CA-IR-236

**Ref: Reponses to CA-IR-1, HECO T-6, Attachment 12, CA-IR-83 spreadsheets (Labor Budget Overtime Assumption).**

According to the Production Department Labor input spreadsheets, a uniform 15 percent overtime labor hours input assumption appears to have been applied to each of the RA groups for the test year. Please provide the following information with respect to this assumption:

a. Confirm that 15 percent overtime hours was the standard overtime assumption for the test year, or identify where any different assumption was employed.

b. Provide copies of all studies, reports, analyses, workpapers and other documents associated with or supportive of the development of the 15 percent assumed overtime input value.

c. For each RA, explain the reasons why test year overtime hours were not reduced proportionately for each added employee position, to account for the filling of vacancies that existed historically or to account for the ability of employees in newly created positions to displace overtime historically required.

HECO Response:

a. Please refer to Attachment 1 to this response. The Production Department RAs (Responsibility Areas) for which a uniform 15% was applied for non-project labor overtime are indicated. If 15% was not utilized, then the percentage that was utilized is indicated. Labor demand for project work can appear during the resource leveling process and could add to the overtime requirements of the work group. For RA PIT (Traveling Maintenance), overtime is determined through the resource leveling process.

b. In developing the overtime percentages for the Production Department budget, an RA was considered separately when its overtime basis was different from other areas or consolidated when it was similar. For example, the overtime assumptions for an RA such as PIP (Planning and Engineering), which is populated with almost all merit employees, will not be the same as the assumptions for PIK (Kahe Station Ops), which is a rotating shift work group. The rotating shift groups (PIH – Hon Station Ops, PIK – Kahe Station Ops, and PIW – Waiau Station Ops) were reviewed together as their work is similar, the Station Maintenance areas (PIL – Kahe Station Maint, PIN – Hon Station Maint, and PIX – Waiau Station Maint) were reviewed together, the Travel Crew (PIT) was reviewed independently, and the predominantly merit work groups (PIB – Admin PS O&M, PIM – Maint Admin, PIO – Operations Admin, and PIP – Planning and Engineering) were reviewed separately. The overtime percentages applied for each group of RAs were based primarily on historical experience and specific considerations such as the following:

1. Overtime percentages for the rotation shift areas were based on staffing the various watch stations and to support increased training requirements.
2. Overtime percentages for the Station Maintenance RAs were based on a reasonable level of overtime to allow the performance of a reasonable level of maintenance effort to reduce the backlog, perform needed preventative maintenance work, and minimize the deferral of work. HECO's estimates for straight time and overtime labor hours are based on the anticipated level of maintenance effort, which is determined by considering the work requirements, scheduling, budget, and the priority of the work. The estimated levels reflect the resource requirements for HECO to perform the work necessary to sustain the reliability of HECO's generating units at acceptable levels.

3. Overtime for PIT was determined by the resource leveling process as this group's overtime is primarily driven by overhaul project demands and the need to support O&M requirements.

4. Merit work group overtime was based on their historical or anticipated level of charged hours. (Merit employees, other than supervisors of bargaining unit employees, do not receive pay for overtime hours.)

Please refer to Attachment 1 to this response for a description of the overtime analysis performed.

c. Please refer to Attachment 1.

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIB | Admin PSOM | NO | Distributed Merit OT in forecast, but Merit exempt employees receive no overtime pay. | Manager @ 25%<br>Secretary @ 0% (Merit Non-Exempt)<br>Budget Analyst @ 5%<br>Trainer @ 5%<br>Station Chemists @ 5%<br>Environmental Spec @ 5%<br>Supv Env Compliance @ 5%<br>Manager Special Proj @ 5%. | Forecast OT is based on historical level of charged time plus anticipated projects. |
| PIH | Hono Oper | YES | | | Forecast OT is based on 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. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIK | Kahe Oper | YES | | Clerk @ 0% (Bargaining Unit). | Forecast OT is based on 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. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIL | Kahe Maint | YES | | | Forecast OT is based on a review of historical level of absences due to holiday, vacation, or illness and on a reasonable level of overtime to allow the performance of a level of maintenance effort to reduce the backlog, perform needed preventative maintenance work, and minimize the deferral of work. HECO's estimates for straight time and overtime labor hours are based on the anticipated level of maintenance effort, which is determined by considering the work requirements, scheduling, budget, and the priority of the work, and reflect the resource requirements to allow HECO to perform adequate amounts of work to sustain the reliability of HECO's generating units at acceptable levels. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIM | Maint Admin | NO | Distributed Merit OT in forecast, but Merit exempt employees receive no overtime pay. | Superintendent @ 35% Rotating Equip Spec @ 5% Clerk @ 0% (Bargaining Unit). | Forecast OT is based on historical level of charged time plus anticipated projects. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIN | Hono Maint | YES | | Supervisor @ 5%.<br>Maint workers have some labor hour demand for capital work entered by other Depts. | Forecast OT is based on a review of historical level of absences due to holiday, vacation, or illness and on a reasonable level of overtime to allow the performance of a level of maintenance effort to reduce the backlog, perform needed preventative maintenance work, and minimize the deferral of work. HECO's estimates for straight time and overtime labor hours are based on the anticipated level of maintenance effort, which is determined by considering the work requirements, scheduling, budget, and the priority of the work, and reflect the resource requirements to allow HECO to perform adequate amounts of work to sustain the reliability of HECO's generating units at acceptable levels. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIO | Oper Admin | NO | Distributed Merit OT in forecast, but Merit exempt employees receive no overtime pay. | Superintendent @ 5%<br>Oper Power Engr @ 5% | Forecast OT is based on historical level of charged time plus anticipated projects. |
| PIP | Plan & Eng | NO | Distributed Merit OT in forecast, but Merit exempt employees receive no overtime pay. | Superintendent @ 6%<br>Sr. Supervisor @ 6%<br>Pred maint Supv @ 6%<br>Pred Maint Spec @ 6%<br>Planning/Proj Coord @ 6%<br>O&M Engineer @ 6%<br>Resource Planners @ 6%<br>Clerk @ 6% (Bargaining Unit). | Forecast OT is based on historical level of charged time plus anticipated projects. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIT | Travel Maint | NO | Resource Level details per Att 12I, pages 1-17 is used as a workpaper by budget personnel to review hours based on need, primarily capital and O&M work. An assumed 15% OT value not applied. | | Overtime for PIT was determined by the resource leveling process as their overtime is primarily driven by overhaul project demands and the need to support O&M and capital work requirements. |
| PIW | Waiau Oper | YES | | Clerk @ 0% (Bargaining Unit). | Forecast OT is based on 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. |

Hawaiian Electric Company, Inc.
2007 Test Year
Production Department Labor Budget Overtime Assumption

| RA | Name | Uniform 15% OT Applied Budget Input Sheet? | If NO, explain | Further explanation | Explanation why not reduced |
|---|---|---|---|---|---|
| PIX | Waiau Maint | YES | | Supervisor @ 10%. Maint workers have some labor hour demand for capital work entered by other Depts. | Forecast OT is based on a review of historical level of absences due to holiday, vacation, or illness and on a reasonable level of overtime to allow the performance of a level of maintenance effort to reduce the backlog, perform needed preventative maintenance work, and minimize the deferral of work. HECO's estimates for straight time and overtime labor hours are based on the anticipated level of maintenance effort, which is determined by considering the work requirements, scheduling, budget, and the priority of the work, and reflect the resource requirements to allow HECO to perform adequate amounts of work to sustain the reliability of HECO's generating units at acceptable levels. |

CA-IR-237

Ref: HECO T-6, page 67, CA-IR-2, HECO T-6, Attachment 13E, CA-IR-3, Attachment 1 (DG Units).

The testimony describes DG unit resources and their in-service dates, while IR-2, Attachment 13E and IR-3 Attachment 1 contains documentation supportive of test year DG expenses. Please provide the following information with respect to this data:

a. Actual monthly lease payments for each of the DG units, based upon the actual achieved in-service dates, with a comparison to the amounts of such payments actually included in test year monthly non-labor expenses.

b. Information required to tie together the 89 pages of data in Attachment 13E, indicating total expenses by EE included in the response to CA-IR-3, Attachment 1, page 2, with references into such supporting data.

c. Explain all assumptions made regarding maintenance requirements associated with each DG unit for test year budgeting purposes.

d. Provide actual incurred monthly DG maintenance expense by unit in a format comparable to the response provided to part c. of this information request.

e. Provide actual plant investment costs incurred by HECO in connection with each DG unit, indicating the dates when such costs were placed in service and closed to plant accounts.

f. Explain which of the plant costs in your response to part e. of this information request were included in beginning and end-of-test year plant in service balances.

HECO Response:

a. Please refer to Attachment 1 to this response for information regarding actual lease payments for the HECO DG units, through May 2007.

b. Please refer to Attachment 2, page 1, to this response for a summary of total 2007 test year DG expenses broken out by expense element, including cross references between HECO's response to CA-IR-3, Attachment 1, page 2, and the information provided in HECO's response to CA-IR-2, Attachment 13E.

Attachment 2, page 2, to this response summarizes the 2007 test year DG expenses reported on HECO-627 by expense element. (See HECO T-6, page 58, for explanation of

adjustment shown on HECO-627.) The expense elements of Attachment 2, page 2, sum as follows to reconcile to HECO-627:

- Labor = Summation of expense element 150.
- Material = Summation of expense elements 201, 205, and 401.
- Outside Services/Other = Summation of expense elements 501 and 506.
- Other (Rental) = Summation of expense elements 520, 521, 522, 570, and 901.
- On-Cost = Summation of expense elements 405, 406, 421, 422, and 423.
- Transportation = Summation of expense element 301.

Attachment 2, page 3, to this response reconciles the 2007 test year DG expenses reported on HECO-627 to information on CA-IR-3, Attachment 1, and CA-IR-2, Attachment 13E.

In HECO's June 2007 Update, HECO is removing two expense items related to DG expenses from its 2007 test year expenses. These are (1) $55,000 in Customer Dispatchable Standby Generator ("DSG") project expenses, due to cancellation of the Kaiser DSG project, and (2) $185,000 in DG outside service refueling expenses, due to reduced contractor refueling service expense. Please refer to HECO's response to CA-IR-337 and HECO's June 2007 Update for details of these adjustments.

c. Please refer to the response to part b. above, and pages 7 to 15 of HECO's response to CA-IR-2, Attachment 13E.

d. Please refer to Attachment 3 to this response for information regarding actual test year maintenance costs for the HECO DG units, through April 2007.

e. Please refer to Attachment 4 to this response for actual plant investment costs incurred by HECO per DG project. The DG projects have been partially closed as of the dates reflected

in Attachment 4. The projects have not been fully closed to allow the completion of the automatic fuel transfer and oil mist control equipment in 2007, as noted in Attachment 4.

f. Please refer to Attachment 4 to this response.

Hawaiian Electric Company, Inc.
2007 Rate Case
Distributed Generation Lease Cost (In Thousands)

| | | Dec-05 | Jan-06 | Feb-06 | Mar-06 | Apr-06 | May-06 | Jun-06 | Jul-06 | Aug-06 | Sep-06 | Oct-06 | Nov-06 | Dec-06 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Helemano | PR048501 | $187.2 | $198.0 | ($137.2) | $158.3 | $39.6 | ($147.6) | $38.2 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 |
| Iwilei | PR048506 | $0.0 | $110.7 | $0.0 | $79.2 | $39.6 | $39.6 | $37.7 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 |
| Ewa Nui 1-2-3 | PR048508 | $0.0 | $0.0 | $137.7 | $0.0 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 | $39.6 |
| CEIP | PR056492 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $68.6 |
| Kalaeloa | PR056496 | $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 |
| Total - Actual | | $187.2 | $308.7 | $0.5 | $237.5 | $118.8 | ($68.4) | $115.5 | $118.8 | $118.8 | $118.8 | $118.8 | $118.8 | $187.4 |

06 YTD $1,494.0

| | | Jan-07 | Feb-07 | Mar-07 | Apr-07 | May-07 | May-07 YTD | Total to Date |
|---|---|---|---|---|---|---|---|---|
| Helemano | PR048501 | $0.0 | $39.8 | $79.6 | $39.8 | $39.8 | $199.0 | $773.1 |
| Iwilei | PR048506 | $0.0 | $39.8 | $79.6 | $39.8 | $39.8 | $199.0 | $743.4 |
| Ewa Nui 1-2-3 | PR048508 | $0.0 | $39.8 | $79.6 | $39.8 | $0.0 | $159.2 | $653.3 |
| CEIP | PR056492 | $0.0 | $39.8 | $79.6 | $39.8 | $0.0 | $159.2 | $227.8 |
| Kalaeloa | PR056496 | $0.0 | $54.4 | $79.6 | $39.8 | $39.8 | $213.6 | $213.6 |
| Ewa Nui 4-5-6 | PR056500 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 | $0.0 |
| Total - Actual | | $0.0 | $213.6 | $398.0 | $199.0 | $119.4 | $930.0 | $2,611.2 |
| Total - Budget (1) | | $197.9 | $197.9 | $237.5 | $237.5 | $237.5 | $1,108.3 | |
| Variance (2) | | ($197.9) | $15.7 | $160.5 | ($38.5) | ($118.1) | ($178.3) | |

| Start of Lease Rent Payments | |
|---|---|
| Helemano | Dec-05 |
| Iwilei | Jan-06 |
| Ewa Nui 1-2-3 | Feb-06 |
| CEIP | Dec-06 |
| Kalaeloa | Feb-07 |
| Ewa Nui 4-5-6 | May-07 |

2007 Variance Explanation-

(1) Budget per 2007 Distributed Generation O&M Budget, CA-IR-3, HECO T-6, Attachment 1, page 2 of 2.

(2) Jan 07 - May 07 variance compared to budget due to the timing of invoice processing and due to Ewa Nui 4-5-6 budget to be in-service in March 2007 was actually in-service in May 2007. Note that no adjustment was made to annualize Ewa Nui 4-5-6 in 2007 Test Year.

**Hawaiian Electric Company, Inc.**
**2007 Rate Case**

**2007 - Distributed Generation Cost Reconcilliation**

| | Per CA-IR-3, Att 1, pg2 | | Diff | Page # indicated if from CA-IR-2, Attachment 13E, 89 pages |
|---|---|---|---|---|
| **DISTRIBUTED GENERATION** | | | | |
| Exp Ele = 570 | | | | |
| Lease Cost (Rent) | $2,660.0 | $456.0 | | Ewa Nui 1-2-3- Full Yr, pg 26, $152k*3 units |
| GE Tax | $110.9 | $456.0 | | Iwilei - Full Yr, pg 37, $152k*3 units |
| | | $456.0 | | Helemano - Full Yr, pg 48, $152k*3 units |
| | | $456.0 | | CEIP - Full Yr, pg 60, $152k*3 units |
| | | $456.0 | | Kalaeloa - Full Yr, pg 73, $152k * 3 units |
| | | $380.0 | | Ewa Nui 4-5-6 In-Svc 3/07,pg 86, $152k/12*10*3 units |
| | | $110.9 | | Applic tax @ old tax rate .04167 |
| | $2,770.9 | $2,770.9 | $0.0 | |
| Exp Ele = 201 | | | | |
| Material | $21.0 | $21.0 | $0.0 | Est consumables for each site @ $300/site/mo. |
| Exp Ele = 501 | | | | |
| | | | | Fuel Escort O/S cost- total |
| | | | | pg 8 of $273.6, incl of items |
| Outside Services | $366.7 | $245.0 | | pg 11,12,14 |
| | | $44.7 | | Per historical phone cost |
| | | $54.0 | | Estimated Source Test required by DOH |
| | | $9.0 | | Annual NCS Air Permit Fee @ $500/site |
| | | $14.0 | | Contract Security/Escort Labor |
| | $366.7 | $366.7 | $0.0 | |
| DG Total - Non-Lab | $3,158.6 | $3,158.6 | $0.0 | |
| **CUSTOMER DISPATCHABLE STANDBY GENERATOR (DSG)** | | | | |
| Exp Ele = 201 | | | | |
| Material | $8.3 | $8.3 | $0.0 | Catalyst |
| Exp Ele = 501 | | | | |
| Outside Services | $46.3 | $46.3 | $0.0 | Incl Reg Asset Amort for $24.6k |
| DSG Total- Non-Lab | $54.6 | $54.6 | $0.0 | |
| **TOTAL NON-LABOR** | | | | |
| | $3,213.2 | $3,213.2 | $0.0 | |
| **TOTAL LABOR** | | | | |
| | $108.0 | $108.0 | $0.0 | |
| **TOTAL NON-LABOR & LABOR** | | | | |
| | $3,321.2 | $3,321.2 | $0.0 | |

Distributed Generation -
Test Year 2007 Cost - Unadjusted

*Ind # NE

| *RA # | Resp Are | *Loc # | Location | *EE # | Sum of FY07 RC Budget07 | |
|---|---|---|---|---|---|---|
| PIM | Maintena | PDG | HECO Distributed Generation | 201 | 14,400 | |
| | | | | 301 | | |
| | | | | 401 | 1,591 | |
| | | | | 501 | 405,900 | |
| | | | | 570 | 2,916,000 | |
| | | | | 901 | 29,605 | |
| | | PDG Total | | | 3,367,496 | |
| PIM Total | | | | | 3,367,496 | |
| PIO | Operation | PDG | HECO Distributed Generation | 150 | 36,530 | (1) |
| | | | | 155 | | |
| | | | | 400 | | |
| | | | | 405 | 10,602 | (2) |
| | | | | 406 | 4,137 | |
| | | | | 421 | 4,724 | |
| | | | | 422 | 13,641 | |
| | | | | 423 | 2,988 | |
| | | PDG Total | | | 72,622 | |
| PIO Total | | | | | 72,622 | |
| PNG | EnergyPr | PDG | HECO Distributed Generation | 150 | 69,921 | (1) |
| | | | | 155 | | |
| | | | | 201 | | |
| | | | | 205 | 5,760 | (3) |
| | | | | 301 | 3,192 | |
| | | | | 400 | | |
| | | | | 406 | 6,236 | (2) |
| | | | | 421 | 7,123 | |
| | | | | 422 | 20,566 | |
| | | | | 423 | 5,720 | |
| | | | | 501 | 20,483 | (3) |
| | | | | 502 | | |
| | | | | 506 | 15,683 | |
| | | | | 520 | 9,000 | |
| | | | | 521 | 3,900 | |
| | | | | 522 | 12,400 | |
| | | PDG Total | | | 179,984 | |
| PNG Total | | | | | 179,984 | |
| Grand Total | | | | | 3,620,102 | |

DG

Σ (1) Labor = $106,451
Σ (2) On Cost = 75,737
Σ (3) Others = 70,418

Energy Project Dept.

**Hawaiian Electric Company, Inc.**
**2007 Rate Case**

**2007 - Distributed Generation ALL Cost Reconcilliation**

| | |
|---|---|
| **Total per CA-IR-237, Attachment 2, page 1** | $3,321.2 |
| **Less: Labor per Budget Schedule, CA-IR-3, Attachment 1, page 2 - shown on this schedule but was not used for purposes of budgeting labor cost (Labor cost identified by EE 150)** | ($108.0) |
| **Subtotal - Agrees with CA-IR-3, Attachment 1, page 1 showing updated DG cost, non-labor.** | $3,213.2 |
| **Labor Cost in 2007 Test Year per CA-IR-237, Attachment 2, page 2** | $106.5 (1) |
| **On Cost in 2007 Test Year per CA-IR-237, Attachment 2, page 2** | $75.7 |
| **Other DG cost budgeted by PNG, Energy Project Dept per CA-IR-237, Attachment 2, page 2 and is not on CA-IR-3, Attachment 1, page 2. Includes materials, O/S, transportation, Meals & Enter, and Interisland Travel.** | $70.4 |
| **Agrees with HECO-627, Total Test Year 2007 DG Cost after Adjustment for $155k.** | $3,465.8 |

Notes:
(1) Test Year 2007 DG labor does not include labor for Customer DSG.

