,512 Schedule G accounts.

b. Based on 2006 data, the Company is aware that construction companies (4 customers totaling 1,327 Schedule G accounts) and government departments (5 customers totaling 1,239 Schedule G accounts) have significant numbers of Schedule G accounts.

c. The Company does not believe it to be "… more important to mitigate bill impacts upon small residential customers than upon small commercial customers". The challenge, as described in the response to CA-IR-317, part a., is that the smallest Schedule G customers are not as readily or clearly identified as the smallest Schedule R customers. An inclining block rate for Schedule G customers could easily confer discounted rates upon a customer who has multiple Schedule G locations with relatively small energy requirements, which may be an unintended and unsatisfactory result of the proposed rate design.

CA-IR-397 **Ref: T-20, page 18 (Schedule R Residential Service).**

Please explain the customer billing impacts of conversions from master metered to individually metered service for multi-family residential buildings, including the following information:

a. Identify the rate schedules used to bill typical master metered multi-family building, with statistics indicating how many multi-family dwelling units are presently thought to be served under each HECO commercial rate schedule.

b. What is HECO's understanding of the most common utility cost apportionment methods employed for multi-family master metered residential buildings?

c. Provide quantification of illustrative typical individual residential customer billing impacts for their dwelling unit upon conversion to individual metering.

d. Explain how the Schedule R Apartment House Collection provision impacts the comparisons of bill impacts in your response to part (b).

e. Has the Company considered the implications of limiting master metering of multi-family buildings to encourage residential customer conservation measures?

f. If your response to part (d) is affirmative, please explain whether and why master metering restrictions have not been advocated?

g. To what extent are the proposed inclining block residential rates expected to encourage conversion to individual metering for smaller dwelling units within multi-family buildings?

h. If HECO has conducted studies or analyses of any of the issues raised in this information request since January 1, 2005, please provide complete copies of documents associated with such efforts.

HECO Response:

a. Based on an analysis of billing system business structure codes, the Company estimates the following number of master metered multi-family electric service accounts: 9 on Schedule G, 1 on Schedule H, 12 on Schedule J, 31 on Schedule PS, and 11 on Schedule PP.

b. HECO is aware that utility costs in multi-family master metered residential buildings are allocated by residential unit type and by residential unit square footage, among other

methods, but the Company does not know what method of allocation is most common in its service area.

c. HECO does not have the information to make this calculation. The quantification of billing impact would depend on how much electricity is typically used and how much the resident is charged for that electricity through whatever utility cost apportionment method is applied.

d. This response assumes that the question refers to the response to part c. If the Schedule R Apartment House Collection provision applies, the bill impact will be less. However, as indicated in the response to part c. above, the Company is unable to calculate that bill impact.

e. The Company has not undertaken any studies or investigations on limiting master metering of multi-family buildings to encourage residential customer conservation measures.

f. This response assumes that the question refers to the response to part e. Not applicable.

g. The proposed design of inclining block residential rates did not anticipate conversion to individual metering for smaller dwelling units within multi-family buildings.

h. HECO has not conducted any such studies.

CA-IR-398 **Ref: HECO-WP-2001, page 84; Response to CA-IR-187 - (Customer Number Allocation Input).**

At page 84, the Cost of Service workpapers reflect a customer count for the residential class of 261,302. Please provide the following information:

a. Confirm that this value is tied to the Rate Schedule projected total customer count shown at HECO-201 that is sponsored by HECO T-2.

b. Explain whether or not the impact of conversion of the Kukui Gardens from master metered service to individual meters has the effect of increasing the customer count allocation for Schedule R by approximately 800.

c. To what extent does Mr. Young believe that the customer related distribution poles, lines and transformers to serve Kukui Gardens increased by a factor of 800 times or more as a result of conversion to separate metering?

d. Beyond additional meter-related plant, was any significant additional distribution system investment required for the Kukui Gardens conversion project?

e. If your response to part (d) of this information request is affirmative, please provide an itemized breakdown of new plant investment associated with the Kukui Gardens conversion by NARUC account.

f. If the new individually metered condos at 215 N. King Street had been master metered, to what extent would Plant Investment requirements other than meter investments have been any different than investments actually incurred to provide service?

HECO Response:

a. The customer count for the residential class of 261,302 is tied to the Rate Schedule projected total customer count shown at HECO-201 that is sponsored by HECO T-2.

b. The impact of the conversion of the Kukui Gardens from master metered service to individual meters has the effect of increasing the customer count allocation for Schedule R by approximately 800. The 261,302 residential customers identified in part a. above include the approximately 800 additional Kukui Gardens customers.

c. The conversion project from master metered service to individual meters involved installing a new underground distribution system. There were no distribution poles

installed on the project. The amount of installed feet of conductors increased by at least a factor of 800. The number of transformers did not increase by a factor of 800. See the attached PUC Application in Docket No. 03-0107 for more information on equipment.

d. Yes, there was additional system investment to convert from master metered primary service to individually metered secondary service. Since Kukui Gardens is not a single building structure, but is comprised of various buildings spread out over a large area, HECO needed to bring power to various points on the property. This would be similar to how a residential townhouse subdivision is designed. Therefore, for this project, most of the cost was due to the installation of the distribution system. The cost of the meters would have made up a very small portion of the total cost.

HECO installed the distribution equipment below. Please see the attached PUC Application filed in Docket No. 03-0107.

1. 19,393 circuit feet of primary conductors (approximate)
2. 2,234 circuit feet of secondary conductors (approximate)
3. 17 single phase transformers
4. 4 three phase transformers
5. 2 primary switchgears

e. The itemized breakdown is $258,217.75 in plant account 367 Underground Conductors and Devices and $510,738.38 in plant account 369 Underground Services, for a total of $768,956.13 which is slightly higher than the cost estimate presented in Docket No. 03-0107, Exhibit II, page 1.

f. The Plant Investment requirements other than meter investments would be basically the same. Since all of the proposed loads at 215 N. King Street are contained within a single building structure, the distribution system necessary to serve either a master-metered account, or individually metered accounts, would be the same.

FILED
2003 APR 28 P 3:38
PUBLIC UTILITIES COMMISSION

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No. 03-0107
	)	
for approval to commit funds in excess	)	
of $500,000 for Project P0000774,	)	
Kukui Gardens Corporation Conversion	)	
	)	

APPLICATION

and

CERTIFICATE OF SERVICE

William A. Bonnet
Vice President, Government
and Community Affairs
Hawaiian Electric Company, Inc.
P. O. Box 2750
Honolulu, Hawaii 96840

Telephone: 543-5660

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Application of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No.
	)	
for approval to commit funds in excess of $500,000 for Project P0000774, Kukui Gardens Corporation Conversion	)	

APPLICATION

TO THE HONORABLE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII:

HAWAIIAN ELECTRIC COMPANY, INC., ("HECO") requests Commission approval to commit funds in excess of $500,000 (currently estimated at $745,732) for Project P0000774, Kukui Gardens Corporation Conversion from primary metered customer to individual metered customers.

HECO further requests a waiver (or temporary exemption) from Paragraph 2.3(g)(2) of General Order No. 7 ("G.O. 7") to permit HECO to commit funds for the subject project earlier than the 60 days after filing its application for Commission review of the expenditure. Without the waiver, Paragraph 2.3(g)(2) of G.O. 7 would require that the application "be submitted to the Commission for review at least 60 days prior to the commencement of construction or commitment for expenditure, whichever is earlier."

I

HECO, whose principal place of business and whose executive offices are located at 900 Richards Street, Honolulu, Hawaii, is a corporation duly organized under the laws of the

Kingdom of Hawaii on or about October 13, 1891, and is now existing under and by virtue of the laws of the State of Hawaii. HECO is an operating public utility engaged in the production, purchase, transmission, distribution, and sale of electricity on the island of Oahu.

II

Correspondence and communications in regard to this Application should be addressed to William A. Bonnet, Vice President, Government and Community Affairs, whose business address is P. O. Box 2750, Honolulu, Hawaii 96840-0001; with a copy to Lorie Ann Nagata, Treasurer, at the same address.

III

Commission approval is sought under the provisions of Paragraph 2.3(g)(2) of General Order No. 7, which states in part that "Proposed capital expenditures ... in excess of $500,000 ... shall be submitted to the Commission for review at least 60 days prior to the commencement of construction or commitment for expenditure, whichever is earlier." This project does not involve construction of high voltage, overhead transmission lines and is, therefore, not affected by Hawaii Revised Statutes, Sections 269-27.5 and 269-27.6.

Commission approval of a waiver (or temporary exemption) from Paragraph 2.3(g)(2) of G.O. 7 is requested pursuant to Paragraph 1.2(b) of G.O. 7, which provides that:

> "If unreasonable hardship to a utility or to a customer results from the application of any rule herein prescribed, application may be made to the Commission for the modification of the rule or for temporary or permanent exception from its requirements."

IV

HECO proposes to commit funds for this project with the issuance of purchase orders for long-lead material items, in accordance with Paragraph 2.3(g)(2) of General Order No. 7, on Item

P0000774, Kukui Gardens Corporation Conversion from primary metered customer to individual metered customers. The project has a total estimated cost of $745,732. The Developer, Kukui Gardens Corporation, will essentially finance the entire project cost with a cash contribution-in-aid-of construction ("CIAC") of $516,384; and an in-kind contribution of $250,000 for the ducts, handholes/manholes, and pullboxes.[1]

V

Project Description

This project involves the installation of an underground distribution system to serve 857 single-family apartment units, in 44 buildings, at Kukui Gardens (408 North Beretania Street). (The ultimate load for this project is estimated to be 2,717 KW.) This is an existing building complex that is currently being served at primary voltage and is master metered. The existing distribution system is approximately 32 years old and in urgent need of replacement. Distribution cables and transformers are deteriorating and are in a state of disrepair. Rather than maintain its distribution system, the customer wishes to have HECO construct and maintain a new distribution system. This will require the conversion of the existing primary service to individual secondary metered service at each apartment unit.

The proposed underground distribution system will be fed from the Iwilei Substation and will consist of approximately 19,393 circuit feet of primary conductors, 2,234 circuit feet of secondary conductors, 17 single-phase transformers, four three-phase transformers, and two primary switchgears. The location of the proposed installation is shown on Exhibit I.

The proposed project will be funded totally by Kukui Gardens Corporation through a

[1] Kukui Gardens Corporation payment to HECO will include an additional $20,652 for General Excise Tax ("GET") related to the cash CIAC. See Exhibit II.

non-refundable cash contribution-in-aid-of construction ("CIAC") of $516,384; and an in-kind contribution of $250,000 for the ducts, handholes/manholes, and pullboxes.[2] These funds will be collected prior to the start of construction. (A down payment of $50,000 was made by Kukui Gardens on September 13, 2002.) Kukui Gardens, through a separate agreement with others, will be paying 100% of the cost to prepare each unit in the building complex for individual metering.

VI

The Developer has requested that the proposed distribution system be completed by December 2003. HECO would need to order the materials immediately due to the long lead-time required to obtain the underground materials. HECO would need to start construction by September 2003 in order to meet the customer's required service date.

A Commission waiver will allow HECO to order the appropriate materials to meet the requested service date. If the waiver is approved, Kukui Gardens will pay HECO a non-refundable cash contribution of $237,866 in advance to cover the cost of ordering the required materials. (See Exhibit II.) Kukui Gardens is fully aware that Commission approval is still required in order for HECO to proceed with this project and that its cash advance is non-refundable. HECO understands that if the Commission does not approve its Application, HECO will have the burden of proof to justify the reasonableness of the capital expenditures in its next rate case. However, HECO is confident that the merits of this project justify the reasonableness of the project. The Consumer Advocate does not object to the request for waiver and reserves its right to state its position with respect to the substance of HECO's Application.

[2] The contribution-in-aid-of-construction by Kukui Gardens Corporation represents the estimated cost of an underground distribution system. No equivalent overhead system cost credit was given to this project since it is an existing load.

Attached as Exhibit II is HECO's "Cost Estimate" showing a summary of the capital expenditures anticipated to complete this work.

VII

Wherefore, HECO respectfully requests that the Commission:

1) approve the commitment of funds for Project P0000774, Kukui Gardens Corporation, Installation of an Underground Distribution System, in accordance with Paragraph 2.3 (g)(2) of General Order No. 7.;

2) grant a waiver (or temporary exemption) from paragraph 2.3(g)(2) of G.O. 7 to permit HECO to commit funds for the subject project earlier than 60 days after filing its application for Commission review of the expenditures; and

3) grant HECO such other and further relief as may be just and equitable in the premises.

DATED: Honolulu, Hawaii April 28, 2003.

HAWAIIAN ELECTRIC COMPANY, INC.

By _____
William A. Bonnet
Vice President
Government and Community Affairs

STATE OF HAWAII)
) ss.
CITY AND COUNTY OF HONOLULU)

WILLIAM A. BONNET, being first duly sworn, deposes and says: That he is the Vice President-Government and Community Affairs of Hawaiian Electric Company, Inc., Applicant in the above proceeding; that he makes this verification for and on behalf of HECO and is authorized so to do; that he has read the foregoing Application, and knows the contents thereof; and that the same are true of his own knowledge except as to matters stated on information or belief, and that as to those matters he believes them to be true.

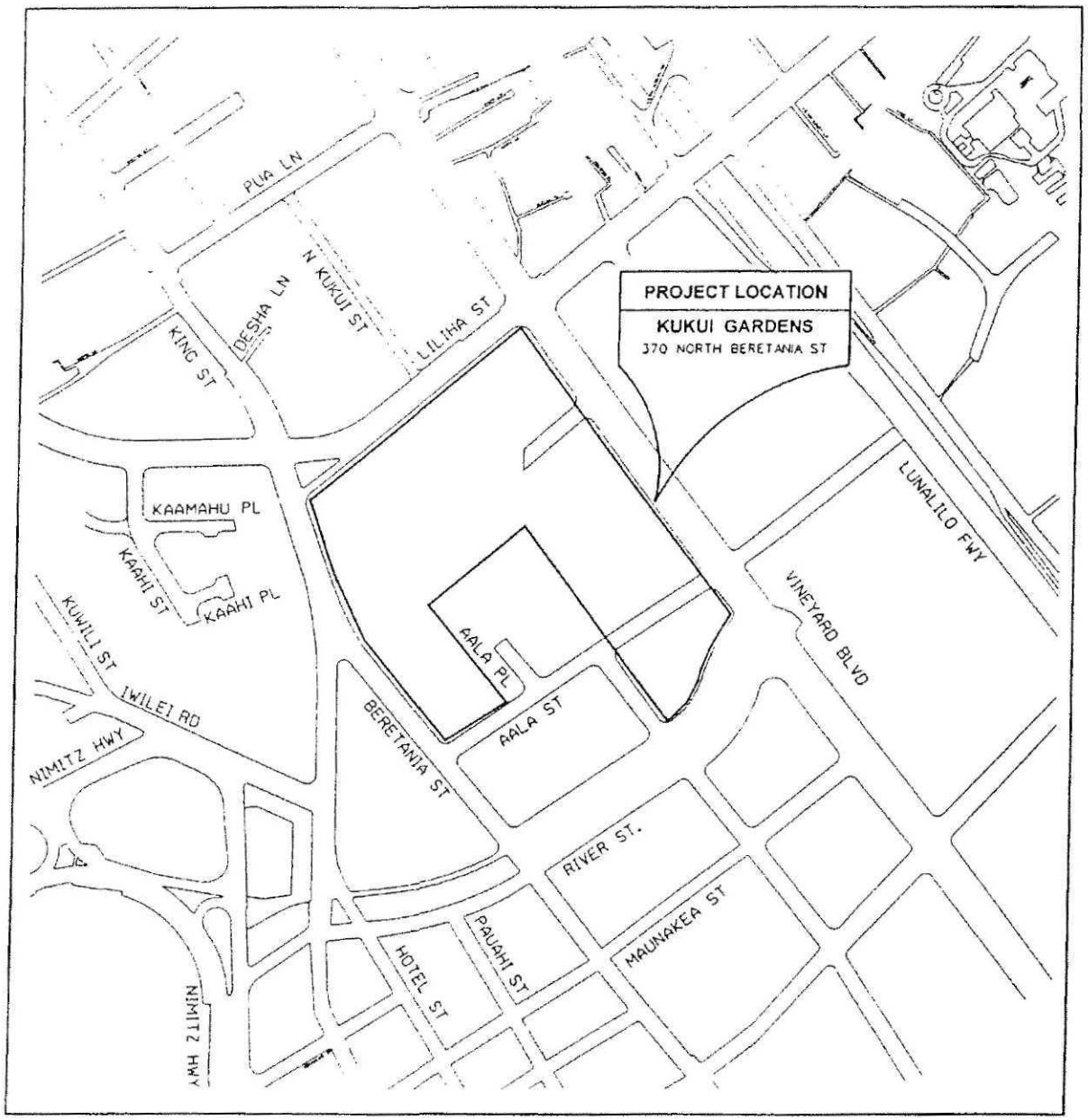
William A. Bonnet

Subscribed and sworn to before
me this 28th day of April, 2003

Carolyn Kuwana
Notary Public, First Circuit,
State of Hawaii

My Commission expires October 4, 2006

LS



LOCATION MAP

COST ESTIMATE

PROJECT TILE: Kukui Gardens Corporation, Conversion
Project: P0000774

LABOR	$ 102,604
ON-COST	$ 155,262
Sub-Total	$ 257,866
MATERIALS	$ 237,866
OUTSIDE SERVICES	$ 0
OTHER	$ 250,000
LAND	$ 0
ALLOWANCE FOR FUNDS USED DURING CONSTRUCTION	$ 0
TOTAL COST OF PROJECT	$ 745,732
GENERAL EXCISE TAX (4.166%):	$ 20,652
Total Project Cost to Customer	$ 766,384

NOTE: The above cost includes estimated cash contributions of $516,384 by Kukui Gardens, which includes $20,652 for taxes (General Excise Tax 4.166%), and an in-kind contribution of $250,000.

Labor hours and projected loaded costs are as follows:

Group		Hours	Dollars
Engineering			
Transmission & Distribution	(BE)	20	$1,511
Structural	(BT)	33	$2,275
Customer Installation			
Planning & Design	(WP)	254	$38,204
Meter Engineering	(WX)	116	$5,719
Construction & Maintenance			
Field Operation	(DF)	60	$4,784
Customer Operation	(DH)	2,538	$198,161
System Operation			
Operating Engineering	(RE)	70	$4,799
Substation	(RS)	32	$2,413
TOTAL		3,123	$257,866

The break down of materials and their estimated costs for each item costing $1,000 or more are shown below:

ITEM	TOTAL COST
PMH-9 Switchgear (2 @ $31,034)	$62,068
Heat Shrink Transition Splice (6 @ $1,131.60)	$6,790
Y Splice – 1/C PILC-PJ 4/0-4/0-4/0 (9 @ $167.67)	$1,509
3-1/C Disconnectable T-Splice (4 @ $1,341.46)	$5,366
Prefab Discconnectable Type Splice, 1/C 1/0Al PEICN (164 @ $252.92)	$41,479
Heat Shrink Transition Splice, 3-1/C #4 CU To #2 AL (2 @ $957.78)	$1,916
1Ph Transformer #1/0 Al Terminations (12 @ $264.67)	$3,176
1Ph Transformer #1/0 Al Terminations with open point (5 @ $240.10)	$1,201
LB MOV Arrester (5 @ $500.97)	$2,505
Connector, Insulated Bus, 4 Position (204 @ $13.91)	$2,838
Conductor, Tpx, 2-1/C 350 KCM Al 600V (2,234' @ $1.62/FT)	$3,619
Conductor, 1-1/C, 1/0 Al 25kV (13,943' @ $1.50/FT)	$20,915
Conductor, 3-1/C, 1/0 Al 25kV (5,060' @ $4.69/FT)	$23,731
Conductor, 3-1/C, 4/0 Al 25kV (390' @ $4.46/FT)	$1,739

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No.
	)	
for approval to commit funds in excess of $500,000 for Project P0000774, Kukui Gardens Corporation, Conversion	)	

CERTIFICATE OF SERVICE

I hereby certify that I have this date served copies of the foregoing Application, together with this Certificate of Service, by making personal service and/or mailing a copy by United States mail, postage prepaid, to the following and at the following address:

Division of Consumer Advocacy (two copies via hand delivery)
Department of Commerce and Consumer Affairs
250 S. King Street, 8th Floor
Honolulu, Hawaii 96813

DATED: Honolulu, Hawaii April 28, 2003

HAWAIIAN ELECTRIC COMPANY, INC.

George S Hirose

George S. Hirose

CA-IR-399 **Ref: T-20, page 48, (Green Pricing Program).**

According to Mr. Young's testimony, "The voluntary contributions received form this Green Pricing Program have been used for such programs as the Sun Power for Schools Pilot Program which funds the installation of photovoltaic systems in public schools." Please provide a summary of customer participation and contribution rates for the past three calendar years and explain how and where an accounting for such contributions is reflected in the Company's rate filing.

HECO Response:

Below is a summary of customer participation and contribution rates for 2004, 2005 and 2006.

The customer contributions are actual billed Community Sun Power for Schools Pledges.

Year	No. of Contributing Customers	Customer Contributions (Billed Pledges)
2004	2769	$43,085.65
2005	2939	$43,172.41
2006	3057	$41,107.59

The contributions are treated as offsets to expenses. The net Sun Power for Schools budgeted expense in TY 2007 is zero dollars. Please reference HECO's response to CA-IR-80 for a more detailed description.

CA-IR-400 **Ref: HECO T-20, page 49, WP-2019, page 21 (Returned Payment Charge).**

Please provide the following information regarding the further proposed increase in this charge to $22.00:

a. Actual volumes of returned items in calendar 2005 and calendar 2006, by external vendor.
b. Documentation supporting the currently effective "$/item" prices as shown in WP-2019, page 21, or more current prices if applicable.

HECO Response:

a. Here are the 2005 and 2006 returned items volumes by vendor.

Vendor Name	2005	2006
Bank Of Hawaii, returned items charged back, 2nd return	3,258	3,142
Bank Of Hawaii, items resubmitted, 1st return	4,873	4,764
First Hawaiian Bank	406	453
Automatic Bill Payment (ABP)	1,834	1,985
CheckFree	238	282
EDS Pay	799	917
Foodland	398	425

b. Please refer to the table below updated for 2006 data:

EXTERNAL CHARGES FOR RETURNED ITEMS	Cost of returned items for Jan - Dec 2006			
	Volume	% of total	$ Total	$/item
Bank of Hawaii	3142	44%	$ 31,006	$ 9.87
First Hawaiian Bank	453	6%	$ 2,265	$ 5.00
Total Bank returned items	3595	50%	$ 33,271	$ 9.25
Foodland	425	6%	$1,551	$ 3.65
Automatic Bill Payment (ABP)	1985	28%	$4,169	$ 2.10
Checkfree	282	4%	$ -	$ -
EDS Pay - Credit Cards	0	0%	$ -	$ -
EDS Pay - Checking/Savings Payments	917	13%	$ -	$ -
Average cost of returned items	7204	100%	$ 38,991	$ 5.41

CA-IR-401 **Ref: HECO T-20, page 59 (Standby Service).**

Please provide the following information regarding the Company's rate case proposed Standby Service rates:

a. Provide a markup of any revisions to the HECO proposed Standby Tariff that is now being proposed in Docket No. 2006-0497.

b. Recognizing that HECO's present and proposed sales rates do not have demand rates equal to calculated unit demand costs, please explain any further adjustments to the Company's proposed Standby pricing for supplemental service pricing that would be required if the Commission wished to achieve approximate parity with the level of demand charges proposed to be recovered within the corresponding general sales rate?

c. Identify and describe any other adjustments that may be required to the HECO-proposed Standby rate levels in the interest of moderating any adverse bill impacts associated with customer billing demand changes arising from self generation and adoption of standby service pricing.

HECO Response:

a. The Company has not filed any proposed revisions to the proposed Schedule SS Standby Service tariff that was filed on August 28, 2006. In Docket No. 2006-0497, in informal discussions, the Company has offered adjustments to the proposed tariff language that would clarify the definition of Supplemental Service Demand and the application of rate adjustments for standby service customers. However, these changes need to be reviewed and may or may not take the same form in a revised proposed tariff.

b. To clarify the Company's standby service proposal, the pricing per kW for supplemental service demand under the standby service tariff is the same as the pricing per kW for demand under the regular rate schedule.

c. The Company does not have a response available at this time. The Company is currently undertaking a review of customer bill impacts under certain operating assumptions and will consider the results in making any revised standby service proposal.

CA-IR-402 **Ref: HECO T-20, page 62 (TOU Rate Availability).**

Please provide the following information regarding HECO provision of time-of-use rates in compliance with EPACT 2005:

a. Explain whether/how HECO believes that its present customer limitation proposed for TOU rates is consistent with the requirements of the EPACT.

b. What is HECO's plan with respect to the timing for removing or changing the customer number limitations upon TOU rates that are offered?

c. Has the Company prepared any reports or analyses of customer participation rates and customer impacts associated with pilot or test programs involving TOU rates?

d. If your response to part (c) of this information request is affirmative, please provide copies of such reports/analyses (or citation if filed with the Commission).

HECO Response:

a. By having the customer limitation for the proposed TOU rates, HECO would be able to offer the proposed TOU rates to customers since it currently requires a significant amount of resources to manually bill and process TOU accounts. Without the limitation, HECO would not be able to offer the proposed TOU rates until the new Customer Information System is in place. HECO plans to remove the customer number limitations when the new Customer Information System is in place. The new system will be able to automatically generate a bill based on TOU rates.

b. See the response in part a. above.

c. Yes, preliminary results of a residential TOU pilot program are presented in HECO T-22, pages 57-60 and in HECO-2236, HECO-2237, HECO-2238 in Docket No. 04-0113.

d. See the response in part c. above.

CA-IR-403

Ref: Response to CA-IR-189 (Actual versus Projected KWH Sales and Customers).

Please provide the following:

a. Updated GWH sales information through June 2007 by Rate Schedule – Actual versus forecast.

b. Updated monthly actual versus projected customer counts by Rate Schedule, through June 2007.

c. Explanations of known causes for cumulative or monthly fluctuations in actual GWH or customer data.

d. Explanation of known causes between actual and projected GWH sales and customer counts through June 2007.

HECO Response:

June 2007 recorded sales information is currently scheduled to be publicly released on August 7, 2007. The following information is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007. All information provided is preliminary and subject to change.

a. A comparison of 2007 versus the August 2006 forecast updated for preliminary data through June is attached on page 4 of this response.

b. The preliminary monthly actual versus projected customer count data for each rate schedule year-to-date June 2007 is attached on page 5 of this response.

c. [redacted]

Confidential Information Deleted
Pursuant To Amended
Protective Order No. 23378

Pages 2-5 contain confidential information and are being provided pursuant to

Amended Protective Order No. 23378, issued June 4, 2007.

CA-IR-404

Ref: Response to CA-IR-318 (Net Energy Metering).

Please provide the following:

a. Breakdown of projected Schedule R and Schedule J installations and kW/kWh impacts on a monthly basis.

b. Schedule R and Schedule J installations and kW/kWh impacts on a monthly basis, through June 2007.

c. Explanations of known causes for cumulative and monthly fluctuations in the pace of actual NEM installations and load impacts to date, relative to anticipated levels.

HECO Response:

a. The projected net energy metering ("NEM") 2007 installations were assumed to occur evenly throughout the test year. Systems with 10 kW or less capacity were assumed to be residential (Schedule R) installations while those greater than 10 kW were assumed to be commercial customers (Schedule J). The expected installations and kW/kWh impacts on a monthly basis are shown on page 3.

b. The actual NEM installations and kW/kWh impacts on a monthly basis is not readily available. The date the customer installed the system and the kWh fed back into HECO's system is not tracked at this time. The following table shows the "known" NEM systems as of the end of June 2007, including those that have executed or pending Rule 18 agreements and other systems "discovered" but without agreements. The majority of identified systems greater than 10 kW are in Schedule J, but a few of the systems without or with pending agreements may be in Schedule GD or P. Those systems less than 10 kW are primarily in Schedule R, but 10 systems of about 2 kW each are Sun Power for Schools program installations in Schedules J and G.

	0 – 10 kW	10 – 50 kW	Unknown Capacity
Estimated Capacity	297.4 kW	350.0 kW	--
No. of Installations	108	10	62

c. The Company has no specific reasons for the fluctuations in the pace of installations or the impact the systems has on sales.

Hawaiian Electric Co., Inc.
NET ENERGY METERING PROJECTIONS (2006 - 2011)
August 2006 Sales Forecast

	Installs				Cumulative				Monthly		Annual		
	Residential ≤ 10 kW		Commercial > 10 kW ≤ 50kW		Residential ≤ 10 kW		Commercial > 10 kW ≤ 50kW		kWh Sales Reduction		kWh Sales Reduction		
	Quant.	KW	Quant.	KW	Quant.	KW	Quant.	KW	Residential ≤ 10 kW	Commercial >10 kW ≤ 50kW	Residential ≤ 10 kW	Commercial >10 kW ≤ 50kW	Total
Jan-07	6.0	12.0	1.0	50.0	87.0	216.9	9.0	374.0	28,574	49,275			
Feb-07	6.0	12.0	1.0	50.0	93.0	228.9	10.0	424.0	30,155	55,862			
Mar-07	7.0	14.0	2.0	100.0	100.0	242.9	12.0	524.0	31,999	69,037			
Apr-07	6.0	12.0	1.0	50.0	106.0	254.9	13.0	574.0	33,580	75,625			
May-07	7.0	14.0	2.0	100.0	113.0	268.9	15.0	674.0	35,425	88,800			
Jun-07	6.0	12.0	1.0	50.0	119.0	280.9	16.0	724.0	37,006	95,387			
Jul-07	7.0	14.0	2.0	100.0	126.0	294.9	18.0	824.0	38,850	108,562			
Aug-07	7.0	14.0	1.0	50.0	133.0	308.9	19.0	874.0	40,695	115,150			
Sep-07	6.0	12.0	2.0	100.0	139.0	320.9	21.0	974.0	42,276	128,325			
Oct-07	7.0	14.0	1.0	50.0	146.0	334.9	22.0	1024.0	44,120	134,912			
Nov-07	6.0	12.0	2.0	100.0	152.0	346.9	24.0	1124.0	45,701	148,087			
Dec-07	7.0	14.0	1.0	50.0	159.0	360.9	25.0	1174.0	47,546	154,675	455,929	1,223,694	1,679,623

Note: Cumulative includes installations prior to 2007

CA-IR-405

Ref: Responses to CA-IR-229, Attachment 1; and CA-IR-244 (PO Nonlabor Costs).

Please provide the following information for each of the Type "PO" outages that have actually occurred in 2007, to-date:

a. Actual incurred material (EE=201) and contract services (EE=501) charges recorded for each outage.

b. Comparable test year budgeted material (EE=201) and contract services (EE=501) charges for each outage.

c. Explain the reasons for each individually significant variance between the amounts in part (a) and part (b) of your response to this information request for each PO type outage.

d. For each test year PO not completely addressed by your response to parts (a) through (c), including the changes and cost omissions described in your response to CA-IR-244, part (f), please explain and provide quantification for each known change in outage scope and non-labor expense budget for the remaining anticipated PO's for the remainder of 2007.

HECO Response:

a. The only overhaul started and completed in 2007 is the Waiau 7 overhaul, which was started March 25, 2007, and completed June 22, 2007. For that overhaul, the PSO&M Department initiated a new process of comparing the budgeted costs at the line item level to the actual costs. The results from that analysis are presented in the response to this IR, subparts a, b, and c.

The variance analysis that is performed for the overhauls being performed in 2007 (in whole or in part) was presented and discussed in the response to CA-IR-420. For each overhaul incurring expenses (positive or negative) in 2007, presented in tabular format, in Attachment 1 to the response to CA-IR-420, there are four categories of cost for each month of the year: 1) Labor, 2) Material, 3) On-costs, and 4) Outside Services. The projected year end variance for each category for each overhaul is tabulated in the far

right-hand column in the table. The type "PO" overhauls included in the table for which expenses are anticipated in 2007 are listed below, including parenthetical values showing the parent project number for the overhaul and the year in which the overhaul was or will be completed.

- Waiau 6 (P0000654, 2005)
- Kahe 6 (P0000844, 2005)
- Kahe 4 (P0000845, 2006)
- Kahe 1 (P0000846, 2007)
- Waiau 4 (P0000847, 2006)
- Waiau 10 (P0000938, 2006)
- Kahe 3 (P0001105, 2007)
- Waiau 7 (P0001106, 2007)
- Waiau 9 (P0001277, 2007)
- Honolulu 8 (P0001278, 2007)
- Waiau 5 (P0001279, 2007)
- Honolulu 9 (P0001280, 2006)
- Honolulu 9 ("OVERHAUL13", 2007)

HECO has completed overhauls for Kahe 1 (on February 22, 2007) and Honolulu 9 (on March 1, 2007). These overhauls commenced on November 24, 2006, and October 20, 2006, respectively. The analyses of budget to actual for these overhauls, as is the case for prior overhauls, was done at the aggregate level for costs such as contract services (EE 501) and materials (EE 201), and are provided in Attachment 1 to the response to CA-IR-420. (HECO would object to doing a variance analysis of the contract services and materials

costs for these overhauls at the line item level on the grounds that the standard prehearing order does not require parties to perform such analyses, and that the performance of such an analysis (not done in the ordinary course of business) would be unduly burdensome.)

Commencing with the overhaul of Waiau 7, which was completed on June 22, 2007, HECO has performed a more detailed analysis of budget versus actual expenses, and is providing the results of that analysis in response to this IR. Attachment 1 to this response provides the actual incurred expenses (i.e., recorded through July 20, 2007 plus forecast to be incurred by the end of 2007) for materials (i.e., EE=201) for the Waiau 7 overhaul performed in 2007. Attachment 2 to this response provides the actual incurred expenses (i.e., recorded through July 20, 2007 plus forecast to be incurred by the end of 2007) for outside services (i.e., EE=501) for the Waiau 7 overhaul performed in 2007.

b. Attachments 1 and 2 to this response also provide the comparable 2007 test year expense (i.e., "Budget") for materials (i.e., EE=201) and outside services (i.e., EE=501) for the Waiau 7 overhaul performed in 2007.

c. Attachments 1 and 2 to this response also identify individually significant variances between the amounts referred to in subparts a. and b. (above) for the Waiau 7 overhaul performed in 2007, and provide explanations for each of the individually significant variances that are identified.

d. The major changes in scope and non-labor expense for the remaining planned outages in 2007 (i.e., Kahe 3, Waiau 5, Honolulu 9, and Waiau 9) are summarized in Attachment 3 to this response.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Materials Variance

	Materials - Expense Element 201					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations for Significant Items
Boiler Waterwall Tube Repairs	$250,560	$0	$250,560	$70,000	$180,560	$69K quotation rec'vd for boiler narrow corner side walls panels. Additional $110K for burner corner tubes was added to scope based on findings from Kahe 4 2006 planned maintenance. Highly recommended by the system owner to replace these corner tubes to prevent unexpected tube failures until unit's next planned maintenance in 2010.
Pumps-Boiler Feed Pump Repairs, Auxiliary Lube Oil System Repairs	$323,161	$0	$323,161	$170,000	$153,161	One (1) boiler feed pump volute was included in the budget (weak pump performance). In 4/07, another refurbished volute was received from the shop, and installed in W72 boiler feed pump (weak pump performance) to avoid a future de-rate on the unit.
Steam Turbine Overhaul - HP/IP, LP (Blades, Diaphragms, Bearings, X-Over Piping, Studs, Nuts, Bolt Heaters) - Crane Services, Trailer Rental to Transport Turbine Parts, Sandblasting Services, Temporary Equipment Storage/Shelter, Air In-leakage Consultant, Rotor Balancing Consultant, Metallurgical Analysis of Turbine Components	$113,366	$0	$113,366	$40,000	$73,366	Underestimated valve repairs. New governor valve piston and bellows were replaced.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Materials Variance

	Materials - Expense Element 201					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations for Significant Items
Pumps-Condensate Pump Repairs (Pump Can, Expansion Joints)	$80,852	$0	$80,852	$10,000	$70,852	$64,600 additional expense to fabricate new pump cans (2 each). Existing cans were found to be rusted and metal thinned. Not completing the repairs would result in future water chemistry problems for the unit.
Overhaul Mobilization Expenses-Security Guards, Forklift Rental, Consumables (e.g. rags, etc.), Consultant for Boiler Controls Tuning @ Start Up, Small tools repairs/replenish parts (e.g. drill bits, probes, etc.)	$62,974	$0	$62,974	$0	$62,974	Underestimated expenses to re-locate traveling crews trailers, tool boxes, portable tools, containers from Kahe to Waiau Station, repairs to portable tools.
Circ Water Discharge Tunnel Structural Inspection/Repairs	$56,841	$0	$56,841	$0	$56,841	Structural damage found during inspection of the tunnel during the unit outage, required repairs.
Boiler BRULs/HiEL Inspection/Repairs (Ultrasonic, Mag Particle, Metallurgical Analysis)	$30,985	$0	$30,985	$1,000	$29,985	Additional boiler repairs were identified during the inspection by the boiler inspector.
Boiler System Intr & Ctrls Service/Repairs (Gauges, Thermocouples, Transmitters, Wiring, Switches, Sample Coolers, SS Tubing, Level/Pressure/Flow/Temperature/Differential Pressure Indicators)	$13,265	$12,900	$26,165	$8,500	$17,665	Under estimated expenses for repairs.
Steam Turbine Lube Oil/Seal Oil System Service/Repairs - Tank Float, Indicators, etc.	$34,017	$0	$34,017	$21,000	$13,017	The main lube oil pump rings were found worn and were replaced.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Materials Variance

	Materials - Expense Element 201					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations for Significant Items
Digital Control System and UPS Service/Repairs (Power Supplies, Cabinet Modules, Hardware, Cooling Fans)	$12,625	$0	$12,625	$5,000	$7,625	
Boiler/Turbine Insulation, Boiler Refractory Repairs, Boiler Furnace Floor Repairs, Piping Insulation Repairs	$41,204	$0	$41,204	$35,000	$6,204	
Boiler Flue Gas O2 Analyzer, Opacity Monitor Service/Repairs	$8,897	$0	$8,897	$3,000	$5,897	
Boiler Ignitor System/Assembly Service/Repairs	$10,816	$0	$10,816	$5,000	$5,816	
Circ Water Inlet Tunnel Structural Inspection/Cleaning/Coating/Repairs	$5,539	$0	$5,539	$0	$5,539	
Motor Service and Repairs (Forced Draft Fan Low/High Speed Motor, Gas Recirc Fan Motor, Condensate Pump Motor, Circ Water Pump Motor, Pilot Air Fan Motor, Boiler Feed Pump Motor, Boiler Feed Pump Auxiliary Oil Pump Motor, Chemical Pump Motors, Heater Drip Pump Motor, Fuel Oil Pump Motor, Ignitor Oil Pump Motor, etc.)	$17,370	$0	$17,370	$12,000	$5,370	
Steam Turbine/Gen, Circ Wtr System Instr & Ctrls Service/Repairs - Main/Aux Governor, Transmitters, Thermocouples, Vibration Instr, Generator Voltage Regulator	$9,137	$0	$9,137	$5,000	$4,137	
Steam Trap Service/Repairs, Misc Minor Jobs	$4,417	$0	$4,417	$1,500	$2,917	
Boiler Steam Drum Inspection and Repairs (Scrubbers, Piping)	$1,625	$0	$1,625	$0	$1,625	

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Materials Variance

	Materials - Expense Element 201					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations for Significant Items
Boiler Burner Gun/Swirlers/Air Register Service/Repairs, Atomizing Air System	$1,314	$0	$1,314	$0	$1,314	
Instrument Air Compressor Service/Repairs	$2,006		$2,006	$1,000	$1,006	
Boiler Stack Inspection/Repairs	$22	$0	$22	$0	$22	
Electrical - Switchgear/Breaker/Linestarter/Gen Brush Rigging Service and Repairs - Cables, Junction Boxes, Switches, Conduit, Electrical Panels	$4,278	$0	$4,278	$5,000	-$722	
Main/Auxiliary Transformer Service/Repairs	$1,255	$0	$1,255	$2,000	-$745	
Boiler / Air Preheater Wash/Waste Disposal	$4,239	$0	$4,239	$6,000	-$1,761	
Valves-Control Valve Internals Refurbishment/Replacement and Actuator Repairs	$27,128	$11,450	$38,578	$30,000	$8,578	
Pumps -Other Than Boiler Feed, Condensate, Circ Water (Auxiliary Cooling Water Pump, Heater Drip Pump, Service Water Pump, Screen Wash Pump, Fuel Oil Pump, Chemical Pumps)	$92	$0	$92	$8,000	-$7,908	
Heat Exchangers Inspection/Repair (FWH, condenser, chiller, lube oil cooler, air ejector, reboiler, seal oil cooler, gland steam condenser) - Eddy Current Tube Material, Cathodic Protection, Strainers, Metallurgical Analysis of Tube Material	$31,370	$0	$31,370	$40,000	-$8,630	
Boiler Sootblower/Wall Box Repairs	$0	$0	$0	$12,000	-$12,000	Repairs were less than estimated.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Materials Variance

	Materials - Expense Element 201					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations for Significant Items
Boiler Observation Ports and Doors Service/Repairs	$12,560	$0	$12,560	$25,000	-$12,440	Repairs were less than estimated.
Boiler Fan Service/Repairs (Forced Draft Fan, Gas Recirc Fan, Pilot Air Fan) - Fan Vanes and Controllers, Bearings, Housing, Ducting	$8,376	$0	$8,376	$21,000	-$12,624	Replacement vanes were not required.
Boiler Chemical Cleaning	$69,320	$0	$69,320	$85,000	-$15,680	Material/Chemical costs less than estimated.
Boiler Expansion Joint/Duct/Damper/Power Operator Service and Repairs	$6,896	$0	$6,896	$31,000	-$24,104	Repairs were less than estimated.
Steam Turbine Valves Inspection/Repairs (Gov, RH IV, RH Stop, Throttle) - Similar activities as Steam Turbine Overhaul	$39,758	$0	$39,758	$70,000	-$30,242	Valve repairs were less than estimated.
Boiler Air Preheater Rotor/Housing/Seals Inspection/Repairs, Sootblowing Assembly/Nozzle Inspection/Repairs, Drain Piping	$7,368	$0	$7,368	$95,000	-$87,632	Air preheater baskets were found to be in good condition, and replacement not required. Baskets were cleaned, and re-installed.
Valve Repairs-Vent, Drain, Root, Isolation (Relief, MOV, Manual, BTV, Section 1 Safety Valve, Section 8 Relief Valve, ERV)	$29,040	$0	$29,040	$140,000	-$110,960	$50K condenser waterbox cross over valve was repaired, valve replacement postponed.
Sub Total	$1,322,673	$24,350	$1,347,023	$958,000	$389,023	
		$3,063	←Stores On-Cost	$104,800	←Stores On-Cost	
Total	$1,322,673	$27,413	$1,350,086	$1,062,800	$287,286	

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Outside Service Variance

	Outside Services - EE 501					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations Significant Items
Steam Turbine Overhaul - HP/IP, LP (Blades, Diaphragms, Bearings, X-Over Piping, Studs, Nuts, Bolt Heaters) - Crane Services, Trailer Rental to Transport Turbine Parts, Sandblasting Services, Temporary Equipment Storage/Shelter, Air In-leakage Consultant, Rotor Balancing Consultant, Metallurgical Analysis of Turbine Components	$442,590	$13,950	$456,540	$0	$456,540	Budget was not identified.
Circ Water Inlet Tunnel Structural Inspection/Cleaning/Coating/ Repairs	$491,768	$0	$491,768	$110,000	$381,768	Tunnel coating on Waiau 8 has yielded positive results. Although not in budget, decision to proceed and not wait until next planned maintenance in 2010.
Circ Water Discharge Tunnel Structural Inspection/Repairs	$175,429	$116,000	$291,429	$0	$291,429	Structural damage found during inspection of the tunnel during the unit outage, repairs required.
Contractor Labor Support	$297,432	$115,000	$412,432	$180,000	$232,432	Underestimated contractor support.
Gantry Crane Controls Repairs	$107,205	$0	$107,205	$0	$107,205	Controls repairs required before Waiau 7 planned maintenance started.
Overhaul Mobilization Expenses-Security Guards, Forklift Rental, Consumables (e.g. rags, etc.), Consultant for Boiler Controls Tuning @ Start Up	$71,765	$19,500	$91,265	$8,000	$83,265	Underestimated expenses to re-locate traveling crews trailers, tool boxes, portable tools, containers from Kahe to Waiau Station, repairs to portable tools.
Boiler Waterwall Tube Repairs	$49,281	$0	$49,281	$0	$49,281	Highly recommended by the system owner to replace these corner tubes to prevent unexpected tube failures until unit's next planned maintenance in 2010.
Valve Repairs-Vent, Drain, Root, Isolation (Relief, MOV, Manual, BTV, Section 1 Safety Valve, Section 8 Relief Valve, ERV)	$18,732	$23,000	$41,732	$0	$41,732	Repairs to MOV-1 were determined after valve was opened up.
Pumps-Condensate Pump Repairs (Pump Can, Expansion Joints)	$36,027	$5,100	$41,127	$0	$41,127	Machining services to repair wear rings, to restore pump performance.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Outside Service Variance

	Outside Services - EE 501					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations Significant Items
Main/Auxiliary Transformer Service/Repairs	$16,214	$26,800	$43,014	$9,500	$33,514	Rocks did not meet requirements and were replaced.
Boiler System Intr & Ctrls Service/Repairs (Gauges, Thermocouples, Transmitters, Wiring, Switches, Sample Coolers, SS Tubing, Level/Pressure/Flow/Temperature/Differential Pressure Indicators)	$18,087	$10,500	$28,587	$0	$28,587	Boiler drum Yarway required calibration and replacement of mercury switches.
Boiler / Air Preheater Wash/Waste Disposal	$30,947	$2,300	$33,247	$5,000	$28,247	Contractor helpers costs are included.
Heat Exchangers Inspection/Repair (FWH, condenser, chiller, lube oil cooler, air ejector, reboiler, seal oil cooler, gland steam condenser) - Eddy Current Tube Material, Cathodic Protection, Strainers, Metallurgical Analysis of Tube Material	$67,049	$10,000	$77,049	$51,000	$26,049	FWH 71 studs were frozen, $13K to machine out the studs (unbudgeted). $5400 additional cost to repair and coat the chiller cover.
Boiler Stack Inspection/Repairs	$36,769	$1,500	$38,269	$15,000	$23,269	$15K to paint the stack exterior (unbudgeted) for corrosion control.
Boiler Air Preheater Rotor/Housing/Seals Inspection/Repairs, Sootblowing Assembly/Nozzle Inspection/Repairs, Drain Piping	$25,710	$11,000	$36,710	$15,000	$21,710	Expenses to high pressure wash the air preheater baskets were not included in the budget.
Pumps-Circulating Water Pump Repairs, Cathodic Protection System Service/Repairs	$946	$20,000	$20,946	$0	$20,946	Crane services to remove/replace the motors were not included in the budget.
Boiler BRULs/HiEL Inspection/Repairs (Ultrasonic, Mag Particle, Metallurgical Analysis)	$47,533	$2,000	$49,533	$33,000	$16,533	Additional boiler repairs were identified during the inspection by the boiler inspector.
Steam Turbine Valves Inspection/Repairs (Gov, RH IV, RH Stop, Throttle) - Similar activities as Steam Turbine Overhaul	$16,270	$0	$16,270	$0	$16,270	Machining services to refurbish turbine governor valves.
Boiler Fan Service/Repairs (Forced Draft Fan, Gas Recirc Fan, Pilot Air Fan) - Fan Vanes and Controllers, Bearings, Housing, Ducting	$15,276	$0	$15,276	$0	$15,276	Increased repairs to the ducting/insulation areas. Contract insulator support included in cost.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Waiau 7 2007 Overhaul Outside Service Variance

	Outside Services - EE 501					
	W7 Actual As of 7-20-07	W7 Estimate to Year End	Year End Estimate	W7 Budget 2007	Variance	Variance Explanations Significant Items
Boiler Expansion Joint/Duct/Damper/Power Operator Service and Repairs	$13,602	$0	$13,602	$0	$13,602	Following inspection, 14 new dampers were fabricated. Contract insulator support included in cost.
Boiler Burner Gun/Swirlers/Air Register Service/Repairs, Atomizing Air System	$11,037	$0	$11,037	$0	$11,037	Contract insulator support to repair insulation, burner wall areas.
Valves-Control Valve Internals Refurbishment/Replacement and Actuator Repairs	$22,633	$0	$22,633	$15,000	$7,633	
Steam Turbine/Gen, Circ Wtr System Instr & Ctrls Service/Repairs - Main/Aux Governor, Transmitters, Thermocouples, Vibration Instr, Generator Voltage Regulator	$0	$10,500	$10,500	$7,000	$3,500	
Motor Service and Repairs (Forced Draft Fan Low/High Speed Motor, Gas Recirc Fan Motor, Condensate Pump Motor, Circ Water Pump Motor, Pilot Air Fan Motor, Boiler Feed Pump Motor, Boiler Feed Pump Auxiliary Oil Pump Motor, Chemical Pump Motors, Heater Drip Pump Motor, Fuel Oil Pump Motor, Ignitor Oil Pump Motor, etc.)	$46,770	$0	$46,770	$45,000	$1,770	
Steam Trap Service/Repairs, Misc Minor Jobs	$365	$0	$365	$0	$365	
Steam Turbine Lube Oil/Seal Oil System Service/Repairs - Tank Float, Indicators, etc.	$1,048	$0	$1,048	$5,000	-$3,952	
Boiler Sootblower/Wall Box Repairs	$0	$0	$0	$10,000	-$10,000	
Scaffolding (Not able to determine cost to date, costs are embedded in individual work orders, expected total = $75,000.	$0	$44,700	$44,700	$73,000	-$28,300	N/A
Boiler Chemical Cleaning	$17,228	$28,000	$45,228	$245,000	-$199,772	Overestimated expenses.
Total	**$2,077,713**	**$459,850**	**$2,537,563**	**$826,500**	**$1,711,063**	

K3 2007 OVERHAUL
NON-LABOR VARIANCE

	A	B	E	I
1	**Kahe 3 2007 OVERHAUL (P0001105)**	**ORIGINAL BUDGET**	**UPDATED BUDGET**	**VARIANCE**
2	**BOILER**			
3	Burner Front Hoses Repl (every 3BO)	$0	$ 12,000.00	$12,000.00
4	GR / Exp Jts Duct Repairs	$15,000	$ 65,000.00	$ 50,000.00
5	Insulation/Refractory	$40,000	$ 80,000.00	$ 40,000.00
6	Boiler Waste Treat and Disposal	$5,000	$ 15,000.00	$ 10,000.00
7	Stack Inspection and/or Repairs	$15,000	$ 25,000.00	$ 10,000.00
8	Yarway Services	$0	$ 25,000.00	$ 25,000.00
9	Mercury Switches	$0	$ 10,000.00	$ 10,000.00
10	WW tubes replace 4 burner corners (CE Boiler)	$0	$ 180,000.00	$ 180,000.00
11	Water wall tubes/panels (cladded)	$15,000	$ 100,000.00	$ 85,000.00
12	Boiler Chemical Cleaning	$0	$ 210,000.00	$ 210,000.00
13	Boiler Thermocouples	$0	$ 15,000.00	$ 15,000.00
14	Asbestos Disposal	$0	$ 10,000.00	$ 10,000.00
15	**TOTAL**	**$90,000**	**$ 747,000.00**	**$657,000.00**
16	**OUTSOURCING**			
17	Boiler - Outsourcing	$0	$ 210,000.00	$ 210,000.00
18	Insulation - Outsourcing	$0	$ 135,000.00	$ 135,000.00
19	Electrical - Outsourcing	$0	$ 100,000.00	$ 100,000.00
20	Technical - Outsourcing	$0	$ 100,000.00	$ 100,000.00
21	Machinist's - Outsourcing	$0	$ 200,000.00	$ 200,000.00
22	**TOTAL**	**$0**	**$ 745,000.00**	**$ 745,000.00**
23	**TURBINE / GEN**			
24	DCS Power Supply Modules (Turb Cabinet)	$0	$ 15,000.00	$ 15,000.00
25	Sand Blast grit	$0	$ 35,000.00	$ 35,000.00
26	T/G Insulation	$0	$ 10,000.00	$ 10,000.00
27	Turbine Remove/Replace/OH Parts	$0	$ 70,000.00	$ 70,000.00
28	Steam Seals / J&L	$0	$ 45,000.00	$ 45,000.00
29	Turbine Part/Motor Parts Staging Shelter		$ 40,000.00	$ 40,000.00
30	Turbine Hauling Services		$ 10,000.00	$ 10,000.00
31	Turbine / Rtr Periphery / Stationary - Weld Repair/Machining	$0	$ 90,000.00	$ 90,000.00
32	Main/Aux Governor Parts	$0	$ 10,000.00	$ 10,000.00
33	Re-Babbitt Bearings	$0	$ 40,000.00	$ 40,000.00
34	Grind Trb/Gen Brg Journals	$0	$ 20,000.00	$ 20,000.00
35	Turbine Studs & bolts	$0	$ 40,000.00	$ 40,000.00
36	HP/LP/Gen Bore	$0	$ 35,000.00	$ 35,000.00
37	NDT Generator Retaining rings	$0	$ 20,000.00	$ 20,000.00
38	T/G NDT - Misc	$0	$ 25,000.00	$ 25,000.00
39	Diaphragms	$0	$ 80,000.00	$ 80,000.00
40	Balance Rotors - HP/LP	$0	$ 14,000.00	$ 14,000.00
41	H2 System / Seals	$0	$ 35,000.00	$ 35,000.00
42	Generator Inspection	$0	$ 25,000.00	$ 25,000.00
43	Flux Probe	$0	$ 10,000.00	$ 10,000.00
44	**TOTAL**	**$0**	**$ 669,000.00**	**$ 669,000.00**
45	**VALVES**			
46	Block/Stop Valves	$0	$ 15,000.00	$ 15,000.00
47	Control Valve Internals/Actuator Parts	$30,000	$ 60,000.00	$ 30,000.00
48	ERV stop valve repair & Controls	$0	$ 10,000.00	$ 10,000.00
49	Valves (root, isolation, drain) Replacement	$15,000	$ 25,000.00	$ 10,000.00
50	Econ Stop/Check Valve parts	$0	$ 8,000.00	$ 8,000.00
51	**TOTAL**	**$45,000**	**$ 118,000.00**	**$ 73,000.00**
52	**CONDENSER / CHILLER**			
53	Chiller cover repairs	$0	$ 10,000.00	$ 10,000.00
54	Water Box (Condenser) Repairs	$0	$ 15,000.00	$ 15,000.00
55	Cathodic Protection Parts	$0	$ 15,000.00	$ 15,000.00
56	ACW Piping Repl (from LO Coolers)	$0	$ 20,000.00	$ 20,000.00
57	**TOTAL**	**$0**	**$ 60,000.00**	**$ 60,000.00**
58	**ECT TESTING**			
59	FWH ECT-ECT contractor	$6,000	$ 40,000.00	$ 34,000.00
60	Eddy Current Condenser/Chiller-Contractor	$20,000	$ 45,000.00	$ 25,000.00
61	Eddy Current Condenser/Chiller-tube cleaning-Contractor hydroblast	$15,000	$ 25,000.00	$ 10,000.00
62	**TOTAL**	**$41,000**	**$ 110,000.00**	**$ 69,000.00**
63	**OTHER**			
64	Crane Services (motor)		$ 20,000.00	$ 20,000.00
65	Scaffolding Services	$60,000	$ 120,000.00	$ 60,000.00
66	Instrumentation - Transducers / Switches / Thermocouples	$0	$ 15,000.00	$ 15,000.00
67	Extra Security Personnel (includes porta-poti/support/tent)	$0	$ 25,000.00	$ 25,000.00
68	Condensate Pump OH	$18,000	$ 28,000.00	$ 10,000.00
69	**TOTAL**	**$78,000**	**$ 208,000.00**	**$ 130,000.00**
70				
71	**TOTAL**	**$254,000**	**$ 2,657,000.00**	**$ 2,403,000.00**

W5 2007 OVERHAUL
NON-LABOR VARIANCE

	A	B	C	D
1	**WAIAU 5 (P0001279) HP/LP/BCC**	**Orig Budget**	**Updated Budget**	**Variance**
2				
3	**BOILER**			
4	Stack Exterior Corrosion Control (paint)		$30,000	$30,000
5	FD Fan Outlet Damper Replacement		$20,000	$20,000
6	Insulation/Refractory	$25,000	$50,000	$25,000
7	Soot blower Wall box		$10,000	$10,000
8	Asbestos Disposal (bins)		$10,000	$10,000
9	Boiler chem cleaning		$210,000	$210,000
10	Boiler Insp Punchlist		$10,000	$10,000
11	Yarways - Clean/Repair/Calib		$25,000	$25,000
12	Mercury Switches		$10,000	$10,000
13	**TOTAL**	**$25,000**	**$375,000**	**$350,000**
14				
15	**OUTSOURCING**			
16	Boiler - Outsourcing		$260,000	$260,000
17	Insulation - Outsourcing		$140,000	$140,000
18	Electrical - Outsourcing		$160,000	$160,000
19	Technical - Outsourcing		$140,000	$140,000
20	Machinist's - Outsourcing		$200,000	$200,000
21	**TOTAL**	**$0**	**$900,000**	**$900,000**
22				
23	**TURB / GEN**			
24	HP/LP/Gen Bore	$50,000	$75,000	$25,000
25	Turb NDT		$25,000	$25,000
26	Turb Contracted repairs		$200,000	$200,000
27	Turb/Gen Brngs Re-babbit		$50,000	$50,000
28	Balance HP/LP		$14,000	$14,000
29	Turb / Seal Oil sys		$5,000	$5,000
30	Seals - steam / J&L / Art / Expandable		$45,000	$45,000
31	Turbine Parts/Motor Staging Temp Shelter		$25,000	$25,000
32	Turbine Valve parts	$20,000	$40,000	$20,000
33	Turbine Studs & Bolts		$40,000	$40,000
34	Air In-Leakage Consultant		$12,000	$12,000
35	Hauling Services (trb parts, large motors)		$10,000	$10,000
36	**TOTAL**	**$70,000**	**$541,000**	**$471,000**
37				
38	**VALVES**			
39	Control Valve / Actuator Parts	$20,000	$60,000	$40,000
40	Valves-root, isol, vent, drains	$15,000	$20,000	$5,000
41	**TOTAL**	**$35,000**	**$80,000**	**$45,000**
42				
43	**MOTORS / BREAKERS**			
44	Motor Repairs	$20,000	$30,000	$10,000
45	2.4kV Breaker Retrofit		$40,000	$40,000
46	480V Breaker Retrofit		$20,000	$20,000
47	**TOTAL**	**$20,000**	**$90,000**	**$70,000**
48				
49	**ECT TESTING**			
50	FWH ECT-tube cleaning	$20,000	$30,000	$10,000
51	FWH ECT-ECT contractor	$30,000	$50,000	$20,000
52	Eddy Current Condenser/Chiller-ECT contractor	$20,000	$45,000	$25,000
53	Eddy Current Condenser/Chiller-tube cleaning contractor	$20,000	$25,000	$5,000
54	**TOTAL**	**$90,000**	**$150,000**	**$60,000**
55				
56	**OTHERS**			
57	Scaff rental	$40,000	$120,000	$80,000
58	Crane Services		$20,000	$20,000
59	Circulating Water Pump Overhaul		$50,000	$50,000
60	Condensate Pump Overhaul		$50,000	$50,000
61	BFP Volute Replacement	$135,000	$170,000	$35,000
62	Chiller cover repairs		$10,000	$10,000
63	**TOTAL**	**$175,000**	**$420,000**	**$245,000**
64				