Hawaiian Electric Company, Inc.
2007 Rate Case

2007 - Distributed Generation Maintenance Cost -Materials, O/S and Direct Labor
(Excludes Lease Cost and Admin Cost)
(In Thousands)

| | | Jan07 Act | Feb07 Act | Mar07 Act | Apr07 Act | YTD Apr07 |
|---|---|---|---|---|---|---|
| DISTRIBUTED GENERATION- ADMINISTRATION | | | | | | |
| | PR060813 | $2.0 | $2.1 | $3.0 | $1.7 | $8.8 |
| Helemano- G0012062 | | | | | | |
| Operation | PR048499 | $0.8 | $2.6 | $0.4 | $1.8 | $5.6 |
| Maint | PR052482 | $0.0 | $1.0 | $11.6 | ($5.9) | $6.7 |
| | | $0.8 | $3.6 | $12.0 | ($4.1) | $12.3 |
| Iwilei- G0012063 | | | | | | |
| Operation | PR048505 | $0.4 | $2.6 | $0.5 | $7.8 | $11.3 |
| Maint | PR052483 | $0.0 | $1.2 | $5.9 | $0.6 | $7.7 |
| | | $0.4 | $3.8 | $6.4 | $8.4 | $19.0 |
| Ewa Nui- G0012064 | | | | | | |
| Operation | PR048507 | $0.5 | $2.7 | $0.0 | $0.4 | $3.6 |
| Maint | PR052484 | $0.2 | $0.9 | $5.9 | $7.9 | $14.9 |
| Maint | PR053698 | $0.0 | $0.0 | $0.2 | $0.0 | $0.2 |
| | | $0.7 | $3.6 | $6.1 | $8.3 | $18.7 |
| CEIP- G0012065 | | | | | | |
| Operation | PR056490 | $0.7 | $0.7 | $0.3 | $0.1 | $1.8 |
| Maint | PR056493 | $0.2 | $1.2 | $6.0 | $1.2 | $8.6 |
| Maint | PR056494 | $0.0 | $0.0 | $0.5 | $0.3 | $0.8 |
| | | $0.9 | $1.9 | $6.8 | $1.6 | $11.2 |
| Kalaeloa Pole Yard - G0012066 | | | | | | |
| Operation | PR056495 | $0.5 | $0.7 | $0.4 | $0.2 | $1.8 |
| Maint | PR056497 | $0.2 | $0.9 | $4.6 | $0.9 | $6.6 |
| | | $0.7 | $1.6 | $5.0 | $1.1 | $8.4 |
| Ewa Nui 4-5-6 - G0012067 | | | | | | |
| Maint | PR056501 | $0.0 | $0.8 a | $3.5 b | $0.9 c | $5.2 |
| Total Actual | | $5.5 | $17.4 | $42.8 | $17.9 | $83.6 |
| Total - Budget | | $29.2 | $28.9 | $29.2 | $28.9 | $116.2 |
| Variance | | ($23.7) | ($11.5) | $13.6 | ($11.0) | ($32.6) |

Variance Explanation-
Variance due to lower Refueling O/S (escort) cost than expected with lower unit cost HECO employees providing the service. Expect higher cost in future months for environmental compliance services provided by HECO employee.

NOTES: a- escort services
b- fabrication and installation of fuel chutes
c- labor and procurement of materials prior to unit startup

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE

Distributed Generation (DG) Plant In Service Costs

| Project # | | (A) Plant In Service Date | (B) Actual Costs for Plant Placed in Service Prior to 01/01/07 | (C) Actual Costs for Plant Placed in Service during 2007, as of 4/30/07 | (D = B+C) Total Project Actual Capital Expenditures as of 4/30/07 | (E) Beginning of Test Year at Direct | (F) End of Test Year Forecast at Direct |
|---|---|---|---|---|---|---|---|
| P0001144 | Helemano Substation | 12/16/2005 | $1,323,115 | $5,613 (2) | $1,328,729 | $1,323,115 | $1,323,115 |
| P0001145 | Ewa Nui Substation 1-2-3 | 10/26/2005 | $1,009,949 | $3,037 (2) | $1,012,986 | $1,009,949 | $1,009,949 |
| P0001146 | Iwilei Tank Farm | 11/9/2005 | $1,297,966 | $8,967 (2) | $1,306,933 | $1,297,966 | $1,297,966 |
| P0001301 | Kalaeloa Pole Yard | 12/20/2006 | $1,640,060 | $116,722 (2) | $1,756,782 | $1,603,240 (3) | $1,605,436 (3) |
| P0001302 | CEIP Substation | 11/8/2006 | $1,123,719 | $53,111 (2) | $1,176,830 | $1,257,854 (3) | $1,257,854 (3) |
| P0001303 | Ewa Nui 4-5-6 | 5/4/2007 | $0 (1) | $0 (1) | $1,910,236 | $0 | $2,252,982 (4) |

Notes:

(1) Project formerly titled "Kuilima Sub DG". Ewa Nui 4-5-6 recorded costs of $692,077 as of 12/31/06 and $1,218,159 of additional costs incurred between 1/1/07 through 4/30/07 are not reported in the plant-in-service balances in columns B & C, respectively. The project was placed into service on 5/4/07.

(2) CA-IR-307 Attach 1 page 8.

(3) HECO WP-1601 page 2.

(4) HECO WP-1601 page 5.

CA-IR-238

**Ref: Response to CA-IR-2, HECO T-6, Attachment 7, page 2 (Environmental Management System).**

According to the response, $100,000 is included for EDSG software and services in the test year.

Please provide the following information:

a. A complete copy of the "Budgetary estimate provided by EDSG."

b. Explain the implementation plan and schedule for the entire system, explaining the purpose and benefits associated with each of the five "modules."

c. Provide a long term budget indicating the anticipated capital and expensed costs in each future year, by module, indicating how/if costs will be allocated to HELCO and/or MECO.

d. Provide actual expenditures, to date, by RA, EE and activity.

e. Provide complete copies of all studies, analyses, workpapers and other documents supportive of the Company's decision to deploy the Environmental Management System.

HECO Response:

a. EDSG is not a software provider but was retained by HECO to facilitate the design, purchase, implementation and maintenance of a software system to support HECO's Environmental Management System project. EDSG's role is thus to help identify Environmental Management System software needs and to match those needs with software vendors, and to assist in the implementation and maintenance of the chosen software. The budgetary estimate for all phases of the project was prepared by EDSG in January 2006 and is provided on Attachment 1 of this response. As noted the total project consists of four phases where each phase is comprised of one or two modules. The initial plan was to

combine and implement both Modules 1 (Compliance Management / Task Tracking) and 2 (Waste Management) in Phase 1 of the project. After further review HECO proceeded with the detailed design of both Modules 1 and 2, and decided to implement only Module 1, in 2007, and Module 2 in 2008. Completing the detailed design of Module 2 in 2007 may result in updated software and implementation estimates for the 2008 budget. The $100,000 estimate in 2007 test year as explained in HECO's response to CA-IR-2, HECO T-6, Attachment 7, page 2, did not include $15,000 to complete the detailed design of Module 2. Therefore, based on the budgetary estimates provided in the table on Attachment 1, HECO plans to spend $115,000 in 2007. The 2007 test year amount, however, remains unchanged at $100,000. EDSG is currently updating the project estimates and implementation schedule for the first two modules in Phase 1, and is expected to provide the results in the June/July 2007 time frame.

b. An updated plan and schedule for design and implementation of the entire Environmental Management System software is not available. The table on Attachment 1 shows the original implementation plan and schedule for the entire system. As discussed in subpart a. above, EDSG will be providing updated estimates and schedules for implementation of the first two modules in June/July of 2007. Updated plans and schedules for the remaining phases/modules will be developed prior to implementation of those phases. The plans and schedules for Phases 2 and 3 on Attachment 1 provide a relative understanding of the timing of implementation for those phases. After further review, plans for implementation of Phase 4, Module 6 (Hazardous Materials / Chemical Inventory), have been indefinitely deferred. The purpose and benefits of each module are described as follow:

1. Module 1 - Compliance Management/Task Tracking

Purpose:

Tracks completion of both internal environmental requirements and regulatory requirements using a combination of e-mail and web technology.

Benefits:

- Increases Compliance Assurance: helps assure task completion and reduce the likelihood of deviations and resulting violations.
- Streamlines Task Management: data forms and linked procedures give users the tools needed to complete their tasks.
- Reduces Oversight Time: Automated, escalating e-mails enable environmental staff to spend less time on "policing" and more time on higher-value activities.
- Decreases Impact of Employee Turnover: reduces the loss of "institutional memory" by having compliance assignments and history of task completion stored in the system.

2. Module 2 - Waste Management

Purpose:

Tracks data associated with waste disposal and recycled materials.

Benefits:

- Generates Regulatory Reports: automatically generates data required for regulatory reporting.
- Tracks Waste: tracks time sensitive activities such as storage time, generator status, exception reporting, etc.
- Reduces Disposal Risk: helps assure that wastes are only shipped to approved waste disposal facilities.

- Produces Shipping Manifests: easily generates shipping documents.

3. Module 3 - Process Wastewater

Purpose:

Manages and reports on water-related data.

Benefits:

- Streamlines Discharge Reporting: Automated data handling, calculations, and reporting.
- Data Ticklers: E-mail notifications warn of approaching limits before they are exceeded.

4. Module 4 - Air Quality

Purpose:

Manages and reports on air-related data.

Benefits:

- Reduces Permitting Time: provide fast access to data required for permit applications.
- Streamlines Calculations: automate data handling, calculations and reporting
- Data Ticklers: E-mail notifications warn of approaching limits before they are exceeded.

5. Module 5 - Incident Reporting - Environmental

Purpose:

Tracks and timely reports on incidents. Enables thorough and effective incident response by managing an incident from start to finish and providing key information to everyone who needs it in a timely manner.

Benefits:

- Creates Standard Incident Responses: Sets up a standard series of actions that need to occur within a set time from when an incident is logged, such as cleanup, root cause analysis, agency reporting, cleanup, and other corrective actions.
- Generates Regulatory Reports: automatically generates data required for regulatory reporting.

c. The only long term budget information currently available is that provided in the table on Attachment 1. Updated estimates are expected in June/July 2007 for Modules 1 and 2. From the estimates expected in June/July 2007, a determination on the breakdown between O&M and Capital will be made for the first two modules, with a majority of the costs expected to be O&M expenses. Capital expenses will depend on whether HECO purchases its own servers or leases servers hosted by another company. Final allocation of costs between HECO, HELCO and MECO has yet to be determined and will be determined following implementation of Module 1.

d. The actual expenditures, to date, by RA, expense element and activity are as follow:

- EDSG Strategic Planning $15,450 in 2005 (PJA876PHENE).
- EDSG Design $28,000 in progress as of May 11, 2007 (PJA875PHENE).

For the balance of 2007, as explained in "a" above, HECO plans to spend $115,000 in 2007 to complete the design stages of Modules 1 and 2, followed by software selection and implementation of Module 1.

e. The Company's decision to deploy Module 1 in 2007, followed by Module 2 in 2008, will depend on the results of the updated project estimates expected from EDSG in June/July 2007.

EDSG
Environmental Data Solutions Group, LLC

**Table 4-1**
**Recommendations and Actions**
**HECO**
**January 2006**

| Recommended Phase | EHS IT Initiative | Recommended Further Action | Detailed Design Estimated Budget (1) | Software Estimated Budget (2) | Implement Estimated Budget (3) | Maintenance Estimated Budget ($/Yr)(4) | Estimated Cost Projection | | | | | | | | | | Comment |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 1H06 | 2H06 | 1H07 | 2H07 | 1H08 | 2H08 | 1H09 | 2H09 | 1H10 | 2H10 | |
| 1 | Compliance Management / Task Tracking | Complete detailed design and identify commercial software solution to centralize recordkeeping and automate assignment and execution of site and corporate compliance obligations and corrective action notifications (i.e. corrective and preventative action tracking). | $12,000 | $60,000 | $70,000 | $23,600 | $12,000 | $102,000 | $28,000 | $16,520 | $7,080 | $16,520 | $7,080 | $16,520 | $7,080 | $16,520 | As part of the software selection for this phase take into consideration additional modules to be deployed in future phases and functionality needs defined in this strategic plan effort. |
| | Waste Management | Complete detailed design and identify commercial software solution to automate waste data collection from vendors that further provides trending analysis and reporting capability corporate wide. Retire current spreadsheet based methods. | $15,000 | $80,000 | $70,000 | $27,600 | $15,000 | | $122,000 | $28,000 | $19,320 | $8,280 | $19,320 | $8,280 | $19,320 | $8,280 | |
| 2 | Process Wastewater | Complete detailed design and identify commercial software solution to standardize and streamline LIMS and temperature/flow data collection. This includes potential custom development of hand-held field data collection application for operations to use when doing their rounds. | $15,000 | $60,000 | $70,000 | $23,600 | | | | $15,000 | $102,000 | $28,000 | $16,520 | $7,080 | $16,520 | $7,080 | |
| | Air Quality | Complete detailed design and identify commercial software solution to standardize and streamline air emission data collection, analysis and reporting. Retire current spreadsheet based methods where appropriate. | $18,000 | $100,000 | $90,000 | $31,600 | | | | $18,000 | | $154,000 | $36,000 | $22,120 | $9,480 | $22,120 | |
| 3 | Incident Reporting - Environmental | Complete detailed design and identify commercial software solution to automate reporting, notification, investigation, closure and *downstream analysis of all site incidents and* near misses. Establish standardized reports across sites for management. Retire current manual methods/processes where appropriate. | $15,000 | $60,000 | $60,000 | $23,600 | | | | | | | $15,000 | $96,000 | $24,000 | $16,520 | |
| 4 | Hazardous Materials / Chemical Inventory | Investigate opportunities to improve internal Ellipse purchasing system. Future, conduct detailed design and identify commercial software to assist with chemical approval, tracking, reporting and MSDS management. | $12,000 | $120,000 | $80,000 | $35,600 | | | | | | | | | $12,000 | $168,000 | |
| NA | Hardware | The existing IT server and network environment should be evaluated as to whether or not it can accommodate additional applications/databases. | NA | | NA | | $12,000 | | -- | -- | -- | -- | | -- | -- | -- | For budgeting purposes, it is assumed that two additional server machines (application/web and database) and related software must be procured. An evaluation should be conducted with IT to validate. |
| | | Totals | $87,000 | $480,000 | $440,000 | $165,600 | $39,000 | $102,000 | $150,000 | $77,520 | $128,400 | $206,800 | $93,920 | $150,000 | $88,400 | $238,520 | $0 |

**Notes:**

**(1) If HECO chose to perform detailed design on more than one module at a time, overall design costs could be reduced by 10-15 percent.**

**(2) These estimates are based on EDSGs current knowledge of HECO needs and the marketplace. It is possible that these estimates can be highly varied depending on actual conditions and upon further detailed design analysis and software vendor inquiries. If software licensing for multiple modules is negotiated at the same time, HECO could expect to reduce overall software costs by 10-20 percent.**

**(3) Implementation estimate assumes that a single, multi-module software solution will be hosted internally using existing HECO IT infrastructure (i.e. only 1 installation activity is required at the outset of the 1st module to be implemented). Also includes a moderate level of data collection/cleansing/importing, report development and train-the-trainer deployment.**

**(4) Annual maintenance includes: 1) 20% of software costs; 2) 2 weeks of external system support @ $120/hr, and 3) internal maintenance labor (IT etc.) for 1 week @ $50/hr;**

CA-IR-239

**Ref: Response to CA-IR-2, HECO T-6, Attachment 12B, page 2 (Power Purchase Division Consulting and Legal Expenses).**

According to the Attachment, $375,000 has been included in the test year forecast for "wind farm proposals, other renewable energy proposals and other IPP proposals" as well as for (implementing the competitive bid process." Please provide the following:

a. Provide a summary of historical actual expenses for these activities in each year 2002 through 2006, by RA, EE and Activity, explaining each individually significant project contained within such data.

b. Provide year-to-date actual 2007 expenses for each listed activity on Attachment 12B, page 2.

c. Explain each of the known projects/activities that will result in expenses being incurred by HECO in 2007 that are not reflected in your response to part b. of this information request.

d. Provide complete copies of all documents associated with your response to part (c) of this information request.

HECO Response:

a. Please refer to Attachment 1 to this response for the summary of historical actual expenses. The significant expenses are identified in Attachment 2 to this response. In 2003, significant outside legal expenses were incurred in the development of Amendment No. 2 to the HECO-AES Hawaii Inc. (AES Barbers Point Inc.) power purchase agreement (PPA), and in work on Non-utility Generator (NUG) issues, including the use of standard form PPA's. (See, for example, Consumer Advocate's Interim Report of the Ad Hoc Advisory Group to

the 22nd Legislature, 2004 Regular Session, and Consumer Advocate's Report of the Ad Hoc Advisory Group to the 23rd Legislature, 2005 Regular Session. The Consumer Advocate formed and held three meetings of an ad hoc advisory group in 2003. A summary of those meetings can be found in the Interim Report.) In 2004, significant outside legal expenses were incurred in the development of Amendment Nos. 5 and 6 to the HECO-Kalaeloa Partners L.P. PPA, and in the continuing work on NUG issues.

In 2004 to 2006, outside legal expenses (Goodsill Anderson Quinn & Stifel, LLP) and outside consulting services (Merrimack Energy) were incurred for the Company to participate in the Commission's Docket No. 03-0372 on Competitive Bidding for New Generation. Expenses were incurred to develop a Preliminary Statement of Position, respond to other parties' and the Commission's Information Requests, prepare a Final Statement of Position, participate in a panel hearing before the Commission, and develop a Framework for Competitive Bidding. The Commission's Decision and Order No. 23121, dated December 8, 2006 (Docket No. 03-0372), adopted a Framework for Competitive Bidding ("Framework") for the acquisition of new generating resources. As stated in HECO's response to CA-IR-68, on January 22, 2007, the Power Supply process area implemented a reorganization to create the Power Supply System Planning Department and reorganize functions in the Power Supply Services Department, in part, to implement the Framework. The June 2007 Update to be filed later for Production O&M expenses describes the reorganization of the Power Supply Process Area in greater detail, including the adjusted and normalized expenses to the 2007 test year estimate that result from the reorganization of the Power Supply Process Area.

b. Please refer to Attachment 1 to this response.

c. HECO's current efforts to obtain power purchase agreements with developers of renewable energy projects are described in the HECO IRP-3 Evaluation Report to be filed on or before May 31, 2007 pursuant to Order No. 23312, issued March 21, 2007 in Docket No. 03-0253. In addition, by letter dated June 27, 2006, in response to the Commission's Oral Argument Question No. 9 in the Competitive Bidding Investigation, Docket No. 03-0372, Hawaiian Electric Company, Inc., Maui Electric Company, Limited, and Hawaii Electric Light Company, Inc. (collectively, the "Companies") submitted a list of offers to sell energy on an as-available basis by non-fossil fuel generation producers that were presently under review by the respective electric utilities. The Companies' list of offers contains confidential information related to the Companies' negotiations with independent power producers, and the list of offers was provided to the Commission and the Consumer Advocate only pursuant to Protective Order No. 22562, issued June 26, 2006. In their Response to Decision and Order No. 22588 and Comments on the Proposed Framework for Competitive Bidding filed September 11, 2006 in Docket No. 03-0372, the HECO Companies noted that, subsequent to the filing of the HECO Companies' response to the Commission's Oral Argument Question Number 9 on June 27, 2006, (1) the HECO Companies have received or had discussions on new proposals that were not included in the June 27, 2006 filing, and (2) some of the proposals discussed in the June 27, 2006 filing had been revised. Exhibit A to the response, which also was provided to the Commission and the Consumer Advocate only pursuant to Protective Order No. 22562, contained additional details concerning the projects. Under the Hawaii Public Utilities Commission's Framework for Competitive Bidding, adopted by Decision and Order No. 23121, issued December 8, 2006 in Docket No. 03-0372, the Framework does not apply to: "(ii) offers to sell energy on an as-available

basis by non-fossil fuel producers that were submitted to an electric utility before this Framework was adopted; and (iii) offers to sell firm energy and/or capacity by non-fossil fuel producers that were submitted to an electric utility before this Framework was adopted, or that resulted from negotiations with respect to offers to sell energy on an as-available basis by non-fossil fuel producers that were submitted to an electric utility before this Framework was adopted; provided that negotiations with respect to such firm energy and/or capacity offers are concluded no later than December 31, 2007."