H9 2007 OVERHAUL NON-LABOR VARIANCE

	A	B	C	K
1	**HONOLULU 9 (Overhaul13)**	**NOTE, No Orig Budget**	**Updated Budget**	**Variance**
2				
3	**BOILER**			
4	Boiler Door Gaskets		$5,000	$5,000
5	Dampers-Service		$8,000	$8,000
6	Air Preheater Misc Parts (seals)		$5,000	$5,000
7	EJ for ducts		$10,000	$10,000
8	Instrumentation Parts Replacements		$5,000	$5,000
9	Power Operators (service kits)		$5,000	$5,000
10	Insulation/Refractory		$40,000	$40,000
11	Asbestos Disposal (bins)		$10,000	$10,000
12	Boiler Waste Treat and Disposal		$5,000	$5,000
13	Blr Misc Scaffolding		$10,000	$10,000
14	**TOTAL**		**$103,000**	**$103,000**
15				
16	**MOTORS / BREAKERS**			
17	Motor Repairs		$20,000	$20,000
18	Motor Bearings		$7,000	$7,000
19	Motor Replace-APH (no mtr H8/9, W3/4)		$3,000	$3,000
20	Switchgear/MCC/Breaker Parts		$2,500	$2,500
21	Breaker / Starter Parts		$2,500	$2,500
22	**TOTAL**		**$35,000**	**$35,000**
23				
24	**VALVES**			
25	Control Valve / Actuator Parts		$30,000	$30,000
26	Safety Valves Section I		$5,000	$5,000
27	Relief Valves Section VIII		$5,000	$5,000
28	MOV repairs/parts		$5,000	$5,000
29	Bleeder Trip Valves		$2,000	$2,000
30	CW Valves		$2,000	$2,000
31	Valve Packing		$5,000	$5,000
32	Valves-root, isol, vent, drains		$10,000	$10,000
33	**TOTAL**		**$64,000**	**$64,000**
34				
35	**TURB MAINT**			
36	Generator Gas (H2/CO2)		$5,000	$5,000
37	Instrumentation		$2,000	$2,000
38	Turbine steam/water seals repairs		$25,000	$25,000
39	Turbine Remove/Repl (rags, consumables)		$4,500	$4,500
40	Turb / Seal Oil sys		$10,000	$10,000
41	Fire Protection Testing		$2,000	$2,000
42	**TOTAL**		**$48,500**	**$48,500**
43				
44	**CONDENSER / CHILLER / TRAV SCREEN.**			
45	Chiller cover repairs		$5,000	$5,000
46	Condenser Repairs		$10,000	$10,000
47	Instrumentation		$10,000	$10,000
48	Travel Screen Overhaul		$20,000	$20,000
49	**TOTAL**		**$45,000**	**$45,000**
50				
51	**TOTAL**		**$295,500**	**$295,500**
52				

CA-IR-406

Ref: HECO Responses to CA-IR-230, page 2; and CA-IR-228 (Effect of W9 and W8 Extended Unplanned Outages).

Reference is made in the response to CA-IR-230 to, "the extended unplanned forced outages of Waiau 9 from October 11, 2004 to April 11, 2005 and Waiau 8 from October 14, 2005 to February 8, 2006." Please provide the following:

a. The actual non-labor O&M costs incurred as a direct result of the "extended unplanned forced outage" of Waiau 9, by month.

b. The actual non-labor O&M costs incurred as a direct result of the "extended unplanned forced outage" of Waiau 8, by month.

c. Copies of internal reports, analyses or studies associated with evaluation of the root causes of the extended unplanned forced outage" of Waiau 9, including but not limited to any reports filed with the Commission or the CA.

d. Copies of internal reports, analyses or studies associated with evaluation of the root causes of the extended unplanned forced outage" of Waiau 8, including but not limited to any reports filed with the Commission or the CA.

e. Approximately how much higher would the HECO Equivalent Availability Factor (as shown in CA-IR-228, Attachment 1) have been in 2004, 2005 and 2006 if the extended unplanned forced outages at W8 and W9 had not been experienced?

f. Approximately how much lower would the HECO Equivalent Forced Outage Rate (as shown in CA-IR-228, Attachment 2) have been in 2004, 2005 and 2006 if the extended
g. unplanned forced outages at W8 and W9 had not been experienced?

h. Please provide calculations and revised graphs for your responses to parts (e) and (f) of this information request.

HECO Response:

a. The actual non-labor O&M costs incurred as a direct result of the "extended unplanned forced outage" of Waiau 9, by month, are provided in Attachment 1 to this response. As shown in the notes of Attachment 1, the credit amount for 2004 and 2005 differs from the credit amounts shown in CA-IR-243, Attachment 3. To correctly match the expense to the

year it was incurred, $92,000 was moved from 2005 to 2004. Also as noted in Attachment 1 to this response, $206,000 of the amount originally credited was ultimately excluded from the insurance claim. The sum of $206,000 is comprised of $163,000 due to a disallowance of stores on cost expense, $35,000 for a disallowance of forensic analysis expense, and $8,000 for a disallowance in tool expense. The revised W9 credit amount is $2,991,000.

b. The actual non-labor O&M costs incurred as a direct result of the "extended unplanned forced outage" of Waiau 8, by month, are provided in Attachment 2 to this response. As shown in the notes of Attachment 2 to this response, the credit amount for 2005 and 2006 differs from the credit amounts shown in Attachment 6 to the response to CA-IR-243. Per note (a), the charges to work order PR051471 were not included in Attachment 1 to the response to CA-IR-243. These charges add $1,000 in materials and $73,000 in outside services to the Waiau 8 repair expense. Per note (b), $62,000 of credit was excluded from the insurance claim in 2006 due to a disallowance of stores on cost. Also as noted in Attachment 2 to this response, an amount of $11,000 was disallowed in 2007, again for stores on cost. The total disallowance was $73,000. The revised W8 credit amount is $866,000.

c. The extended unplanned forced outage of Waiau 9 was caused by catastrophic failure of a stationary blade in the combustion turbine compressor. The root cause of the stationary blade failure was identified as stress corrosion cracking on page 5 of Attachment 3 to this response.[1]

d. The extended unplanned forced outage of Waiau 8 was caused by a steam turbine water induction incident. The root cause of the incident was failed tubes in the No. 84 feedwater

heater, which led to water from the feedwater heater carrying over and into the steam turbine through steam extraction piping (as described in more detail on page 2 of Attachment 4 to this response).[2] Further analysis of the incident is provided in Attachment 5 to this response.[3]

e. The estimate of the HECO system EAF without the extended outages of Waiau 8 and Waiau 9 can be made with simplifying assumptions, including: (1) That the W8 and W9 units would be 100% available for the entire period of their outages (and that planned outages for the units would not have been necessary to correct the conditions that led to the forced outages), (2) that the outages on the Planned Maintenance Schedule which were displaced by the W8 and W9 forced outages occurred as scheduled, and (3) that any maintenance outages which were displaced by the W8 and W9 outages occurred as they would have been scheduled. In the interest of simplicity, the calculation shown in Attachment 6 to this response assumes Waiau 8 and Waiau 9 units were 100% available for the entire period of the outages, but does not include any offsetting adjustments for the displaced Planned Outages or Maintenance Outages. As shown in the attachment, EAF would increase from 85.84% to 86.79% in 2004, from 84.54% to 87.27% in 2005, and from 86.52% to 87.25% in 2006. Because of the simplifying assumptions, however, the estimated EAF values should be viewed as inflated and in reality the EAF would not be expected to increase as much as estimated.

f. As with the EAF estimate in subpart e, simplifying assumptions must be made when

---

1 *"Waiau U-9 Combustion Turbine Compressor Stationary Blade Failure"* by Reinhart & Associates, Inc., dated December 2004 – March 2005.

2 *"Addendum to Previous Report: Failure Analysis of 5/8" 70-30 Cu-Ni Tubes from Waiau 8-Feed Water Heater #84"* by Lloyds Register Capstone, Inc., dated December 15, 2005.

estimating the EFOR had the Waiau 8 and Waiau 9 outages not occurred. The assumptions would include: (1) Waiau 8 and Waiau 9 were 100% available for the entire outage periods, without derate, (2) Service Hours of Waiau 8 and Waiau 9 would have to be adjusted to an assumed amount, and (3) no other units were impacted by the Waiau 8 and Waiau 9 unit forced outages. As an example of impact to other units, the Waiau 8 and Waiau 9 forced outages may have displaced an outage to correct a derate on another unit. If that were the case, the derate on that unit would be carried longer and system EFOR would be decreased. To simplify the analysis shown in Attachment 7 to this response, it was assumed that Waiau 8 and Waiau 9 were 100% available for the entire period, without derate, service hours on Waiau 8 and Waiau 9 were not increased, and there were no impacts to EFOR for other units. In this calculation, EFOR would decrease from 6.18% to 4.98% in 2004, from 9.25% to 5.89% in 2005, and from 5.30% to 4.34% in 2006. Because of the simplifying assumptions and the unknown circumstances that would have otherwise existed at the time, the estimated impacts on EFOR should be viewed as an approximation.

g. Calculations and revised graphs illustrating the estimates discussed in subparts e and f (above) are provided in Attachments 6, 7, and 8 to this response.

---

[3] *"Failure Analysis of 5/8" 70-30 Cu-Ni Tubes from Waiau 8-Feed Water Heater #84"* by Lloyds Register Capstone, Inc., dated November 17, 2006.

HAWAIIAN ELECTRIC COMPANY INC.
2007 Rate Case
Production Operation and Maintenance - INSURABLE NON-LABOR COST
G0000900- **WAIAU 8** TURBINE REPAIRS

	OCT05	NOV05	DEC05	FY05	JAN06	FEB06	MAR06	APR06	MAY06	DEC06	FY06	FEB07	FY07	TOTAL	
PR051409															
Materials	$0	$0	$3,481	$3,481							$0		$0	$3,481	
Outside Services	$0	$0	$0	$0							$0		$0	$0	
PR051414															
Materials		$18,540	$128,346	$146,886	$86,210	$2,516	$29,419				$118,145		$0	$265,031	
Outside Services			$250,354	$250,354	$8,187	$96,106					$104,293		$0	$354,647	
PR051425															
Materials				$0							$0		$0	$0	
Outside Services				$0							$0		$0	$0	
PR051437															
Materials				$0							$0		$0	$0	
Outside Services				$0							$0		$0	$0	
PR051471															
Materials		$139	$613	$752	$342						$342		$0	$1,094	(a)
Outside Services			$72,501	$72,501							$0		$0	$72,501	(a)
PR051485															
Materials				$0							$0		$0	$0	
Outside Services		$60,622	$2,425	$63,047							$0		$0	$63,047	
TOTAL				(a)							(a)				
Materials	$0	$18,679	$132,440	$151,119	$86,552	$2,516	$29,419	$0	$0	$0	$118,487	$0	$0	$269,606	
Outside Services	$0	$60,622	$325,280	$385,902	$8,187	$96,106	$0	$0	$0	$0	$104,293	$0	$0	$490,195	
	$0	**$79,301**	**$457,720**	**$537,021**	**$94,739**	**$98,622**	**$29,419**	**$0**	**$0**	**$0**	**$222,780**	**$0**	**$0**	**$759,801**	
PR051622				(b)							(b)		(b)		
INSURANCE CREDIT	**$0**	**($117,780)**	**($421,468)**	**($539,248)**	**($234,371)**	**($123,518)**	**($31,302)**	**($6,672)**	**($4,159)**	**$62,025**	**($337,997)**	**$11,168**	**$11,168**	**($866,077)**	
NET CREDIT	**$0**	**($38,479)**	**$36,252**	**($2,227)**	**($139,632)**	**($24,896)**	**($1,883)**	**($6,672)**	**($4,159)**	**$62,025**	**($115,217)**	**$11,168**	**$11,168**	**($106,276)**	
(applied to labor+overheads)															

Notes:

(a) Reconciliation of Materials & Outside Services in Attachment 6 to the response to CA-IR-243:

Materials:	FY05	FY06	TOTAL
Per Schedule Above	$151,119	$118,487	$269,606
Per CA-IR-243, Attach 6	$150,367	$118,145	$268,512
Difference	$752	$342	$1,094 [1]

Outside Services:	FY05	FY06	TOTAL
Per Schedule Above	$385,902	$104,293	$490,195
Per CA-IR-243, Attach 6	$313,401	$104,293	$417,694
Difference	$72,501	$0	$72,501 [1]

[1] Represents costs recorded in work order PR051471 that was not included in Attachment 6 to the response to CA-IR-243, but reflected in schedule above.

(b) Reconciliation of Insurance Credit in Attachment 6 to the response to CA-IR-243:

	FY05	FY06	FY07	TOTAL
Per Schedule Above	($539,248)	($337,997)	$11,168	($866,077)
Per CA-IR-243, Attach 6	($539,248)	($400,023)	$0	($939,271)
Difference	$0	$62,026	$11,168	$73,194 [2]

[2] Represents $62,025 & $ 11,168 of disallowed stores on cost in Dec 2006 & Feb 2007, respectively, from insurance claim filed for W8 repair expense.

Attachments 3-5 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. Electronic versions of the attachments are being provided.

CA-IR-407

Ref: HECO-629 (Projected R&D Spending - Production).

Please provide the following:

a. A monthly breakdown of actual HECO expenses year to date through June 2007, in the 9 categories set forth at page 1 of HECO-629.

b. Describe and quantify the actual firm financial commitments made by HECO for production R&D spending in 2007, beyond the amounts set forth in your response to part (a) of this information request.

c. Provide copies of documents indicative of the firm commitments described in part (b).

d. Explain the reasons for each individually significant difference between actual to-date spending on R&D (part a) plus any firm commitments (parts b and c), relative to the amounts budgeted in each category set forth at page 1 of HECO-629.

e. Explain any known revisions or updates to the narrative contained within HECO-629.

f. Explain the concepts/methods being used to assign cost responsibility for funding of EPRI, renewables, biofuels, ESA and other projects of mutual interest to HELCO and MECO and provide calculations indicating how test year projected amounts were assigned/allocated among utilities.

HECO Response:

a. A monthly breakdown of the actual HECO expenses year to date through June 2007 is presented in Attachment 1.

b. See CA-IR-245 for response on local EPRI matching funds, renewable energy initiative, biofuels initiative, electronic shock absorber, and Sun Power for Schools and CA-IR-183 and CA-IR-341 for update on the electronic shock absorber.

c. Local EPRI matching funds —As discussed in HECO-629 and CA-IR-245, the break in EPRI membership (in 2006) has caused delays in initiating the new 2007 local EPRI Tailored Collaboration (TC) agreements. HECO has initiated discussions with EPRI to

develop research agreements related to local EPRI matching funds. When these agreements are signed, HECO will then issue a check to match the agreement amount; thus, the 2007 local EPRI TC matching funds will be expended in 2007. See Attachments 2 and 3 for the HECO-signed local EPRI matching fund agreements that have been sent to EPRI for processing. Other agreements are currently being developed. Once these agreements are signed, HECO will send a check to cost share each project and thus the funds will be expended.

Renewable energy initiative — As discussed in HECO-629 and CA-IR-245, the funds for this project is directed to collecting wind speed at a Kahuku military site. The signed consultant agreements are in Attachments 4 and 5. Attachments 4 and 5 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information.

The charges to date for this project are related to the preliminary development of a wind monitoring program at the military site and for wind speed data collection on an existing communication tower. A 12-month monitoring program is planned so as we wait for ultimate Army approval to install a new wind speed monitoring tower the expenses for this project will overlap into 2008.

Biofuels initiative — HECO is developing a test plan for biodiesel testing in a steam boiler. The test plan includes selection of one of four Combustion Engineering steam boilers on the HECO system based on space availability for biodiesel fuel storage and delivery, infrastructure availability (pump size and pressure rating, etc.), minimum modifications, timing of next planned maintenance outage. A test plan, schedule, and budget are being

developed. After these items are firmed, HECO will enter an agreement with EPRI (will leverage EPRI funds). HECO will then send a check to EPRI to co-fund this project and these funds will be expended in 2007. HECO hopes to complete this agreement within the next month.

Electronic shock absorber — See CA-IR-183, CA-IR-341, and CA-IR-245 for updates. HECO has received and is reviewing the damage and disposal report. The 2007 test year expense for ESA will be used for the disposal of the damaged ESA trailer and hazardous ultracapacitors. Bids will be sought from local vendors to dispose of this hazardous material and trailer. It is likely that the hazardous material will be shipped to the mainland for incineration and the non-hazardous material and trailer will be taken to a local construction landfill.

d. See CA-IR-245 for general updates and CA-IR-183 and CA-IR-341 for general updates related to the ESA.

Local EPRI matching funds — HECO has already signed research agreement with EPRI and anticipates that all 7 will be signed, HECO will send checks to EPRI for each project and these funds will be expended in 2007.

Renewable energy initiative — As discussed in CA-IR-245, HECO is collecting wind data from equipment mounted on an existing communication tower and is awaiting final Army approval to install a new meteorological tower to monitor wind speeds in the area. Once this approval is obtained, there will be more activity and expenses incurred related to the construction of the new meteorological tower and subsequent wind speed monitoring.

Biofuels initiative — See response in subpart c.

Electronic shock absorber — See response in subpart c.

e. See CA-IR-245, CA-IR-183 and CA-IR-341 and responses above.

f. Local EPRI matching funds — The method for allocation of local EPRI matching funds is based on an internal Request for Proposal ("RFP") process. HECO issues an RFP to HECO, HELCO and MECO engineers for upcoming calendar year research and development projects. Projects are reviewed, evaluated and discussed by all proposers. Management provides approval of the projects that will be funded based on strategic needs and priorities. Shifts in priorities during the year may change the mix of projects that ultimately get funded. For the 2007 test year, all proposals for local EPRI matching fund projects were accepted and funding was allocated to the specific projects.

Renewable energy initiative — For the 2007 test year for renewable energy initiatives, all funds for this initiative are directed toward wind speed monitoring efforts on Oahu.

Biofuels initiative — For the 2007 test year, all funds for the biomass initiative will be directed towards biodiesel testing in HECO steam boilers on Oahu.

Electronic shock absorber — The design, procurement and installation of the electronic shock absorber was originally allocated between HECO, HELCO, and MECO at 50%, 25% and 25%, respectively (missing note in HECO-829 table on page 12 did not include $25,000 installation for HELCO cost-share). There were some additional costs that HECO picked up for shipping and increase cost for installation.

HAWAIIAN ELECTRIC COMPANY INC.

2007 Rate Case

HECO Research & Development

		2007 Actual						
		Jan	Feb	Mar	Apr	May	Jun	Total
1	Local EPRI Matching Funds (a)	$ -	$ -	$ -	$ -			$ -
2	Recurring Renewable Energy Funds	$ 229	$ 27	$ 3,176	$ 210	$ 73	$ 1,071	$ 4,786
3	Renewable Energy Initiative (b)	$ 10,768	$ 4,261	$ 15,627	$ 6	$ 38,840	$ 45,205	$ 114,707
4	Biofuels Initiative (c)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
5	Electronic Shock Absorber (d)	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6	Sun Power for Schools (e)	$ 22	$ 28,701	$ 650	$ 22	$ 22	$ 1,491	$ 30,909
7	Labor	$ 10,728	$ 9,916	$ 12,001	$ 11,065	$ 11,574	$ 10,420	$ 65,704
8	Overheads	$ 7,652	$ 7,057	$ 8,327	$ 7,576	$ 7,596	$ 6,828	$ 45,035
9	Other Activities (f)	$ 2,630	$ 2,630	$ (5,135)	$ 1,530	$ 2,751	$ (9,197)	$ (4,791)
	PNR budget:	$ 32,029	$ 52,592	$ 34,646	$ 20,409	$ 60,856	$ 55,817	$ 256,350

Notes:

(a) Signed agreement sent to EPRI for processing. Once the agreement is completed, HECO will send a check to EPRI to match the project funds and thus the money will be expended in 2007. The other agreements are currently being developed.

(b) Funds expended to date are for wind speed monitoring on an existing communication tower at the Kahuku military wind site. HECO is awaiting Army and subsequent state approval to install a new meteorological tower for wind speed measurement. Once the approvals are obtained, the activities and expenditures will increase for the tower installation, wind monitoring and other wind measurement activities.

(c) HECO is developing a preliminary plan for biodiesel blend testing in a HECO steam boiler. Once the test plan is completed, HECO will leverage EPRI monies and sign an agreement with EPRI. HECO will send then send a check to EPRI and thus these funds will be expended in 2007.

(d) HECO received the damage and disposal report. These funds will be used for the disposal of the damaged ESA trailer and hazardous ultracapacitors. It is likely that the hazardous material will be shipped to the mainland for incineration.

(e) Per CA-IR-80, Sun Power for Schools expenses were treated as a net zero.

(f) Other Activities includes Sun Power for School collections or revenues which represents why there are negative charges in March and June.

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Supplemental Project Agreement

1. **Project Title; Agreement, Funder and Project Numbers:** This Supplemental Project Agreement applies to the Project entitled: ***"Hawaiian Electric Company Underground Cable Replacement Policy Development".*** The Parties will reference Supplemental Project Agreement number **TC/CF 011850-11156, (Project ID No. 065973)** in all correspondence. The terms and conditions of the Master Agreement between the Parties dated January 3, 2007 are incorporated herein and govern all Work hereunder. Any Purchase Order issued by Member pursuant to this Agreement is solely for Member's internal accounting requirements and, as such, the terms and conditions of such Purchase Order are superseded by the terms and conditions set forth in this Agreement.

2. **Contact Information:**

Contact	Name	Phone/Fax	Email
EPRI Project Manager:	Jeremy Bloom	650-855-2796 / 2511	jbloom@epri.com
EPRI Contracts:	Josephine M. Erickson	650-855-`	jerickson@epri.com
EPRI Sector Account Executive:	Ivo Hug	650-855-8518	ihug@epri.com
Member Contracts	Arthur Seki,	808-543-7987 / 1581	arthur.seki@heco.com
Member Project Manager:	Dean Mizumura	808-543-7041	dean.mizumura@heco.com

3. **Project Funding in U.S. Dollars:**

Funding Year	-2007-	-2008-	-2009-	-2010-	TOTAL
Funder Cofunding	$145,000				$145,000
Funder TC Funds	$27,500				$27,500
EPRI TC Match	$27,500				$27,500
Total U.S. Dollars	$200,000				$200,000

4. **Project Objectives, Tasks and Deliverables:** See Attached Exhibit 1, incorporated herein by reference.

5. **Invoicing:**

☐ Current year payment enclosed (This form is the invoice for the current year).

☐ Address invoices to: Arthur Seki, , Director of Technology
Hawaiian Electric Company, Inc.
820 Ward Ave (M/S WA3-YP)
Honolulu, HI 96814-2109
Phone/Fax: 808-543-7987 / 1581
E-mail: Arthur.Seki@heco.com

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Project Agreement to be executed by their duly authorized representatives.

Approval / **HAWAIIAN ELECTRIC COMPANY, INC.** 820 Ward Ave (M/S WA3-YP) Honolulu, HI 96814-2109 Phone/Fax: 808-543-7987 / 1581 Signature: Name: Herald Kagemoto Title: Date:	Approval / **ELECTRIC POWER RESEARCH INSTITUTE, INC.** Post Office Box 10412 3420 Hillview Avenue Palo Alto, Ca 94303 Phone/Fax: 650-855-2003 / 1032 Signature: Name: Josephine M. Erickson, Revenue Contracts Negotiator Title: Revenue Contract Negotiator Date:

ENDORSEMENT: EPRI is hereby authorized to release Tailored Collaboration Matching Funds from the account of the **HAWAIIAN ELECTRIC COMPANY, INC.** as set forth in this Agreement.

By: _____ 7/7/07
Arthur Seki, , Director of Technology — Date

Exhibit 1
To
Supplemental Project Agreement
TC/CF 011850-11156 (Project ID No. 065973)

"Hawaiian Electric Company Underground Cable Replacement Policy Development"

1. *Introduction & Background*

The electric delivery infrastructure in many systems has been in service for nearly its design life, and even beyond. In particular, many companies face substantial future costs to replace aging underground distribution cables. Yet today, utility decisions are made under stringent expense controls, limited capital, and increased public concern about reliability. These factors combine to make well-informed decision-making more crucial and yet more elusive than ever. EPRI's Aging Assets research can help by identifying the most economic strategies for dealing with testing, repair, and replacement of underground cables.

EPRI is developing and proving a methodology and supporting software tools for tackling these issues. This methodology fully accounts for the utility's business goals, cost of capital, availability of maintenance budget, and risk tolerance to provide optimal life-cycle strategies for maintaining and replacing underground cable assets. The underlying logic of the EPRI Aging Asset methodology is a dynamic optimization model that has evolved from extensive industrial applications and fundamental operations research principles.

In this project, EPRI will work with HECO to review, adapt, and apply EPRI's methodology for underground cable replacement policy, using EPRI's decision model to assist HECO in developing a test/repair/replace strategy. The research question addressed is "How can a utility plan for cost effective cable replacements while maintaining reliability?" This project continues to develop and apply methods to manage aging infrastructure assets. In particular, the project will produce lessons learned from a utility case study that will be applicable to many utilities implementing processes for managing aging equipment. The project will also advance the state of the art in modeling cable degradation and failure.

The EPRI Aging Asset methodology develops a specific decision strategy for the participant to manage specific asset groups (underground cables, in this case). The strategy provides a clear set of conditions for when to repair and when to replace an asset, when and how to apply diagnostic tests, and what action to take based on the test results. The economic justification for the strategy will be quantified. The strategy includes 1) an operating procedure the utility can use to guide field personnel when confronted with repair or replace decisions, 2) an asset inspection and testing plan, and 3) a tool to quantify risks of equipment failures that may be used in financial planning decisions. When this project concludes, HECO will have

- A thorough understanding of the EPRI's aging assets analysis methodology
- Trained staff people capable of using it
- EPRI software and data for modeling repair/replace decisions for underground cables
- A report documenting the findings and lessons learned

2. *Objectives*

To recommend cost-effective policies for managing aging underground cables and to further develop methodology for making such recommendations.

3. ***Scope of Work/Task Descriptions***

The scope of this contract/amendment includes the following tasks; (1) Project Kick-Off, (2) Detailed Specification of the Problem, (3) Data Gathering and Analysis, (4) Policy Development, Sensitivity Analysis, and Testing, (5) Final Report and Technology Transfer.

3.1. Task 1: Project Kick-Off

EPRI will hold kickoff meeting and webcast, with HECO to address the following items:

- Review project objectives and work plan
- Tutorial on the EPRI aging assets analysis methodology
- Preliminary discussion of problem formulation

HECO is expected to designate one or more staff members to work with the EPRI team throughout the project and to designate an executive sponsor to oversee the project. HECO resources needed will be about 250 man-hours to gather data, provide support, and attend meetings and training.

3.2. Task 2: Detailed Specification of the Problem

The EPRI project team and the participants will work together to review the methods, assumptions and data requirements of the decision problem to be solved. This task will conducted via webcasts or conference calls. Aspects of the problem formulation to be addressed include:

- Cable deterioration modes and hazard rates
- Inspection and testing options and possible outcomes
- Maintenance, repair, and replacement alternatives
- Costs
- Other uncertainties

EPRI expects to make use of its considerable experience with this problem to guide the discussion.

The EPRI project team will provide EPRI's decision model for underground cable replacement, including the following aspects

- Objective function
- Decision timing
- Asset condition description
- Test result description

The EPRI project team will present the model for discussion with the HECO participants in a webcast. The webcast will include a tutorial session on the model logic and analysis methods.

3.3. Task 3: Data Gathering and Analysis

The EPRI project team will assist HECO staff in gathering the data needed for the decision model. Items to be addressed in this task include:

- Identification of required data
- Application of industry data (failure rate elicitation)
- Application of company-specific data (e.g., costs)

An EPRI staff member will work on-site with the HECO staff to identify and collect the necessary data. This task will also include conference calls or webcasts as necessary between the EPRI project team and HECO staff.

3.4. Task 4: Policy Development, Sensitivity Analysis, and Testing

The EPRI project team will perform analysis with the decision model to develop test/repair/replace policy recommendations for underground cables. The results of this task will be reviewed with HECO in a webcast or conference call. Items to be addressed in this task include:

- Inspection and testing strategy using base case assumptions
- Maintenance, repair, and replacement strategy using base case assumptions

The EPRI project team will work with HECO to test the model to ensure it provides reasonable results for HECO. Testing will include sensitivity analysis to determine the sensitivity of the policy recommendations and costs to the model parameters and will identify those parameters for which more precise estimates would have a significant impact on the results. The results of this task will be reviewed with HECO in a webcast or conference call.

3.5. Task 5: Final Report and Technology Transfer

The EPRI project team will document the model methodology, input data, policy recommendations, sensitivity analysis, and lessons learned in a final report for publication as an EPRI technical report. The non-proprietary results of this work will be incorporated into EPRI R&D program 112, Power Delivery Asset Management, and made available to funding members of that program and to the public, for purchase or otherwise. EPRI will respect the confidentiality of HECO's proprietary information in a manner that is mutually acceptable. HECO will have the opportunity to review the draft final report.

The EPRI team will train HECO staff in using the model and performing the analysis in a webcast. EPRI will present the final results in a closing webcast or on-site meeting at HECO's option.

4. *Deliverables*

- Cable Population Asset Management and Testing Model
- Draft Final Report
- Final Report

5. *Schedule*

Task Description	Completion Date
Task 1: Project Kick-Off	June 21, 2007
Task 2: Detailed Specification of the Problem	July 31, 2007
Task 3: Data Gathering and Analysis	August 31, 2007
Task 4: Policy Development, Sensitivity Analysis, and Testing	October 15, 2007
Task 5: Final Report and Technology Transfer	November 15, 2007

EPRI | ELECTRIC POWER RESEARCH INSTITUTE

Supplemental Project Agreement

1. **Project Title; Agreement, Funder and Project Numbers:** This Supplemental Project Agreement applies to the Project entitled: ***"Demand Control Ventilation Demonstration".*** The Parties will reference Supplemental Project Agreement number **TC/CF 011920-11156, (Project ID No. 66014)** in all correspondence. The terms and conditions of the Master Agreement between the Parties dated January 3, 2007 are incorporated herein and govern all Work hereunder. Any Purchase Order issued by Member pursuant to this Agreement is solely for Member's internal accounting requirements and, as such, the terms and conditions of such Purchase Order are superseded by the terms and conditions set forth in this Agreement.

2. **Contact Information:**

Contact	Name	Phone/Fax	Email
EPRI Project Manager:	K. R. Amarnath	650-855-1007 / 2002	aamarnath@epri.com
EPRI Contracts:	Josephine M. Erickson	650-855-2003 / 1032	jerickson@epri.com
EPRI Sector Account Executive:	Ivo Hug	650-855-8518	ihug@epri.com
Member Contracts	Arthur Seki	808-543-7987 / 1581	arthur.seki@heco.com
Member Project Manager:	Linda Koyanagi	808-543-4720 / 4697	linda.koyanagi@heco.com

3. **Project Funding in U.S. Dollars:**

Funding Year	-2007-	-2008-	-2009-	-2010-	TOTAL
Funder Cofunding	$18,500				$18,500
Funder TC Funds	$29,200				$29,200
EPRI TC Match	$29,200				$29,200
Total U.S. Dollars	$76,900				$76,900

4. **Project Objectives, Tasks and Deliverables:** See Attached Exhibit 1, incorporated herein by reference.

   The equipment purchased under this agreement is expected to have little to no residual value at the end of the project. Funder (HECO) may, at its option, pay fair market value at the end of the period of performance to purchase the equipment. Alternatively, EPRI may, at its option, abandon the equipment in place.

5. **Invoicing:** Funder will be invoiced for $29,200, the balance of the Funds, $18,500 are being paid out of Funder's deposit account

   ☐ Current year payment enclosed (This form is the invoice for the current year).

   ☒ Address invoices to: Arthur Seki, , Director of Technology
   Hawaiian Electric Company, Inc.
   820 Ward Ave (M/S WA4-NR)
   Honolulu, HI 96840
   Phone/Fax: 808-543-7987 / 7099
   E-mail: Arthur.Seki@heco.com

HAWAIIAN ELECTRIC COMPANY, INC.

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Project Agreement to be executed by their duly authorized representatives.

Approval / **HAWAIIAN ELECTRIC COMPANY, INC.** P.O. Box 2750 (M/S CP10-1W) Honolulu, HI 96840 Phone/Fax: 808-543-4794 / 4697	Approval / **ELECTRIC POWER RESEARCH INSTITUTE, INC.** Post Office Box 10412 3420 Hillview Avenue Palo Alto, Ca 94303 Phone/Fax: 650-855-2003 / 1032
Signature: _____ Name: David G. Waller Title: Vice President, Customer Solutions Date: July 12, 2007	Signature: _____ Name: Josephine M. Erickson, Title: Revenue Contract Negotiator Date:

ENDORSEMENT: EPRI is hereby authorized to release Tailored Collaboration Matching Funds from the account of the Hawaiian Electric Company, Inc. as set forth in this Agreement.

By: _____ 7/12/07
Arthur Seki, , Director of Technology — Date

Exhibit 1
To
Supplemental Project Agreement
TC/CF 011920-11156 (Project ID No. 66014)

"Demand Control Ventilation Demonstration"

A. Background, Objectives and New Learnings:

Introduction/Background

Conditioning of outside air in a typical commercial air conditioning system accounts for approximately 30% - 40% of the overall cooling load. Standard air conditioning systems are designed with a fixed amount of outside air introduced, with the remainder of the supply air being re-circulated from the space. The quantity of ventilation air required is normally determined by the space design populace. Hence, if a room is designed for a maximum of 100 people, the ventilation provided is based on 100 people even though the population in the space is not normally at a maximum.

Demand Control Ventilation (DCV) is a control strategy whereby the carbon dioxide level in the space is used as an indirect measure of the occupant density, and the ventilation air is modulated in response to the CO_2 levels. The use of a DCV controls strategy can significantly reduce the amount of outside air required for a space, and consequently, the energy use of the air conditioning system. In previous calculations done for the Navy Exchange Building located in Honolulu, based on energy simulation software, the annual kWh usage for DCV systems was estimated at around 60% of standard fixed ventilation systems. It is expected that the use of a DCV system could reduce total air conditioning energy usage by approximately 18% to 25%.

Implementation of a DCV control strategy involves the installation of motorized dampers on air conditioning unit outside air intakes. Additionally, CO_2 sensors are installed in the spaces served by the air conditioning units, and the outside air dampers are controlled via a direct digital control (DDC) system in response to the space CO_2 levels. During periods of lower than design occupancy, the volume of outside air to the space can be reduced while still maintaining an adequate amount of ventilation air to the reduced number of people.

Objectives

The energy savings potential of demand control ventilation in air conditioning systems in Hawaii will be determined, and the accuracy of building energy simulation programs in predicting the energy savings of DCV will be verified.

This project is designed to assist EPRI member utilities in promoting DCV as an energy efficient electro-technology to their commercial customers. Energy efficient DCV technology can benefit customers by lowering their electricity bills, and also helps utilities to reduce demand on the system in a time when generation capacity reserve margins are shrinking. As a part of this project, HECO will be examining the expected cost-to-savings benefit for this technology in Hawaii, and the accuracy of the Trace 700™ energy simulation program in predicting the kWh savings due to DCV implementation.

New Learnings: This project will determine the potential for energy savings in commercial building applications. It will determine if DCV is the appropriate technology to be promoted by EPRI member utilities. The project will also determine the cost effectiveness of DCV technology.

Benefit to the Public: Commercial building owners and operators will benefit from understanding the value of installing DCV technology in their facilities.

Benefit to the Funder: This project is designed to assist HECO in promoting DCV as an energy efficient electrotechnology to their commercial customers. DCV has the potential to provide significant energy reduction in air conditioning systems; it is not in widespread use in Hawaii and several other states. Energy efficient technologies such as DCV can benefit customers by lowering their electricity bills, and also helps HECO to reduce demand on the system.

B. Tasks:

Task 1: Site Survey:

DCV systems will be installed at a Customer Site. The type of facilities best suited to DCV would be those where there is a large occupancy swing and a sizeable number of operational hours, such as retail stores or supermarkets. Baseline CO_2 monitoring of the customer facility will be done to determine the normal occupancy load curve.

A site survey is needed to determine the specific equipment required to retrofit the existing AHU systems for DCV and monitoring.

Task 2: Preparation of Design Plan (including data-logging plan)

Drawings and specifications will be prepared to obtain construction price quotes and for use by installation Contractors.

Task 3: Computer Modeling of DCV systems

A building energy simulation model for the existing air conditioning systems will be created to predict the kWh savings due to the implementation of DCV. The modeling results will be compared against the actual results of the project. The Trace 700™ software program will be used for the DCV energy savings simulation.

Task 4: System Procurement, Installation and Commissioning

Installation of new controls hardware will be done as required to implement a DCV strategy, and as required for post monitoring.

Task 5: Post Monitoring and Analysis of HVAC energy usage

Monitoring will be conducted for approximately 3-months to determine the effectiveness of the DCV systems. A brief technical report will be prepared, summarizing the results of the project, including the following:

1) Detailed description of the facility

2) Building energy simulation DCV savings estimate

3) Description of the methodology used to collect and analyze the data.

4) Detailed analysis and explanation of the significant factors impacting the resulting energy savings and outside air reduction.

5) Comparison of the actual energy savings against that predicted by the energy simulation modeling software.

6) Conclusions on the applicability of the results of this demonstration project to other similar facilities in Hawaii.

7) Documentation of the building energy simulation modeling.

8) Raw monitoring data in electronic format.

The main contractor on this project will be HECO. The utility has extensive capabilities in providing engineering solutions to their customer base, including residential, commercial and industrial customers. HECO will subcontract with appropriate HVAC contractors to install the DCV systems at the Customer site.

C. Deliverables: The non-proprietary results of this work will be incorporated into EPRI R&D Program 170 – Advancing End-Use Energy Efficiency & Technology, and made available to funding members of that program and to the public, for purchase or otherwise.

D. Estimated Period of Performance / Estimated Schedule:

Selection and contract execution of Sub-Contractor	1 month	(Q2 2007)
Contract execution with Customer	1 month	(Q2 2007)
Installation of new equipment (incl. lead-time)	3 months	(Q3 2007)
Baseline Monitoring	1 month	(Q4 2007)
Implementation of DCV strategy and monitoring	6 months	(Q4 2007 to Q2 2008)
Report preparation	3 months	(Q3 2008)

Attachments 4-5 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. An electronic version of the requested information is being provided.

CA-IR-408

Ref: HECO-615, page 3 (Power Supply Management Reporting).

With regard to the Manager, Operations & Maintenance position shown in the organization table, please provide the following:

a. Identify and describe each of the recurring monthly reports prepared by or for this management employee, for use in informing HECO senior management personnel about the operational or financial performance of the business unit(s) within the responsibility of this manager.

b. Provide copies of each of the reports identified in your response to part (a) for each available month of 2007, to date.

c. To the extent not provided in your response to part (b) of this information request, please provide detailed copies of all financial analyses and budget variance reports prepared by or for the use of the Manager, Operations & Maintenance for all available periods in 2007, to-date.

HECO Response:

a. The title and description of the recurring monthly operational and financial reports prepared by or for the Manager, Operations & Maintenance are presented in Attachment 1 to this response.

b. The Company objects to providing the requested internally distributed management reports, including variance reports, as these documents are privileged and confidential and should not be provided on public policy grounds, as described below, and it would be unduly burdensome to produce all such reports, which are generated on a frequent basis, and which would require explanations of how unadjusted budget numbers relate to test year numbers to be meaningful, which also would be unduly burdensome.

Without waiving its objections, HECO provides the reports identified below.

The first column of Attachment 1 of this response provides the attachment number of

each report. Attachments 2A through 2E of the response to CA-IR-408 provide the Forward Looking Financial Update for January through May 2007.

Attachments 3 through 6 provide the reports as indicated in Attachment 1 only for the last month in which the respective report was produced.

HECO provides Attachments 2A through 2E and 3 through 6 subject to Amended Protective Order No. 23378 as they include recorded financial information that should not be disclosed publicly in advance of the release of associated public financial statements, confidential operational and forward-looking financial information, and critical infrastructure information that is related to the security of the Company's facilities.

As stated below, HECO objects to providing internally distributed management reports and narrative discussions of the reasons for budget variances, on the grounds that: 1) these documents are privileged and confidential and should not be provided on public policy grounds, and 2) explanations generally would be required as to how unadjusted budget numbers relate to test year numbers to be meaningful, which would be unduly burdensome to provide.

Explanations of budget variances are communicated through various media ranging from telephone conversations, brief and informal notes, to more standard write-ups containing explanations in "bullet point" form. The explanations are intentionally brief in nature since Company personnel understand the context behind the drivers of the variances and the Company believes that it is not cost effective to spend the time to generate elaborate variance explanations. If the Company is required to produce internally generated variance information at the time of rate cases, then the information will have to be generated in a

fashion suitable for external publication, rather than in its present form used for internal management purposes. This would be unduly burdensome, as well as counter productive.

These internal reports are intended solely to be a management tool, and are not required to be submitted to management in a form to be transmitted outside the Company. Were these documents subject to review in a regulatory proceeding, their candid nature and, therefore, their value would diminish significantly in the future, and HECO's internal communications would be seriously hampered.

This information request basically requests unlimited access to internal reports or documents submitted in connection with the operating forecast and variances from the operating forecast and other operational information. The information request fails to balance the Consumer Advocate's need for this information against the Company's need to manage.

For example, the Federal Freedom of Information Act ("FFIA"), codified at 5 U.S.C. Section 552, and the Uniform Information Practices Act (modified), codified at H.R.S. Ch. 92F, contains broad disclosure requirements based on the public's interest in open government. However, even such broad disclosure acts provide exceptions from the broad disclosure requirements that are intended to permit the efficient and effective functioning of government. It is common in such acts to protect from disclosing pre-decisional agency memoranda and notes, and/or government records that, by their nature, must be confidential in order to avoid the frustration of a legitimate government function. This is similar to the "deliberative process privilege" recognized by the Pennsylvania Public Utility Commission with respect to its own internal staff reports.

See Pennsylvania Public Utility Commission v. West Penn Power company, 73 Pa PUC 122 (July 20, 1990).

HECO also objects to disclosure of the requested information under a protective order. The value of the internal management reports will be diminished for the reasons stated above if the Company is required to provide the reports to the Consumer Advocate, even if the reports are provided pursuant to a protective order.

Providing variance to budget explanations was raised as an issue by the Consumer Advocate in MECO's 1992-1993 test year rate case, Docket No. 7000. MECO (and essentially HECO and HELCO, or the Companies) and the Consumer Advocate reached agreement in Docket No. 7000 to separate from Docket No. 7000 the Budget Preparation Process/Budget Issues, including the type and amount of information to be provided to the Consumer Advocate between rate cases. MECO and the Consumer Advocate agreed to work together outside of Docket No. 7000 to resolve the budgeting and reporting issues. As a result of the discussions to resolve the issues, among other things, the Companies agreed to provide detailed recorded data files and forecast detailed data files for the link year as part of each subsequent rate case filing. (See transmittal letter dated January 29, 2007 in this proceeding indicating the filing of these data files.) In this case, HECO has provided (as part of its direct testimonies filed in the rate case) explanations of variances by activity, above a threshold, between the budget prepared for the test year and the full year actual information. (See for example HECO-WP-601 and HECO-1002 submitted in this proceeding.) HECO also has responded to numerous specific information requests regarding its test year estimates, and its actual expenses from earlier years. Thus, HECO has provided a significant amount of information as a result of prior agreements in order for

the Consumer Advocate and the Commission to determine the reasonableness of HECO's test year expenses.

c. The Company objects to providing the requested reports on the grounds provided in the response to subpart b. Without waiving its objections, the Company provides the following information. Other financial analyses and budget variance reports prepared by or for the use of the Manager, Operations & Maintenance are also listed in Attachment 1 to this response. Copies of the most current versions of those reports are provided in Attachments 8 to 12 to this response.

HECO provides Attachments 8, 9, 11 and 12 subject to Amended Protective Order No. 23378 as they include recorded financial information that should not be disclosed publicly in advance of the release of associated public financial statements, and confidential operational and forward-looking financial information.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Power Supply O&M Department Management Reporting

ATTACHMENT #	Report Title	Freq	Recurring Report	PS O&M Dept. Management Staff					Report Description
				Mgr, O&M	Station Supt, Hon & Waiau	Station Supt, Kahe	Supt, Plng & Engr	Supt, Maint	
Recurring Monthly Operational or Financial Reports:									
2A to 2E	Forward Looking Financial Update	Monthly	Yes	X	X	X	X	X	Power Point presentation prepared by Administrators/Budget Analyst to report to Managers and Executive Management the financial status and year end outlook and process area goals.
3	PSOM Year End O&M Expense Projection Spreadsheet	Monthly	Yes	X			X	X	Spreadsheet lists monthly actual and estimated O&M expense by cost and work category. This is utilized by the Maintenance Superintendent to develop and update year end O&M expense projection for Power Supply O&M Department.
4	Monthly Budget Variance Report	Monthly	Yes	X				X	Budget Analyst prepares the monthly O&M budget variance report that includes explanations for significant differences. Report is reviewed and approved by the Maintenance Superintendent and then submitted to Management Accounting & Financial Services Department.
5	PSOM Vacancy Status	Monthly	Yes	X					List of Power Supply O&M Department staff vacancies and hiring status from Workforce Staffing & Development Department.
6	Monthly Project Inactivation Status Report	Monthly	Yes	X			X		The monthly project activation report is prepared to monitor open projects (e.g. planned maintenance outages), and identify projects to be closed out in Ellipse. Projects are closed when all work for the project has been completed and expenses paid.
CA-IR-333	Monthly Work Order Backlog Report	Monthly	Yes	X			X		The monthly work order backlog report is prepared to monitor the number of outstanding work orders.
7	Not Used.								

ATTACHMENT #	Report Title	Freq	Recurring Report	PS O&M Dept. Management Staff					Report Description
				Mgr, O&M	Station Supt, Hon & Waiau	Station Supt, Kahe	Supt, Plng & Engr	Supt, Maint	
Other Financial Analyses & Budget Variance Reports:									
8	O&M Budget Weekly Report	Weekly	Yes	X	X	X	X	X	Report to track and review budget variance and projected expenses for (1) selected maintenance work by station, (2) PS O&M Program P00061271, (3) substation distributed generation non-labor costs, & (4) Operating Division expenses. Each week major O&M budget line items are reviewed by all Superintendents, Budget Analyst, and O&M Engineers.
9	Weekly O&M Expense Update	Weekly	Yes	X	X	X	X	X	Weekly update of O&M expense by department and consolidated process area reported to VP Power Supply.
10	Bi-Weekly Project Commitment Report	Bi-Weekly	Yes				X		Report lists outstanding commitments by project overhaul. A bi-weekly project commitment meeting, facilitated by Sr. Supervisor, Planning, is held to (a) review outstanding material and outside service costs to determine validity of the expenses (e.g. a reduced work scope could result in reduced expenses), and (b) address timing of the expenses (e.g. it may be necessary to call contractors providing services to submit their invoice), (c) identify any additional non-labor expenses resulting from recent identification of work which was not identified previously.
11	Quarterly O&M Variance Report	Quarter	Yes	X				X	Report prepared by Adminstrator to review and explain O&M expense quarter variance between current year and prior year actual results. Report is reviewed and approved by the Maintenance Superintendent and then submitted to Management Accounting & Financial Services Department.
12	Account Spending Analysis Detail Report	Quarter	Yes	X					Transaction listing of purchases with the company credit card made by authorized Power Supply O&M Department employees. Report is reviewed by Power Supply O&M Department Manager.

Attachments 2A-12 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect these documents. Electronic versions of the attachments are being provided.

Attachments 2A-2E, 3-6, 8, 9, 11, and 12 contain confidential information and are being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

CA-IR-409

Ref: HECO-615, page 3 (Power Supply Management Reporting).

With regard to the Station Superintendent, Honolulu & Waiau position shown in the organization table, please provide the following:

a. Identify and describe each of the recurring monthly reports prepared by or for this management employee, for use in informing HECO senior management personnel about the operational or financial performance of the business unit(s) within the responsibility of this manager.

b. Provide copies of each of the reports identified in your response to part (a) for each available month of 2007, to date.

c. To the extent not provided in your response to part (b) of this information request, please provide detailed copies of all financial analyses and budget variance reports prepared by or for the use of the Station Superintendent, Honolulu & Waiau position for all available periods in 2007, to-date.

HECO Response:

a. The title and description of the recurring monthly operational and financial reports prepared by or for the Station Superintendent, Honolulu & Waiau are listed in Attachment 1 to the response to CA-IR-408.

b. See the Company's response to CA-IR-408.b, the objections to producing the requested reports listed in Attachment 1 thereto, and the reports that are being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections. Attachment 1 of the response to CA-IR-408 indicates which reports are prepared by or for the Station Superintendent, Honolulu & Waiau and provides the attachment number of each report.

c. See the Company's response to CA-IR-408.c. Attachment 1 of the response to CA-IR-408 indicates which other financial analysis and budget variance reports are prepared by or for the Superintendent, Honolulu & Waiau and provides the attachment number of each report that is being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections.

CA-IR-410

Ref: HECO-615, page 3 (Power Supply Management Reporting).

With regard to the Superintendent, Planning & Engineering position shown in the organization table, please provide the following:

a. Identify and describe each of the recurring monthly reports prepared by or for this management employee, for use in informing HECO senior management personnel about the operational or financial performance of the business unit(s) within the responsibility of this manager.

b. Provide copies of each of the reports identified in your response to part (a) for each available month of 2007, to-date.

c. To the extent not provided in your response to part (b) of this information request, please provide detailed copies of all financial analyses and budget variance reports prepared by or for the use of the Superintendent, Planning & Engineering for all available periods in 2007, to-date.

HECO Response:

a. The title and description of the recurring operational and financial reports prepared by or for the Superintendent, Planning & Engineering are listed in Attachment 1 to the response to CA-IR-408.

b. See the Company's response to CA-IR-408.b, the objections to producing the requested reports listed in Attachment 1 thereto, and the reports that are being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections. Attachment 1 of the response to CA-IR-408 indicates which reports are prepared by or for the Superintendent, Planning & Engineering and provides the attachment number of each report.

c. See the Company's response to CA-IR-408.c. Attachment 1 of the response to CA-IR-408 indicates which other financial analysis and budget variance reports are prepared by or for the Superintendent, Planning & Engineering and provides the attachment number of each report that is being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections.

CA-IR-411

Ref: HECO-615, page 3 (Power Supply Management Reporting).

With regard to the Superintendent, Maintenance position shown in the organization table, please provide the following:

a. Identify and describe each of the recurring monthly reports prepared by or for this management employee, for use in informing HECO senior management personnel about the operational or financial performance of the business unit(s) within the responsibility of this manager.

b. Provide copies of each of the reports identified in your response to part (a) for each available month of 2007, to-date.

c. To the extent not provided in your response to part (b) of this information request, please provide detailed copies of all financial analyses and budget variance reports prepared by or for the use of the Superintendent Maintenance for all available periods in 2007, to-date.

HECO Response:

a. The title and description of the recurring monthly operational and financial reports prepared by or for the Superintendent Maintenance are listed in Attachment 1 to the response to CA-IR-408.

b. See the Company's response to CA-IR-408.b, the objections to producing the requested reports listed in Attachment 1 thereto, and the reports that are being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections. Attachment 1 of the response to CA-IR-408 indicates which reports are prepared by or for the Superintendent, Maintenance and provides the attachment number of each report.

c. See the Company's response to CA-IR-408.c. Attachment 1 of the response to CA-IR-408 indicates which other financial analysis and budget variance reports are prepared by or for the Superintendent Maintenance and provides the attachment number of each report that is being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections.

CA-IR-412

Ref: HECO-615, page 3 (Power Supply Management Reporting).

With regard to the Station Superintendent, Kahe position shown in the organization table, please provide the following:

a. Identify and describe each of the recurring monthly reports prepared by or for this management employee, for use in informing HECO senior management personnel about the operational or financial performance of the business unit(s) within the responsibility of this manager.

b. Provide copies of each of the reports identified in your response to part (a) for each available month of 2007, to-date.

c. To the extent not provided in your response to part (b) of this information request, please provide detailed copies of all financial analyses and budget variance reports prepared by or for the use of the Station Superintendent, Kahe for all available periods in 2007, to-date.

HECO Response:

a. The title and description of the recurring operational and financial reports prepared by or for the Station Superintendent, Kahe are listed in Attachment 1 to the response to CA-IR-408.

b. See the Company's response to CA-IR-408.b, the objections to producing the requested reports listed in Attachment 1 thereto, and the reports that are being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections. Attachment 1 of the response to CA-IR-408 indicates which reports are prepared by or for the Station Superintendent, Kahe and provides the attachment number of each report.

c. See the Company's response to CA-IR-408.c. Attachment 1 of the response to CA-IR-408 indicates which other financial analysis and budget variance reports are prepared by or for the Station Superintendent, Kahe and provides the attachment number of each report that is being produced subject to Amended Protective Order No. 23378, without waiving HECO's objections.

CA-IR-413

Ref: HECO Response to CA-IR-239, Attachments 1 and 2 (Actual and Projected Power Purchase and Generation Planning Division Outside Services).

Please provide the following additional information:

a. Please update Attachments 1 and 2 to include additional actual expenditures through June 2007.

b. Explain the details of any known projects and committed expenditures for the remainder of 2007 (subsequent to June).

c. State all reasons why (whether) expenditure levels in this cost category for the remainder of 2007 (subsequent to April spending of only $1,160) are realistically expected to exceed the actual spending needed in 2005 and 2006 by a multiple of 3 or more, as evidenced by the test year budget of $380,000.

HECO Response:

a. Attachments 1 and 2 to the response to CA-IR-239 have been updated for HECO's actual recorded expenses through May 31, 2007 for: (1) outside legal services for the Purchase Power Division; (2) outside legal and consultant services performed in years 2004 through 2006 for the regulatory proceedings before the Commission that culminated in the Commission's Decision and Order No. 23121, dated December 8, 2006 (Docket No. 03-0372), adopting the Framework for Competitive Bidding ("Framework") for the acquisition of new generating resources; and (3) subsequent outside legal and consulting services performed in 2007 to comply with the Commission's Decision and Order No. 23121 and Framework requirements for competitive bidding in Hawaii (these upfront common costs are applicable to all competitively bid projects and must be completed before requests for proposals can be issued, and include the evaluation and selection of candidate Independent Observers and the preparation of and securing Commission approval for a

proposed Code of Conduct and a new Interconnection and Transmission Upgrades tariff), and are provided as Attachments 1 and 2 to this response.

Where available, additional expenditure information for invoices after May 31, 2007, is provided in Attachments 1 and 2 to this response for outside legal services ($5,751) and consulting services ($2,942) in support of competitive bidding activities.

b. The competitive bidding activities and projects are identified in the respective IRP Reports filed by HECO (Docket No. 03-0253), MECO (Docket No. 04-0077), and HELCO (Docket No. 04-0046). For 2007, as discussed on page 9 of HECO T-6, June 2007 Update, the specific project identified in Section 4.2.5 in the HECO IRP-3 Evaluation Report filed with the Commission on May 31, 2007 is the issuance, on or about year-end 2007, of a Request for Proposals ("RFP") for a block of approximately 100 MW of non-firm renewable energy for Oahu. (As noted in the report, HECO is targeting issuance of a Solicitation of Interest on or about September, 2007, announcing HECO's intent to proceed with the RFP.) For MECO, the IRP action plan identified two blocks of firm capacity generation required in the 2011 and 2013 timeframes. In support of these efforts, HECO's Generation Bidding Division is currently in the process of establishing a scope of work and cost estimate for outside consultant services to assist with the development of both of these competitive bidding projects. Outside legal services will also be needed in the months ahead (and continuing beyond 2007) for activities such as, but not limited to, preparation of power purchase and other forms of contract, review of RFP material, advice on communication with prospective bidders and regulatory compliance, and preparation of regulatory filings. In addition, services of an Independent Observer for both projects are also planned to be secured in 2007, with preliminary work already underway on the scope of services and form

contract. Finally, as described in response to subpart (a) above, expenditures for outside legal and consulting services continue in support of securing Commission approval for a proposed Code of Conduct and a new Interconnection and Transmission Upgrades tariff, both of which are presently before the Commission awaiting approval.

c. Power Purchase Division's outside services in the 2007 test year estimate is $200,000 ($100,000 for administering firm capacity contracts, and $100,000 for evaluating and negotiating new contracts, and it was not revised in the June 2007 Update). Generation Bidding Division's normalized estimate for outside services in the June 2007 Update is $418,333 (see June 2007 Update, HECO T-6, Attachments 7 and 8). Each is discussed separately below.