Outside legal services will be required to support negotiations with "grandfathered" Oahu non-utility generator developers that are expected to take place and hopefully be concluded during the remainder of 2007, and to support competitive biddings activities for renewable energy facilities through the end of 2007. Outside legal services will also be required to develop applications to the Commission for approval of any negotiated power purchase agreements.

d. Non-utility generator summary forms provided by the developers of the proposed "grandfathered" projects can be made available for review by the Consumer Advocate (and the Commission) under Protective Order, but would not be made available to non-regulators, since they contain confidential, proprietary information provided by project developers. In addition, there is other voluminous correspondence between HECO and the project developers that falls within this category.

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR
Power Purchase and Generation Planning Divisions -- Outside Legal Services
Actual Costs Recorded 2002 to 2006, and as of April 30, 2007

| Acct Blk Descr | RA # | Resp Area | EE # | Exp Element | Act # | Activity | 2002 Actual | 2003 Actual | 2004 Actual | 2005 Actual | 2006 Actual | 4/30/07 YTD Actual | 2007 TY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | $177,716 | $242,543 | $28,542 | $5,862 | $115 | $100,000 |
| Prod Oper | PIC | Power Purchase | 502 | Outside Svcs-Legal | 122 | Eval & Neg New Cont | $4,233 | $24,054 | $14,807 | $7,009 | $12,735 | $0 | $100,000 |
| Prod Oper | PIC | Power Purchase | 501 | Outside Svcs-Gen | 700 | Dev & Adm Business | $0 | $0 | $0 | $0 | $0 | $0 | $175,000 |
| | | | | | | RA PIC Total **(A)** | $13,635 | $204,278 | $257,350 | $35,551 | $18,597 | $115 | $375,000 |
| Prod Oper | PYB | Generation Plan | 502 | Outside Svcs-Legal | 700 | Dev & Adm Business | $0 | $0 | $7,792 | $25,988 | $98,751 | $1,045 | $5,000 |
| | | | | | | **TOTAL** | **$13,635** | **$204,278** | **$265,142** | **$61,539** | **$117,348** | **$1,160** | **$380,000** |

**(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 Division -- Outside Legal Services
Significant Actual Costs Recorded 2002 to 2006, and as of April 30, 2007 by Activity and Year

| 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 4/30/07:** | | | | | |
| Mar | $115 | HP000023 | IC-KPLP PPA | GOODSILL-KALAELOA PPA | GOODSILL ANDERSON QUINN STIFEL |
| **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 |

| Month | Amount | Work Order / Project # | Work Order / Project Description | Invoice Item | Supplier |
|---|---|---|---|---|---|
| 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 |
| 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 |
| TOTAL | $6,788 | | | | |
| **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 |
| TOTAL | $25,704 | | | | |
| **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 |
| 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 |
| TOTAL | $98,751 | | | | |
| **Activity 700(RA PYB) - As of 4/30/07:** | | | | | |
| March | $423 | HP001789 | Comp Bid Work - Generation Planning Div | GOODSILL-Competitive Bidding Dock(98341 | GOODSILL ANDERSON QUINN STIFEL |
| March | $555 | 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 |
|---|---|---|---|---|---|

TOTAL $978

CA-IR-240

**Ref: Response to CA-IR-2, HECO T-6, Attachment 13D, pages 3-6 (Kahe Station O&M Priority List).**

a. Please identify each of the priority list items that are not included in test year forecasted Kahe maintenance expenses (if any), indicating the reason for exclusion.

b. For each listed item that individually exceeds $50,000, please describe the work that is planned to be done and state the approximate date when the same work was last required (if available) at the station.

c. Provide the monthly amounts expended to date in 2007 for each listed project.

d. Explain why all of the listed discretionary projects, even those of the lowest priority, are fully budgeted to be performed in the test year, rather than deferring any of the planned work to later years.

e. List and describe each listed project that the Company has decided to not undertake and complete in 2007.

HECO Response:

a. All items on the Kahe Priority list were included in the 2007 O&M expense budget, which was the basis for the 2007 test year expense estimates for Other Production O&M. (The budget and normalization adjustments identified in HECO T-6, pages 57-60, did not affect these Kahe maintenance expenses.)

b. Please refer to Attachment 1 to this response.

c. Please refer to Attachment 2 to this response for the monthly sums expended to date in 2007 for the Kahe Station Priority List line items which have recorded expenses.

d. As described in HECO's response to CA-IR-64, three criteria are considered in the development of HECO's Planned Maintenance Schedules. The third criterion is to review whether the work required is consistent with the overall level of maintenance effort experienced in recent years. This same consideration is applied in the development of the

Production O&M budget. The 2007 budget includes discretionary work forecast to be performed within the budget year, at a level consistent with the maintenance effort of past years.

HECO's definition of "Non-Discretionary" work is work that must be performed, with little or no option, due to a regulatory, safety, environmental, security, scheduling, or other reason. "Discretionary" work is work needing to be performed but not characterized by the non-discretionary considerations that dictate it must be performed. Categorizing the work as "Discretionary" does not imply that the work should not be performed. The discretionary work is identified and included in the budget with the full intention of performing the work, but the scheduling of discretionary work is subject to consideration against all other work requirements, resources, and priorities as the year unfolds. Discretionary work items, if deferred, may eventually be elevated in priority and be reclassified as "non-discretionary." Non-discretionary work that materializes during the course of the year and is unbudgeted can lead to deferral of discretionary work even if it was budgeted. Moreover, unbudgeted non-discretionary work that was not scheduled (e.g., corrective maintenance to repair broken equipment that is causing a forced outage) could be more expensive to perform than if similar work had been planned in advance. If the Production O&M budget did not include some level of discretionary work, all unbudgeted work that had to be performed would result in overruns relative to the budget. Accordingly, being able to offset this type of work with the deferral of discretionary work helps to manage resources and expenses.

By way of example, Attachment 4 to this response summarizes the overhaul and outage project expenses for 2007. The expenses for the projects have been revised to a total of $21,607,000, an increase of $5,886,000 over the 2007 test year estimate of $15,721,000.

(The 2007 Projected expenses are updates to the 2007 overhaul project expenses for the Production O&M Department and not for Production Block of Accounts.) HECO plans its unit maintenance schedules up to five years in advance. The work that is planned for each outage on each unit depends upon known or identified problems that need to be corrected and on maintenance work that needs to be performed on regular intervals. Typically, this work will address problems that arise from normal wear and tear on the units. Actual inspection performed at the time of the outage, however, may reveal additional work that needs to be performed. In many cases, the additional work will result in an overrun for that overhaul.

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.

e. Please refer to Attachment 3 to this response.

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR

| **2007 Priority List Items Kahe > $50,000** | **Amount (X1,000)** | **Date Last Performed** | **Description** |
|---|---|---|---|
| Kahe Waste Water Structural Maint | $60.0 | 2003 | Inspect and repair waste water tank, piping, valves. |
| Kahe Contract Helpers & Insulators | $360.0 | 2006, annual ongoing activity | Supplemental contract labor to do clean up, general maintenance work and insulation work on station on an ongoing basis. |
| Kahe Condenser Cleaner | $60.0 | 2006, annual ongoing activity | Supplemental contract labor to fill in when members of the condenser crew are on vacation or when additional help is needed during storms or when cleaning other heat exchangers in addition to condensers. |
| Kahe Demin Mixed Bed Resin | $90.0 | 2003 | Replace Demin mixed bed resin at the end of its useful life. |
| Kahe Burner Tips Replace | $80.0 | 2006, annual ongoing activity | Replace burner tips on all units as they show signs of wear which leads to poor atomization, poor combustion and opacity. |
| Kahe Roadway Repairs | $100.0 | 2006, annual ongoing activity | Repair crumbling roadway surfaces as part of storm water permit compliance. |
| K6 Continuous Emission Monitoring (CEMS) Maint | $54.0 | 2006, annual ongoing activity | Contract maintenance of the K-6 CEMS computers and analytical equipment. |
| Kahe Basin Dredging | $200.0 | 2005 | Contract workers and equipment to pump sand out of K-1 to 4 and K-5/6 stilling basins to keep the sand from building up to the point that it stops the travel screens from moving. |
| Kahe (Stilling) Basin Structural Repair | $150.0 | 2005 | Spalling concrete repair to maintain the structural integrity and safety of the 2 stilling basins at Kahe. |
| Kahe 5&6 Auxiliary Cooling Water Lines | $250.0 | 2004 | Replace underground sections of lines that leaked in 2004. |
| Kahe Turbine Deck Coating Repair | $300.0 | Prior to 2003 | Remove old coating, prepare the surface and replace the coating that seals the turbine decks stopping the water from seeping into the concrete and leaking below as well as damaging rebar as it leaks through the concrete floor. |

Hawaiian Electric Company, Inc.
Rate Case - 2007 Test Year

Station O&M Priority List - line items with cost as of 04/30/07
(In Thousands)

| Listed Item | Jan07 Act | Feb07 Act | Mar07 Act | Apr07 Act | Total |
|---|---|---|---|---|---|
| Kahe-- | | | | | |
| Contract Helpers and Insul | $0.0 | $0.0 | $102.8 | $0.0 | $102.8 |
| ABB Engineer | $0.0 | $0.0 | $4.0 | $0.0 | $4.0 |
| Westinghouse Engineer | $0.0 | $0.0 | $0.4 | $0.0 | $0.4 |
| Basin Dredging | $0.0 | $0.0 | $0.0 | $124.2 | $124.2 |
| Condenser Cleaner | $48.0 | $2.9 | $20.1 | $0.1 | $71.1 |
| Stilling Basin Struct Rep | $0.0 | $0.0 | $6.3 | $0.0 | $6.3 |
| K6 CEMS Maint | $0.0 | $5.3 | $4.9 | $3.6 | $13.8 |
| Waste Oil Disposal | $0.0 | $0.2 | $0.0 | $0.0 | $0.2 |

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR

(In Thousands)

| 2007 Priority List Kahe Not to be done in 2007 | Reason | Budget |
|---|---|---|
| Kahe Admin Office Refurbish, Paint, Ceiling Tiles | Working on a facilities master plan for Power Supply O&M. Defer this work till that plan is completed. Funds to be used to offset unbudgeted work. | $50 |
| Kahe Drott Maint Certificate | Crane is not operable, no certification is needed. Funds to be used to offset unbudgeted work | $20 |
| Kahe 1-6 Corrosion Control | Deferring this lower priority work to offset unbudgeted work. | $250 |
| Kahe Boiler Feed Pump Overhaul | Volutes that needed replacement were changed as part of a unit overhaul. Remaining unit tests show all pumps operating satisfactorily at this time. Funds to be used to offset unbudgeted work. | $189 |
| Lube Oil Tanks 11,12,31,32 | Deferring until work can be more completely specified. Funds to be used to offset unbudgeted work. | $200 |
| Total | | $709 |

Hawaiian Electric Company, Inc.
2007 Rate Case
Overhaul Project Cost
(In thousands)

| Project Number | Project Name | 2007 TY | 2007 Projected (1) | 2007 Chng | |
|---|---|---|---|---|---|
| P0000654 | Waiau 6 Overhaul (2004) | $0 | ($135) | ($135) | |
| P0000844 | Kahe 6 Overhaul (2005) | $0 | ($33) | ($33) | |
| P0000845 | Kahe 4 Overhaul (2006) | $0 | $145 | $145 | |
| P0000846 | Kahe 1 Overhaul (2005) | $1,729 | $4,215 | $2,486 | |
| P0000847 | Waiau 4 Overhaul (2006) | $0 | $121 | $121 | |
| P0001105 | Kahe 3 Overhaul (2006) | $3,723 | $5,463 | $1,740 | |
| P0001106 | Waiau 7 Overhaul (2007) | $4,132 | $5,055 | $923 | |
| P0001277 | Waiau 9 Overhaul (2007) | $1,069 | $903 | ($166) | |
| P0001278 | Hono 8 Overhaul (2007) | $1,207 | $200 | ($1,007) | |
| P0001279 | Waiau 5 Overhaul (2007) | $3,480 | $3,259 | ($221) | |
| P0001280 | Hono 9 Outage (2006) | $381 | $1,318 | $937 | |
| P000XXXX | Hono 9 Outage (2007) | $0 | $1,096 | $1,096 | (2) |
| TOTAL | | $15,721 | $21,607 | $5,886 | |
| | Non-Overhaul Projects | $9,742 | | | |
| | Non-Projects | $59,846 | | | |
| | Non-Labor G/L Codes | ($15,876) | | | |
| | Total Production O&M | $69,433 | Agrees with Operating Budget per HECO-602 | | |

(1) 2007 Projected is an update of 2007 overhaul expenses for Production O&M Department and not for Production Block of Accounts.

(2) Honolulu 9 Outage (2007) not currently approved, however work is planned for 10/01/07 to 10/26/07.

CA-IR-241

**Response to CA-IR-2, HECO T-6, Attachment 13K, pages 3-4 (Waiau Station O&M Priority List).**

a. Please identify each of the priority list items that are not included in test year forecasted Waiau maintenance expenses (if any), indicating the reason for exclusion.

b. For each listed item that individually exceeds $50,000, please describe the work that is planned to be done and state the approximate date when the same work was last required (if available) at the station.

c. Provide the monthly amounts expended to date in 2007 for each listed project.

d. Explain why all of the listed discretionary projects, even those of the lowest priority, are fully budgeted to be performed in the test year, rather than deferring any of the planned work to later years.

e. List and describe each listed project that the Company has decided to not undertake and complete in 2007.

HECO Response:

a. All items on the Waiau Priority list were included in the 2007 O&M expense budget, which was the basis for the 2007 test year expense estimates for Other Production O&M. (The budget and normalization adjustments identified in HECO T-6, pages 57-60, did not affect these Waiau maintenance expenses.)

b. Please refer to Attachment 1 to this response.

c. Please refer to Attachment 2 to this response for the monthly sums expended to date in 2007 for the Waiau Station Priority List line items which have recorded expenses.

d. As described in HECO's response to CA-IR-64, three criteria are considered in the development of HECO's Planned Maintenance Schedules. The third criterion is to review whether the work required is consistent with the overall level of maintenance effort experienced in recent years. This same consideration is applied in the development of the

Production O&M budget. The 2007 budget includes discretionary work forecast to be performed within the budget year, at a level consistent with the maintenance effort of past years.

HECO's definition of "Non-Discretionary" work is work that must be performed, with little or no option, due to a regulatory, safety, environmental, security, scheduling, or other reason. "Discretionary" work is work needing to be performed but not characterized by the non-discretionary considerations that dictate it must be performed. Categorizing the work as "Discretionary" does not imply that the work should not be performed. The discretionary work is identified and included in the budget with the full intention of performing the work, but the scheduling of discretionary work is subject to consideration against all other work requirements, resources, and priorities as the year unfolds. Discretionary work items, if deferred, may eventually be elevated in priority and be reclassified as "non-discretionary." Non-discretionary work that materializes during the course of the year and is unbudgeted can lead to deferral of discretionary work even if it was budgeted. Moreover, unbudgeted non-discretionary work that was not scheduled (e.g., corrective maintenance to repair broken equipment that is causing a forced outage) could be more expensive to perform than if similar work had been planned in advance. If the Production O&M budget did not include some level of discretionary work, all unbudgeted work that had to be performed would result in overruns relative to the budget. Accordingly, being able to offset this type of work with the deferral of discretionary work helps to manage resources and expenses.

HECO's response to CA-IR-240 d. describes how funds initially allocated for lower priority or discretionary work (for example, the work identified in Attachments 3 of HECO's responses to this information request as well as CA-IR-240 and -242) will be

reallocated and used to offset unbudgeted expenses in other higher priority areas such as the overruns in Kahe 1, Waiau 7, and Honolulu 9 overhaul project expenses. In addition to the discretionary work identified in Attachment 3 that was deferred, other work must also be deferred to perform all the necessary overhaul work and avoid significant overruns of the budget.

e. Please refer to Attachment 3 to this response.

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR

| Waiau > $50k | Amount (X1,000) | Date Last Done | Description |
|---|---|---|---|
| Waiau Contract Boiler Makers, Helpers, Insulators | $360.0 | 2006, annual ongoing activity | Supplemental contract labor to do welding and insulation work on station on an ongoing basis. |
| Waiau Condenser Cleaner | $60.0 | 2006, annual ongoing activity | Supplemental contract labor to fill in when members of the condenser crew are on vacation or when additional help is needed during storms or when cleaning other heat exchangers in addition to condensers. |
| Waiau Distilled Water Tank 4 | $80.0 | Not recorded | Open, clean inspect and repair Demineralized Water Tank 4. |
| Waiau Waste Water Treatment Facility Rep | $75.0 | Prior to 2003 | Repair corrosion, concrete spalling, refurbish filters to maintain the waste water treatment facility in good operating condition. |
| Waiau Roadway Repair | $100.0 | 2004 | Repair crumbling roadway surfaces as part of our storm water permit compliance. |
| Waiau Asbestos Abatement | $100.0 | 2006, annual ongoing activity | Ongoing removal and disposal of deteriorated asbestos on station either as it becomes friable or to do repairs under the asbestos insulation. |
| Waiau Hazardous Waste Disposal | $100.0 | 2006, annual ongoing activity | Removal and disposal costs to deal with various hazardous materials on Station. |
| Waiau Shop Bldg Repair | $150.0 | 2004 | Repair leaking roof sections. |
| Waiau Boiler Feed Pump Overhaul | $170.0 | 2006 | Replace pump volutes when they are no longer capable of minimum flow performance. |
| Waiau Traveling Screens Overhaul | $240.0 | 2006 | Remove and replace worn parts on 2 of the 12 travel screens on a priority basis. |
| Waiau Circ Water Pump Overhaul | $180.0 | 2006 | Overhaul Station Circ Water Pumps usually as a result of worn condition as detected by our PDM practices. |

Hawaiian Electric Company, Inc.
Rate Case - 2007 Test Year

Station O&M Priority List - line item with cost as of 04/30/07
(In Thousands)

| Listed Item | Jan07 Act | Feb07 Act | Mar07 Act | Apr07 Act | Total |
|---|---|---|---|---|---|
| Waiau-- | | | | | |
| Contract Blr Mkr Help/Insul | $17.7 | $14.9 | $44.4 | $7.2 | $84.2 |
| Westinghouse Engineer | $0.0 | $0.0 | $0.3 | $0.0 | $0.3 |
| ABB Engineer | $0.0 | $0.0 | $4.0 | $0.0 | $4.0 |
| Travel Scrn OH W5/6 | $0.0 | $0.0 | $109.5 | $19.9 | $129.4 |
| Condenser Cleaner | $5.6 | $0.4 | $24.9 | $1.5 | $32.4 |
| Condensate Pump OH | $0.2 | $0.0 | $0.0 | $0.5 | $0.7 |
| Distill Water Tank Maint 4 | $2.8 | $2.0 | $0.6 | $0.0 | $5.4 |
| Burner Tips Replacement | $1.4 | $0.0 | $12.5 | $2.7 | $16.6 |
| Fence Repair | $0.0 | $2.0 | $0.0 | $0.0 | $2.0 |
| Roadway Repair | $0.0 | $2.0 | $0.0 | $5.0 | $7.0 |
| Sludge Bed Drying Cell | $10.1 | $0.0 | $0.0 | $0.0 | $10.1 |
| A/C Duct Clean & Disinf | $8.5 | $10.2 | $0.0 | $0.0 | $18.7 |
| Gantry Crane Cert | $0.0 | $0.0 | $0.0 | $0.4 | $0.4 |
| Hazardous Waste Disp | $0.0 | $0.0 | $0.0 | $0.1 | $0.1 |
| Tree Trim (Safety & Sec) | $0.1 | $0.0 | $20.9 | $0.0 | $21.0 |

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR
(In Thousands)

| **2007 Priority List Waiau Not to be done in 2007** | **Reason** | **Cost** |
|---|---|---|
| Waiau Paint Corrosion Control | Deferring this lower priority work to offset unbudgeted work. | $200 |
| Waiau Demin Reverse Osmosis Filter | Determined filters do not need to be replaced this year. Funds to be used to offset unbudgeted work. | $35 |
| Waiau Fence Repairs | Assessment of Station fence indicates no major work needed this year. Funds to be used to offset unbudgeted work. | $80 |
| Waiau Fuel oil tank maintenance | Deferring until work can be more completely specified. Funds to be used to offset unbudgeted work. | $50 |
| Total | | $365 |

CA-IR-242

**Ref: Response to CA-IR-2, HECO T-6, Attachment 13F, pages 3-4 (Honolulu Station O&M Priority List).**

a. Please identify each of the priority list items that are not included in test year forecasted Honolulu maintenance expenses (if any), indicating the reason for exclusion.

b. For each listed item that individually exceeds $50,000, please describe the work that is planned to be done and state the approximate date when the same work was last required (if available) at the station.

c. Provide the monthly amounts expended to date in 2007 for each listed project.

d. Explain why all of the listed discretionary projects, even those of the lowest priority, are fully budgeted to be performed in the test year, rather than deferring any of the planned work to later years.

e. List and describe each listed project that the Company has decided to not undertake and complete in 2007.

HECO Response:

a. All items on the Honolulu Priority list were included in the 2007 O&M expense budget, which was the basis for the 2007 test year expense estimates for Other Production O&M. (The budget and normalization adjustments identified in HECO T-6, pages 57-60, did not affect these Honolulu maintenance expenses.)

b. Please refer to Attachment 1 to this response.

c. Please refer to Attachment 2 to this response for the monthly sums expended to date in 2007 for the Honolulu Station Priority List line items which have recorded expenses.

d. As described in HECO's response to CA-IR-64, three criteria are considered in the development of HECO's Planned Maintenance Schedules. The third criterion is to review whether the work required is consistent with the overall level of maintenance effort experienced in recent years. This same consideration is applied in the development of the

Production O&M budget. The 2007 budget includes discretionary work forecast to be performed within the budget year, at a level consistent with the maintenance effort of past years.

HECO's definition of "Non-Discretionary" work is work that must be performed, with little or no option, due to a regulatory, safety, environmental, security, scheduling, or other reason. "Discretionary" work is work needing to be performed but not characterized by the non-discretionary considerations that dictate it must be performed. Categorizing the work as "Discretionary" does not imply that the work should not be performed. The discretionary work is identified and included in the budget with the full intention of performing the work, but the scheduling of discretionary work is subject to consideration against all other work requirements, resources, and priorities as the year unfolds. Discretionary work items, if deferred, may eventually be elevated in priority and be reclassified as "non-discretionary." Non-discretionary work that materializes during the course of the year and is unbudgeted can lead to deferral of discretionary work even if it was budgeted. Moreover, unbudgeted non-discretionary work that was not scheduled (e.g., corrective maintenance to repair broken equipment that is causing a forced outage) could be more expensive to perform than if similar work had been planned in advance. If the Production O&M budget did not include some level of discretionary work, all unbudgeted work that had to be performed would result in overruns relative to the budget. Accordingly, being able to offset this type of work with the deferral of discretionary work helps to manage resources and expenses.

HECO's response to CA-IR-240 d., describes how funds initially allocated for lower priority or discretionary work (for example, the work identified in Attachments 3 of HECO's responses to this information request as well as CA-IR-240 and -241) will be

reallocated and used to offset unbudgeted expenses in other higher priority areas such as the overruns in Kahe 1, Waiau 7, and Honolulu 9 overhaul project expenses. In addition to the discretionary work identified in Attachment 3 that was deferred, other work must also be deferred to perform all the necessary overhaul work and avoid significant overruns of the budget.

e. Please refer to Attachment 3 to this response.

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR

| 2007 Priority List Items Honolulu > $50k | Amount (X1,000) | Date Last Done | Description |
|---|---|---|---|
| Hon Contract Welder & Insulator | $288.0 | Through 2006 | Supplemental contract labor to do welding and insulation work on station on an ongoing basis. |
| Iwilei pipeline DOT Compliance | $75.0 | 2005 | Contractor support to prepare and maintain documentation to keep Iwilei pipeline operation in Federal DOT compliance |
| Hon Asbestos Removal | $100.0 | 2006, annual ongoing activity | Ongoing removal and disposal of deteriorated asbestos on station either as it becomes friable or to do repairs under the asbestos insulation. |
| Hon Building Repairs | $160.0 | 2003 | Work includes repairing the leaking welding shop roof, replacing broken windows in locker room, cleaning and painting corroding building louvers. |
| Iwilei Pipeline Inspection | $120.0 | 2006 | Perform a "smart pig" inspection of the Iwilei pipeline to determine if there are any areas of excessive corrosion and hence thinning. |

Hawaiian Electric Company, Inc.
Rate Case - 2007 Test Year

Station O&M Priority List - line item with cost as of 04/30/07
(In Thousands)

| Listed Item | | Jan07 Act | Feb07 Act | Mar07 Act | Apr07 Act | Total |
|---|---|---|---|---|---|---|
| Honolulu-- | | | | | | |
| | Contract Welder and Insul | ($11.6) | $25.8 | $11.6 | $0.0 | $25.8 |
| | Waste Water Pit Repairs | $0.0 | $0.6 | $0.0 | $6.5 | $7.1 |
| | Burner Tips Replace | $0.0 | $0.0 | $0.0 | $3.1 | $3.1 |
| | Iwilei Pipeline DOT Compl | $0.0 | $0.0 | $0.0 | $0.6 | $0.6 |
| | Asbestos Abatement | $51.6 | $0.5 | $37.6 | $0.0 | $89.7 |
| | Hazardous Waste Disp | $0.0 | $0.0 | $1.2 | $1.0 | $2.2 |
| | Mercury Disposal | $0.0 | $3.4 | $0.0 | $0.0 | $3.4 |

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR
(In Thousands)

| **2007 Priority List Honolulu Not to be done in 2007** | **Reason** | **Cost** |
|---|---|---|
| Honolulu Boiler Feed Pump Overhaul | Tests show all pumps operating satisfactorily at this time. Funds to be used to offset unbudgeted work. | $189 |
| Honolulu Travel Screen Overhaul | Travel Screens are operating satisfactorily. Will likely do screen overhauls as part of Honolulu 8 overhaul in 2008. Funds used to offset unbudgeted work. | $50 |
| Honolulu Fuel Oil tank Berm Modifications | Work was done in 2006. Funds used to offset unbudgeted work. | $100 |
| Honolulu Lube Oil Tank 81/82 clean inspect and repair | Lack of personnel to specify, bid out, and lead the work. Funds used to offset unbudgeted work. | $100 |
| Iwilei Pipeline repairs | Results of pigging are expected to be too late to allow work scope to be determined, and permits obtained for completion prior to the end of 2007. Funds used to offset unbudgeted work. | $300 |
| Total | | $739 |

CA-IR-243

**Ref: Response to CA-IR-2, HECO T-6, Attachment 13I, pages 10-68 (Test Year Projected Overhaul Materials/Services).**

The Attachment provides estimated EE 201 materials and EE 501 outside services expense estimates for overhauls in the test year. Please provide the following information with respect to this data:

a. Actual EE 201 (materials) PIT expenses in each of the years 2001 through 2006 and projected test year 2007, by activity (257, 258, 259, 260, 261, 262, 272, 273 and 274).

b. Actual EE 501 (outside services) PIT expenses in each of the years 2001 through 2006 and projected test year 2007, by activity (257, 258, 259, 260, 261, 262, 272, 273 and 274).

c. To the extent historical average and trended expenses provided in response to parts a. and b. of this information request include unusual fluctuations or extraordinary activity/expense in any particular year, please explain the causes for such activity/expense fluctuations.

d. To the extent historical average and trended expenses provided in response to parts a. and b. of this information request do not compare reasonably to test year projected expenses, please explain each additional consideration that HECO believes is supportive of its proposed expense level.

HECO Response:

a. Please refer to Attachment 1 to this response for actual PIT (Traveling Maintenance) Materials- Projects (overhauls) expenses from 2001 to 2006 and budgeted for 2007. (As is explained in response to subpart d.5., expenses for materials and outside services for

overhauls are projected to be higher than the 2007 budgeted amounts due to the overhaul changes identified in response to CA-IR-244.)

b. Please refer to Attachment 2 to this response for actual PIT Outside Service- Projects (overhauls) expenses from 2001 to 2006 and budgeted for 2007. (As is explained in response to subpart d.5., expenses for materials and outside services for overhauls are projected to be higher than the 2007 budgeted amounts due to the overhaul changes identified in response to CA-IR-244.)

c. On October 11, 2004, Waiau 9 combustion turbine suffered a catastrophic failure in its compressor section. That repair was extraordinary in scope and expense. Most of these costs were in activity 273 materials in 2004 and activity 273 outside services in 2005. The Waiau 9 material and outside service expenses related to this failure and repair are included in Attachment 1 and 2, however, the expenses were subsequently charged to insurance and credited back to Production O&M as an expense element 900 item. The Waiau 9 credit is detailed in Attachment 3 to this response. In total, 2004 expenses were reduced by $1,674,000 and 2005 expenses by $1,524,000. The impact of the credit is reflected in Attachment 4 for material charges and Attachment 5 for outside service charges as the plot line labeled "Adj Tot" in each attachment. The plots show a reduction of material charges of $1,344,156 in 2004 and $267,120 in 2005, and a reduction of outside service charges of $235,951 in 2004 and $1,169,831 in 2005.

HECO understands that the Consumer Advocate is aware of another extraordinary failure on Waiau 8 which occurred on October 14, 2005. The expenses for this failure were also charged to insurance and credited back to Production O&M as an expense element 900 item. This credit is detailed in Attachment 6 to this response and totals $539,000 in 2005

and $400,000 in 2006. The Waiau 8 expenses, in this case, were not charged to RA PIT but to RA PIX (Waiau Station Maintenance) instead. As a result, the associated material and outside service charges are not included in Attachment 1 and Attachment 2.

The remainder of the fluctuations observed in the adjusted totals of Attachment 4 and Attachment 5 are a function of the number of reheat and non-reheat overhauls, the number of turbine major overhauls and the scope of work in each of those overhauls, and the additional work performed but not budgeted. This type of work includes maintenance items that are determined to be required based on inspections that occur during the overhaul (e.g., inspections of the steam turbine internals once the steam turbine has been opened, and inspection of boiler tubes, headers, expansion joints, etc. once the unit is off line and the boiler has been washed). Conversely, on occasion it is determined that work that is forecast may not be needed and this also contributes to fluctuations in the expense pattern (e.g., air heater baskets may not have to be replaced based on internal inspections of the equipment once the unit is off line and the surfaces are cleaned). Many variables combine during the course of each year and affect the cost of overhauls for the year.

d. The discussion that follows compares 2007 budgeted expenses with historical actual expenses provided in responses to parts a. and b. As discussed in HECO T-6 pages 19-22, and in the responses to CA-IR-234, -240, -241, and -242, maintenance activities are relatively fluid in any particular year due to a variety of circumstances including: forced outages, discovery of necessary work based on equipment inspections, and the diversion of resources from the performance of discretionary work to manage more important emergent work that is deemed non-discretionary. As 2007 unfolds, the result is expected to be similar, that is, the total maintenance expense will be consistent with the test year estimate

and many of the specific work items performed will be different from those originally projected.

Attachment 7 summarizes the PIT material and outside service expenses by project (overhaul), and grouped by boiler activities (257, 258, and 259), turbine activities (260, 261, and 262), and combustion turbine activities (272, 273, and 274). Attachment 8 summarizes the PIT material expenses for boiler activities (257, 258, and 259), for overhauls where material expenses exceed $200,000. Attachments 1, 2, 4, 5, 7, and 8 to this response provide references to the explanations below of the comparison of 2007 budgeted PIT expenses to actual expenses for prior years.

1. As shown in Attachment 4 and referencing the Adjusted Total line, which removes the credited amounts for Waiau 9 combustion turbine, the 2007 budget expense is slightly lower than the 2006 recorded PIT material expenses.
2. The 2006 total for material expenses in Attachment 4 is higher than prior years due to $910,410 in material expenses for Waiau 10 major overhaul in 2006 (refer to Attachment 7, page 30).
3. The 2007 budget total for material expenses in Attachment 4 is higher than 2005 and prior years due to the following:
   a. 2007 budget has one more scheduled overhaul where material expenses are greater than $200,000 when compared to prior years, and
   b. the average material cost per overhaul is increasing.

   Attachment 8 summarizes the number and cost for overhauls where material expenses are greater than $200,000. The average cost has increased from $327,000 in 2001 to $696,000 in 2006, and decreased to $575,000 in the 2007 budget. The increase

in average cost since 2001 is due to a combination of reasons, which can include increased cost of parts and materials, increased work scope due to increased wear and tear on the unit, improved forecasting of work due to improved planning, as well as the other factors described earlier in this response. The increase is apparent and equals approximately 15% per year, as reflected by the trend line in the plot of Attachment 8.

4. As shown in Attachment 5, the 2007 budget total for PIT Outside Service of $3,327,000 is significantly lower than prior years and is lower than the 2006 actual of $6,319,000 by $2,992,000. Two major contributors to this large decrease are:

   a. $1,713,000 in outside labor support for RA PIT in 2006 (summarized from CA-IR-74, Attachment 8) compared to $881,000 in 2007 (summarized from CA-IR-74, Attachment 8, page 33), a difference of $832,000. The 2007 amount is lower than that for prior years due primarily to the assumption that the Maintenance Division would be fully staffed (i.e., no vacant positions) for the entire year.

   b. Outside service expenses for 2006 are also higher than that for the 2007 budget because of the combustion turbine major overhaul performed on Waiau 10 in 2006. As shown in Attachment 7, page 32, the outside service expense for this major overhaul totaled $1,985,200. Only $126,500 is included in the 2007 budget for a combustor inspection on Waiau 9, as shown in Attachment 7, page 33, a difference of $1,858,700.

5. Another contributor to reduced material and outside service expenses in 2007 is the number of forecast high pressure and low pressure (HP/LP) steam turbine overhauls included in the 2007 budget. As described in HECO's response to CA-IR-244, while the 2007 Planned Maintenance Schedule (Rev. 02/14/06) (HECO-608) reflects five

HP/LP steam turbine overhauls in 2007 (full period or carryover from 2006 or into 2008), the 2007 budget includes material and outside service expenses for only the Waiau 5 and Honolulu 8 (proportional amount for 2007) overhauls. The expenses for HP/LP steam turbine overhauls for Kahe 1 (proportional amount for 2007), Waiau 7, and Kahe 3 were not included in the 2007 budget, which contributes to the material and outside service expenses in the 2007 budget being lower than the actual amounts for the prior years. As described in CA-IR-244, 2007 test year overhaul expenses are lower than "normal" by an amount equivalent to one, and possibly two, HP/LP steam turbine overhauls. Also, as stated in CA-IR-244, the HP/LP steam turbine overhauls will be performed at Kahe 1, Waiau 7, and Kahe 3 in 2007, and consequently, lower priority discretionary work will be deferred to offset (or partially offset) these unforecasted, non-discretionary expenses.

As stated earlier in this response, as 2007 unfolds, the result is expected to be that the total maintenance expense will be consistent with the test year estimate and many of the specific work items performed will be different from that originally projected.