Power Purchase

The Power Purchase Division forecasted $100,000 for outside legal services related to administration of firm capacity contracts. This amount is a reasonable normalized cost when compared to the average outside legal expenses for administering firm capacity contracts from 2002 to 2006 ($91,872).

At the time of the forecast, it was anticipated that outside legal services could be required in 2007 in conjunction with renegotiation of the Power Purchase Agreement ("PPA") between HECO and Kalaeloa Partners, L.P. ("KPLP"). It is reasonable to assume that the cost of such outside legal services could amount to approximately $100,000, based on the cost of similar outside legal services for projects described below. While significant outside legal expenses have not been incurred to date, costs may still be incurred by the end of 2007.

The HECO – KPLP PPA provides that HECO shall have the first opportunity to negotiate with KPLP to purchase energy from the facility, or the facility itself, after May 23, 2016, which is the end of the PPA term. The PPA also provides that at the request of HECO, KPLP shall enter into such negotiations at any time after the beginning of the seventh calendar year prior to the end of the term. The beginning of the seventh calendar year prior to the end of the term is January 1, 2009. Because of the length of time required in acquiring new generation resources, in 2006, HECO and KPLP agreed informally to explore early renegotiation of the PPA. However, continuation of the renegotiation efforts in 2007, which would have involved outside legal counsel services, have been delayed due to several reasons, including: (1) HECO personnel redirection of efforts to respond to the Commission on matters regarding the system outage following the October 15, 2006 earthquake event, and (2) KPLP's redirection of efforts to address facility reliability.

The $100,000 forecast is reasonable in comparison to past expenses for outside legal assistance. In 2003, HECO spent $177,646 on outside legal expenses primarily relating to negotiation of Amendment No. 2 to the HECO – AES Hawaii PPA. In 2004, HECO spent $239,233 on outside legal expenses primarily relating to negotiation of Amendments Nos. 5 and 6 to the HECO – KPLP PPA. In 2005, the bulk of the $27,477 on outside legal expenses was for continuing work relating to negotiation of Amendment Nos. 5 and 6 to the HECO – KPLP PPA.

The Power Purchase Division also forecast $100,000 for 2007 for outside legal services related to evaluation and negotiation of new contracts. HECO has received several proposals for the provision of renewable energy from independent power producers (IPP). Although these proposals are confidential, the names and descriptions of the proposals were

provided to the Commission and the Consumer Advocate under protective order in Docket No. 03-0372. At the time of the forecast, it was anticipated that outside legal services would be required in 2007 in conjunction with PPA negotiations with some or all of these IPPs. While no outside legal expenses have been incurred to date, costs may still be incurred by the end of 2007.

In HECO's IRP-3 Evaluation Report filed with the Commission on May 31, 2007 (Docket No. 03-0253), HECO stated its intention to continue discussions with these IPPs who submitted proposals before the adoption of the Framework for Competitive Bidding filed by the Commission on December 8, 2006 in Docket No. 03-0372, to seriously examine the viability of these projects and to establish a reasonable schedule for bringing these discussions to conclusion. As a result, HECO expects to begin negotiations with one or more of these IPP developers in 2007.

The $100,000 forecast is reasonable in comparison to past expenses for outside legal assistance. In mid-2004, Maui Electric Company (MECO) began negotiations with Kaheawa Wind Power, LLC (KWP) for a PPA. The PPA was filed with the Commission for approval, and was approved in Decision and Order No. 21701 in Docket No. 04-0365. Outside legal counsel assisted MECO in negotiations and filing the PPA for approval. Over an approximately year's period between July 2004 and August 2005, MECO incurred approximately $70,000 in outside legal expenses for these services. The $100,000 forecast, which is for outside legal services contemplated for possibly several PPA negotiations later in 2007, is reasonable in comparison to the expense for outside legal services for one PPA proposal for MECO.

Generation Bidding

As previously discussed in HECO T-6, June 2007 Update, the Generation Bidding Division was newly formed in 2007 and actual labor and non-labor spending in prior years do not exist for the implementation of the competitive bidding process pursuant to the Commission's Framework for Competitive Bidding ("Framework") adopted on December 8, 2006, by Commission Decision and Order No. 23121 (Docket No. 03-0372). Thus, there is no meaningful comparison of anticipated expenses in 2007 for competitive bidding activities with actual spending in 2005 and 2006. While there were significant expenditures in prior years for outside legal services (i.e., 2004 - $6,788; 2005 - $25,704; and 2006 - $98,751) and outside consulting services (i.e., 2004 - $9,980; 2005 - $20,204; and 2006 - $7,168) in support of the active regulatory proceeding in the Commission's docket to Investigate Competitive Bidding for New Generating Capacity in Hawaii (Docket No. 03-0372), these historical expenses are not indicative of forecasted expense to actually secure new generating resources via implementation of this new process. As for labor estimates, the Director of Generation Bidding position was filled in June 2007. The Project Manager positions are expected to be filled by the end of July, 2007. As indicated in response to part (b) above, work authorizations for the outside consultant and Independent Observer are being prepared and further legal services from counsel are required. A detailed explanation of expected expenditures forecast in 2007 in support of competitive bidding activities is provided in HECO T-6, June 2007 Update. Please also refer to HECO's response to CA-IR-424 for additional information.

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR
Power Purchase and Generation Planning/Bidding Divisions -- Outside Legal Services
Actual Costs Recorded 2002 to 2006, and as of May 31, 2007
(As Updated to Include Outside Service - General)

Acct Blk Descr	RA #	Resp Area	EE #	Exp Element	Act #	Activity	2002 Actual	2003 Actual	2004 Actual	2005 Actual	2006 Actual	5/31/07 YTD Actual	June 2007 TY Update
Prod Oper	PIC	Power Purchase	502	Outside Svcs-Legal	120	Adm As Avail Contracts	$0	$2,508	$0	$0	$0	$0	$0
Prod Oper	PIC	Power Purchase	502	Outside Svcs-Legal	121	Adm Firm Cap Contracts	$9,402	$177,646	$239,233	$27,477	$5,604	$230	$100,000
Prod Oper	PIC	Power Purchase	502	Outside Svcs-Legal	122	Eval & Neg New Cont	$3,843	$23,974	$14,008	$6,894	$12,163	$0	$100,000
Prod Oper	PIC	Power Purchase	501	Outside Svcs-Gen	700	Dev & Adm Business	$0	$0	$0	$0	$0	$0	$175,000 3
						RA PIC Total **(A)**	$13,245	$204,128	$253,241	$34,371	$17,767	$230	$375,000
Prod Oper	PYB	Generation Plan	502	Outside Svcs-Legal	700	Dev & Adm Business	$0	$0	$6,788	$25,704	$98,751	$1,467 1	$0
Prod Oper	PYB	Generation Plan	501	Outside Svcs-Gen	700	Dev & Adm Business	$0	$0	$9,980	$20,204	$7,168	$0	$0
Prod Oper	PXB	Gen Bidding	501	Outside Svcs-Gen	210	Plan & Approve Projects	$0	$0	$0	$0	$0	$1,183 2	$243,000 3
						TOTAL	**$13,245**	**$204,128**	**$270,009**	**$80,279**	**$123,686**	**$2,880**	**$618,000**

Notes:

(1) Invoices for legal services from Goodsill received but not recorded as of 5/31/07 - HECO portion is $3,281 (June - $1,189; July - $1,996; July - $96), in addition a pending invoice for $7,384 (HECO portion is $2,470) covers work performed by Goodsill during the month of June. Updated total of HECO's portion of services through June 30 is $7,218.

(2) Invoice for consulting services from Merrimack Energy received but not recorded as of 5/31/07 - HECO portion is $2,942 (June). Updated total of HECO's portion for services through June 30 is $4,125.

(3) $175,000 plus $243,000 = $418,000 generation bidding outside services as shown in Attachment 7 and 8 in HECO T-6's June 2007 Update. .

(A) -2002-2005 Actual and 2007 TY agrees to CA-IR-2, HECO T-6, Attachment 12B, page 3.

HAWAIIAN ELECTRIC COMPANY INC.
2007 Rate Case
Power Purchase and Generation Bidding Divisions -- Outside Legal and Consulting Services
Significant Actual Costs Recorded 2002 to 2006, and as of May 31, 2007 by Activity and Year
Updated for Merrimack Energy Contract (2004-2006)

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 120 (RA PIC) - YR2003:					
April	$2,508	G0000301	As Available Contracts	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Activity 121 (RA PIC) - YR2002:					
Oct	$650	HP000020	IC-AES-HI PPA	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Jan	$234	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Feb	$1,758	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
May	$4,932	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Jul	$703	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Aug	$352	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Sep	$187	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
	$8,166				
Mar	$211	G0000187	Firm Capacity Contracts	GOODSILL-NUG CURTAILMENT	GOODSILL ANDERSON QUINN STIFEL
Apr	$375	G0000187	Firm Capacity Contracts	GOODSILL-NUG CURTAILMENT	GOODSILL ANDERSON QUINN STIFEL
	$586				
TOTAL	$9,402				

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 121 (RA PIC)- YR2003:					
Apr	$2,519	G0000187	Firm Capacity Contracts	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
May	$21,593	G0000187	Firm Capacity Contracts	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Jul	$35,759	G0000187	Firm Capacity Contracts	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Aug	$25,113	G0000187	Firm Capacity Contracts	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Sep	$12,662	G0000187	Firm Capacity Contracts	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Oct	$600	G0000187	Firm Capacity Contracts	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Jul	$1,266	G0000187	Firm Capacity Contracts	GOODSILL-REGULATORY 2003-AES HI	GOODSILL ANDERSON QUINN STIFEL
	$99,512				
Oct	$70,248	HP000020	IC-AES-HI PPA	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Apr	$703	HP000022	IC-H-POWER PPA	GOODSILL-H POWER PPA	GOODSILL ANDERSON QUINN STIFEL
Dec	$894	HP000022	IC-H-POWER PPA	GOODSILL-H POWER PPA	GOODSILL ANDERSON QUINN STIFEL
	$1,597				
May	$190	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Nov	$3,466	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
	$3,656				
Dec	$1,489	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Dec	$1,144	HP001694	IC KPLP General Partner Change	GOODSILL-Kalaeloa GP	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$177,646				

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 121(RA PIC) - YR2004:					
Jan	$11,122	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Mar	$2,812	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Mar	$4,266	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Jun	$25,017	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Jul	$9,458	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Jul	$9,021	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Aug	$32,691	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Sep	$11,925	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Oct	$22,943	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Nov	$9,345	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Dec	$85,494	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Dec	$12,997	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
	$237,091				
Jan	$2,142	HP001694	IC KPLP General Partner Change	GOODSILL-Kalaeloa GP	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$239,233				

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 121(RA PIC) - YR2005:					
Dec	$315	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Feb	$1,188	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Mar	$3,321	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Apr	$5,216	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
May	$1,300	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Jun	$2,248	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Aug	$2,436	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Sep	$2,312	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Oct	$2,638	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Dec	$3,611	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
Dec	$2,892	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
	$27,162				
TOTAL	$27,477				
Activity 121 (RA PIC)- YR2006:					
Oct	$2,196	G0000187	Firm Capacity Contracts	GOODSILL-NUG CURTAILMENT	GOODSILL ANDERSON QUINN STIFEL
Mar	$229	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Jun	$458	HP000023	IC-KPLP PPA	*Accrue Unpaid Invoices at Quarter End*	GOODSILL ANDERSON QUINN STIFEL
Jun	$1,088	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Dec	$344	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
Dec	$573	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
	$2,692				
May	$716	HP001686	IC KPLP Capacity Addition Options	GOODSILL-Kalaeloa Capacity Add	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$5,604				

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 121(RA PIC) - As of 5/31/07:					
Mar	$115	HP000023	IC-KPLP PPA	GOODSILL-KALAELOA PPA	GOODSILL ANDERSON QUINN STIFEL
May	$115	HP000020	IC-AES-HI PPA	GOODSILL-AES HAWAII PPA (93368)	GOODSILL ANDERSON QUINN STIFEL
	$230				
Activity 122 (RA PIC)- YR2002:					
Mar	$562	G0000292	New Contracts	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
May	$189	G0000292	New Contracts	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
	$751				
Mar	$1,187	HP000025	IC-NUG Guidelines Development	GOODSILL-INTERCONNECTION AGMT #95824	GOODSILL ANDERSON QUINN STIFEL
Apr	$719	HP000025	IC-NUG Guidelines Development	GOODSILL-INTERCONNECTION AGMT #95824	GOODSILL ANDERSON QUINN STIFEL
	$1,906				
Jun	$229	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Aug	$348	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
	$577				
Mar	$609	HP001141	Net Energy Metering Implementation	GOODSILL-NET ENERGY METERING	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$3,843				
Activity 122 (RA PIC)- YR2003:					
Jul	$708	HP000025	IC-NUG Guidelines Development	GOODSILL-INTERCONN TARIFF	GOODSILL ANDERSON QUINN STIFEL
Oct	$2,594	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Nov	$14,839	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Dec	$5,833	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$23,974				

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 122 (RA PIC)- YR2004:					
Feb	$3,569	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Mar	$450	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Mar	$3,075	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Jul	$862	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Aug	$244	HP000025	IC-NUG Guidelines Development	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
	$8,200				
Jul	$758	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES HAWAII PPA	GOODSILL ANDERSON QUINN STIFEL
Jul	$379	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES Hawaii PPA	GOODSILL ANDERSON QUINN STIFEL
Aug	$244	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES Hawaii PPA	GOODSILL ANDERSON QUINN STIFEL
Sep	$1,354	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES Hawaii PPA	GOODSILL ANDERSON QUINN STIFEL
	$2,735				
Dec	$244	HP001141	Net Energy Metering Implementation	GOODSILL-NET ENERGY METERING	GOODSILL ANDERSON QUINN STIFEL
Dec	$1,881	HP001141	Net Energy Metering Implementation	GOODSILL-NET ENERGY METERING	GOODSILL ANDERSON QUINN STIFEL
	$2,125				
May	$704	HP001748	IC SSP Oahu I	GOODSILL - Sea Solar Power	GOODSILL ANDERSON QUINN STIFEL
Nov	$244	HP001748	IC SSP Oahu I	GOODSILL - Sea Solar Power	GOODSILL ANDERSON QUINN STIFEL
	$948				
TOTAL	$14,008				

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Activity 122 (RA PIC)- YR2005:					
Jun	$438	HP000025	IC-NUG Guidelines Development	RUSH - Interconnection Guidelines	RUSH MOORE LLP
Dec	$5,333	HP000025	IC-NUG Guidelines Development	RUSH - Interconnection Guidelines	RUSH MOORE LLP
	$5,771				
Jun	$493	HP001748	IC SSP Oahu I	GOODSILL - Sea Solar Power	GOODSILL ANDERSON QUINN STIFEL
Aug	$344	HP002175	IC Barlow Negotiations	GOODSILL - Barlow Energy	GOODSILL ANDERSON QUINN STIFEL
Dec	$286	HP002235	IC North Shore Wind Power Negotiations	GOODSILL - North Shore Wind	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$6,894				
Activity 122 (RA PIC)- YR2006:					
Aug	$2,349	G0000292	New Contracts	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
Aug	$1,432	G0000292	New Contracts	GOODSILL-NUG POLICY	GOODSILL ANDERSON QUINN STIFEL
	$3,781				
Feb	$542	HP000025	IC-NUG Guidelines Development	RUSH - Interconnection Guidelines	RUSH MOORE LLP
May	$1,919	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES Hawaii PPA	GOODSILL ANDERSON QUINN STIFEL
Oct	$229	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES Hawaii PPA	GOODSILL ANDERSON QUINN STIFEL
Dec	$2,626	HP001133	AES-HI 5 MW Prop PPD	GOODSILL-AES Hawaii PPA	GOODSILL ANDERSON QUINN STIFEL
	$4,774				
Jun	$602	HP001748	IC SSP Oahu I	*Accrue Unpaid Invoices at Quarter End*	GOODSILL ANDERSON QUINN STIFEL
Oct	$143	HP001748	IC SSP Oahu I	GOODSILL - Sea Solar Power	GOODSILL ANDERSON QUINN STIFEL
Dec	$1,003	HP001748	IC SSP Oahu I	GOODSILL - Sea Solar Power	GOODSILL ANDERSON QUINN STIFEL
	$1,748				
Aug	$1,318	HP002305	IC Kahuku Wind Farm (Shell Wind) Neg	GOODSILL - Shell Kahuku Wind	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$12,163				
Activity 700 (RA PYB)- YR2004:					
Jun	$733	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
July	$764	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
July	$1,589	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Aug	$235	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Oct	$325	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
Nov	$496	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Dec	$2,646	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
	$6,788				
Jun-Upt	$4,705	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Jul-Upt	$386	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Aug-Upt	$496	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Sep-Upt	$220	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Oct-Upt	$3,953	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Nov-Upt	$220	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
	$9,980				
TOTAL	$16,768				
Activity 700 (RA PYB)- YR2005:					
April	$460	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
June	$3,683	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
July	$5,469	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Sept	$2,554	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Nov	$6,198	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Dec	$6,225	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Dec	$1,115	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
	$25,704				
Feb-Upt	$5,635	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Mar-Upt	$1,315	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Apr-Upt	$1,863	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
May-Upt	$1,917	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Jun-Upt	$3,107	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Jul-Upt	$948	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Aug-Upt	$2,027	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Sep-Upt	$548	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Nov-Upt	$1,211	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Dec-Upt	$1,633	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
	$20,204				
TOTAL	$45,908				
Activity 700 (RA PYB)- YR2006:					
Mar	$16,834	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
April	$956	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier
May	$9,215	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Aug	$13,932	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Aug	$14,838	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Aug	$8,688	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Sept	$12,922	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Oct	$4,386	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Dec	$267	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Dec	$10,620	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
Dec	$6,093	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
	$98,751				
Jan-Upt	$5,923	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Feb-Upt	$102	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Mar-Upt	$602	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Jun-Upt	$219	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Aug-Upt	$158	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
Sep-Upt	$164	HP001789	Comp Bid Work - Generation Planning Div	Contract PYA03022- Merrimack Energy (017792)	Merrimack Energy
	$7,168				
TOTAL	$105,919				

Activity 700(RA PYB) - As of 5/31/07:

Jan-Upt	$67	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
March	$423	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
April	$555	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
May-Upt	$422	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
TOTAL	$1,467				
June-Upt*	$1,189	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
July-Upt*	$1,996	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
July-Upt*	$96	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
July-Upt**	$2,470	HP001789	Comp Bid Work - Generation Planning Div	GOODSILL-Competitive Bidding Dock(98341	GOODSILL ANDERSON QUINN STIFEL
	$5,751				

*Invoices received but not yet recorded

**Invoice not yet submitted by Goodsill (covers work performed in June)

Activity 210(RA PXB) - As of 5/31/07:

May	$1,183	HP002574	Competitive Bid Framework Imp	Merrimack Energy Group, Inc.	Merrimack Energy Group, Inc.
June-Upt*	$2,942	HP002574	Competitive Bid Framework Imp	Merrimack Energy Group, Inc.	Merrimack Energy Group, Inc.

*Invoice received but not yet recorded

Month	Amount	Work Order / Project #	Work Order / Project Description	Invoice Item	Supplier

Annual Totals

2002	$13,245
2003	$204,128
2004	$270,009
2005	$80,279
2006	$123,686
2007	$2,880
	=========
	$694,227

CA-IR-414

Ref: HECO-614 (Filling of Positions by RA).

Please provide the following:

a. Updated HECO-614 indicating all changes in actual staffing in 2006 and 2007, through June 2007.

b. Explain any revisions to T-6 testimony at pages 25 through 55 that are required to describe any changes in the Company's staffing plans or staffing requirements.

HECO Response:

a. See Attachment 1 to this response for an update to HECO-614 as of June 30, 2007.

b. HECO's staffing plans for Production were presented and discussed in detail in HECO T-6 direct testimony. The staffing plan was subsequently revised in the June 2007 Update to account for the reorganization of the Power Supply Process Area, including:

(1) Creation of a new System Planning Department and a new Generation Bidding Division within that department.

(2) Creation of a new Fuels infrastructure Division within the Power Supply Services Department.

(3) Consolidation of financial administrative activities in a new group in the PSO&M Department.

As a consequence of the reorganization there was a net of five new positions added to Production: 1) Director, Generation Bidding; 2) Project Manager, Generation Bidding; 3) Project Manger, Generation Bidding; 4) Director, Fuels Infrastructure Division; and 5) Administrator PSO&M. As described in the responses to CA-IR-424, CA-IR-425, and CA-IR-426, these positions have been or will be filled in the immediate future. As a result of these five additional positions, the total Process Area staffing count increased from the original HECO-614 amount of 455 to 460. In addition, two transfers occurred, 1) the Secretary position in VP-Special Projects moved to Power Supply Services Dept (PSSD)

and 2) the position in the Sr. VP-Operations' Office moved to the Manager's position in PSSD. The total count for the Power Supply Process Area increased to 462 as shown in the updated HECO-614 in Attachment 1 to this response.

At any particular time in the year, there is active recruitment to fill the vacant trades and craft positions in the Maintenance Division of the PSO&M Department. Also, at any particular time, there is active recruitment to fill entry-level vacancies in the Operations Division (i.e., Equipment Operator Trainee) and Maintenance Division (i.e., Condenser Cleaner and Helper). In fact, as of July 19, 2007, there were three entry level positions vacant and Job Vacancy Requisitions ("JVRs") being processed to fill them). The entry-level vacancies occur whenever there are retirements, transfers and movement within the workforce to backfill the vacancies. It is a continual process to recruit and fill entry-level vacancies that are created by such movement in the workforce.

There were two other staff position vacancies in the PSO&M Department as of July 19, 2007, for which JVRs have not yet been submitted: (1) Rotating Equipment Specialist; and (2) Technical Trainer. New position descriptions are being prepared for both of the positions and then JVRs will be processed to initiate the recruitment process, with a goal to fill the vacancies in the immediate future.

There is one staff position vacancy in the Environmental Department as of July 19, 2007, the Environmental Scientist, for which a JVR is in process. The need for the Environmental Scientist position continues and is expected to be filled as early as August 2007. This would require expedited recruitment once the JVR is approved.

Thus, other than the new positions identified in the June 2007 update, and in spite of the vacancies that currently exist, there is no change in the forecast workforce needed to conduct the business of HECO Production.

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	Nov	Dec	TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
ENVIRONMENTAL DEPT																						
ADMIN																						
Manager	JA	1	1				0							1							0	1
Sr. Environ Scientist	JA	1	1				0							1							0	1
Secretary	JA	1	1				0							1							0	1
Clerk Typist	JA	1	1				0							1							0	1
Admin Subtotal		4	4	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4
Air Quality / Noise																						
Prin Environ Scientist	JB	1	1				0						-1	0	1						0	1
Sr. Environ Scientist	JB	3	3				0							3		1					1	4
Environ Scientist	JB	1	1				0							1							0	1
Air Quality/Noise Subtotal		5	5	0	0	0	0	0	0	0	0	0	-1	4	1	1	0	0	0	0	1	6
Chemistry																						
Lab Supervisor	JC	1	1				0							1							0	1
Analytical Chemist	JC	5	5				0						-1	4		1					0	5
Chemistry Subtotal		6	6	0	0	0	0	0	0	0	0	0	-1	5	0	1	0	0	0	0	0	6
Water & Hazardous Materials																						
Prin Environ Scientist	JW	1	1				0							1							0	1
Sr. Environ Scientist	JW	4	4				0							4							0	4
Environl Scientist	JW	1	1				0							1		1					1	2
Environl Specialist	JW	1	1				0							1							0	1
Water & Haz Mat Subtotal		7	7	0	0	0	0	0	0	0	0	0	0	7	0	1	0	0	0	0	1	8
TOTAL ENVIRONMENTAL		22	22	0	0	0	0	0	0	0	0	0	-2	20	1	3	0	0	0	0	2	24
POWER SUPPLY ENGINEERING																						
ADMIN																						
Manager	YA	1	1				0							1							0	1
Secretary	YA	1	1				0							1							0	1
Administrator	YA	1	1				0							1							0	1
Admin Subtotal		3	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3

(UPDATE HECO-614)

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
Support Staff																						
Project Cleck	YC	1	1				0							1							0	1
Drawing Control Clerk	YC	1	1				0							1							0	1
Support Staff Subtotal		**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Technical Services																						
Superintendent	YE	1	1				0							1							0	1
Senior Staff Engineer	YE	5	5				0							5		1					1	6
Staff Engineer	YE	2	2	-1			-1			1				2							1	2
Technical Services Subtotal		**8**	**8**	**-1**	**0**	**0**	**-1**	**0**	**0**	**1**	**0**	**0**	**0**	**8**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**9**
Electrical Engineering Section																						
Sr. Supervising Engi	YF	1	1				0							1							0	1
Engineer II	YF	3	1		2		2							3		1					1	4
Engineer I (DesignerII)	YF	6	5	1			1							6							0	6
Electrical Eng Sec Subtotal		**10**	**7**	**1**	**2**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	**11**
Drafting Section																						
Drafting Technician II	YG	2	2				0							2							0	2
Drafting Subtotal		**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
Project Manangement																						
Project Manager	YJ	5	4	-1		1	0							4							0	4
Project Management Subtota		**5**	**4**	**-1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
Mechanical Engineering Section																						
Prin Eng, Power Plt Eng	YM	1	1				0							1							0	1
Sr. Supervising Eng	YM	1	1				0							1							0	1
Engineer II	YM	6	6			1	1	1						8		1					2	9
Engineer II (Designer II)	YM	3	3				0							3							0	3
Mechanical Eng Sec Subtota		**11**	**11**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	**14**
TOTAL POWER SUPPLY ENG		**41**	**37**	**-1**	**2**	**2**	**3**	**1**	**0**	**1**	**0**	**0**	**0**	**42**	**0**	**3**	**0**	**0**	**0**	**0**	**5**	**45**

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
SYSTEM PLANNING DEPT																						
ADMIN																						
Manager	XA	0	0				0	1						1							1	1
Secretary	XA	0	0				0	1						1							1	1
Admin Subtotal		0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	2
Generation Bidding																						
Gen Bidding Director	XB	0	0				0						1	1							1	1
Staff Engineer	XB	0	0				0							0		2					2	2
Air Quality/Noise Subtotal		0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	3	3
GENERATION PLANNING																						
Generation Planning Dir	YB	1	1				0							1							0	1
Sr Plannning Engineer	YB	3	3				0							3							0	3
Planning Engineer	YB	5	5	-1		1	0							5							0	5
Generation Planning Subtota		9	9	-1	0	1	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	9
TRANSMISSION PLANNING																						
Transm Planning Dir	YT	1	1			-1	-1	1						1							1	1
Lead Transm Plan Eng	YT	3	3				0						-2	1		2					0	3
Transm Planning Eng	YT	3	3		1		1					-1		3		1					0	4
Transmission Planning Subt		7	7	0	1	-1	0	1	0	0	0	-1	-2	5	0	3	0	0	0	0	1	8
TOTAL SYSTEM PLANNING		16	16	-1	1	0	0	3	0	0	0	-1	-1	17	0	5	0	0	0	0	6	22
POWER SUPPLY SERVICES DEPT																						
ADMIN																						
Power Supply Srvc Mngr	IA	1	1				0							1							0	1
Power Supply Srvc Secr	IA	1	1				0							1							0	1
Administrator	IA	1	1				0							1							0	1
Contracts Administrator	IA	1	0				0							0							0	0
Admin Subtotal		4	3	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	2007 Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
POWER PURCHASE																						
Power Purchase Dir	IC	1	1				0							1							0	1
Power Purch Contr Adm	IC	3	3				0							3							0	3
Administrative Assistant	IC	2	2				0							2							0	2
Power Purchase Subtotal		6	6	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	6
FUELS RESOURCES																						
Fuel Resources Director	IF	1	1				0							1							0	1
Fuels Contracts Admin	IF	1	1				0					-1		0		1		1			1	2
Fuels Records Clerk	IF	1	1				0							1							0	1
Forecast Plan Analyst	IF	1	1		-1		-1							0							0	0
Fuels Resources Subtotal		4	4	0	-1	0	-1	0	0	0	0	-1	0	2	0	1	1	0	0	0	1	4
FUELS INFRASTRUCTURE																						
Fuel Infra Director	IJ	0	0				0					1		1							1	1
Staff Engineer	IJ	0	0				0							0	1	1					2	2
Support Staff Subtotal		0	0	0	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	3	3
TOTAL POWER SUPPLY SER		14	13	0	-1	0	-1	0	0	0	0	0	0	12	1	2	1	0	0	0	4	16
POWER SUPPLY O&M ADMIN																						
Power Supply O&M Mngr	IB	1	1				0							1							0	1
Mgr Special Projects	IB	0	1				0							1						-1	-1	0
Power Supply O&M Sec	IB	1	1				0							1							0	1
Senior Technical Analyst	IB	0	1				0							1							0	1
Budget Analyst	IB	1	1				0							1	1						1	2
Technical Trainer	IB	1	0				0							0							0	0
Environmental Specialist	IB	0	0				0		1					1							1	1
Env Compliance Superv	IB	1	1				0							1							0	1
Station Chemist	IB	2	2				0		-1		1	-1	1	2							0	2
Admin Subtotal		7	8	0	0	0	0	0	0	0	1	-1	1	9	1	0	0	0	0	-1	1	9