ONLY PIT MATERIALS - PROJECTS

6/19/2007 *Rate Case - 01-07 Compare-Dept,Actykay 12:46PM

| *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|
| 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $664,114 | $882,063 | $695,199 | $332,723 | $870,994 | $634,980 | $401,862 |
| 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $208,329 | $182,509 | $186,588 | $714,684 | $261,005 | $928,431 | $1,276,797 |
| 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $520,812 | $801,178 | $614,006 | $615,405 | $792,834 | $763,967 | $1,195,176 |
| 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $507,807 | $615,565 | $546,668 | $472,509 | $274,079 | $440,811 | $497,504 |
| 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $137,300 | $410,383 | $782,252 | $462,979 | $273,462 | $101,467 | $101,888 |
| 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $134,390 | $174,823 | $259,856 | $252,563 | $48,944 | $314,256 | $442,673 |
| 272 | Maint CT & Elec Eq-Prev | MATERIAL | $36,631 | $0 | $0 | $124,156 | $681,725 | $151,497 | $49,973 |
| 273 | Maint CT & Elec Eq-Pred | MATERIAL | $1,532 | $0 | $0 | $1,569,474 | $110,150 | $711,479 | 0 |
| 274 | Maint CT & Elec Eq-Corr | MATERIAL | $7,814 | $0 | $0 | $3,486 | $110,734 | $47,434 | $5,553 |
| | | | $2,218,730 | $3,066,521 | $3,084,569 | $4,547,980 | $3,423,927 | $4,094,322 | $3,971,426 |

ONLY PIT O/S SVC-PROJECTS

6/19/2007

*Rate Case - 01-07 Compare-Dept,Actykay

12:47PM

| *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|
| 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $510,554 | $546,242 | $368,845 | $520,662 | $790,780 | $647,616 | $381,500 |
| 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $361,029 | $282,069 | $289,629 | $1,166,081 | $613,336 | $708,241 | $991,416 |
| 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $403,510 | $398,366 | $331,291 | $522,053 | $532,945 | $1,016,422 | $806,666 |
| 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $709,359 | $723,929 | $751,958 | $780,365 | $807,852 | $436,168 | $362,584 |
| 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $313,798 | $810,658 | $658,968 | $1,658,378 | $693,111 | $270,983 | $424,166 |
| 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $87,141 | $163,585 | $903,422 | $366,129 | $377,705 | $1,254,334 | $234,584 |
| 272 | Maint CT & Elec Eq-Prev | O/S SVCS | $11,467 | $0 | $0 | $83,388 | $799,737 | $1,051,736 | $82,500 |
| 273 | Maint CT & Elec Eq-Pred | O/S SVCS | $1,406 | $0 | $0 | $239,963 | $1,449,722 | $830,969 | $27,000 |
| 274 | Maint CT & Elec Eq-Corr | O/S SVCS | $19,000 | $0 | $0 | $2,930 | $46,224 | $102,501 | $17,000 |
| | | | $2,417,264 | $2,924,849 | $3,304,112 | $5,339,949 | $6,111,411 | $6,318,970 | $3,327,416 |

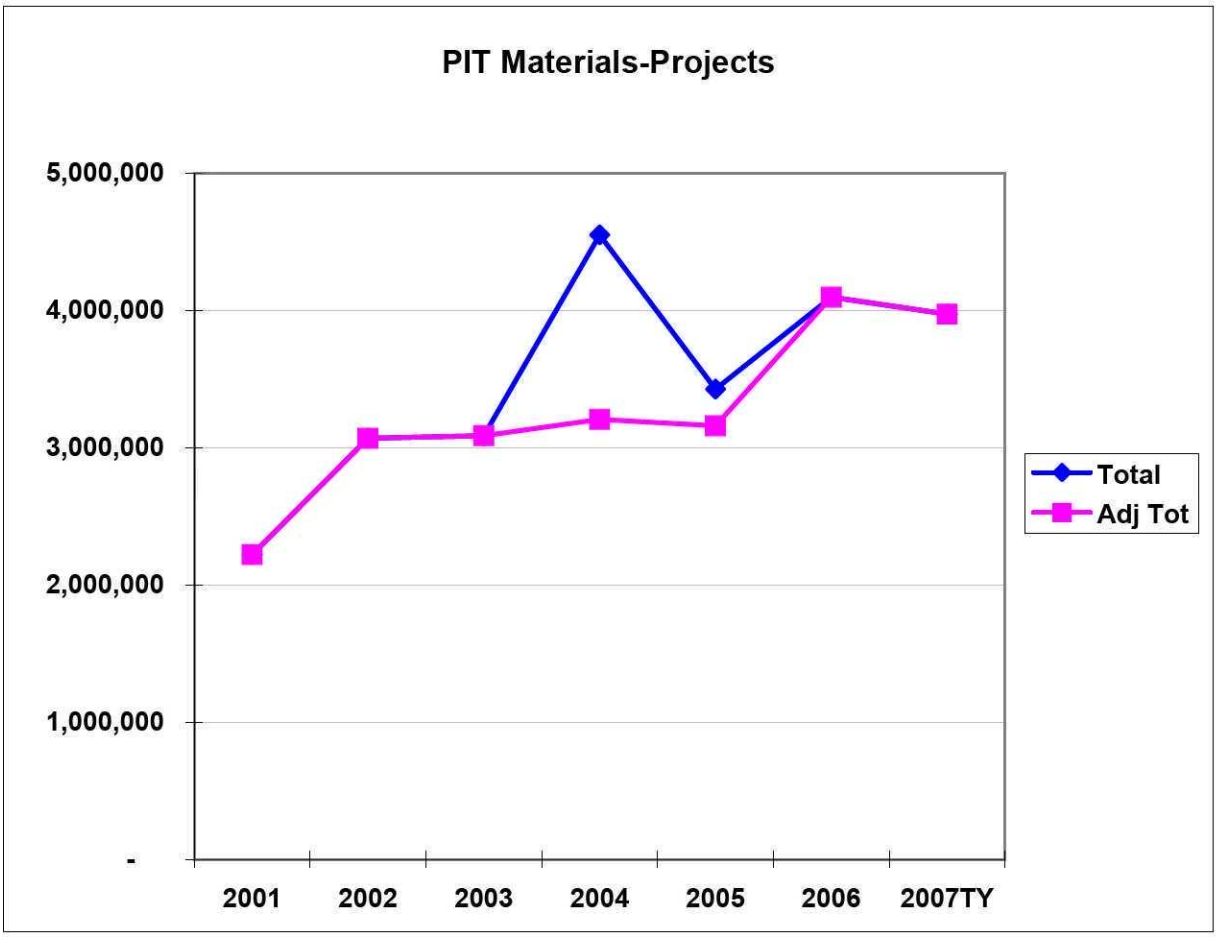
CA-IR-243
DOCKET NO. 2006-0386
ATTACHMENT 2
PAGE 1 OF 1

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR

**Insurance Credit (PR044748 EE900 applied to Act# 262 to PIT273W09NEP0000937)**

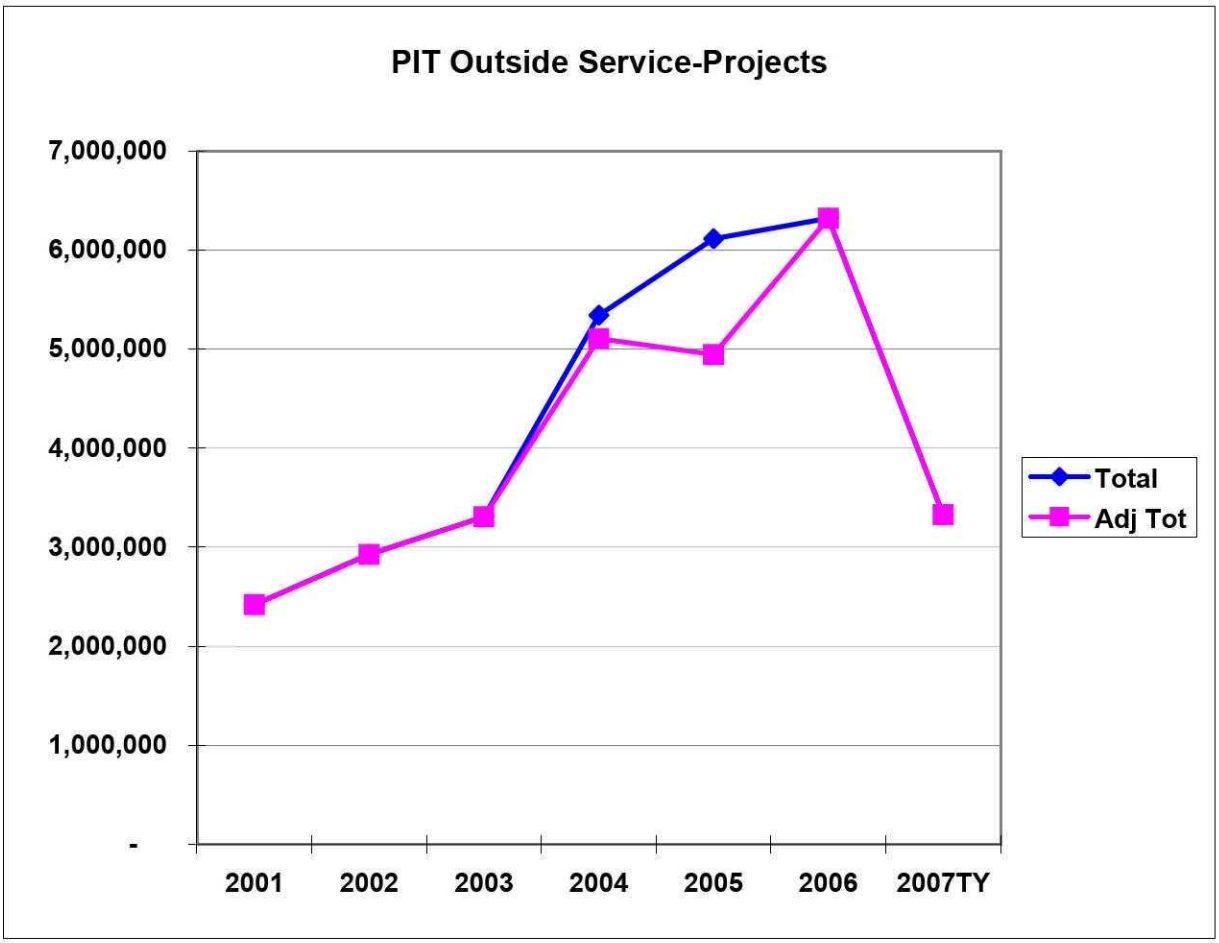
| Unit | WO | EE | 2004 | 2005 |
|---|---|---|---|---|
| **W9** | PR043797 | Labor | 89 | (5) |
| | | Materials | 92,199 | 195,694 |
| | | O/S Svcs | | |
| | | Overheads | 41 | (0) |
| | PR043637 | Labor | 38,037 | 2,002 |
| | | Materials | 17,849 | 6,511 |
| | | O/S Svcs | 199,270 | 148,445 |
| | | Overheads | 23,179 | 1,620 |
| | PR043638 | Labor | 16,928 | 47,290 |
| | | Materials | 7,460 | 3,698 |
| | | O/S Svcs | 4,656 | 952,696 |
| | | Overheads | 9,712 | 34,363 |
| | PR043639 | Labor | 487 | 796 |
| | | Materials | 1,226,649 | 61,217 |
| | | O/S Svcs | | |
| | | Overheads | 410 | 567 |
| | PR043642 | Labor | 2,834 | (14) |
| | | Materials | | |
| | | O/S Svcs | 32,025 | 68,690 |
| | | Overheads | 2,535 | (1) |
| | **Total** | **Labor** | **58,374** | **50,068** |
| | | **Materials** | **1,344,156** | **267,120** |
| | | **O/S Svcs** | **235,951** | **1,169,831** |
| | | **Overheads** | **35,876** | **36,548** |
| | | **Grand Total** | **1,674,357** | **1,523,567** |

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR




| Act# | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007TY |
|---|---|---|---|---|---|---|---|
| Total | 2218730 | 3066521 | 3084569 | 4547980 | 3423927 | 4094322 | 3971426 |
| Credits | | | | 1344156 | 267120 | | |
| **Adj Tot** | **2218730** | **3066521** | **3084569** | **3203824** | **3156807** | **4094322** | **3971426** |

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR




| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007TY |
|---|---|---|---|---|---|---|---|
| Total | 2417264 | 2924849 | 3304112 | 5339949 | 6111411 | 6318970 | 3327416 |
| Credits | | | | 235951 | 1169831 | | |
| **Adj Tot** | **2417264** | **2924849** | **3304112** | **5103998** | **4941580** | **6318970** | **3327416** |

HAWAIIAN ELECTRIC COMPANY INC.
2007 TEST YEAR

**Insurance Credit (PR051622 EE900 applied to Act# 262 to PIX262W08NENPIZZZZZ, Proj G00000900)**

| Unit | WO | EE | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|
| **W8** | PR051409 | Labor | | 8,748 | |
| | | Materials | | 3,481 | |
| | | O/S Svcs | | | |
| | | Overheads | | 6,785 | |
| | PR051414 | Labor | | 17,629 | 77,667 |
| | | Materials | | 146,885 | 118,145 |
| | | O/S Svcs | | 250,354 | 104,293 |
| | | Overheads | | 14,818 | 61,156 |
| | PR051425 | Labor | | 726 | 329 |
| | | Materials | | | |
| | | O/S Svcs | | | |
| | | Overheads | | 708 | 347 |
| | PR051437 | Labor | | 12,329 | 18,116 |
| | | Materials | | | |
| | | O/S Svcs | | | |
| | | Overheads | | 13,738 | 19,970 |
| | PR051471 | Labor | | | |
| | | Materials | | | |
| | | O/S Svcs | | | |
| | | Overheads | | | |
| | PR051485 | Labor | | | |
| | | Materials | | | |
| | | O/S Svcs | | 63,047 | |
| | | Overheads | | | |
| | **Total** | **Labor** | | **39,432** | **96,112** |
| | | **Materials** | | **150,367** | **118,145** |
| | | **O/S Svcs** | | **313,401** | **104,293** |
| | | **Overheads** | | **36,049** | **81,473** |
| | | | **Grand Total** | **539,248** | **400,023** |

PIT 257/258/259 MATERIAL

6/19/2007 *Rate Case - 01-07 Compare-Dept,Actykay 12:30PM

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Honolulu 8 Overhaul | P0000137 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $60,749 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $46 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | -$3,854 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $56,941 | $0 | 0 | 0 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2003) | P0000523 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $133,280 | $3,315 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $34,130 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | $253,429 | $278 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $420,838 | $3,593 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2007) | P0001278 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $41,366 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $152,139 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $100,223 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $293,727 |
| Honolulu 9 Outage (2006) | P0001280 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $22,701 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $0 | $144,916 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $7,765 | $0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $175,382 | $0 |
| Honolulu 9 Overhaul | P0000138 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $0 | $138,897 | $37,839 | $0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $0 | $5,361 | $12,009 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $0 | $108,500 | $59,774 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $252,758 | $109,622 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 1 2002 Overhaul | P0000251 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $4 | $154,205 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $0 | $13,018 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $11,789 | $146,138 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $11,793 | $313,361 | 0 | 0 | 0 | 0 | 0 |
| Kahe 1 Overhaul (2005) | P0000846 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $204,610 | $21,794 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $0 | $480,623 | $209,052 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $101,146 | $81,067 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $786,379 | $311,912 |
| Kahe 2 2001 Overhaul | P0000247 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $100,374 | -$604 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $164,362 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $38,194 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $302,930 | -$604 | 0 | 0 | 0 | 0 | 0 |
| Kahe 2 Overhaul (2004) | P0000650 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $0 | $6,771 | $377,330 | $12,108 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $0 | $56,089 | $116,598 | $349 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $178,148 | $16 | 0 |
| | | | | | 0 | 0 | $0 | $62,860 | $672,075 | $12,473 | 0 |
| Kahe 2 Overhaul (2008) | P0001107 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 3 2001 Overhaul | P0000248 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $254,350 | -$21,795 | -$689 | $144 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $29,679 | $843 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $180,542 | $5,905 | $889 | $0 | 0 | 0 | 0 |
| | | | | | $464,571 | -$15,047 | $201 | $144 | 0 | 0 | 0 |
| Kahe 3 Overhaul (2006) | P0001105 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $53,859 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $322,045 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $22,550 | $383,123 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $22,550 | $759,027 |
| Kahe 4 June 1999 Overhaul | P0000013 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $262 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $262 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2003) | P0000520 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $0 | $69,083 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $0 | $11,001 | $2,678 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $0 | $60,520 | $96 | $256 | 0 | 0 | 0 |
| | | | | | $0 | $140,605 | $2,774 | $256 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2004) | P0000655 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $162,697 | $46,384 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $51,002 | $254 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | $235,898 | $42,479 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $449,597 | $89,117 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2005) | P0000845 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $204,737 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 4 Overhaul (2005) | P0000845 | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $0 | $182,541 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $251,766 | $321,965 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $251,766 | $709,244 | 0 |
| Kahe 5 Overhaul | P0000140 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $2,448 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $2,448 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2003) | P0000519 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $221,522 | $27,235 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $29,610 | $124,130 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $0 | $5,156 | $42,380 | $145,345 | 0 | 0 | 0 |
| | | | | | $0 | $5,156 | $293,512 | $296,710 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2008) | P0001276 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Kahe 6 2002 Overhaul | P0000250 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $0 | $343,005 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $0 | $28,349 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $0 | $328,261 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $699,615 | 0 | 0 | 0 | 0 | 0 |
| Kahe 6 Overhaul (2005) | P0000844 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $324,980 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $74,183 | $0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 6 Overhaul (2005) | P0000844 | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $172,084 | $52 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $571,248 | $52 | 0 |
| PROG Misc Power Plant A... | P1429000 | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $0 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 3 2002 Overhaul | P0000249 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $0 | $66,153 | $50 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $0 | $182,733 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | $0 | $57,309 | -$4,501 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $306,194 | -$4,451 | $0 | 0 |
| Waiau 3 Overhaul (2008) | P0001275 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Waiau 4 2001 Overhaul | P0000244 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $63,584 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $5,322 | $0 | $319 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $264,147 | $0 | -$803 | $0 | 0 | 0 | 0 |
| | | | | | $333,053 | $0 | -$484 | $0 | 0 | 0 | 0 |
| Waiau 4 Overhaul (2005) | P0000847 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $29,750 | $189,990 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $19,259 | $120,002 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $39,472 | $281,727 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 4 Overhaul (2005) | | | | | 0 | 0 | 0 | 0 | $88,480 | $591,719 | 0 |
| Waiau 5 2002 Overhaul | P0000252 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $0 | $199,273 | $14,968 | $0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $0 | $123,937 | -$6,442 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $0 | $146,697 | $10,653 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $469,906 | $19,180 | $0 | 0 | 0 | 0 |
| Waiau 5 Overhaul (2007) | P0001279 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $232,650 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $189,340 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $312,051 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $734,041 |
| Waiau 6 2001 Overhaul | P0000243 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $169,924 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | $8,920 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $29,678 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $208,522 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 6 Overhaul (2004) | P0000654 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $0 | $51,946 | $138,464 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $0 | $187,963 | $50,919 | $0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | $0 | $86,613 | $155,865 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $326,522 | $345,247 | $0 | 0 |
| Waiau 7 Overhaul | P0000141 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | $12,420 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | $315 | $0 | 0 | 0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 7 Overhaul | | | | | $12,735 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2003) | P0000522 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $125,582 | $15,356 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $63,282 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | $11,689 | $0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $200,553 | $15,356 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2007) | P0001106 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $834 | $52,194 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $404,222 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $28,744 | $318,714 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $29,579 | $775,129 |
| Waiau 8 Overhaul (2003) | P0000521 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | $0 | $115,419 | $421 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | $0 | $163,514 | $46 | $0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | $0 | $283,127 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $0 | $562,059 | $467 | $0 | 0 |
| Waiau 8 Overhaul (2008) | P0001273 | 257 | Maint Boiler Plt Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | $1,393,255 | $1,865,750 | $1,495,793 | $1,662,812 | $1,924,833 | $2,327,378 | $2,873,835 |