CA-IR-414
DOCKET NO. 2006-0386
ATTACHMENT 1
PAGE 4 OF 8
(UPDATE HECO-614)

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	2007 Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
TRAINING																						
Senior Supv, Trainer	ID	0	1				0							1							0	1
Technical Trainer	ID	0	1				0							1				1			1	2
Training Subtotal		**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**3**
OPERATIONS																						
Honolulu Senior Superv	IH	1	1				0							1							0	1
Shift Supervisor	IH	4	5				0					-1		4	1						0	5
Honolulu Operators	IH	21	20			-2	-2	1				1		20			1				3	21
Kahe Senior Shift Suprv	IK	1	1				0							1							0	1
Kahe Station Aide	IK	1	1				0							1							0	1
Shift Supervisor	IK	7	6		-1	2	1							7							0	7
Kahe Operators	IK	49	48	2			2	-1	3	-1				51			1				2	52
Operation Superint	IO	1	2				0							2							0	2
Operation Pwr Eng	IO	1	0				0							0							0	0
Waiau Sr Shift Super	IW	1	1				0							1							0	1
Waiau Station Aide	IW	1	1				0							1							0	1
Shift Supervisor	IW	7	6			-1	-1	1				1		7							2	7
Waiau Operators	IW	49	52			2	2	-4	5	-1		1		55			2				3	57
Operations Subtotal		**144**	**144**	**2**	**-1**	**1**	**2**	**-3**	**8**	**-2**	**0**	**2**	**0**	**151**	**1**	**0**	**4**	**0**	**0**	**0**	**10**	**156**
PLANNING																						
Planning & Eng Super	IP	1	1				0							1							0	1
Power Plant Clerk	IP	1	1				0							1							0	1
Senior Supervisor	IP	1	2				0			-1	1			2							0	2
Work Management Spec	IP	0	0				0			1				1							1	1
Resource Planner	IP	8	7			0	0		1	-1	2		-1	8			2				3	10
Planning/Project Coord	IP	1	1			-1	-1							0							0	0
O&M Engineer	IP	0	2	1	1	1	3							5			-1				-1	4
PDM Supervisor	IP	1	0				0							0							0	0
PDM Specialist	IP	3	3				0				-1			2		2					1	4
BRO Engineer	IP	2	1				0							1				1			1	2
Temporary	IP	1	0				0							0							0	0
Planning Subtotal		**19**	**18**	**1**	**1**	**0**	**2**	**0**	**1**	**-1**	**2**	**0**	**-1**	**21**	**0**	**2**	**1**	**1**	**0**	**0**	**5**	**25**

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
MAINTENANCE																						
Kahe																						
Kahe Maint Supervisor	IL	2	2				0							2							0	2
Boiler Working Foreman	IL	1	1				0							1							0	1
Elec Working Foreman	IL	1	1				0							1							0	1
Machinist Work Foreman	IL	1	1				0							1							0	1
Senior Electrician	IL	4	4				0							4							0	4
Machinist	IL	3	3				0							3							0	3
Pipefitter Mechanic	IL	4	3				0							3						2	2	5
Certified Comb Welder	IL	3	3				0						1	4							1	4
Insulator	IL	0	0	1			1							1							0	1
Control Technician	IL	6	6				0							6						2	2	8
Helper	IL	2	2				0							2							0	2
Mob Crn & Hvy Eq Oper	IL	1	1				0							1							0	1
Kahe Maint Subtotal		**28**	**27**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**29**	**0**	**0**	**0**	**0**	**0**	**4**	**5**	**33**
Maint Admin																						
O&M Maint Superint	IM	1	1				0							1							0	1
Rotating Equip Spec	IM	0	0				0							0						1	1	1
Maintenance Clerk	IM	1	1				0							1							0	1
Maint Admin Subtotal		**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**
Honolulu																						
Hono Maint Supervisor	IN	1	1				0						1	2	-1						0	1
Boiler Working Foreman	IN	1	1				0							1							0	1
Elec Working Foreman	IN	1	1	-1		1	0							1							0	1
Machinist Work Foreman	IN	1	1				0							1							0	1
Senior Electrician	IN	1	1				0							1							0	1
Machinist	IN	1	1				0							1							0	1
Pipefitter Mechanic	IN	0	1				0							1							0	1
Welder	IN	0	0				0						1	1							1	1
Insulator	IN	0	0				0							0							0	0
Control Technician	IN	2	2				0			1				3							1	3
Honolulu Maint Subtotal		**8**	**9**	**-1**	**0**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**12**	**-1**	**0**	**0**	**0**	**0**	**0**	**2**	**11**

CA-IR-414
DOCKET NO. 2006-0386
ATTACHMENT 1
PAGE 6 OF 8
(UPDATE HECO-614)

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
Travel																						
Traveling Maint Superv	IT	4	4				0							4							0	4
Senior Supv Overhauls	IT	0	1				0							1							0	1
Boiler Working Foreman	IT	2	2				0							2							0	2
Elec Working Foreman	IT	2	1	1			1							2							0	2
Machinist Work Foreman	IT	2	2				0							2							0	2
Insulator Work Foreman	IT	1	1				0							1							0	1
Condenser Crew Leader	IT	1	1				0							1							0	1
Senior Electrician	IT	8	9	1		-1	0				1			10							1	10
Machinist	IT	9	8				0							8						1	1	9
Pipefitter Mechanic	IT	5	6		-1		-1							5						2	2	7
Certified Equip Mechanic	IT	1	1		0		0	1						2							1	2
Certified Comb Welder	IT	7	8		-1		-1							7			2				2	9
Control Technician	IT	7	7		2		2			-1				8						1	0	9
Helper	IT	3	3				0							3							0	3
Insulator	IT	9	9	-2			-2					2		9					-1	2	3	10
Mob Crane & Equip Oper	IT	0	0				0							0	1						1	1
Condenser Cleaner	IT	6	7	1			1	-1				-1	1	7		1					0	8
Travel Crew Subtotal		**67**	**70**	**1**	**0**	**-1**	**0**	**0**	**0**	**-1**	**1**	**1**	**1**	**72**	**1**	**1**	**2**	**0**	**-1**	**6**	**11**	**81**
Waiau																						
Waiau Maint Supervisor	IX	2	2				0							2							0	2
Boiler Working Foreman	IX	1	1				0							1							0	1
Elec Working Foreman	IX	1	1				0							1							0	1
Machinist Work Foreman	IX	1	1				0							1							0	1
Senior Electrician	IX	2	4				0			-1		1		4							0	4
Machinist	IX	3	3				0							3							0	3
Pipefitter Mechanic	IX	4	4		1		1							5							0	5
Certified Comb Welder	IX	2	2		1		1					1		4							1	4
Insulator	IX	0	0	1			1							1							0	1
Control Technician	IX	6	6				0			1				7						1	2	8
Helper	IX	1	1				0				-1			0						1	0	1
Mob Crn & Hvy Eq Oper	IX	1	1				0							1							0	1
Waiau Maint Subtotal		**24**	**26**	**1**	**2**	**0**	**3**	**0**	**0**	**0**	**-1**	**2**	**0**	**30**	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**32**
Maintenance Subtotal		**129**	**134**	**2**	**2**	**0**	**4**	**0**	**0**	**0**	**0**	**3**	**4**	**145**	**0**	**1**	**2**	**0**	**-1**	**13**	**22**	**160**

Hawaiian Electric Company, Inc.
2007 Rate Case - Power Supply Process Area
Filling of Vacancies - Actuals through June 30, 2007

Position	RA	2005 Actual	9/06 YTD Actual	2006 Oct	2006 Nov	2006 Dec	2006 TOT	2007 Actual Jan	Feb	Mar	Apr	May	Jun	YTD 06/07	2007 Projected Jul	Aug	Sep	Oct	Nov	Dec	TOT	TY 2007
TOTAL POWER SUPPLY O&M		299	306	5	2	1	8	-3	9	-3	3	4	4	328	2	3	7	2	-1	12	39	353
POWER SUPPLY - VP																						
Vice President	7V	1	1				0							1							0	1
VP Secretary	7V	1	1				0							1							0	1
TOTAL POWER SUPPLY - VP		2	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
TOTAL PROCESS AREA		394	396	3	4	3	10	1	9	-2	3	3	1	421	4	16	8	2	-1	12	56	462

Count as of 12/31/06 = 406
Count as of 06/30/07 = 421
Count projected at 2007 YE = 462

NOTE: Count by Dept and Process Area different from HECO-1403 Exhibit, Summary of Recorded and Average Number of Employees by by employee count of one. The one count difference is due to the expected vacancy of the PSSD Transm Planning Dir in late Dec 2006 and the hiring of two Kahe Shift Supervisor in late Dec. 2006.

CA-IR-415

Ref: HECO-613, (Actual and Projected VP-Power Supply Employee Counts).

Please provide the following:

a. Updated HECO-613, adding columns for:
   1. 2006 Actual EOY employee counts;
   2. Actual June 30, 2007 employee counts;
   3. Test Year 2005 HECO-proposed employee counts; and
   4. Test Year 2005 settlement approved employee counts.

b. Explain any revisions to HECO plans to ultimately achieve the employee count values shown for "2007 Test Year" within the remaining months of 2007, given your response to part (a)(2) of this information request.

c. For what reasons is it reasonable to continue to assume that the challenges faced by HECO in filling vacancies, as discussed by HECO T-6, will be resolved by year-end 2007, such that all the currently vacant positions included in test year projected production labor expenses will ultimately be filled?

d. Provide complete copies of all studies, reports, projections, analyses and other documents associated with your responses to parts (b) and (c) of this information request.

HECO Response:

a. See Attachment 1 to this response for an update to HECO-613, including: 1) 2006 Actual EOY employee counts; 2) Actual June 30, 2007 employee counts; and 3) Test Year 2005 HECO-proposed employee counts. Regarding the 2005 Settlement Approved employee counts, the Consumer Advocate proposed a labor and benefits test year expense reduction based on the average test year concept and maintained that only one-half of the annual cost of new positions filled over the course of the test year should be included in revenue requirements. In the interest of compromise and to settle the issue in the proceeding, HECO accepted the Consumer Advocate's proposed labor and benefits adjustment. (See HECO's Opening Brief, Docket No. 04-0113, Exhibit II, Page 2.)

When the as-filed 2007 Test Year, Power Supply Employee Count in HECO-613 of 455 employees is compared with Attachment 1 Revised Test Year 2007 employee count, the difference is 7. The difference of 7 is due to:

1) 5 positions added – As shown in HECO T-6's June 2007 Update, Attachment 1, Power Supply process area added 1- Generation Bidding Director, 2- Staff Engineers (Project Managers), 1- Fuel Infrastructure Director, and 1- PSOM Administrator. These added positions are fully described in the June 2007 Update.
2) 2 position transfers – Also due to the reorganization, the Secretary position in VP-Special Projects moved to Power Supply Services Dept (PSSD) and the Manager of Operations Strategic Planning in the Sr. VP-Operations' Office moved to the Manager's position in PSSD. These employee count changes can be seen when comparing HECO-1403 and HECO's responses to CA-IR-302 (employee count as of 5/10/07) and CA-IR-465 (employee count as of 6/30/07).

b. As described in HECO T-6, pages 38-40, HECO continues to experience difficulties attracting and hiring qualified individuals to fill its vacancies. The situation is particularly acute in the Maintenance Division of the PSO&M Department. The expanded efforts enumerated in HECO T-6, page 39, have continued. In particular, the Leeward Community College has launched its "Process Operator" curriculum and HECO is directly supporting and participating in the program. The development of new in-house training and apprentice programs is underway. The initial class of insulator trainees will begin in the third quarter of 2007, and new apprentice programs for electricians and machinists are targeted to commence in early 2008.

c. For the reasons discussed in HECO T-6, there are many challenges to fill all the vacancies in 2007, and there is no guarantee that all of the challenges will be resolved in the near-term. However, that does not change the fact that these positions need to be filled to perform the work that is required at the most reasonable cost. In the near-term, the work will be performed by HECO personnel working excess overtime and supplemental labor will be contracted at higher rates than forecast. In the longer term, HECO will pursue a parallel path to overcome the challenges. One path will be to continue its aggressive hiring practices (described in HECO T-6, pages 25 to 56) and, in particular, its efforts to hire journeyman-level trades and crafts personnel to fill the vacancies in the Maintenance Division. The second path would consider increased in-house training and apprenticeship programs to develop journeyman-level personnel through a multi-year program. HECO is currently considering the institution of apprenticeship programs for electricians, machinists, and instrument technicians as early as the first quarter of 2008.

As noted above, HECO requires the additional employees in the O&M budget (or other resources) to perform the work that the Company expects to complete in 2007. By reflecting the resource requirements as regular employees, the Company also has forecasted the associated labor costs that are required to perform such work. (See HECO T-14, pages 3-4.) Adjusting the test year O&M expenses to reflect the fact that some of positions would not be filled at the beginning of and/or during the course of 2007 would result in a significant understatement of the O&M expenses expected for 2007, 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 accomplish the expected work load.

d. See the response to CA-IR-346 and its attachments.

Hawaiian Electric Company, Inc.
2007 TEST YEAR

VP-POWER SUPPLY EMPLOYEE COUNT

(Update to CA-IR-613)

		(A) 2004 EOY REC	(A1) Ave 2005 TY	(B) 2005 EOY REC	(C) 2006 (9/30/06)	(D) 2006 PROJ EOY	(D1) 2006 REC EOY	(E) 2007 TY*	(E1) 2007YTD (6/30/07)
	VP - POWER SUPPLY								
1	Environmental Department	24	24	22	22	22	22	24	20
2	Power Supply Engineering Department (formerly Planning & Engineering)	41	55	41	37	40	36	45	42
3	Power Supply O&M Department	296	338	299	306	314	304	353	328
4	Power Supply Services Department (1)	32	13	30	29	29	29	16	12
5	VP-Power Supply's Office	2	2	2	2	2	2	2	2
5a	System Planning Department (1)	0	0	0	0	0	0	22	17
6	TOTAL	395	432	394	396	407	393	462	421

* As Revised 2007 TY count agrees with CA-IR-465, Actual Empl Ct vs. 2007 EOY TY Empl Ct 6/30/07.

Added Columns to Exhibit (Update to CA-IR-613)

(A1) - 2005 Test Year - Agrees with 2005 Test Year, HECO-1612, Summary--Average Employees. Separated count for departments PSO&M and Power Supply Services identified as Production.

(D1) - 2006 Recorded Count - Agrees with CA-IR-27, page 14.

(E1) - 2007 YTD, 6/30/07 - Agrees with CA-IR-465, Actual Empl Ct vs. 2007 EOY TY Ct 6/30/07.

Added Row to Exhibit:

5a - New Department from Power Supply Process Area reorganization - See HECO T-6 June 2007 Update for explanation of employee changes.

(1) - Shift in employees from PSSD to System Planning; transfer of Mgr of Strategic Planning & Secretary VP Special Proj to PSSD. See June 2007 Update and this response for explanation of employee changes.

CA-IR-416

Ref: HECO Response to CA-IR-3, HECO T-6, Attachment 1, page 2 (2007 Distributed Generation O&M by Month).

Please provide the following information:

a. Actual monthly expenses by line item through June 2007.

b. Explanations for individually significant variances between budgeted and actual values.

c. Updated status of the Kaiser DG unit, with revised projections of O&M, as appropriate.

d. Copy of contracts with Kaiser defining expense obligations of HECO.

e. Calculations supporting the budgeted DSG Incentive amounts set forth in Attachment 1, page 2.

HECO Response:

a. See CA-IR-337 for actual monthly expenses through May 2007.

b. See CA-IR-337 for comments on significant variances between budgeted and actual amounts. An adjustment was identified for refueling contract services totaling $185,000 and was reported in HECO T-6's June 2007 Update.

c. As stated in CA-IR-337, the Kaiser Dispatchable Standby Generator (DSG) project was cancelled. An adjustment of $55,000 for the DSG non- labor has been reported in the June 2007 Update. See also response to CA-IR-484 for a copy of HECO's March 27, 2007 letter to Kaiser Permanente withdrawing the Company's proposed DSG Agreement.

d. As stated in response to part c., the Kaiser DSG project has been cancelled and HECO has no expense obligations.

e. The Kaiser DSG project has been cancelled and the DSG incentive removed as reported in HECO T-6's June 2007 update.

CA-IR-417

Ref: HECO Responses to CA-IR-72, Attachment 1 and CA-IR-74, Attachment 5 (Quarterly Employee Count Data).

Please provide the following information:

a. Updated actual Operating Division Staff Positions by Power Plant, adding 2Q2007.

b. Updated actual Maintenance Division Staff Positions by Power Plant, adding 2Q2007.

HECO Response:

a. See Attachment 1 to this response.

b. See Attachment 2 to this response.

Hawaiian Electric Company Inc.
2007 Test Year
PSO&M Operating Division -- Staff Positions by Power Plant

RA	Position	3/31/04	6/30/04	9/30/04	12/31/04	3/31/05	6/30/05	9/30/05	12/31/05	3/31/06	6/30/06	9/30/06	12/31/06	3/31/07	6/30/07	
IO	Operating Superintendent	1	1	1	1	1	1	1	1	1	0	0	0	0	0	
	Station Superintendent	0	0	0	0	0	0	0	0	0	2	2	2	2	2	
	Operations Power Engr	0	0	2	2	2	2	2	1	1	0	0	0	0	0	
	Subtotal	1	1	3	3	3	3	3	2	2	2	2	2	2	2	(1)
IK	Sr. Supervisor	1	1	1	1	2	1	1	1	1	1	1	1	1	1	
	Shift Supervisor	8	7	7	7	6	6	7	7	7	6	6	7	7	7	
	Control Operator	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	Jr. Control Operator	15	15	15	15	15	15	15	15	15	15	15	15	15	15	
	Utility Operator	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Equipment Operator	9	14	12	10	8	11	8	11	13	10	10	13	13	15	
	Operator Trainee	5	0	0	5	5	0	8	3	3	2	3	2	3	1	
	Power Plant Clerk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Subtotal	59	58	56	59	57	54	60	58	60	55	56	59	60	60	(1)
IW																
	Sr. Supervisor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Shift Supervisor	7	7	7	7	7	7	7	7	7	6	6	5	6	7	
	Control Operator	13	13	13	13	15	15	15	15	15	15	15	15	15	15	
	Jr. Control Operator	13	13	13	13	15	15	15	15	15	15	15	15	15	15	
	Utility Operator	8	8	8	8	9	10	10	10	10	10	10	10	10	10	
	Equipment Operator	10	12	11	8	7	9	8	6	8	10	10	12	9	10	
	Operator Trainee	2	0	6	13	7	0	7	3	5	2	2	2	5	5	
	Power Plant Clerk	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Subtotal	55	55	60	64	62	58	64	58	62	60	60	61	62	64	(1)
IH																
	Sr. Supervisor	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
	Shift Supervisor	4	4	4	4	4	4	4	4	4	4	5	5	5	4	
	Control Operator	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Jr. Control Operator	5	5	5	5	5	5	5	5	5	5	5	5	5	5	
	Utility Operator	2	2	2	4	5	5	5	5	5	5	5	5	5	5	
	Equipment Operator	0	0	0	0	1	4	4	6	5	6	5	3	3	5	
	Operator Trainee	0	0	0	0	0	0	0	0	0	0	0	0	1	0	
	Power Plant Clerk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Subtotal	17	17	17	19	21	24	24	26	25	26	26	24	25	25	(1)
	Grand Total	132	131	136	145	143	139	151	144	149	143	144	146	149	151	

NOTE: (1) Agrees with CA-IR-465, Actual Employee Count vs 2007 EOY Test Year Employee Count as of June 30, 2007.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
PSO&M Maintenance Division - Staffing - 2007 - 1st and 2nd Quarter

	1st Qtr '07 Kahe (PIL)	1st Qtr '07 Waiau (PIX)	1st Qtr '07 Hono (PIN)	1st Qtr '07 Travel (PIT)	1st Qtr '07 Admin (PIM)	1st Qtr '07 Total
O&M Maint Superint					1	1
Rotating Eq Spec						0
Maint Clerk					1	1
Sen Supv Overhaul				1		1
Maint Supervisor	2	2	1	4		9
Working Foreman	3	3	3	7		16
Condens Crew Leader				1		1
Electrician	4	3	1	9		17
Machinist	3	3	1	8		15
Pipefitter Mech	3	5	1	5		14
Cert Equip Mech				2		2
Cert Comb Welder	3	3		7		13
Insulator	1	1		7		9
Control Tech	6	7	3	8		24
Helper	2	1		3		6
Mob Crn & Hvy Eq Op	1	1				2
Condens Cleaner				7		7
Total	28	29	10	69	2	138

	2nd Qtr '07 Kahe (PIL)	2nd Qtr '07 Waiau (PIX)	2nd Qtr '07 Hono (PIN)	2nd Qtr '07 Travel (PIT)	2nd Qtr '07 Admin (PIM)	2nd Qtr '07 Total
O&M Maint Superint					1	1
Rotating Eq Spec						0
Maint Clerk					1	1
Sen Supv Overhaul				1		1
Maint Supervisor	2	2	2	4		10
Working Foreman	3	3	3	7		16
Condens Crew Leader				1		1
Electrician	4	4	1	10		19
Machinist	3	3	1	8		15
Pipefitter Mech	3	5	1	5		14
Cert Equip Mech				2		2
Cert Comb Welder	4	4	1	7		16
Insulator	1	1		9		11
Control Tech	6	7	3	8		24
Helper	2	0		3		5
Mob Crn & Hvy Eq Op	1	1				2
Condens Cleaner				7		7
Total	29	30	12	72	2	145
	(1)	(1)	(1)	(1)	(1)	

NOTE: (1) Agrees with CA-IR-465, Actual Employee Count vs 2007 EOY Test Year Employee Count as of June 30, 2007.

CA-IR-418

Ref: HECO Response to CA-IR-77, Attachments 1 and 2 (Maintenance Backlog Report Data).

Please provide the following information:

a. Complete copies of the "DARS 1877 Excel Report, as used to prepare Attachment 1 and 2.

b. Updated current Backlog Reports, prepared on a basis consistent with Attachments 1 and 2.

c. Complete copies of the "DARS 1877 Excel Report, as used to prepare your response to part (b) of this information request.

HECO Response:

a. As stated in the response to CA-IR-333, the DARS 1877 Excel Report for the reporting periods in CA-IR-77 cannot be provided as the reports were not retained. As described in HECO's response to CA-IR-77, HECO does not produce and retain daily backlog reports, and it is not possible to reproduce a backlog report for any prior day. Once a work order is closed, it is no longer part of the data on which reports are based because the software tracks only open work orders.

b. The updated and current Backlog Report was provided as Attachment 1 to the response to CA-IR-333.

c. The complete copy of the "DARS 1877 Excel Report" used to prepare the Backlog Report referred to subpart b, above, was provided as Attachment 2 to the response to CA-IR-333.

CA-IR-419

Ref: HECO Responses to CA-IR-74, Attachment 10; CA-IR-234, page 2 (Actual Maintenance Labor and Outside Services Expenses).

According to the CA-IR-234 response, "Consequently, since the Maintenance Division is not fully staffed in 2007 as of this date, the actual labor expense for HECO Maintenance Division is expected to be less than estimated and the corresponding actual outside service expense is expected to be higher than estimated." Please provide the following:

a. Actual monthly Maintenance Division labor expense for January through June 2007, prepared on a basis consistent with CA-IR-74, Attachment 10.

b. Actual monthly Maintenance Division outside services expense for January through June 2007, prepared on a basis consistent with CA-IR-74, Attachment 10.

c. Explanations of the extent to which the substitution of outside services for company labor has taken place, as anticipated within the quoted language from CA-IR-234.

HECO Response:

a. The actual monthly Maintenance Division labor expense for January through May 2007, including direct labor and overheads, is provided in Attachment 1 to this response, and totals $5,638,000 for 2007 year to date. Attachment 10 to the response to CA-IR-74 has been updated to include this total, and is provided as Attachment 2 to this response.

b. The actual monthly Maintenance Division outside services expense for supplemental labor for January through May 2007, was provided in Attachment 4 to the response to CA-IR-346 and totals $2,009,000 for 2007 year to date.

c. As discussed in the response to CA-IR-346 subparts d through f, and confirmed by an analysis of the information presented in Attachment 2 to this response, the actual labor expense for HECO Maintenance Division for January 2007 through May 31, 2007, has been less than estimated and the corresponding actual outside service expense for supplemental labor has been higher than estimated. If the expense pattern continues at the same rate for

the last seven months of the year, the 2007 year end estimate for labor would be $13,531,000 ($5,638,000 X 12/5), which would be $1,777,000 less than $15,308,000, the updated 2007 test year estimate. The corresponding 2007 year end estimate for supplemental labor would be $4,822,000 ($2,009,000 X 12/5), which would be $2,646,000 greater than $2,176,000, the original 2007 budget estimate. The total of estimated year end labor plus estimated year end supplemental labor would then equal $18,353,000.

7/23/2007 *Rate Case - 01-07 Compare-Dept,C... 12:21PM

Acct Blk ...	Cost Category	*EE #	Jan 07 Act07$RA	Feb 07 Act07$RA	Mar 07 Act07$RA	Apr 07 Act07$RA	May 07 Act07$RA	FY07 Act07$RA
Prod Maint	LABOR	150	$1,062,390	$965,584	$976,606	$952,375	$1,058,640	$5,015,595
		155	$29,804	$18,567	-$25,764	$10,686	$26,237	$59,530
			$1,092,194	$984,152	$950,842	$963,061	$1,084,876	$5,075,125
	OVERHEADS	421	$118,031	$108,180	$109,679	$107,286	$119,510	$562,686
			$118,031	$108,180	$109,679	$107,286	$119,510	$562,686
			$1,210,225	$1,092,332	$1,060,521	$1,070,346	$1,204,387	$5,637,811
			$1,210,225	$1,092,332	$1,060,521	$1,070,346	$1,204,387	$5,637,811

Hawaiian Electric Company, Inc.
2007 Rate Case
Production O&M - Maintenance Division
Labor + Outside Service Supplementary Labor
(Dollars X 1,000)

CA-IR-74, Attachment 10 (Updated)

		(A) Labor	(B) Supp Labor	Total
	2001	8,329	1,675	10,004
	2002	8,867	1,605	10,472
	2003	9,353	1,685	11,038
	2004	9,329	2,894	12,223
	2005	10,519	3,159	13,678
	2006	11,474	3,517	14,991
Original 2007 Budget Est (1)		15,219	2,176	17,395
Upd	May07YTD	5,638	2,009	7,647

Note (1): Maintenance Labor updated to $15,308,000 per June 2007 Update.

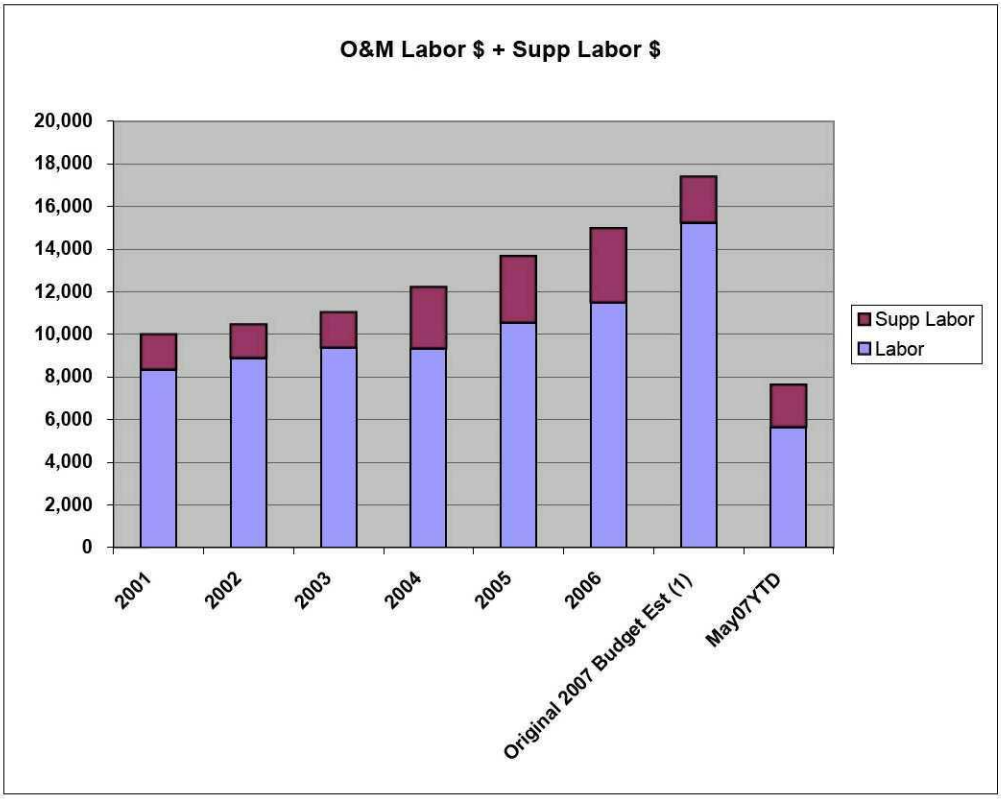
Source:

Column A: 2001-2005 and 2007TY from HECO-623; 2006 from CA-IR-32, page 93 to page 188.