PIT 257/258/259 O/S SVC



| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Honolulu 8 Overhaul | P0000137 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $3,646 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $28,350 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $100 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $32,097 | $0 | 0 | 0 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2003) | P0000523 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $229,214 | $4,178 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $52,280 | $4,270 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $116,910 | $0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $398,405 | $8,447 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2007) | P0001278 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Honolulu 9 Outage (2006) | P0001280 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $81,236 | $29,250 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $284,703 | $180,000 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $115,584 | $142,500 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $481,523 | $351,750 |
| *Honolulu 9 Overhaul* | *P0000138* | 257 | *Maint Boiler Plt Eq-Prev* | *O/S SVCS* | $0 | $3,614 | $21,862 | $0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $0 | $21,002 | $37,054 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $0 | $40,392 | $183,378 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $65,008 | $242,294 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 1 2002 Overhaul | P0000251 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $9,008 | $74,844 | $3,463 | $0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $9,008 | $112,975 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $100 | $32,724 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $18,115 | $220,542 | $3,463 | $0 | 0 | 0 | 0 |
| Kahe 1 Overhaul (2005) | P0000846 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $70,229 | $50,250 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $74,958 | $201,750 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $63,959 | $127,500 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $209,146 | $379,500 |
| Kahe 2 2001 Overhaul | P0000247 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $79,333 | $5,468 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $116,317 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $5,611 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $201,260 | $5,468 | 0 | 0 | 0 | 0 | 0 |
| Kahe 2 Overhaul (2004) | P0000650 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $0 | $20,999 | $367,859 | $19,814 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $310,740 | $2,080 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $221,103 | $274 | 0 |
| | | | | | 0 | 0 | $0 | $20,999 | $899,701 | $22,168 | 0 |
| Kahe 2 Overhaul (2008) | P0001107 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 3 2001 Overhaul | P0000248 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $221,197 | $3,206 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $106,426 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $305,712 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $633,335 | $3,206 | 0 | 0 | 0 | 0 | 0 |
| Kahe 3 Overhaul (2006) | P0001105 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $137,000 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $124,000 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $170,000 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $431,000 |
| Kahe 4 Overhaul | P0000139 | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $1,170 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $3,042 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $4,212 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2003) | P0000520 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $0 | $43,847 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $0 | $9,142 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $0 | $38,894 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $91,883 | 0 | 0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2004) | P0000655 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $23,057 | $48,338 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $109,830 | $67,816 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $9,968 | $70,792 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $142,856 | $186,946 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 4 Overhaul (2005) | P0000845 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $307,264 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $164,958 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $245,431 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $717,653 | 0 |
| Kahe 5 Overhaul | P0000140 | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $497 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $497 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2003) | P0000519 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $0 | $220,116 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $0 | $342,655 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $0 | $189,953 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $0 | $752,725 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2008) | P0001276 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Kahe 6 2002 Overhaul | P0000250 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $0 | $287,841 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $0 | $75,755 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $0 | $44,033 | $1,875 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $407,630 | $1,875 | $0 | 0 | 0 | 0 |
| Kahe 6 August 1999 Overh... | P0000015 | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $80 | $0 | 0 | 0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 6 August 1999 Overh... | | | | | $80 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 6 Overhaul (2005) | P0000844 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $243,706 | $551 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $138,525 | $0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $102,318 | $0 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $484,547 | $551 | 0 |
| Waiau 3 2002 Overhaul | P0000249 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $0 | $141,793 | $1,599 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $0 | $414,927 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $0 | $6,725 | $1,598 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $563,444 | $3,197 | $0 | 0 |
| Waiau 3 Overhaul (2008) | P0001275 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Waiau 4 2001 Overhaul | P0000244 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $37,228 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $1,197 | $0 | $998 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $65,739 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $104,164 | $0 | $998 | $0 | 0 | 0 | 0 |
| Waiau 4 Overhaul (2005) | P0000847 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $168,523 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $3,657 | $181,542 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 4 Overhaul (2005) | P0000847 | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $591,173 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $3,657 | $941,239 | 0 |
| Waiau 5 2002 Overhaul | P0000252 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $0 | $127,422 | $6,412 | $0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $0 | $63,196 | $1,112 | $0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $0 | $242,322 | $4,234 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $432,940 | $11,758 | $0 | 0 | 0 | 0 |
| Waiau 5 Overhaul (2007) | P0001279 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $98,000 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $116,666 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $196,666 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $411,332 |
| Waiau 6 2001 Overhaul | P0000243 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $155,868 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $96,307 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $23,182 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $275,357 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 6 Overhaul (2004) | P0000654 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $0 | $10,135 | $169,348 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $0 | $690 | $136,575 | $0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $0 | $19,524 | $141,657 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $30,350 | $447,580 | $0 | 0 |
| Waiau 7 Overhaul | P0000141 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | $4,275 | $0 | 0 | 0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 7 Overhaul | P0000141 | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $1,300 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $5,575 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2003) | P0000522 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $84,836 | $0 | 0 | 0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $88,355 | $1,300 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $14,925 | $0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $188,116 | $1,300 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2007) | P0001106 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $67,000 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $369,000 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $170,000 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $606,000 |
| WAIAU 8 OVERHAUL | P0000142 | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | $378 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | $24 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $402 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 8 Overhaul (2003) | P0000521 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | $0 | $75,103 | $8,269 | $0 | 0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | $0 | $334,422 | $23,839 | $0 | 0 |
| | | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | $0 | $235,059 | $66,271 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $644,584 | $98,379 | $0 | 0 |
| Waiau 8 Overhaul (2008) | P0001273 | 257 | Maint Boiler Plt Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 258 | Maint Boiler Plt Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 8 Overhaul (2008) | P0001273 | 259 | Maint Boiler Plt Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | $1,275,093 | $1,226,677 | $989,764 | $2,208,796 | $1,937,061 | $2,372,279 | $2,179,582 |

PIT 260/261/262 MATERIAL



| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Honolulu 8 Overhaul | P0000137 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $14,499 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $307 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $14,806 | $0 | 0 | 0 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2003) | P0000523 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | $331,165 | $1,596 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $44,958 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $195,064 | $0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $571,188 | $1,596 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2007) | P0001278 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $41,644 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $3,887 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $71,350 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $116,880 |
| Honolulu 9 Outage (2006) | P0001280 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $647 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $0 | $2,607 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $969 | $0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $4,223 | $0 |
| Honolulu 9 Overhaul | P0000138 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $0 | $41,410 | $85,757 | $0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $0 | $55,002 | $225,664 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $0 | $3,799 | $4,383 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $100,210 | $315,804 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 1 2002 Overhaul | P0000251 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $13,265 | $89,798 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $24,769 | $97,567 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $0 | $5,927 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $38,034 | $193,292 | 0 | 0 | 0 | 0 | 0 |
| Kahe 1 Overhaul (2005) | P0000846 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $123,181 | $41,644 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $6,941 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $3,568 | $23,737 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $126,748 | $72,321 |
| Kahe 2 2001 Overhaul | P0000247 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $39,733 | $1,050 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $80,737 | -$1,571 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $48,487 | $322 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $168,957 | -$199 | 0 | 0 | 0 | 0 | 0 |
| Kahe 2 Overhaul (2004) | P0000650 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $146,835 | $122 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $85,472 | $0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $5,172 | $0 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $237,479 | $122 | 0 |
| Kahe 2 Overhaul (2008) | P0001107 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 3 2001 Overhaul | P0000248 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $241,753 | $12,373 | -$28,446 | $0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $29,530 | $23,621 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $69,946 | $4,638 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $341,229 | $40,632 | -$28,446 | $0 | 0 | 0 | 0 |
| Kahe 3 Overhaul (2006) | P0001105 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $149,918 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $61,078 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $61,633 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $272,628 |
| Kahe 4 Overhaul | P0000139 | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | -$68,122 | $0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | -$68,122 | $0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2003) | P0000520 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $0 | $14,879 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $0 | $4,929 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $0 | $17,574 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $37,382 | 0 | 0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2004) | P0000655 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | $7,582 | $12,940 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $95,779 | $112,164 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $19,084 | $16,095 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $122,445 | $141,200 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2005) | P0000845 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $0 | $154,289 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 4 Overhaul (2005) | P0000845 | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $0 | $20,328 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $159,302 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $333,920 | 0 |
| Kahe 5 Overhaul | P0000140 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $90 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $90 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2003) | P0000519 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $0 | $5,039 | $32,084 | $223,427 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $14,130 | $151,488 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $0 | $89,142 | 0 | 0 | 0 |
| | | | | | $0 | $5,039 | $46,214 | $464,057 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2008) | P0001276 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Kahe 6 2002 Overhaul | P0000250 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $0 | $262,884 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $0 | $108,273 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $0 | $87,288 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $458,445 | 0 | 0 | 0 | 0 | 0 |
| Kahe 6 Overhaul (2005) | P0000844 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $70,758 | $0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $133,820 | $0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 6 Overhaul (2005) | P0000844 | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $11,110 | $0 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $215,688 | $0 | 0 |
| Waiau 3 2002 Overhaul | P0000249 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | $0 | $97,798 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $0 | $61,980 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $0 | $67,405 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $0 | $227,183 | 0 | 0 | 0 |
| Waiau 3 Overhaul (2008) | P0001275 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Waiau 4 2001 Overhaul | P0000244 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $23,793 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $321 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $12,041 | $0 | $104 | $0 | 0 | 0 | 0 |
| | | | | | $36,155 | $0 | $104 | $0 | 0 | 0 | 0 |
| Waiau 4 Overhaul (2005) | P0000847 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $14,645 | $162,572 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $0 | $78,532 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $0 | $150,418 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $14,645 | $391,521 | 0 |
| Waiau 5 2002 Overhaul | P0000252 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $0 | $188,132 | $1,286 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 5 2002 Overhaul | P0000252 | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $0 | $122,563 | $454,580 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $0 | $55,276 | $27,187 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $365,970 | $483,053 | $0 | 0 | 0 | 0 |
| Waiau 5 Overhaul (2007) | P0001279 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $97,724 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $13,326 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $182,677 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $293,727 |
| Waiau 6 2001 Overhaul | P0000243 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $159,478 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | $1,943 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $882 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $162,303 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 6 Overhaul (2004) | P0000654 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | $0 | $7,955 | $41,599 | $0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $0 | $8,424 | $53,847 | $0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $0 | $46,255 | $21,929 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $62,634 | $117,375 | $0 | 0 |
| Waiau 7 Overhaul | P0000141 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | $15,197 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | $2,727 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $17,923 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2003) | P0000522 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | $117,238 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 7 Overhaul (2003) | P0000522 | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $15,263 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $14,034 | $0 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $146,536 | $0 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2007) | P0001106 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $166,575 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $16,658 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $103,277 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $286,509 |
| Waiau 8 Overhaul (2003) | P0000521 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | $0 | $128,794 | $241 | $0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | $0 | $128,924 | $324 | $0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | $0 | $33,665 | $10,733 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $291,382 | $11,299 | $0 | 0 |
| Waiau 8 Overhaul (2008) | P0001273 | 260 | Maint Stm Turbo Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | $779,497 | $1,200,771 | $1,588,776 | $1,188,052 | $596,485 | $856,534 | $1,042,065 |

PIT 260/261/262 O/S SVC



| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Honolulu 8 Overhaul | P0000137 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $24,736 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $1,255 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $25,991 | $0 | 0 | 0 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2003) | P0000523 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | $443,358 | $0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | $255,327 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | $573,165 | $9,146 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $1,271,850 | $9,146 | 0 | 0 | 0 |
| Honolulu 8 Overhaul (2007) | P0001278 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Honolulu 9 Outage (2006) | P0001280 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $14,250 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $15,000 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $2,100 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $2,100 | $29,250 |
| Honolulu 9 Overhaul | P0000138 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $0 | $13,503 | $47,729 | $0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $0 | $139,119 | $208,346 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | $223,933 | $0 | 0 | 0 | 0 |
| | | | | | $0 | $152,622 | $480,008 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 1 2002 Overhaul | P0000251 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $0 | $104,621 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $0 | $119,500 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $0 | $318 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $224,440 | 0 | 0 | 0 | 0 | 0 |
| Kahe 1 Overhaul (2005) | P0000846 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $127,081 | $57,000 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $1,313 | $52,500 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $11,250 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $128,393 | $120,750 |
| Kahe 2 2001 Overhaul | P0000247 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $51,116 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $140,435 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $26,409 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $217,960 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 2 Overhaul (2004) | P0000650 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $493,461 | $11,796 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $167,348 | $203 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $230,543 | $82,429 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $891,353 | $94,428 | 0 |
| Kahe 2 Overhaul (2008) | P0001107 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 3 2001 Overhaul | P0000248 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $235,433 | $392 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $71,635 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $58,382 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $365,449 | $392 | 0 | 0 | 0 | 0 | 0 |
| Kahe 3 Overhaul (2006) | P0001105 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $76,000 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $180,000 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $15,000 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $271,000 |
| Kahe 4 Overhaul | P0000139 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $96 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | -$5,147 | $0 | 0 | 0 | 0 |
| | | | | | $96 | $0 | -$5,147 | $0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2003) | P0000520 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $0 | $50,646 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $0 | $20,597 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $0 | $28,034 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $99,278 | 0 | 0 | 0 | 0 | 0 |
| Kahe 4 Overhaul (2004) | P0000655 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | $0 | $11,520 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | $89,463 | $131,764 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | $9,541 | $20,309 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $99,004 | $163,593 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 4 Overhaul (2005) | P0000845 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $68,475 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $9,449 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $516,819 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $594,744 | 0 |
| Kahe 5 Overhaul | P0000140 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $10 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $10 | $0 | 0 | 0 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2003) | P0000519 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | $0 | $253,568 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | $0 | $360,747 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | $0 | $317,975 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $0 | $932,289 | 0 | 0 | 0 |
| Kahe 5 Overhaul (2008) | P0001276 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Kahe 6 2002 Overhaul | P0000250 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $0 | $239,211 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $0 | $299,468 | $22 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $0 | $35,980 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $0 | $574,658 | $22 | $0 | 0 | 0 | 0 |
| Kahe 6 Overhaul (2005) | P0000844 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $253,042 | $4,245 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Kahe 6 Overhaul (2005) | P0000844 | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $248,583 | $6,368 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $29,342 | $0 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $530,967 | $10,613 | 0 |
| Waiau 3 2002 Overhaul | P0000249 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | $0 | $179,551 | $3,837 | $0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | $0 | $627,925 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $0 | $807,476 | $3,837 | $0 | 0 |
| Waiau 3 Overhaul (2008) | P0001275 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Waiau 4 2001 Overhaul | P0000244 | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $1,000 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $1,000 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 4 Overhaul (2005) | P0000847 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $224,479 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $253,650 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $652,986 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $1,131,114 | 0 |
| Waiau 5 2002 Overhaul | P0000252 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $0 | $315,555 | $49,336 | $0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $0 | $231,974 | $54,315 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $0 | $99,254 | $25,075 | $0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 5 2002 Overhaul | | | | | $0 | $646,783 | $128,726 | $0 | 0 | 0 | 0 |
| Waiau 5 Overhaul (2007) | P0001279 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $139,334 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $106,666 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $143,334 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $389,334 |
| Waiau 6 2001 Overhaul | P0000243 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $385,031 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $92,036 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $477,067 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 6 Overhaul (2004) | P0000654 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $53,525 | $0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $274,743 | $0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $117,820 | $0 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $446,087 | $0 | 0 |
| Waiau 7 Overhaul | P0000141 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $12,681 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $9,130 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $21,811 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 7 Overhaul (2003) | P0000522 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | $211,534 | $7,914 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | $56,642 | $0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | $71,708 | $1,217 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $339,884 | $9,131 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 7 Overhaul (2007) | P0001106 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $93 | $76,000 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $70,000 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $65,000 |
| | | | | | 0 | 0 | 0 | 0 | $0 | $93 | $211,000 |
| WAIAU 8 OVERHAUL | P0000142 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | $256 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | $563 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | $96 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $914 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 8 Overhaul (2003) | P0000521 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | $0 | $327,813 | $3,987 | $0 | 0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | $0 | $537,943 | $2,437 | $0 | 0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | $0 | $17,482 | 0 | 0 | 0 |
| | | | | | 0 | 0 | $0 | $883,238 | $6,424 | $0 | 0 |
| Waiau 8 Overhaul (2008) | P0001273 | 260 | Maint Stm Turbo Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 261 | Maint Stm Turbo Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 262 | Maint Stm Turbo Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | $1,110,298 | $1,698,172 | $2,314,348 | $2,804,872 | $1,878,668 | $1,961,486 | $1,021,334 |

PIT 272/273/274 MATERIAL

6/19/2007 *Rate Case - 01-07 Compare-Dept,Actykay 12:26PM

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W10 Major Inspection | P0000938 | 272 | Maint CT & Elec Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | $272,384 | $151,497 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | MATERIAL | 0 | 0 | 0 | 0 | $31,475 | $711,479 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | $66,888 | $47,434 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $370,747 | $910,410 | 0 |
| W9 Major Inspection | P0000937 | 272 | Maint CT & Elec Eq-Prev | MATERIAL | 0 | 0 | $0 | $124,156 | $409,341 | $0 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | MATERIAL | 0 | 0 | $0 | $1,569,474 | $78,675 | $0 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | MATERIAL | 0 | 0 | $0 | $3,486 | $43,846 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $1,697,116 | $531,862 | $0 | 0 |
| Waiau 10 2001 Overhaul | P0000246 | 272 | Maint CT & Elec Eq-Prev | MATERIAL | -$17,772 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | MATERIAL | $901 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | MATERIAL | $1,262 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | -$15,609 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 10 Overhaul (2008) | P0001274 | 272 | Maint CT & Elec Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 274 | Maint CT & Elec Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Waiau 9 2001 Overhaul | P0000245 | 272 | Maint CT & Elec Eq-Prev | MATERIAL | $54,404 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | MATERIAL | $631 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | MATERIAL | $6,552 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $61,587 | $0 | 0 | 0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 9 Overhaul (2007) | P0001277 | 272 | Maint CT & Elec Eq-Prev | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $49,973 |
| | | 274 | Maint CT & Elec Eq-Corr | MATERIAL | 0 | 0 | 0 | 0 | 0 | 0 | $5,553 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $55,525 |
| | | | | | $45,978 | $0 | $0 | $1,697,116 | $902,609 | $910,410 | $55,525 |

PIT 272/273/274 O/S SVC



| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| W10 Major Inspection | P0000938 | 272 | Maint CT & Elec Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | $81,535 | $1,051,736 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | $9,911 | $830,969 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | $0 | $102,501 | 0 |
| | | | | | 0 | 0 | 0 | 0 | $91,446 | $1,985,206 | 0 |
| W9 Major Inspection | P0000937 | 272 | Maint CT & Elec Eq-Prev | O/S SVCS | 0 | 0 | $0 | $83,388 | $718,202 | $0 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | O/S SVCS | 0 | 0 | $0 | $239,963 | $1,439,811 | $0 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | O/S SVCS | 0 | 0 | $0 | $2,930 | $46,224 | $0 | 0 |
| | | | | | 0 | 0 | $0 | $326,281 | $2,204,237 | $0 | 0 |
| Waiau 10 2001 Overhaul | P0000246 | 272 | Maint CT & Elec Eq-Prev | O/S SVCS | $7,462 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | O/S SVCS | $2,520 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $9,982 | $0 | 0 | 0 | 0 | 0 | 0 |
| Waiau 10 Overhaul (2008) | P0001274 | 272 | Maint CT & Elec Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 273 | Maint CT & Elec Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | 274 | Maint CT & Elec Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $0 |
| Waiau 9 2001 Overhaul | P0000245 | 272 | Maint CT & Elec Eq-Prev | O/S SVCS | $4,005 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 273 | Maint CT & Elec Eq-Pred | O/S SVCS | $1,406 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | 274 | Maint CT & Elec Eq-Corr | O/S SVCS | $16,480 | $0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | $21,891 | $0 | 0 | 0 | 0 | 0 | 0 |

| Project | *Proj # | *Act # | Activity | Cost Cat... | FY01 Act01-02$RA | FY02 Act01-02... | FY03 Act03-04$... | FY04 Act03-04$... | FY05 Act05-06$ RA | FY06 Act05-06$ RA | FY07 RC Budget07 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Waiau 9 Overhaul (2007) | P0001277 | 272 | Maint CT & Elec Eq-Prev | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $82,500 |
| | | 273 | Maint CT & Elec Eq-Pred | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $27,000 |
| | | 274 | Maint CT & Elec Eq-Corr | O/S SVCS | 0 | 0 | 0 | 0 | 0 | 0 | $17,000 |
| | | | | | 0 | 0 | 0 | 0 | 0 | 0 | $126,500 |
| | | | | | $31,873 | $0 | $0 | $326,281 | $2,295,683 | $1,985,206 | $126,500 |

CA-IR-244

**Ref: Response to CA-IR-2, HECO T-6, Attachment 13I, pages 10-68 (Test Year Projected Overhaul Materials/Services).**

The Attachment provides estimated EE 201 materials and EE 501 outside services expense estimates based upon budgeted overhauls schedule in or near the test year. Please provide the following information with respect to this data:

a. Please confirm that the estimated costs are based upon the Company's planned overhaul schedule at a specific point in time, based upon standardized work scope estimates, as well as known specific corrective work anticipated for each unit.

b. State the revision date of the overhaul schedule that is associated with the projected expense levels and provide copies of the schedule, if it is other than HECO-608.

c. Please confirm that no adjustments were deemed necessary or made by HECO to the test year overhaul schedule, planned work scoping or estimated expenses as they appear in Attachment 13I.

d. Please confirm that estimated materials and outside services expenses were prorated on a monthly basis to recognize portions of the costs associated with certain scheduled overhauls that were expected to occur near the beginning or beyond the end of the test year.

e. If anything but unqualified confirmation is provided in your responses to parts a., c. and d. of this information request, please explain and provide references or additional information to support your response.

f. Provide the number of full and partial (pro-rated) outages that are budgeted for the test year in each of the following categories:

   1. Boiler Standard;

2. Boiler Chemical Clean;
3. HP Turbine;
4. LP Turbine;
5. Generator;
6. CT major overhaul;
7. CT hot gas overhaul; and
8. CT inspection.