Column A: May07YTD from CA-IR-419, Attachment 1

Column B: 2001-2004 from Docket No. 04-0113, CA-IR-36, Attachment 3. 2005-2007TY from CA-IR-74 Attachment 8.

Column B: May07YTD Supplemental Labor from CA-IR-346, Attachment 4.



CA-IR-420

Ref: HECO Response to CA-IR-240, page 3 (Actual Maintenance Labor and Outside Services Expenses).

According to the response, "While HECO anticipates an overrun of $5,886,000 for 2007 overhaul and outage projects, HECO is not currently seeking an increase in 2007 test year expenses. Instead, the funds initially allocated for lower priority work or the discretionary work described above and identified in Attachment 3 to this response, as well as CA-IR-241 and CA-IR-242, will be used to offset the unbudgeted increases in these overhaul and outage projects. In addition to the discretionary work identified in Attachment 3 that was deferred, other work must also be deferred to allow performance of all the necessary overhaul and outage project work and avoid significant overruns of the budget." Please provide the following:

a. Explain and provide detailed calculations supporting the currently anticipated "overrun," indicating the causes for each element of same.

b. Provide a breakdown of projected labor and non-labor expenses for the test year by overhaul and outage project and provide comparable currently "anticipated" cost levels, indicating which outages and overhaul projects are producing the "overrun."

c. Please state and explain whether Mr. Giovanni's testimony at page 17, line 13 and the Company's response to CA-IR-64 are accurate and complete, such that the anticipated higher costs associated with the anticipated "overrun" must be "abnormal."

d. Please explain whether or not the Company believes that test year projected O&M costs should be updated to reflect more current views of anticipated test year spending levels.

e. Please explain whether or not the Company is advocating no correction to test year projected expenses that are known to be overstated in a particular area, in this case "for lower priority work or the discretionary work described above and identified in Attachment 3," when and to the extent that HECO anticipates overruns in other expense areas beyond the amounts included preparing the test year forecasts.

HECO Response:

a. As summarized in Attachment 3 to the response to CA-IR-488, page 3, the currently anticipated overrun (i.e., "variance") for overhauls is $6,638,000 and the currently anticipated total cost for overhauls is $22,425,000 compared to the June 2007 update to the test year estimate. The variance is $752,000 higher than that discussed in the response to

CA-IR-240 and summarized in Attachment 4 to that response. The major contributions to the currently anticipated variance of $6,638,000 are added expense for work in the overhauls of Kahe 1, Kahe 3, Waiau 7, and Honolulu 9.

Attachment 1 to this response is a copy of the Variance Report for Overhauls presented on a "financial view" (i.e., not the "NARUC view" for the test year estimate). The report is prepared monthly and used as the basis for the year-to-date actual and year-end forecast of overhaul costs that are summarized in the monthly "Forward Looking Financial Update" presented to HECO executives (see the Attachments 2A to 2E to the response to CA-IR-408). The Variance Report for Overhauls has a specific date (e.g., the date in the report provided as Attachment 1 to this response is July 16, 2007). The costs for the months prior to that date are actual recorded costs, and the costs for the month of that date and all subsequent months are updated monthly and forecast. For each overhaul incurring expenses (positive or negative) in 2007, there are four categories of cost for each month of the year: 1) Labor, 2) Material, 3) On-costs, and 4) Outside Services. The third-to-the-last right-hand column on pages 11 and 12 of Attachment 1 is the "Budget" for 2007. The second-to-the-last right-hand column on pages 11 and 12 is the "Estimated Actual" for 2007 (including actual costs to date). The far right column is the difference between the Budget and Estimated Actual, and is labeled as the "Projected Year End Variance." As stated above, as of July 16, 2007, the total Estimated Actual for overhauls in 2007 is $22,425,000, and the total Projected Year End Variance for 2007 is $6,638,000.

b. A breakdown of the currently projected labor and non-labor expenses by overhaul is also provided in Attachment 1.

c. Both HECO T-6, page 17 and the response to CA-IR-64 correctly state that the 2007 test year Planned Maintenance Schedule (PMS) (2/14/06 rev.) in HECO-608 represents a normal overhaul year based on three criteria: 1) the PMS includes major Planned Outages (PO) consistent with the long-term major inspection schedules; 2) the PMS includes significant Maintenance Outages for units not scheduled for a PO; and 3) the work required to implement the PMS is consistent with the overall level of maintenance effort experienced in recent years. Based on these criteria, the subsequent updates to the Planned Maintenance Schedule (i.e., the 2007 PMS was revised and approved on the following dates: July 21, 2006, October 2, 2006, November 21, 2006, April 18, 2007, and June 15, 2007) also represent a normal overhaul year. However, it does not follow that a Planned Maintenance Schedule for a normal overhaul year will necessarily result in actual expenses that match estimated expenses. It is not uncommon for actual overhaul expenses to exceed estimated expenses even though the Planned Maintenance Schedule provides for a normal overhaul year. Moreover, in the present circumstances, the bulk of the overhaul expense overrun results from an administrative error in compiling 2007 budget figures, not from an "abnormal" Planned Maintenance Schedule. Therefore, the overhaul expense overrun discussed in HECO's responses to CA-IR-240 and CA-IR-488 does not support the suggestion that the 2007 Planned Maintenance Schedule is "abnormal" or that the testimony of HECO T-6 and the response to CA-IR-64 are not accurate.

As discussed in the responses to subparts a. and b., above, and the response to CA-IR-240, as 2007 has unfolded, the costs for overhauls have proven to be substantially higher than originally forecast and included in the test year estimate. As stated in the response to CA-IR-488, in general, HECO's expectation that the total amount of estimated

Other Production O&M expenses discussed in the June 2007 Update would be sufficient, despite the substantially higher overhaul expenses now expected for 2007, was based on earlier monthly Forward Looking Financial Update reports provided under protective order in the response to CA-IR-408. However, HECO's more recent look at the expected 2007 results for the Power Supply Process area, as well as current work being undertaken as part of the 2008 budget development process, indicate that the 2007 test year estimate, even with the June 2007 updates, will be inadequate. The higher costs are due to a combination of factors, including costs for steam turbine overhauls not included in the test year estimates (see the response to CA-IR-488 and its attachments) and the cost of materials and services utilized during the overhauls continuing to increase (see Attachment 2 to the response to CA-IR-488).

d. Please refer to the response to CA-IR-488, wherein HECO proposes an update to the projected O&M costs for steam turbine overhauls.

e. There is no need for any correction to test year projected expenses associated with the deferral of discretionary work. As described in CA-IR-240, page 3, the funds initially allocated for the work described in CA-IR-240, Attachment 3; CA-IR-241, Attachment 3; and CA-IR-242, Attachment 3 will be used to partially offset the unbudgeted increases in the overhaul and outage projects.

Hawaiian Electric Company - Projection Overhauls Only

OVERHAULS		Jan	Jan	Jan $	Feb	Feb	Feb $	Mar	March
On-Cost Rate	90.0%	Budget	Act	Vari	Budget	Act	Vari	Budget	Act
P0000654	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(3.0)
W6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(10.1)
01/28/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1.9)
04/17/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(120.2)
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	(135.2)
P0000844	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1.9)
K6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(29.6)
05/06/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(1.4)
07/06/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	(0.1)
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	(33.0)
P0000845	LABOR	0.0	11.7	11.7	0.0	13.7	13.7	0.0	0.8
K4 OH (2006)	MATERIAL	0.0	0.6	0.6	0.0	28.2	28.2	0.0	0.8
09/09/2006 to	ON-COSTS	0.0	10.2	10.2	0.0	11.2	11.2	0.0	0.7
11/8/2006	O/S SVCS	0.0	(29.4)	(29.4)	0.0	37.5	37.5	0.0	26.8
		0.0	(6.9)	(6.9)	0.0	90.6	90.6	0.0	29.1
P0000846	LABOR	419.1	303.2	(115.9)	38.8	297.3	258.5	0.0	135.0
K1 OH (2006)	MATERIAL	384.4	311.0	(73.4)	0.0	243.2	243.2	0.0	290.7
11/24/2006 to	ON-COSTS	353.9	249.3	(104.6)	32.8	243.7	210.9	0.0	119.1
02/22/2007	O/S SVCS	169.1	160.6	(8.5)	169.1	457.1	288.0	169.1	1,038.8
		1,326.5	1,024.1	(302.4)	240.7	1,241.3	1,000.6	169.1	1,583.6
P0000847	LABOR	0.0	5.2	5.2	0.0	12.1	12.1	0.0	23.8
W4 OH (2006)	MATERIAL	0.0	1.5	1.5	0.0	2.4	2.4	0.0	3.8
05/23/2006 to	ON-COSTS	0.0	3.8	3.8	0.0	9.2	9.2	0.0	20.1
08/11/2006	O/S SVCS	0.0	5.2	5.2	0.0	(9.7)	(9.7)	0.0	51.7
		0.0	15.7	15.7	0.0	14.0		0.0	99.4
P0000938	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10 Maj Insp	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0
		0.0	0.8	0.8	0.0	0.0	0.0	0.0	0.0
P0001105	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.2
K3 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
06/25/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2
09/14/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6
P0001106	LABOR	0.0	12.6	12.6	321.9	10.6	(311.3)	423.3	170.4
W7 OH (2007)	MATERIAL	354.3	15.2	(339.1)	354.2	20.3	(333.9)	354.3	67.1
03/25/2007 to	ON-COSTS	0.0	11.9	11.9	271.4	11.6	(259.8)	357.3	152.5
06/20/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.8
		354.3	39.7	(314.6)	947.5	42.5	(905.0)	1,134.9	514.8
P0001277	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W9 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/15/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/13/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001278	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H8 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001279	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W5 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11/4/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Hawaiian Electric Company - Projection Overhauls Only

OVERHAULS		Jan	Jan	Jan $	Feb	Feb	Feb $	Mar	March
On-Cost Rate	**90.0%**	**Budget**	**Act**	**Vari**	**Budget**	**Act**	**Vari**	**Budget**	**Act**
01/18/2008	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001280	LABOR	0.0	71.4	71.4	0.0	1.2	1.2	0.0	1.2
H9 Outage(2006)	MATERIAL	0.0	98.7	98.7	0.0	18.7	18.7	0.0	30.8
10/20/2006 to	ON-COSTS	0.0	54.1	54.1	0.0	2.0	2.0	0.0	1.1
03/01/2007	O/S SVCS	127.0	8.8	(118.2)	127.0	139.8	12.8	127.0	661.2
		127.0	233.0	106.0	127.0	161.7	34.7	127.0	694.3
OVERHAUL13	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H9 Outage(2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/29/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/26/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALL OVERHAULS									
	LABOR	419.1	404.1	(15.0)	360.7	334.9	(25.8)	423.3	331.5
	MATERIAL	738.7	427.0	(311.7)	354.2	312.8	(41.4)	354.3	353.7
	ON-COSTS	353.9	329.3	(24.6)	304.2	277.7	(26.5)	357.3	294.4
	O/S SVCS	296.1	146.0	(150.1)	296.1	624.7	328.6	296.1	1,783.0
		1,807.8	1,306.4	(501.4)	1,315.2	1,550.1	234.9	1,431.0	2,762.6

Hawaiian Electric Company -

OVERHAULS

On-Cost Rate	90.0%	Mar $ Vari	April Budget	Apr Act	Apr $ Vari	May Budget	May Act	May $ Vari	June Budget
P0000654	LABOR	(3.0)	0.0	0.0	0.0	0.0	(7.1)	(7.1)	0.0
W6 OH	MATERIAL	(10.1)	0.0	0.0	0.0	0.0	(25.9)	(25.9)	0.0
01/28/2005 to	ON-COSTS	(1.9)	0.0	0.0	0.0	0.0	(4.5)	(4.5)	0.0
04/17/2005	O/S SVCS	(120.2)	0.0	*120.2*	120.2	0.0	(74.3)	(74.3)	0.0
		(135.2)	0.0	120.2	120.2	0.0	(111.8)	(111.8)	0.0
P0000844	LABOR	(1.9)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K6 OH	MATERIAL	(29.6)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05/06/2005 to	ON-COSTS	(1.4)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/06/2005	O/S SVCS	(0.1)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		(33.0)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000845	LABOR	0.8	0.0	0.7	0.7	0.0	0.0	0.0	0.0
K4 OH (2006)	MATERIAL	0.8	0.0	0.1	0.1	0.0	(4.0)	(4.0)	0.0
09/09/2006 to	ON-COSTS	0.7	0.0	0.5	0.5	0.0	0.0	0.0	0.0
11/8/2006	O/S SVCS	26.8	0.0	(18.9)	(18.9)	0.0	19.1	19.1	0.0
		29.1	0.0	(17.6)	(17.6)	0.0	15.1	15.1	0.0
P0000846	LABOR	135.0	0.0	5.0	5.0	0.0	1.1	1.1	0.0
K1 OH (2006)	MATERIAL	290.7	0.0	72.5	72.5	0.0	7.2	7.2	0.0
11/24/2006 to	ON-COSTS	119.1	0.0	4.5	4.5	0.0	1.0	1.0	0.0
02/22/2007	O/S SVCS	869.7	0.0	(90.8)	(90.8)	0.0	172.5	172.5	0.0
		1,414.5	0.0	(8.8)	(8.8)	0.0	181.8	181.8	0.0
P0000847	LABOR	23.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W4 OH (2006)	MATERIAL	3.8	0.0	1.7	1.7	0.0	0.0	0.0	0.0
05/23/2006 to	ON-COSTS	20.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/11/2006	O/S SVCS	51.7	0.0	(13.5)	(13.5)	0.0	2.7	2.7	0.0
		99.4	0.0	(11.8)	(11.8)	0.0	2.7	2.7	0.0
P0000938	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10 Maj Insp	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001105	LABOR	5.2	0.0	15.0	15.0	0.0	26.3	26.3	230.5
K3 OH (2007)	MATERIAL	0.2	0.0	57.9	57.9	344.3	119.2	(225.1)	344.3
06/25/2007 to	ON-COSTS	4.2	0.0	13.6	13.6	0.0	24.6	24.6	194.6
09/14/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		9.6	0.0	86.5	86.5	344.3	170.1	(174.2)	769.4
P0001106	LABOR	(252.9)	399.1	346.9	(52.2)	77.7	431.1	353.4	0.0
W7 OH (2007)	MATERIAL	(287.2)	0.0	373.2	373.2	0.0	714.4	714.4	0.0
03/25/2007 to	ON-COSTS	(204.8)	337.1	279.5	(57.6)	65.5	353.8	288.3	0.0
06/20/2007	O/S SVCS	124.8	275.5	(31.7)	(307.2)	275.5	643.7	368.2	275.5
		(620.1)	1,011.7	967.9	(43.8)	418.7	2,143.0	1,724.3	275.5
P0001277	LABOR	0.0	0.0	0.0	0.0	364.6	0.0	(364.6)	116.1
W9 OH (2007)	MATERIAL	0.0	20.2	0.0	(20.2)	20.2	0.0	(20.2)	20.2
07/15/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	307.8	0.0	(307.8)	98.0
08/13/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.8
		0.0	20.2	0.0	(20.2)	692.6	0.0	(692.6)	284.1
P0001278	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H8 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001279	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W5 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11/4/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Hawaiian Electric Company -

OVERHAULS		Mar $	April	Apr	Apr $	May	May	May $	June
On-Cost Rate	**90.0%**	**Vari**	**Budget**	**Act**	**Vari**	**Budget**	**Act**	**Vari**	**Budget**
01/18/2008	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001280	LABOR	1.2	0.0	49.5	49.5	0.0	0.0	0.0	0.0
H9 Outage(2006)	MATERIAL	30.8	0.0	4.3	4.3	0.0	0.0	0.0	0.0
10/20/2006 to	ON-COSTS	1.1	0.0	37.9	37.9	0.0	0.0	0.0	0.0
03/01/2007	O/S SVCS	534.2	0.0	(62.7)	(62.7)	0.0	195.5	195.5	0.0
		567.3	0.0	29.0	29.0	0.0	195.5	195.5	0.0
OVERHAUL13	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H9 Outage(2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/29/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/26/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALL OVERHAULS									
	LABOR	(91.8)	399.1	417.1	18.0	442.3	451.4	9.1	346.6
	MATERIAL	(0.6)	20.2	509.7	489.5	364.5	810.9	446.4	364.5
	ON-COSTS	(62.9)	337.1	336.0	(1.1)	373.3	374.9	1.6	292.6
	O/S SVCS	1,486.9	275.5	(97.4)	(372.9)	275.5	959.2	683.7	325.3
		1,331.6	1,031.9	1,165.4	133.5	1,455.6	2,596.4	1,140.8	1,329.0

Hawaiian Electric Company -

OVERHAULS		June	Jun $	July	July	July $	Aug.	Aug	Aug $
On-Cost Rate	90.0%	Act	Vari	Budget	Act/Proj	Vari	Budget	Act/Proj	Vari
P0000654	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
01/28/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04/17/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000844	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05/06/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/06/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000845	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K4 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09/09/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11/8/2006	O/S SVCS	17.0	17.0	0.0	2.0	2.0	0.0	0.0	0.0
		17.0	17.0	0.0	2.0	2.0	0.0	0.0	0.0
P0000846	LABOR	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0
K1 OH (2006)	MATERIAL	2.1	2.1	0.0	0.0	0.0	0.0	0.0	0.0
11/24/2006 to	ON-COSTS	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0
02/22/2007	O/S SVCS	54.8	54.8	0.0	55.0	55.0	0.0	0.0	0.0
		58.5	58.5	0.0	55.0	55.0	0.0	0.0	0.0
P0000847	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W4 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05/23/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/11/2006	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000938	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10 Maj Insp	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001105	LABOR	134.8	(95.7)	340.0	250.0	(90.0)	355.7	175.7	(180.0)
K3 OH (2007)	MATERIAL	205.6	(138.7)	344.3	488.0	143.7	0.0	300.0	300.0
06/25/2007 to	ON-COSTS	120.7	(73.9)	287.0	225.0	(62.0)	300.2	158.1	(142.1)
09/14/2007	O/S SVCS	14.8	14.8	0.0	406.0	406.0	237.2	591.0	353.8
		475.9	(293.5)	971.3	1,369.0	397.7	893.1	1,224.8	331.7
P0001106	LABOR	198.3	198.3	0.0	0.0	0.0	0.0	0.0	0.0
W7 OH (2007)	MATERIAL	159.8	159.8	0.0	0.0	0.0	0.0	0.0	0.0
03/25/2007 to	ON-COSTS	164.4	164.4	0.0	0.0	0.0	0.0	0.0	0.0
06/20/2007	O/S SVCS	1,459.8	1,184.3	0.0	211.0	211.0	0.0	130.0	130.0
		1,982.3	1,706.8	0.0	211.0	211.0	0.0	130.0	130.0
P0001277	LABOR	0.0	(116.1)	0.0	90.0	90.0	0.0	180.0	180.0
W9 OH (2007)	MATERIAL	0.0	(20.2)	0.0	20.2	20.2	0.0	40.4	40.4
07/15/2007 to	ON-COSTS	0.0	(98.0)	0.0	81.0	81.0	0.0	162.0	162.0
08/13/2007	O/S SVCS	0.0	(49.8)	49.8	50.0	0.2	49.8	49.8	0.0
		0.0	(284.1)	49.8	241.2	191.4	49.8	432.2	382.4
P0001278	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H8 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001279	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W5 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	343.0	0.0	(343.0)
11/4/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Hawaiian Electric Company -

OVERHAULS		June	Jun $	July	July	July $	Aug.	Aug	Aug $
On-Cost Rate	90.0%	Act	Vari	Budget	Act/Proj	Vari	Budget	Act/Proj	Vari
01/18/2008	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	343.0	0.0	(343.0)
P0001280	LABOR	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
H9 Outage(2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/20/2006 to	ON-COSTS	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
03/01/2007	O/S SVCS	12.5	12.5	0.0	28.0	28.0	0.0	0.0	0.0
		12.9	12.9	0.0	28.0	28.0	0.0	0.0	0.0
OVERHAUL13	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H9 Outage(2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/29/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/26/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ALL OVERHAULS									
	LABOR	334.2	(12.4)	340.0	340.0	0.0	355.7	355.7	0.0
	MATERIAL	367.5	3.0	344.3	508.2	163.9	343.0	340.4	(2.6)
	ON-COSTS	286.1	(6.5)	287.0	306.0	19.0	300.2	320.1	19.9
	O/S SVCS	1,558.8	1,233.5	49.8	752.0	702.2	287.0	770.8	483.8
		2,546.6	1,217.6	1,021.1	1,906.2	885.1	1,285.9	1,787.0	501.1

Hawaiian Electric Company -

OVERHAULS		Sept	Sept	Sept $	Oct	Oct	Oct $	Nov
On-Cost Rate	**90.0%**	**Budget**	**Act/Proj**	**Vari**	**Budget**	**Act/Proj**	**Vari**	**Budget**
P0000654	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
01/28/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
04/17/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000844	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K6 OH	MATERIAL	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*	*0.0*
05/06/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/06/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000845	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K4 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
09/09/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11/8/2006	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000846	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
K1 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11/24/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
02/22/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000847	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W4 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
05/23/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
08/11/2006	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0000938	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10 Maj Insp	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001105	LABOR	152.2	240.1	87.9	0.0	0.0	0.0	0.0
K3 OH (2007)	MATERIAL	0.0	300.0	300.0	0.0	0.0	0.0	0.0
06/25/2007 to	ON-COSTS	128.5	216.1	87.6	0.0	0.0	0.0	0.0
09/14/2007	O/S SVCS	237.2	407.0	169.8	237.2	406.0	168.8	0.0
		517.9	1,163.2	645.3	237.2	406.0	168.8	0.0
P0001106	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W7 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03/25/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
06/20/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
P0001277	LABOR	0.0	94.6	94.6	0.0	0.0	0.0	0.0
W9 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
07/15/2007 to	ON-COSTS	0.0	85.1	85.1	0.0	0.0	0.0	0.0
08/13/2007	O/S SVCS	0.0	49.8	49.8	0.0	0.0	0.0	0.0
		0.0	229.5	229.5	0.0	0.0	0.0	0.0
P0001278	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	93.8
H8 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	205.7
2008	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	79.1
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	378.6
P0001279	LABOR	182.5	0.0	(182.5)	411.1	0.0	(411.1)	302.4
W5 OH (2007)	MATERIAL	343.0	276.0	(67.0)	343.0	276.0	(67.0)	0.0
11/4/2007 to	ON-COSTS	153.7	0.0	(153.7)	346.8	0.0	(346.8)	255.0

Hawaiian Electric Company -

OVERHAULS		Sept	Sept	Sept $	Oct	Oct	Oct $	Nov
On-Cost Rate	**90.0%**	**Budget**	**Act/Proj**	**Vari**	**Budget**	**Act/Proj**	**Vari**	**Budget**
01/18/2008	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	404.6
		679.2	276.0	(403.2)	1,100.9	276.0	(824.9)	962.0
P0001280	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H9 Outage(2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/20/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
03/01/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVERHAUL13	LABOR	0.0	0.0	0.0	0.0	411.1	411.1	0.0
H9 Outage(2007)	MATERIAL	0.0	120.0	120.0	0.0	120.0	120.0	0.0
9/29/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	370.0	370.0	0.0
10/26/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	120.0	120.0	0.0	901.1	901.1	0.0
ALL OVERHAULS								
	LABOR	334.7	334.7	0.0	411.1	411.1	0.0	396.2
	MATERIAL	343.0	696.0	353.0	343.0	396.0	53.0	205.7
	ON-COSTS	282.2	301.2	19.0	346.8	370.0	23.2	334.1
	O/S SVCS	237.2	456.8	219.6	237.2	406.0	168.8	404.6
		1,197.1	1,788.7	591.6	1,338.1	1,583.1	245.0	1,340.6

Hawaiian Electric Company -

OVERHAULS		Nov	Nov $	Dec	Dec	Dec $	May YTD	May YTD
On-Cost Rate	**90.0%**	**Act/Proj**	**Vari**	**Budget**	**Act/Proj**	**Vari**	**Budget**	**Actuals**
P0000654	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	(10.1)
W6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	(36.0)
01/28/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	(6.4)
04/17/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	(74.3)
		0.0	0.0	0.0	0.0	0.0	0.0	(126.8)
P0000844	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	(1.9)
K6 OH	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	(29.6)
05/06/2005 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	(1.4)
07/06/2005	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	(0.1)
		0.0	0.0	0.0	0.0	0.0	0.0	(33.0)
P0000845	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	26.9
K4 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	25.7
09/09/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	22.6
11/8/2006	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	35.1
		0.0	0.0	0.0	0.0	0.0	0.0	110.3
P0000846	LABOR	0.0	0.0	0.0	0.0	0.0	457.9	741.6
K1 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	384.4	924.6
11/24/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	386.7	617.6
02/22/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	507.3	1,738.2
		0.0	0.0	0.0	0.0	0.0	1,736.3	4,022.0
P0000847	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	41.1
W4 OH (2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	9.4
05/23/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	33.1
08/11/2006	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	36.4
		0.0	0.0	0.0	0.0	0.0	0.0	120.0
P0000938	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
W10 Maj Insp	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.8
		0.0	0.0	0.0	0.0	0.0	0.0	0.8
P0001105	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	46.5
K3 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	344.3	177.3
06/25/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	42.4
09/14/2007	O/S SVCS	206.0	206.0	0.0	0.0	0.0	0.0	0.0
		206.0	206.0	0.0	0.0	0.0	344.3	266.2
P0001106	LABOR	0.0	0.0	0.0	0.0	0.0	1,222.0	971.6
W7 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	1,062.8	1,190.2
03/25/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	1,031.3	809.3
06/20/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	551.0	736.8
		0.0	0.0	0.0	0.0	0.0	3,867.1	3,707.9
P0001277	LABOR	0.0	0.0	0.0	0.0	0.0	364.6	0.0
W9 OH (2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	40.4	0.0
07/15/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	307.8	0.0
08/13/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		0.0	0.0	0.0	0.0	0.0	712.8	0.0
P0001278	LABOR	0.0	(93.8)	338.2	0.0	(338.2)	0.0	0.0
H8 OH (2007)	MATERIAL	205.7	0.0	205.7	205.7	0.0	0.0	0.0
2008	ON-COSTS	0.0	(79.1)	285.3	0.0	(285.3)	0.0	0.0
	O/S SVCS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		205.7	(172.9)	829.2	205.7	(623.5)	0.0	0.0
P0001279	LABOR	396.2	93.8	0.0	338.2	338.2	0.0	0.0
W5 OH (2007)	MATERIAL	276.0	276.0	0.0	276.0	276.0	0.0	0.0
11/4/2007 to	ON-COSTS	356.6	101.6	0.0	304.4	304.4	0.0	0.0

Hawaiian Electric Company -

OVERHAULS		Nov	Nov $	Dec	Dec	Dec $	May YTD	May YTD
On-Cost Rate	**90.0%**	**Act/Proj**	**Vari**	**Budget**	**Act/Proj**	**Vari**	**Budget**	**Actuals**
01/18/2008	O/S SVCS	396.0	(8.6)	404.7	396.0	(8.7)	0.0	0.0
		1,424.8	462.8	404.7	1,314.6	909.9	0.0	0.0
P0001280	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	123.3
H9 Outage(2006)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	152.5
10/20/2006 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	95.1
03/01/2007	O/S SVCS	0.0	0.0	0.0	0.0	0.0	381.0	942.6
		0.0	0.0	0.0	0.0	0.0	381.0	1,313.5
OVERHAUL13	LABOR	0.0	0.0	0.0	0.0	0.0	0.0	0.0
H9 Outage(2007)	MATERIAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9/29/2007 to	ON-COSTS	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10/26/2007	O/S SVCS	75.0	75.0	0.0	0.0	0.0	0.0	0.0
		75.0	75.0	0.0	0.0	0.0	0.0	0.0
ALL OVERHAULS								
	LABOR	396.2	0.0	338.2	338.2	0.0	2,044.5	1,939.0
	MATERIAL	481.7	276.0	205.7	481.7	276.0	1,831.9	2,414.1
	ON-COSTS	356.6	22.5	285.3	304.4	19.1	1,725.8	1,612.3
	O/S SVCS	677.0	272.4	404.7	396.0	(8.7)	1,439.3	3,415.5
		1,911.5	570.9	1,233.9	1,520.3	286.4	7,041.5	9,380.9