HECO Response:

a. Yes, the estimated costs are based on a planned maintenance schedule and standardized work scope estimates as well as known corrective work.

b. Yes, HECO-608 was the Planned Maintenance Schedule (Rev 02/14/06) associated with the development of the test year expenses.

c. Yes, no adjustments were deemed necessary or made by HECO to the test year estimated expenses in Attachment 13I, which were developed using the 02/14/06 revision of the Planned Maintenance Schedule. Changes to the 2007 Planned Maintenance Schedule have been made and approved on 07/21/06 (HECO-611), 11/21/06 (HECO-612), 03/01/07, 04/18/07, and 06/15/07. The 06/15/07 schedule is provided in HECO's response to CA-IR-335. In general, HECO's position is that Other Production O&M expenses, in total, as presented in HECO T-6, represent a reasonable, on-going level of expenses for the 2007 test year. Therefore, HECO does not plan to change the test year estimates, except for the specific changes contained in the June 2007 Update.

That is not to say that Other Production O&M expenses will not continue to increase in the future, due to the factors addressed at length in HECO T-6 and the responses to numerous information requests. Moreover, if revisions to individual expense items are proposed by other parties based on actual 2007 conditions, HECO may propose revisions to other items (such as overhaul expenses) based on actual 2007 conditions (see response to CA-IR-240).

d. Yes, the estimated materials and outside services expenses in Attachment 13I were prorated on a monthly basis per the indicated months for each category of work type and expense element.

e. N/A

f. The number of full and partial outages that were included in the 2007 budget for each category are:

1. Boiler Standard: Six. (Honolulu 9, Kahe 1, Waiau 7, Kahe 3, Waiau 5, and Honolulu 8).
2. Boiler Chemical Clean: Three. (Honolulu 9, Kahe 1, and Waiau 7).
3. HP Turbine: Two. (Waiau 5 and Honolulu 8).
4. LP Turbine: Two. (Waiau 5 and Honolulu 8).
5. Generator: One. (Kahe 3).
6. CT major overhaul: None.
7. CT hot gas overhaul: None.
8. CT inspection: One. (Waiau 9).

The 2007 Planned Maintenance Schedule (Rev 02/14/06) (HECO-608) that was used to generate the 2007 test year estimate reflects a total of five high pressure/low pressure

(HP/LP) steam turbine overhauls. These include Kahe 1 (carryover from 2006), Waiau 7, Kahe 3, Waiau 5, and Honolulu 8 (carryover to 2008). However, a review of the non-labor budget in CA-IR-2, Attachment 13I, will show that non-labor budget amounts are included for only one HP/LP steam turbine major overhaul (i.e., Waiau 5) and a portion of another (i.e., Honolulu 8) in the 2007 budget. Attachment 1 to this response summarizes activities normally associated with a turbine HP/LP steam turbine major overhaul for these generating units. For the listed activities, $327,000 was included in the 2007 budget for Waiau 5, $32,500 was included for Honolulu 8 (most of H8's expenses are scheduled to be incurred in 2008) , and no expenses were included for Waiau 7, Kahe 3, and Kahe 1. The exclusion of the HP/LP steam turbine major overhaul expenses in the 2007 budget for these three units was an oversight. The HP/LP steam turbine major overhauls of Waiau 7, Kahe 3, and Kahe 1 will be performed in 2007. Other, lower priority discretionary work that was included in the 2007 budget will be deferred as an offset (or partial offset) for the work that will be performed.

With a total of 14 HECO-owned steam units on the island of Oahu, and with the steam units scheduled for HP/LP steam turbine major overhauls every six years, on average two to three turbine HP/LP steam turbine major overhauls are expected to occur each year. The 2007 test year estimate is based on the 2007 budget (with the budget and normalization adjustments referred to in HECO T-6, pages 57-60, which do not affect overhaul expenses), and, therefore, under-estimates expenses for HP/LP steam turbine major overhauls in a normal year by an amount approximately equivalent to that of one, and possibly two, HP/LP steam turbine major overhauls.

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE
Comparison of Non-Labor Input Amounts for 2007 Turbine Overhauls

| | | 2007 Budget | | | | | |
|---|---|---|---|---|---|---|---|
| | | W7 | K3 | W5 | H8 | K1 | Reference |
| **Turbine PM -- 260** | | | | | | | |
| Material 201 | Sand blast grit | - | - | 10,000 | 5,000 | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 |
| | T/G Insulation | - | - | 10,000 | 5,000 | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 |
| Service 501 | T/G Sandblast incl dust collection | - | - | 12,000 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 |
| | Turbine Weld Repai/Machining/brgs rebbabiting | - | - | 66,667 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 |
| | Balance turbine spindle | - | - | 6,667 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 |
| | Vac Truck Services | - | - | 3,333 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 |
| | T/G Valve Parts | - | - | 20,000 | 10,000 | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 |
| | Turbine Overhaul Parts | - | - | 25,000 | 12,500 | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 |
| **Turbine CM -- 262** | | | | | | | |
| Services 501 | Grind Trb/Gen Bearing Journals or Rebabbit Trb/Gen Bearing Journals | - | - | 13,333 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 |
| | Misc Machining | - | - | 66,667 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 |
| | T/G Contractor Repairs | - | - | 33,333 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 |
| **Turbine PDM -- 261** | | | | | | | |
| Services 501 | Clean LO Tank (tank for the unit) | - | - | 6,667 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 16 |
| | HP/LP/Gen Bore | - | - | 33,333 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 16 |
| | T/G NDT-Misc | - | - | 20,000 | - | - | W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 17 |
| | Total | - | - | 327,000 | 32,500 | - | |

CA-IR-245

**Ref: HECO-629, (R&D Expenses).**

The referenced 13-page document summarizes elements of R&D expense charged to production O&M accounts. Please provide the following additional information:

a. Comparable historical actual expenses incurred by HECO (net of any allocations to HELCO/MECO) in each year 2003 through 2006 in each of the following categories:

   1. Local EPRI matching funds.
   2. Renewable initiative funds.
   3. Biofuels initiative.
   4. Electronic shock absorber.
   5. Sun Power for Schools.

b. Actual monthly 2007 expenditures to date incurred by HECO (net of any allocations to HELCO/MECO) in each of the following categories:

   1. Local EPRI matching funds;
   2. Renewable initiative funds;
   3. Biofuels initiative;
   4. Electronic shock absorber; and
   5. Sun Power for Schools.

c. State and explain all reasons for any major variations in spending compared to annual historical levels, by category.

d. State and explain all reasons for any major variations between planned test year spending compared to monthly spending levels to-date in 2007.

e. Provide a detailed statement of the current status and Company plans for the ESA demonstration unit.

HECO Response:

HECO-629 describes R&D expenses identified for HECO in the technology areas listed on page 1 of HECO-629 that were included in the 2007 budget in the Production O&M block of accounts. As noted in HECO-629, there also are R&D expenses for different technology areas that are included in certain other blocks of accounts. For example, as mentioned in HECO-629,

HECO T-13 describes expenses for Electric Power Research Institute (EPRI) membership and other related activities.

For "local EPRI matching funds", not all of the items listed would be recorded in the Production O&M block of accounts, although the total amount for this activity was placed there for budgeting purposes. Similarly, the actual expenses that occurred prior to 2007 were incurred by the respective departments to which the expense was assigned. HECO-629 (with the corrections noted below) summarizes actual expenses that were incurred by Production O&M and areas outside of Production O&M, and both are included in the 2007 test year expense for Production O&M. Conversely, CA-IR-80, Attachment 1, describes expenses recorded to only Production O&M for Activities 730 (Research New Technology) and 731 (Develop and Demonstrate New Technology), and excludes expenses incurred by other areas and charged to other activity numbers. When comparing the 2007 test year expense amount to historical actual amounts, it will be necessary to also include the charges recorded to other areas and activity numbers.

The following corrections need to be made to HECO-629:

1. The first sentence in HECO-629 mistakenly states "… expenses for renewable energy…" and it should state "…expenses for technology areas…".
2. The amounts listed for local EPRI matching funds expenses on the top of page 3 of HECO-629 are corrected as follows:

| Original Amount in Direct Testimony | Corrected Amount |
|---|---|
| 2003: $303,479 | $191,880 |
| 2004: $243,300 | $376,770 |
| 2005: $152,500 | $54,600 |

The amounts are being corrected due to several factors, including: (1) The originally reported amounts did not include taxes; (2) The reported amounts for 2003 and 2004 were incorrectly split between years; and (3) The amount for 2005 was incorrectly reported as "$152,500" instead of "$52,500" plus 4% tax. Revised pages 1 and 3 of HECO-629 are included with this response as Attachment 1. The expense amounts in HECO-629, page 3 for the years 2000, 2001, and 2002 have not been verified as this information request does not request expense information for those years. (See also Attachment 3 for the Summary of the 2003 to 2005 EPRI TC Matching Funding.)

a. Comparable historical actual expenses incurred by HECO (net of any allocations to HELCO/MECO) in each year, 2003 through 2006, are provided in Attachment 2 to this response for the following technology areas: (1) Local EPRI matching funds; (2) Renewable initiative funds; (3) Biofuels initiative; (4) Electronic shock absorber; and (5) Sun Power for Schools. These expenses are for non-labor only. The summary of historic expenses for local EPRI matching funds also includes incurred R&D charges to other areas and other activities outside of 730 and 731, but which were budgeted in the Production block of accounts, as described above. Some of the projects or studies may have occurred on the Big Island or Maui islands (HELCO or MECO service territory). HELCO and/or MECO cost shares are not listed unless explicated stated in the text. HECO expended some of these renewable energy related funds on neighbor island projects because the R&D projects may benefit more than one island, and the State of Hawaii Renewable Portfolio Standard ("RPS") law currently in place allows HECO, HELCO, and MECO to aggregate the renewable energy contributions on all three utilities to meet the RPS levels. This was allowed by State Legislators because they recognized that the renewable resources are better on the neighbor islands than on Oahu. Thus, any study funded by HECO on the

neighbor islands will help the overall development of renewable energy in the State of Hawaii.

b. See Attachment 2 to this response for actual monthly 2007 expenses to date incurred by HECO for each category, including labor and non-labor expenses.

c. HECO intends to expend R&D funds in 2007 equal to that in the 2007 test year estimate. The 2007 actual project expenses to date are less than the amounts originally planned due to several factors, including project timing, consultant unavailability and work load, extended contract negotiations, delays in obtaining government approvals, and delays in negotiating rights for land entry. The following discussions address the reasons for major variations in spending compared to historical levels.

<u>Local Electric Power Research Institute ("EPRI") Matching Funds</u>

1. The local EPRI matching funds used to match EPRI Tailored Collaboration ("TC") funding have not always remained at the same level over time. The amount of local EPRI matching funds is a function of the TC funds available to HECO, which depends on the EPRI programs and projects (herein referred to as "products") that HECO subscribes to as part of its membership. Only some of the EPRI products offerings have TC funds associated with them. When HECO subscribes to EPRI products each year, some products will have TC funds available for HECO matching. In general, the local EPRI matching funds were used for outside services, materials, etc. and not for HECO labor.

2. In 2003 and 2004, department(s) with an approved EPRI TC project were allocated local EPRI matching funds and each department allocated the local EPRI matching funds in its department budget(s). The department(s) would match the EPRI TC financial commitment when the research funding agreement was executed in the project

year. In 2003 and 2004, six and three, respectively, EPRI TC projects were executed between EPRI and HECO departments. Some of these projects were new and some were continuing from previous year(s).

In 2005, HECO was in negotiations with EPRI to renew HECO's membership. In late 2005, however, HECO made a decision not to renew its EPRI membership for 2006 (see T-13 for discussion). Thus, HECO did not expend any funds for new projects in 2005 (after this decision was made) and in 2006. Before this decision was made, a total of $54,600 was expended from separate departments to continue research activity for two existing projects in early 2005. This amount was incorrectly reported in HECO-629, page 3, as $152,500.

3. HECO has signed a multi-year agreement with EPRI (2007-2011). Therefore, HECO is an EPRI member in 2007 and will expend to the level projected ($249,000) in 2007. This results in a large variation over 2006 when HECO was not an EPRI member.

4. As listed in HECO-629, HECO currently plans to use 2007 local EPRI matching funds totaling $249,000 for seven research projects. The break in EPRI membership (in 2006) caused delays in initiating the new 2007 local EPRI TC research agreements. EPRI has been working internally to identify the proper EPRI contact for each EPRI TC matching project. Once the EPRI contacts have been established, HECO will work to complete the respective 2007 EPRI TC research agreements. When these agreements are signed, HECO will then issue a check to match the TC agreement amount; thus, the 2007 local EPRI TC matching funds will be expended in 2007. See CA-IR-407 for agreement status and copies of the signed EPRI agreement sent to HECO for processing. The other agreements are currently being developed.

Renewable Energy Initiative

As discussed in HECO-629, the increase in renewable energy activities in 2005 and 2006 reflects HECO's renewable energy strategy to increase its renewable energy portfolio and meet the requirements of Hawaii's Renewable Portfolio Standards law. HECO's expenditures for renewable energy activities could increase in the future so the test year level of expenses might actually understate the on-going level of expenses for this type of activity.

1. The Renewable Energy Initiative budget was first introduced in 2005, thus there were no activities in 2003 and 2004 in this category.
2. The 2007 test year estimate includes an amount of $300,000 to be used for renewable energy initiatives. This is the same level included in the 2005 test year estimate (first introduced as a new initiative). The Hawaii RPS law for electric utilities mandates that they increase the percentage of renewable energy on their electric systems. HECO is allowed to aggregate the renewable energy contributions from its subsidiaries. Wind technology is one renewable technology that is mature. HECO recently participated with Department of Business, Economic Development & Tourism and National Renewable Energy Laboratory to develop high resolution wind maps, which identified potential areas for wind development for the islands. Pumped storage hydroelectric is another mature technology that could be used in the HECO system. The funds identified would be used to initiate tasks that help increase the development of these and other technologies: advanced technology assessments, siting work, data collection for resource verification and confirmation, investigation of operational and other issues, land use, and permits.

3. The initial funds in this category were used for "green field" pumped storage hydroelectric feasibility studies on the Big Island and Maui (see HECO-629 for details). The funds expended in 2005 reflect a timing issue due to vendor qualification review and contract negotiations. Thus, the project was initiated in late 2005 and the bulk of the study was completed in 2006.

4. The 2005 expenses were also used for other studies: pumped storage hydro on existing water systems on Maui and Molokai and wind photo simulations used in the early discussions with the Army for a possible wind farm development at Kahuku. These expenses of about $61,540 were not listed on HECO-629 (page 5) because of a misallocation.

5. The 2006 expenses accounted for the projects mentioned above and the initial costs for a new multi-year project – the assessment and evaluation of a wind resource at a Kahuku military site. HECO-629 provided actual (2005) and actual and projected costs (2006) for this initiative. Attachment 2 provides the updated expense information for 2006. HECO-629 also explains the project details and the various contracts in place (current contracts amount to $370,244) to complete this assessment and evaluation of the wind resource. See CA-IR-407 for updated actual expenses to June 2007.

6. HECO received Army approval for only one site (existing communication tower) and is currently collecting wind data from the sensors installed on the existing communication tower on the site. HECO just completed a one-week bird radar survey that will augment the pending state conservation permit application. HECO is waiting for state approval to enter and collect wind data on conservation land and Army approval to enter the property to erect a meteorological tower and monitor wind speeds in the area. Thus, the expenses in 2007 to date are related to a single site data collection, permit

approvals, and flora and fauna survey, and bird radar survey. Once all approvals (Army approval and State Department of Land & Natural Resources Board) are obtained, the activity in 2007 will increase with the erection of the meteorological tower and its data collection (12 months) and sodar trailer data collection at multiple sites (about 6 to 8 weeks at each site). Some of these expenses will continue into 2008.

7. As detailed in Docket No. 03-0253 (HECO IRP Evaluation Report), HECO is targeting issuance of a Solicitation of Interest on or about September, 2007, announcing HECO's intent to proceed with an Request for Proposal ("RFP") for approximately 100 MW of non-firm renewable energy. The anticipated RFP to follow is targeted for issuance on or about year-end 2007, with a desired service date for the resource or resources totaling up to 100 MW in the 2010 to 2012 timeframe. HECO has discussed this RFP process with Army personnel and the Army land agents are working diligently to make this site available for a wind developer to propose this Army site in the upcoming HECO RFP. Thus, the renewable energy initiative for collecting wind data at this site will be helpful in developing a commercial wind farm project at this site.

<u>Biofuels Initiatives</u>

1. Biofuels initiative budget was first introduced in 2005, thus there were no activities in 2003 and 2004 in this category.
2. This is a new initiative first introduced in 2005 for $100,000. The 2007 test year estimate of $100,000 is to be used for biofuels assessments.
3. In 2005, Southwest Research Institute ("SwRI") was subcontracted to conduct qualitative combustor performance efficiency and emission evaluation as part of Phase 2 of HECO's biofuels R&D program. Biomass initiative funds were leveraged with

EPRI funds (about 60% of the total project funding was from biomass initiative funds). The study was completed in 2006. HECO-629 details the study results.

4. Attachment 2 reflects the actual cost for this initiative in 2005 and 2006. These costs include expenses for local taxes related to this project that were not accounted for in HECO-629 and the timing of reimbursements from EPRI (EPRI funds also are used in this project), which netted to a negative expense in 2006.

5. The activities related to biofuels activities increased in 2006: (1) HECO contracted a Black & Veatch study to contact manufacturers of HECO, HELCO and MECO steam boilers, diesel generators and combustion turbines regarding the use of biofuels blends and neat fuels (using EPRI funds); (2) MECO obtained approval from a state agency to conduct biodiesel blends and neat fuels testing on its existing diesel generators and combustion turbine; and (3) HECO made the decision to use 100% biofuels at its new Campbell Industrial Park ("CIP") combustion turbine (see HECO-629 for details).

6. The 2007 monies related to biofuels initiative will fund priority projects resulting from the Black & Veatch study recommendations (final report in development), MECO biodiesel testing; and HECO CIP related project and/or other priority areas (discussed in HECO-629). EPRI funds will be leveraged where possible. HECO plans to direct these funds to one or a number of research projects. See CA-IR-407 for an updated discussion of the use of these funds in a HECO biodiesel steam boiler testing project. HECO is developing a test plan. Once the test plan is completed, HECO will leverage EPRI monies and sign an agreement with EPRI. HECO will then send a check to EPRI to co-fund the project. Thus, these funds will be expended in 2007.

Electronic Shock Absorber

1. The Electronic Shock Absorber ("ESA") is the first-of-a-kind demonstration unit developed from idea and patent approval to design, procurement and construction of a demonstration unit dealing with wind integration issues. While commercially-available products for the main components were used, the integration of the components and associated software are first-of-a kind.
2. The 2004 and 2005 expenditures reflect the design, construction, shipment, and installation of the ESA. Testing and operation was conducted in 2006. As mentioned in HECO-629, the ESA was damaged in the October 15, 2006 earthquake that originated of the west coast of the Big Island.
3. For 2007 ESA activity, see the responses to CA-IR-183 and CA-IR-341. HECO has received and is reviewing the damage and disposal report. The 2007 expense for the 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.