Hawaiian Electric Company -

OVERHAULS		May YTD	Budget	Est Act	Projected
On-Cost Rate	**90.0%**	**Vari**	**12 mos.**	**12 mos.**	**YE Var**
P0000654	LABOR	(10.1)	0.0	(10.1)	(10.1)
W6 OH	MATERIAL	(36.0)	0.0	(36.0)	(36.0)
01/28/2005 to	ON-COSTS	(6.4)	0.0	(6.4)	(6.4)
04/17/2005	O/S SVCS	(74.3)	0.0	(74.3)	(74.3)
		(126.8)	0.0	(126.8)	(126.8)
P0000844	LABOR	(1.9)	0.0	(1.9)	(1.9)
K6 OH	MATERIAL	(29.6)	0.0	(29.6)	(29.6)
05/06/2005 to	ON-COSTS	(1.4)	0.0	(1.4)	(1.4)
07/06/2005	O/S SVCS	(0.1)	0.0	(0.1)	(0.1)
		(33.0)	0.0	(33.0)	(33.0)
P0000845	LABOR	26.9	0.0	26.9	26.9
K4 OH (2006)	MATERIAL	25.7	0.0	25.7	25.7
09/09/2006 to	ON-COSTS	22.6	0.0	22.6	22.6
11/8/2006	O/S SVCS	35.1	0.0	54.1	54.1
		110.3	0.0	129.3	129.3
P0000846	LABOR	283.7	457.9	742.5	284.6
K1 OH (2006)	MATERIAL	540.2	384.4	926.7	542.3
11/24/2006 to	ON-COSTS	230.9	386.7	618.4	231.7
02/22/2007	O/S SVCS	1,230.9	507.3	1,848.0	1,340.7
		2,285.7	1,736.3	4,135.5	2,399.2
P0000847	LABOR	41.1	0.0	41.1	41.1
W4 OH (2006)	MATERIAL	9.4	0.0	9.4	9.4
05/23/2006 to	ON-COSTS	33.1	0.0	33.1	33.1
08/11/2006	O/S SVCS	36.4	0.0	36.4	36.4
		120.0	0.0	120.0	120.0
P0000938	LABOR	0.0	0.0	0.0	0.0
W10 Maj Insp	MATERIAL	0.0	0.0	0.0	0.0
	ON-COSTS	0.0	0.0	0.0	0.0
	O/S SVCS	0.8	0.0	0.8	0.8
		0.8	0.0	0.8	0.8
P0001105	LABOR	46.5	1,078.4	847.1	(231.3)
K3 OH (2007)	MATERIAL	(167.0)	1,032.9	1,470.9	438.0
06/25/2007 to	ON-COSTS	42.4	910.3	762.3	(148.0)
09/14/2007	O/S SVCS	0.0	711.6	2,030.8	1,319.2
		(78.1)	3,733.2	5,111.1	1,377.9
P0001106	LABOR	(250.4)	1,222.0	1,169.9	(52.1)
W7 OH (2007)	MATERIAL	127.4	1,062.8	1,350.0	287.2
03/25/2007 to	ON-COSTS	(222.0)	1,031.3	973.7	(57.6)
06/20/2007	O/S SVCS	185.8	826.5	2,537.6	1,711.1
		(159.2)	4,142.6	6,031.2	1,888.6
P0001277	LABOR	(364.6)	480.7	364.6	(116.1)
W9 OH (2007)	MATERIAL	(40.4)	60.6	60.6	0.0
07/15/2007 to	ON-COSTS	(307.8)	405.8	328.1	(77.7)
08/13/2007	O/S SVCS	0.0	149.4	149.6	0.2
		(712.8)	1,096.5	902.9	(193.6)
P0001278	LABOR	0.0	432.0	0.0	(432.0)
H8 OH (2007)	MATERIAL	0.0	411.4	411.4	0.0
2008	ON-COSTS	0.0	364.4	0.0	(364.4)
	O/S SVCS	0.0	0.0	0.0	0.0
		0.0	1,207.8	411.4	(796.4)
P0001279	LABOR	0.0	896.0	734.4	(161.6)
W5 OH (2007)	MATERIAL	0.0	1,029.0	1,104.0	75.0
11/4/2007 to	ON-COSTS	0.0	755.5	661.0	(94.5)

Hawaiian Electric Company -

OVERHAULS		May YTD	Budget	Est Act	Projected
On-Cost Rate	90.0%	Vari	12 mos.	12 mos.	YE Var
01/18/2008	O/S SVCS	0.0	809.3	792.0	(17.3)
		0.0	3,489.8	3,291.4	(198.4)
P0001280	LABOR	123.3	0.0	123.5	123.5
H9 Outage(2006)	MATERIAL	152.5	0.0	152.5	152.5
10/20/2006 to	ON-COSTS	95.1	0.0	95.3	95.3
03/01/2007	O/S SVCS	561.6	381.0	983.1	602.1
		932.5	381.0	1,354.4	973.4
OVERHAUL13	LABOR	0.0	0.0	411.1	411.1
H9 Outage(2007)	MATERIAL	0.0	0.0	240.0	240.0
9/29/2007 to	ON-COSTS	0.0	0.0	370.0	370.0
10/26/2007	O/S SVCS	0.0	0.0	75.0	75.0
		0.0	0.0	1,096.1	1,096.1
ALL OVERHAULS					
	LABOR	(105.5)	4,567.0	4,449.1	(117.9)
	MATERIAL	582.2	3,981.1	5,685.6	1,704.5
	ON-COSTS	(113.5)	3,854.0	3,856.7	2.7
	O/S SVCS	1,976.2	3,385.1	8,432.9	5,047.8
		2,339.4	15,787.2	22,424.3	6,637.1
					6,637.1

Agrees w/CA-IR-488
Attachment 3

CA-IR-421

Ref: HECO Response to CA-IR-236, Attachment 1 (Production Department Overtime).

Please provide the following additional information, to supplement the narrative description of how the uniform 15 percent overtime rate was determined:

a. For PIH, provide:
   1. A complete copy of the analysis described as a, "review of historical level of absences due to holiday, vacation, or illness; shift staffing requirements; and anticipated training needs, then adjusted downward to reflect full staffing."
   2. Explain and provide calculations illustrating how such analysis was used to derive the 15% overtime rate that was employed.
   3. Explain with specificity and provide calculations showing how the increased PIH staffing, per HECO-614, page 3, was translated into an adjustment value for overtime, relative to historical levels.

b. For PIK, provide:
   1. A complete copy of the analysis described as a "review of historical level of absences due to holiday, vacation, or illness; shift staffing requirements; and anticipated training needs, then adjusted downward to reflect full staffing."
   2. Explain and provide calculations illustrating how such analysis was used to derive the 15% overtime rate that was employed, after "adjust[ing] downward to reflect full staffing."
   3. Explain with specificity how the increased PIK staffing, per HECO-614, page 3, was translated into an adjustment value for overtime, relative to historical levels.

c. For PIL, provide:
   1. A complete copy of all documents associated with the referenced analysis described in the "Explanation why not reduced" column of Attachment 1, page 3.
   2. Explain and provide calculations illustrating how the data provided in your response to part (c)(1) (the analysis) was used to derive the 15% overtime rate that was actually employed.
   3. Explain with specificity how increased PIL staffing, per HECO-614, page 3, was considered and used in the calculations of test year overtime, relative to historical levels.

d. For PIN, provide:
   1. A complete copy of all documents associated with the referenced analysis described in the "Explanation why not reduced" column of Attachment 1, page 5.
   2. Explain and provide calculations illustrating how the data provided in your response to part (d)(1) "the analysis" was used to derive the 15% overtime rate that was actually employed.
   3. Explain with specificity how increased PIN staffing, per HECO-614, page 4, was considered and used in the calculations of test year overtime, relative to historical levels.

e. For PIW, provide:
   1. A complete copy of the analysis described as a "review of historical level of absences due to holiday, vacation, or illness; shift staffing requirements; and anticipated training needs, then adjusted downward to reflect full staffing."
   2. Explain and provide calculations illustrating how such analysis was used to derive the 15% overtime rate that was employed for PIW, after "adjust[ing] downward to reflect full staffing."
   3. Explain with specificity how the increased PIW staffing, per HECO-614, page 4, was translated into an adjustment value for overtime, relative to historical levels.

f. For PIX, provide:
   1. A complete copy of all documents associated with the referenced analysis described in the "Explanation why not reduced" column of Attachment 1, page 8.
   2. Explain and provide calculations illustrating how the data provided in your response to part (f)(1) "the analysis" was used to derive the 15% overtime rate that was actually employed.
   3. Explain with specificity how increased PIX staffing, per HECO-614, page 4, was considered and used in the calculations of test year overtime, relative to historical levels.

<u>HECO Response:</u>

a. For PIH:

   1. The review referred to in this information request was revised in the response to CA-IR-232, Revised 07-13-07 and included the following:

      - A comparison of total productive labor hours for 2004 to 2006 for the Operating Division RAs (see CA-IR-232 Revised 07-13-07, Attachment 1, page 1).
      - A review of 2006 base, holiday, "productive", sick, and vacation hours (see CA-IR-232 Revised 07-13-07, Attachment 1, page 2).
      - A review of the indicated 2006 labor hour references for the three power plant RAs (see CA-IR-232 Revised 07-13-07, Attachment 1, pages 3, 4, and 5).
      - Shift staffing levels are determined based on the Line of Progression charts for each of the power plants. Please refer to the response to CA-IR-331 for a discussion of this topic.

- Training requirements and future retirements are reviewed to determine the number of Operator Trainees to include in staffing. The Operator Trainee is designated as an "Extra" operator and used to provide replacement for vacation, LOP training, or refresher training, as described in the response to CA-IR-331.

2. The revised overtime hour calculations for PIH are shown on Attachment 1 to the response to CA-IR-232, page 5. The description of how the staffing level and overtime are related is outlined in the response to CA-IR-331.

3. Please refer to the response to CA-IR-331 for discussion of how the increased PIH staffing (per HECO-614, page 3) was translated into an adjustment value for overtime, relative to historical levels.

b. For PIK:

1. Please refer to the response to subpart a.1 (above), as a similar process was followed for PIK as that described for PIH.

2. Please refer to the response to subpart a.2 (above), as a similar process was followed for PIK as that described for PIH.

3. Please refer to the response to CA-IR-331, as a similar process was followed for PIK at that described for PIH.

c. For PIL:

1. The overtime requirements for PIL are established during the labor forecasting and resource leveling process, as shown in the response to CA-IR-1, Attachment 12D. Total labor supply is first determined by the total headcount of personnel. Estimated non-productive labor hours for holiday, vacation, suspension, leave, and illness are subtracted, based on a review of historical levels for each. In an iterative resource

leveling review process (not a formal analysis), labor demand for the subject year is estimated based, in part, on demand considerations for the overhauls that will be performed, capital projects that will be performed separately and in conjunction with overhauls, station requirements for preventive and corrective maintenance, and O&M projects that are planned. As discussed in the response to CA-IR-240 subpart d, the overall level of effort includes non-discretionary and discretionary work items. As the year unfolds the plans are typically revised and discretionary work may be deferred in favor or non-discretionary and emergent work that materializes. Thus, the total labor demand is defined to accomplish the combination or maintenance work necessary to sustain the reliability of HECO's generating units at acceptable levels. The total labor demand exceeds the total labor supply of productive straight time hours.[1] The difference is made up by HECO personnel working overtime. If HECO personnel working a reasonable amount of overtime is insufficient to make up the difference then supplemental labor would be contracted to buttress the maintenance work force. Based on experience and the professional judgment of the maintenance supervisory staff, it has been determined that a reasonable level of overtime for the maintenance work force is 15%. This is an average value, some employees would work more than 15% and some would work less than 15%.

2. As discussed in the response to subpart c.1 (above) the annual 15% overtime rate determined to be reasonable based on the professional judgment of the maintenance supervisory staff, the level of work demands, and the tolerance of the workforce.

---

[1] For 2007, the total labor supply of productive straight time hours is defined as the number of maintenance personnel times 2,088 hours per year, minus non-productive labor supply for holiday, vacation, suspension, leave, and illness.

3. The historic levels of overtime shown in the response to CA-IR-74 are higher than what HECO considers to be reasonable. Additional staffing and supplemental labor will allow the amount of overtime to be reduced, thus alleviating the general work burden and stress on the workforce.

Actual circumstances dictate the amount of overtime that is worked within a year. Moreover, it must be recognized that overtime is rarely uniform throughout the year and more commonly there are periods of extensive levels of overtime offset with periods of lesser amounts of overtime. Circumstances that influence the amount of overtime (and supplemental contract labor) needed within any period include, and are not limited to, the following: 1) Availability (and unavailability due to vacancies) of trades and crafts personnel; 2) Magnitude of planned work during the midst of a scheduled overhaul; 3) System conditions requiring the accelerated return of generating units out of service for scheduled or forced outages; 4) Availability of supplemental labor; 5) Forced outages; 6) Environmental upset conditions that could compromise permit compliance; 7) Backlog of preventive maintenance; 8) Required training; and 9) System conditions requiring work to be performed during off peak hours or weekends. As stated above, the annual 15% overtime rate (average for the maintenance personnel) is considered to be reasonable based on experience and the professional judgment of HECO's maintenance supervisory staff, and the historical levels of overtime that have been worked by HECO's maintenance workforce in recent years are considered to be higher than reasonable.

d. For PIN:

1. Please refer to the response to subpart c.1 (above), as a similar process was followed for PIN as that described for PIL.
2. Please refer to the response to subpart c.2 (above), as a similar process was followed for PIN as that described for PIL.
3. Please refer to the response to subpart c.3 (above), as a similar process was followed for PIN as that described for PIL.

e. For PIW:

1. Please refer to the response to subpart a.1 (above), as a similar process was followed for PIW as that described for PIH.
2. Please refer to the response to subpart a.2 (above), as a similar process was followed for PIW as that described for PIH.
3. Please refer to the response to CA-IR-331, as a similar process was followed for PIW at that described for PIH.

f. For PIX:

4. Please refer to the response to subpart c.1 (above), as a similar process was followed for PIX as that described for PIL.
5. Please refer to the response to subpart c.2 (above), as a similar process was followed for PIX as that described for PIL.
6. Please refer to the response to subpart c.3 (above), as a similar process was followed for PIX as that described for PIL.

CA-IR-422

Ref: Response to CA-IR-2, Attachment 7, pages 5, 7 and 10; June Update HECO T-6, page 2 (Emission Fees).

Please provide the following information regarding HECO calculated Emission Fees for 2007:

a. State whether the DOH has accepted and approved the amounts calculated for Honolulu, Kahe and Waiau stations, as set forth at Attachment 7, pages 5, 7 and 10, respectively.

b. If your response to part (a) is negative, please provide copies of the most recently approved actual emission fee calculations (or state they are as provided in response to CA-IR-82, Attachment 1).

c. Has HECO received any indication of the potential for fee waivers in 2007 or 2008?

d. If your response to part (c) of this information request is affirmative, please explain and provide documentation for any information HECO possesses regarding fee waivers.

HECO Response:

a. DOH acceptance or approval of the Company's estimates of emissions fee amounts is not a requirement in the emissions fees calculation process. See response to part (b) below.

b. Copies of HECO's April 27, 2007 submittals to DOH for emission fee payments for 2006 operations are attached as Attachment 1 for Kahe, Attachment 2 for Waiau, and Attachment 3 for Honolulu stations, respectively. Attachments 1 to 3 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. The calculated emission fees are the same as provided in HECO's response to CA-IR-82.

c. No, HECO has not received any indication of the potential for fee waivers in 2007 or 2008 at this time.

d. Not applicable.

Attachments 1-3 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect the requested information. An electronic version of the requested information is being provided.

CA-IR-423

Ref: June 2007 Update, HECO T-6, pages 3 to 6; Attachments 3, 4, 5 and 6 (Clean Water Act 316(b) Expenses).

Please provide the following regarding this newly proposed test year expense element:

a. Explain and provide documentation supporting the basis for HECO decisions to defer incurred CWA Section 316b costs as potential capital projects, as noted on page 4.

b. Provide a breakdown of the deferred costs in Attachment 3, by month and by RA for all periods shown.

c. Provide complete copies of all studies, reports, analyses and other documents prepared or relied upon in connection with the April 3, 2007 "accounting decision [that] was made by HECO to transfer the accumulated Section 316(b) costs…"

d. Provide the amounts of projected labor costs in the HECO 2005 test year that were removed from ratemaking expense and treated as capitalized charges to PEWON work orders (if any).

e. Provide copies of 2005 test year workpapers or IR responses supportive of any affirmative response to part (d) of this information request.

f. Provide the amounts of projected labor costs in the HECO 2007 test year that were removed from ratemaking expense and treated as capitalized charges to PEWON work orders (if any), with references to where such amounts can be observed in the Company's response to CA-IR-1.

g. Provide a copy of the 2005 test year RA=PJW non-labor expense support documentation as supplied in response to CA-IR-2 in Docket No. 04-0113, indicating costs budgeted to expense indicators as well as any projected 2005 capital or other non-expensed projects (such as the 316b projects listed in Attachment 3).

h. Provide a comparative analysis of RA=PJW actual monthly non-labor expenses <u>by expense element</u> in 2005, 2006 and 2007, to-date, in relation to the PJW non-labor expenses approved in the 2005 test year.

i. Provide supporting documentation for each amount shown on Attachment 4, with references into CA-IR-1 and CA-IR-2 schedules where such amounts were reflected, as applicable.

j. Provide copies of documentation supportive of each listed 2007 cost estimate in Attachment 5, including but not limited to requests for proposals, contracts, work orders and correspondence with each of the listed vendors.

k. Provide a monthly breakdown of each of the cost line items in Attachment 6 (except 316(b) incurred 1/07-4/07) for <u>all</u> years <u>by expense element</u>, indicating each amounts for which a contract or other firm commitments to spend has been secured.

l. Provide a monthly breakdown of actual HECO charges for CWA Section 316(b) compliance activities by RA, Indicator (NP, NE, etc.) and expense element through June 2007, indicating how such amounts can be reconciled to Attachment 3 and Attachment 4.

HECO Response:

a. HECO's decision to defer incurred CWA Section 316b costs as potential capital projects was based on information contained in EPA's published final regulations. When the *"Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities; Federal Register Vol. 69, No 131, 7/9/04"* were published in 2004, they contained a description of the "applicable [compliance] technology" and associated cost estimate for each specific facility that fell under this regulation. EPA's candidate technologies were modeled by EPA and the technology deemed to be the most appropriate for each facility was identified as the applicable technology. These applicable technologies and cost estimates for Kahe, Waiau, and Honolulu were published in the final regulations under "*Appendix A: Costs considered by EPA in Establishing Performance Standards*." Attachment 1 to this response are excerpts from EPA's final rule listing the proposed technologies and associated cost estimates for HECO's Kahe, Waiau, and Honolulu generating stations.[1]

The proposed technologies and cost impacts for the Kahe, Waiau, and Honolulu facilities were obtained using the three-step process described below (the indicated page numbers denote the page numbers printed on the excerpt and the appendices referred to are the appendices in Attachment 1 to this response):

Step 1: Obtain the "Facility ID" from Appendix B on pages 41680 and 41681.

Kahe – AUTO305

Waiau – DUT1116

Honolulu – DUT1145

[1] *Final Regulations to Establish Requirements for Cooling Water Intake Structures at Phase II Existing Facilities;* Federal Register Vol. 69, No. 131, 7/9/04

Step 2: Using the Facility ID above, locate each facility in the spreadsheets on pages 41670, 41671, and 41674. The description of each cost component summarized in response to CA-IR-423, subpart a., is provided in the column headings on page 41670 and 41674.

Step 3: A description of the applicable technologies for Kahe, Waiau and Honolulu can be obtained from the "EPA Modeled Technology Code" in Column 12 on pages 41671 (Code #14 for Kahe) and 41674 (Code #11 for Waiau and Code #12 for Honolulu). Descriptions of the applicable technologies are provided in Table 9-1, "Technology Codes and Descriptions" on page 41646.

The resulting technology descriptions and associated costs for Kahe, Waiau and Honolulu facilities are summarized below:

Kahe Power Plant

Relocation of an existing intake to a submerged offshore location with passive fine mesh screen inlet with a mesh width of 0.76 mm.

- $42,822,242 Capital Cost
- $146,012 Annual Baseline O&M
- $281,593 Annual Post Construction O&M
- $49,751,104 Loss Revenue from Construction Downtime
- $4,326,108 Pilot Study Costs

Waiau Power Plant

Addition of dual-entry, single exit traveling screens to a shoreline intake system.

- $2,886,459 Capital Cost
- $69,804 Annual Baseline O&M

- $84,921 Annual Post Construction O&M
- $291,604 Pilot Study Costs

Honolulu Power Plant

Addition of passive mesh screen system (cylindrical wedgewire) near shoreline with a mesh width of 0.76 mm.

- $2,702,979 Capital Cost
- $38,035 Annual Baseline O&M
- $57,101 Annual Post Construction O&M
- $1,565,614 Loss Revenue from Construction Downtime
- $273,068 Pilot Study Costs

Given the significant cost potentially associated for compliance with Clean Water Act Section 316(b), HECO established a "PEWON" account to capture the costs for this project in accordance with the Section 316(b) schedule. On December 5, 2005, an "Authorization for Preliminary Engineering Workorder Charges in Excess of $20K" was requested and approved based on a total estimate of $1,066,500 (equal to $355,500 each for Kahe, Waiau, and Honolulu Power Plants). A copy of the preliminary engineering work order is provided as Attachment 2 to this response. The $355,500 forecast for each facility was broken down as follows:

1) Proposal for Information Collection (PIC)	$55,500
2) Technology Assessment	$25,000
3) Impingement & Entrainment Monitoring	$125,000
4) Comprehensive Demonstration Study	$150,000
Total:	$355,500

b. Breakdowns of the deferred costs in HECO T-6, June 2007 Update, Attachment 3, Costs Incurred for 316(b) Work for the period 2005-April 2007, by month and by RA are provided as Attachments 3, 4, and 5 to this response for Honolulu; Waiau; and Kahe, respectively.

c. The basis for the accounting decision that was made by HECO to transfer the accumulated Section 316(b) costs from the PEWON account is described in Attachment 6 to this response, HECO Interoffice Correspondence (IOC), from Patsy Nanbu to Tayne Sekimura, dated April 3, 2007.

d. There were no projected labor costs in the HECO 2005 test year that were removed from ratemaking expense and treated as capitalized charges to CWA Section 316(b) PEWON work orders

e. Not Applicable.

f. Labor estimates relating to the CWA Section 316(b) PEWON work orders totaled $23,004 as shown in Attachment 7 to this response. These estimates were treated as capitalized expenses and were not included in the O&M labor estimates provided in response to CA-IR-1.

g. A copy of the 2005 test year RA=PJW non-labor expense support documentation as supplied in response to CA-IR-2 in Docket No. 04-0113, is provided in Attachment 8 to this response. A review of Attachment 8, page 11, shows that $75,000 was included for each of the three HECO power plants (the line items identified as "NPDES 316(b) Study" for locations HST, KST, and WST). The $75,000 per power plant estimate, or $225,000 total, on pages 3 and 11 of Attachment 8 to this response was based on an EPRI proposal (Attachment 9 to this response) for $176,000, plus an additional budgetary estimate of $49,000 for the collection of baseline data. After realizing the potential impact of 316(b) on capital expenses, a PEWON account was established in December 2005 as discussed in subpart a. above.

h. Please refer to Attachments 3, 4 and 5 to this response, discussed in subpart b. above, for actual monthly non-labor expenses by expense element in 2005, 2006 and January through April, 2007 for PJW. The table below compares 2005 test year non-labor estimates relating to 316(b) with actual expenses for 2005, 2006, and January through April 2007 for expense element 501. Except for 2005, actual annual expenditures relating to 316(b) are significantly higher than the 2005 TY estimate.

Year	Honolulu	Waiau	Kahe	Total
2005 TY	$75,000	$75,000	$75,000	$225,000
2005 Actual	$56,850	$56,782	$57,335	$170,967
2006 Actual	$98,733	$112,240	$101,724	$312,697
2007 Jan-Apr	$97,095	$104,574	$100,037	$301,706

i. The amounts in the June 2007 Update, HECO T-6, Attachment 4, reflect actual expenses from January, 2007 through April 2007. At the time responses to CA-IR-1 and CA-IR-2 were prepared, the amounts in the June 2007 Update, HECO T-6, Attachment 4 were in PEWON, and therefore did not show up as Other Production O&M expenses. Supporting information for each activity listed in the June 2007 Update, HECO T-6, Attachment 4 is provided as referenced below.

- Labor expenses (150, 151, Overheads) – Please refer to page 3 in Attachments 3 and 5 and page 4 in Attachment 4 to this response for a monthly breakdown of expenses.
- Outside Services (501) – In addition to monthly breakdowns on page 3 in Attachments 3 and 5 and page 4 in Attachment 4 to this response, please reference the Tenera Cost Proposal in Attachment 10 to this response, which served as the basis for the ongoing studies relating to 316(b). The Tenera Cost Proposal provided several options that

allowed the study to shift between sampling alternatives based on sampling results. Referring to the options on page 2 in Attachment 10 to this response, the entrainment portion of the monitoring plan HECO submitted to DOH/EPA included weekly pump sampling for entrainment monitoring (Option 1). Before the start of sampling it was further determined that Option 3, weekly net sampling was more effective than pump sampling based on the design of the seawater intake structures. After five months of weekly net sampling, monitoring switched to a bi-weekly cycle (Option 4) based on the results of the weekly sampling. The impingement sampling frequency has been, and will continue, to be weekly.

- Travel/Lodging and Meals (520 and 521) – Expenses in this category are related to travel expenses for a HECO Senior Environmental Scientist to attend an EPRI Workshop that was held in March, 2007. Attachment 11 to this response describes the workshop and Attachment 12 to this response is a breakdown of the travel, lodge and meal expenses.

j. Copies of documents supportive of each activity listed in the June 2007 Update, HECO T-6, Attachment 5 are provided as referenced below. Please note a reduction in BPJE expenses as explained below.

- 316(b) monitoring – Kahe, Waiau, Honolulu ($130,000).
    1. Reference Attachment 13 to this response, Tenera Environmental letter dated April 4, 2007. The $130,000 estimate is discussed in the 2nd paragraph of the letter.
- Extended monitoring – Kahe, Waiau, Honolulu ($388, 575)
    1. Reference Attachment 13 to this response, Tenera Environmental letter dated April 4, 2007. As noted in Attachment 5, the $388,575 estimate was based on

8/12 of the total amount of $582,862. The breakdown of the $583,000 amount is provided on page 2 of the letter.

2. Reference Attachment 14 to this response, HECO Work Authorization Amendment dated June 21, 2007.
3. Reference Attachment 15 to this response, Amendment No. 1 to Authorization No. 01 which reflects the change to the Master Contract with Tenera Environmental.

- Closed Cycle Cooling Evaluation ($6,000)
  1. Reference Attachment 16 to this response, EPRI Solutions e-mail from Cynthia Toth to Kirk Tomita dated 7/20/06, quoting a fixed price of $5,917.
  2. Reference Attachment 17 to this response, Proposal for: California 316(b) Project – ESI Project No. 06-00787 for Kahe Station.
  3. Reference Attachment 18 to this response, Billable Services Agreement No. 542-06.
- Best Professional Judgment Evaluation (BPJE) ($102,000)
  1. Reference Attachment 19 to this response, Supplement Project Agreement and Exhibit 1 to Supplemental Project Agreement TC/CF 011950-11156 (Project ID No. 066063)
  2. Reference Attachment 20 to this response, Proposal to Prepare the 316(b) BPJ Compliance Support Services for Hawaiian Electric Power Company's Honolulu, Kahe and Waiau Generating Stations. Total expenses based on the proposal amounted to $203,500 ($190,000 for Projects 1 & 2, and $13,500 for optional meetings). As shown in Attachment 14 to this response, EPRI Tailored Collaboration funding was approved in June with the result of reducing HECO's

expenses to half of the amount in the proposal, or approximately $102,000 ($88,200 for Projects 1 & 2 and $13,500 for optional meetings).

3. Reference Attachment 21 to this response, Work Authorization No. 01 – CWA Section 316(b) Support Services.

k. A monthly breakdown of the cost line items in T-6, June 2007 Update, Attachment 6 is provided as Attachment 22 to this response. Commitments to spend include all expenses shown for 2007, and "Continue IM&E Eval" expenses from January through April, 2008. All remaining expense estimates from May through December 2008, and for all of 2009, are estimates only.

l. Please refer to response in subpart b. above for the breakdown of costs incurred from 2005 - April 2007 showing actual HECO charges for CWA Section 316(b) compliance activities. The 2005 - April 2007 amounts shown in Attachments 3 and 4, and replicated in subpart b. above for comparison purposes, represent costs that were transferred to the Power Supply clearing account. The May 2007 & June 2007 amounts were charged to O&M expense in accordance with the accounting decision discussed in subpart c. above. A breakdown of the costs incurred for 316(b) Work for the period May-June 2007, by month and by RA, is provided as Attachment 23 to this response.

Attachments 1-23 are voluminous and available for inspection at HECO's Regulatory Affairs Division office, Suite 1301, Central Pacific Plaza, 220 South King Street, Honolulu, Hawaii. Please contact Dean Matsuura at 543-4622 to make arrangements to inspect these documents. Electronic versions of the attachments are being provided.