Sun Power for Schools

In response to CA-IR-80, HECO addressed the 2007 rate case monies related to Sun Power for Schools as a net zero. Therefore, HECO is not addressing Sun Power for Schools in this inquiry.

d. See response in c.

e. See HECO's responses to CA-IR-183 and CA-IR-341 for current updates.

Research and Development 2007 Test Year Estimate

The Company's 2007 test year estimate for research and development ("R&D") expenses for technology areas that are included in Production Operation & Maintenance is $1,181,000 for activities primarily conducted by Technology Division and Senior Vice-President Energy Solution & Technology. In general, the estimate includes expenses associated with near-term locally-based research and development activities to further HECO's evaluation and implementation of new technologies related to electric utility operations, renewable energy, alternate energy, and emerging technologies and primarily labor related to Technology Division activities. The Technology Division and Senior Vice President Energy Solutions budgets are covered in two testimonies—HECO T-6 Production Operations and Maintenance (R&D) and HECO T-13 Corporate and Property Accounting (Electric Power Research Institute membership and other related activities). Specifically, the major R&D activities include:

| | | |
|---|---|---|
| 1) | local EPRI matching funds | $249,000 |
| 2) | recurring renewable energy funds | $65,000 |
| 3) | renewable energy initiative | $300,000 |
| 4) | biofuels initiatives | $100,000 |
| 5) | electronic shock absorber | $221,000 |
| 6) | Sun Power for Schools | $40,000 |
| 7) | Labor | $104,000 |
| 8) | Overheads | $76,000 |
| 9) | other activities | $25,000 |
| | TOTAL | $1,181,000* |

(*figures may not total exactly due to rounding)

The 2007 test year amount was determined based on costs incurred in prior years for near-term research and development, studies, evaluation and implementation of new technologies related to electric utility operations, renewable energy, alternate energy, and emerging technology projects. Also included were funds used to leverage estimated 2007 EPRI Tailored Collaboration funding and HECO labor and overheads.

HECO's local research and development costs are budgeted to further HECO's near-term research and development, studies, evaluation and implementation of renewable energy, alternate energy, and emerging technologies. The intent of the local research and development funding is to fund projects and studies that are directly related to HECO issues that may not be addressed under the general EPRI membership research package.

These expenses are used to cover general research and development activities related to renewable energy and alternate energy organization memberships, publications and reports, travel to renewable energy and alternate energy conferences, seminars and training, and initiatives in wind, biomass and other renewable energy, alternative energy and emerging technologies (such as hydrogen and fuel cells).

The research activities will concentrate on areas where the project results will have

- 2000: $470,505
- 2001: $234,749
- 2002: $161,200
- 2003: $191,880
- 2004: $376,770
- 2005: $54,600

The amount of local EPRI matching funds is a function of the TC funds available to HECO, which depend on the EPRI programs and projects that HECO subscribes to as part of its membership. Only some of the EPRI products offerings have TC funds associated with them. When HECO subscribes to EPRI products each year, some products will have TC funds available for HECO matching.

The types of R&D projects that will be funded by the local EPRI matching funds in 2007 are as follows (note the type of R&D projects vary each year depending on the company needs):

| Project Title | Project Description | Local EPRI match Funds |
|---|---|---|
| Underground Cable Replacement Policy Model Development | Review and utilize HECO's cable data to develop an optimal Repair/Replace policy for HECO's UG direct buried cables. Train company personnel to use the model for future projects. | $27,500 |
| Fargo ACSR Compression Dead-End Connector Failure Investigation | HECO has experienced four failures of Fargo ACSR Compression Dead-End connectors on the Waiau-Ewa Nui 138kV circuits. EPRI to inspect the failed components and the documentation related to the failures and develop and implant any component testing needed to identify the cause of these failures. | $48,397 |
| Underground Best Practices Assessment | Review and assess HECO's underground installation and maintenance practices and compare them to industry best practices. | $30,000 |
| T&D Inspector Training | EPRI has started an on-line training program with photo's and descriptions of a limited amount of components on a typical electrical distribution and transmission system. There is also a test that is associated with the on-line training to measure the knowledge gained from the training. EPRI has talked about expanding the on-line training to more components and C&M would like to work with EPRI in continuing the development of this training to | $35,000 |

HAWAIIAN ELECTRIC COMPANY INC.
2007 Rate Case

## HECO Research & Development--Historical Summary of Non-Labor Expenses
## CA-IR-245

| | | Actual | | | | Budget | 2007 Actual | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2003 | 2004 | 2005 | 2006 | 2007 | Jan | Feb | Mar | Apr | Total |
| 1 | local EPRI matching funds (1) | $ 191,880 | $ 376,770 | $ 54,600 | $ - | $ 249,000 | $ - | $ - | $ - | $ - | $ - |
| 2 | renewable energy initiative (2) | $ - | $ - | $ 76,715 | $ 278,987 | $ 300,000 | $ 10,768 | $ 4,261 | $ 15,627 | $ - | $ 30,656 |
| 3 | biofuels/biomass initiatives (3) | $ - | $ - | $ 139,884 | $ (14,492) | $ 100,000 | $ - | $ - | $ - | $ - | $ - |
| 4 | electronic shock absorber (4) | $ - | $ 151,450 | $ 264,528 | $ 30,290 | $ 221,000 | $ - | $ - | $ - | $ - | $ - |
| 5 | Sun Power for Schools (5) | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - |
| PNR budget: | | $ 191,880 | $ 528,220 | $ 535,727 | $ 294,785 | $ 870,000 | $ 10,768 | $ 4,261 | $ 15,627 | $ - | $ 30,656 |

Notes:

(1) HECO was not a member of EPRI in 2006 therefore only partial funds were expended in 2005 (on existing and continuing projects) and no funds were expended in new projects in 2005 and 2006. The amounts indicated for 2003 to 2005 are totals of signed and executed EPRI TC research funding agreements. Please see CA-IR-245, b.2., for more details.

(2) renewable energy initiative is a new area which began in 2005.

(3) biofuels initiative is a new area which began in 2005; HECO-629 expenditures reflect the actual Southwest Research Institute contract which included EPRI cost-share.

(4) electronic shock absorber initiative began in 2004.

(5) per CA-IR-80--Sunpower for Schools expenses were treated as as net zero.

HAWAIIAN ELECTRIC COMPANY INC.
2007 Rate Case
Summary of 2003 - 2005 EPRI TC Match Funding

2003

| Project | WO # | EE # | ACT # | Exp/Clr | NARUC | TC Match |
|---|---|---|---|---|---|---|
| High temperature, low sag transmission conductors | TD032378 | 501 | 342 | Expensed | 571 | $52,000 |
| Maintenance optimization support (Phase II) -- system and equipment reliability prioritization (SERP), maintenance based optimization (MBO), and predictive maintenance (PdM) | TD039401 | 501 | 720 | Cleared | 184060 | $80,600 |
| Implementation of project prioritization | EE005208 | 501 | 720 | Cleared | 184060 | $59,280 |
| | | | | | Total 2003 Local EPRI Match Funds | $191,880 |

2004

| Project | | | | | | |
|---|---|---|---|---|---|---|
| High temperature, low sag transmission conductors | TD032378 | 501 | 342 | Expensed | 571 | $26,000 |
| Dynamic thermal circuit rating (DTCR) technology at HECO - Phase I | EE006594 | 501 | 301 | Cleared | 184060 | $55,952 |
| Transmission and Distribution Maintenance Optimization (TDMO) Phase III, maintenance based optimization (MBO), and predictive maintenance (PdM) and aerial inspection | SS007805 | 501 | 349 | Expensed | 570 | $171,080 |
| Planning and Scheduling Tool Assistant (PaSTA) training and work control coaching | PR000140 | 501 | 240 | Expensed | 506020 | $61,631 |
| PlantView implementation and training | PR026259 | 501 | 240 | Expensed | 506020 | $42,369 |
| HECO assessment for renewable energy options for Coconut Island | HP001633 | 501 | 731 | Deferred | 186000 | $19,738 |
| | | | | | Total 2004 Local EPRI Match Funds | $376,770 |

2005

| Project | | | | | | |
|---|---|---|---|---|---|---|
| High temperature, low sag transmission conductors | TD032378 | 501 | 342 | Expensed | 571 | $26,000 |
| Maintenance optimization for Power Delivery | TD046171 | 501 | 720 | Cleared | 184060 | $28,600 |
| | | | | | Total 2005 Local EPRI Match Funds | $54,600 |

CA-IR-246

**Ref: Response to CA-IR-2, HECO T-6, Attachment 7B, page 1 (Environmental Outside Services).**

a. Please provide a complete copy of existing contracts or other commitments made by HECO for services in 2007 for EE 508 estimated expenses in each category of activity listed on page 1.

b. Provide actual annual expenses incurred by HECO in each of the years 2003 through 2006 for services in each of the test year EE 508 estimated expenses by category of activity listed on page 1.

c. Provide actual annual expenses incurred by HECO in each month of 2007, to date, for services in each of the test year EE 508 estimated expenses by category of activity listed on page 1.

d. Explain and quantify any changes in the level of spending, timing or scope of activities associated with the test year 2007 EE 508 estimated expenses by category of activity listed on page 1.

HECO Response:

a. Please refer to Attachment 1 to this response which provides a summary of current commitments and pending contracts relative to the 2007 forecast amounts for each activity in EE508 and supporting information including copies of approved Work Authorizations (commitments) and invoices as of May 2007. Additional work authorizations for the balance of 2007 services have not yet been issued.

b. The actual annual expenses incurred by HECO in cost type EE 508 for each of the years 2003 through 2006 is provided in Attachment 2 to this response.

c. The actual monthly expenses incurred by HECO in 2007, through March 2007, for services in cost type EE 508, by category of activity, are provided in Attachment 3 to this response.

d. The following explains and quantifies any changes in the level of spending, timing or scope of activities associated with the test year 2007 estimated expenses in cost type EE 508 by

category of activity, listed on page 1: The forecasting of costs for environmental support contains uncertainty as the level of effort that is required, and the timing of that effort, is dependent on the regulatory issues or operational considerations that are driven by the respective regulatory agencies. Therefore HECO uses its best judgment to forecast what regulations and initiatives will become a priority for the agencies, and how much effort by HECO will be required to respond. Notwithstanding the unpredictability of regulations and initiatives, HECO forecasts a level of effort and corresponding expenses that are reasonable based on experience and its own assessments of what services may be required and when they may be required. On that basis, an estimate of total outside support services is developed for the year and allocated to the different activities in cost type EE 508. As the year progresses, actual expenses in each activity in EE 508 reflect the actual level of effort required to respond to actual regulatory activities and initiatives. The remaining forecasted amounts in each activity are rebalanced to manage the total level of spend forecasted in EE 508. Explanations of the differences between the levels of expense in prior years (i.e., 2003 – 2006) with the 2007 estimates for the respective activity categories in EE508 are provided below.

Air Compliance Support

Unanticipated compliance incidents occur due to operational events and/or equipment malfunctions that lead to extensive investigative work by HECO's staff and outside consultants in order to document the particulars of the incidents, prevent future similar events, and to respond to agency inquiries. In some cases, outside consultants are required for their specialized expertise and their input and guidance are incorporated into corrective or preventative follow-up measures. An example of this was the contracting of Ashworth

Leininger Group (ALG) in 2004 to provide recommendations on mitigating opacity issues at Kahe Power Plant. Referring to Attachment 2 in response to subpart b above, the cost for ALG's services in 2004 was $74,523 and is included in the annual total.

The approach used to determine 2007 estimates for outside services in the category of air compliance expenses was to first develop a base using an average of prior year actual expenses from 2004 – 2006, then adding other anticipated expenditures in the same activity category that were not actually incurred in the prior year. For example, referring to the information provided in Attachment 2 above for Air Compliance Support:

Actual Expenses

2004 Actuals - $116,865

2005 Actuals - $65,524

2006 Actuals - $47,560

Average for 2004 – 2006 = $76,650

Additional Costs

$30,000 (related to incorporating EPA revisions to continuous opacity monitor regulations).

$30,000 (related to air dispersion modeling required for compliance with the clean air visibility rule).

$20,000 (related to evaluation of permit modifications to the blackstart generators located at Waiau and Kahe to facilitate start-up under emergency outage conditions).

2007 Forecast = $156,650 – rounded to $150,000 and allocated as $30,000 to Honolulu, and $60,000 each to Waiau and Kahe.

Permit Renewal Expenses

Cost estimates for covered source permit (CSP) renewals are also dependent on the complexity and compliance issues for each specific permit. Factors to consider are number of generating units, applicable regulations, and considerations for possible revisions to existing permit conditions. The timing of HECO's expenditures in support of the covered source permit renewal process is dependent on the renewal application processing schedule which is determined by the Department of Health, given its workload, available resources and number and extent of inquiries relating to the permit conditions. The covered source permit renewal application for the two generators at the Honolulu Power Plant is due in November 2007. HECO's consultant has estimated $10,000 for the preparation of the application and supporting documents. The Waiau Power Plant CSP renewal, which covers eight generating units, shows actual outside services expenditures of $22,233 in 2005 and 2006. An additional amount of $7,500 was included in the 2007 estimate to evaluate possible permit modifications to the used oil section and opacity language. For the Kahe CSP renewal, actual outside services expenditures amounted to $28,538 in 2006 for the preparation of the application. HECO included $7,500 in the 2007 estimates for technical assistance in anticipation of questions from the DOH on the Kahe application.

General Compliance Support

In addition to regulatory activities and initiatives, expenses for General Compliance Support also depend legislative activities. For example, recent developments resulting from the 2007 State legislative session with respect to green house gas initiatives, (the implementation of HB 226 and the State's participation in the Climate Registry) were added to the Environmental Department's scope of responsibilities when it was not previously.

New EPA regulations going into effect later in 2007 will affect maintenance procedures on the Continuous Opacity Monitoring Systems on the generating units. HECO personnel and contractors will need to be trained by expert consultants to help assure compliance with the requirements of the new regulations. These efforts are difficult to forecast due to the uncertainty involved with first determining the actual procedures that must be followed to attain compliance, and then due to developing the appropriate training and implementation plans.

When the 2007 forecast was developed, HECO reviewed the actual expenditures for general compliance from the previous two years and made an adjustment to the 2005 actual expenses by adding $30,000 for outside legal services from Baker Botts LLP. The 2007 estimate for the General Compliance category was determined as follows:

2005 Actuals - $54,971 ($24,971 + $30,000)

2006 Actuals - $72,386

Average for 2005 – 2006 = $63,678 (rounded to $65,000)

2007 Forecast = $65,000

Regulatory Uncertainties

Regulatory uncertainties contribute to the challenges of forecasting for services and levels of effort required to support environmental compliance. Historical trends combined with anticipated new developments with respect to green house gas legislation and emission registries translate into an increasing cost trend for environmental compliance and support.

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE

HECO 2007 Non-Labor Forecast
JB - EE 508 Outside Consultant Services Summary

| | Consultant Services Master Agreement | Work Authorization No. | Description | Amount | Comments |
|---|---|---|---|---|---|
| General Permitting Support (865PHE/NE) | | | | | |
| | | | | | |
| Kahe CSP Renewal (865KST/NE) | | | | | |
| | | | Kahe Covered Source Permit Renewal Review | $7,500 | Work Authorization for 2007 is pending |
| Waiau Air Permit Renewal (865WST/NE) | | | | | |
| | | | Waiau Covered Source Permit Review | $7,500 | Work Authorization for 2007 is pending |
| Honolulu Air Permit Renewal (865HST/NE) | | | | | |
| | | | Honolulu Covered Source Permit Review | $10,000 | Work Authorization for 2007 is pending |
| Honolulu Air Compliance (875HST/NE) | | | | | |
| | MSTR-JB-05-02 | PJB-07-003 | Honolulu Air Compliance | $12,000 | Issued Work Authorization for $12,000 for assistance with compliance reports. |
| | | | Honolulu Air Compliance | $8,000 | Compliance - Shared portion of outside consultant expenses associated with evaluation and implementation of opacity mitigation measures. Consultant will also initiate research into alternatives for opacity regulations under the State Implementation Plan. |

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE

HECO 2007 Non-Labor Forecast
JB - EE 508 Outside Consultant Services Summary

| | Consultant Services Master Agreement | Work Authorization No. | Description | Amount | Comments |
|---|---|---|---|---|---|
| | | | Honolulu Air Compliance | $10,000 | Continuous Opacity Monitoring System (COMS) - Shared portion of outside consultant assistance with developing implementation plans and procedures associated with revisions to 40 CFR 60 Appendix F. |
| Kahe Air Compliance (875KST/NE) | | | | | |
| | MSTR-JB-05-02 | PJB-07-004 | Kahe Air Compliance | $15,000 | Issued Work Authorization for $15,000 for assistance with compliance reports. |
| | | | Kahe Air Compliance | $10,000 | Compliance - Shared portion of outside consultant expenses associated with evaluation and implementation of opacity mitigation measures. Consultant will also initiate research into alternatives for opacity regulations under the State Implementation Plan. |
| | | | Kahe Air Compliance | $10,000 | Continuous Opacity Monitoring System (COMS) - Shared portion of outside consultant assistance with developing implementation plans and procedures associated with revisions to 40 CFR 60 Appendix F. |

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE

HECO 2007 Non-Labor Forecast
JB - EE 508 Outside Consultant Services Summary

| | Consultant Services Master Agreement | Work Authorization No. | Description | Amount | Comments |
|---|---|---|---|---|---|
| | MSTR-JB-03-05 | PJB-04-016 | Kahe Regional Haze Modeling | $15,000 | Work authorization issued in prior year. Amendment for 2007 services is pending. |
| | MSTR-JB-05-02 | PJB-07-006 | Kahe Blackstart Modification | $10,000 | Issued initial Work Authorization for $6,000, balance to be issued as amendment if necessary to respond to agency questions |
| Waiau Air Compliance (875WST/NE) | | | | | |
| | MSTR-JB-05-02 | PJB-07-005 | Waiau Air Compliance | $15,000 | Issued Work Authorization for $15,000 for assistance with compliance reports. |
| | | | Waiau Air Compliance | $10,000 | Compliance - Shared portion of outside consultant expenses associated with evaluation and implementation of opacity mitigation measures. Consultant will also initiate research into alternatives for opacity regulations under the State Implementation Plan. |
| | | | Waiau Air Compliance | $10,000 | Continuous Opacity Monitoring System (COMS) - Shared portion of outside consultant assistance with developing implementation plans and procedures associated with revisions to 40 CFR 60 Appendix F. |

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE

HECO 2007 Non-Labor Forecast
JB - EE 508 Outside Consultant Services Summary

| | Consultant Services Master Agreement | Work Authorization No. | Description | Amount | Comments |
|---|---|---|---|---|---|
| | | | Waiau Air Compliance | $10,000 | Waiau Blackstart review - Consultant services to assist with evaluation of possible permit modifications for the Waiau blackstart unit. |
| | MSTR-JB-03-05 | PJB-04-015 | Waiau Regional Haze Modeling | $15,000 | Work authorization issued in prior year. Amendment for 2007 services is pending. |
| General Compliance Support (875PHE/NE) | | | | | |
| | MSTR-JB-05-02 | PJB-07-002 | General Compliance Support - Voluntary Green House Gas Reporting | $20,000 | Issued work authorization to Jim Clary & Associates for assistance with Green House Gas reporting and preparing DOE 1605(b) submittal. |
| | | | General Compliance Support - Outside consultant legal services | $30,000 | Actual invoice from Baker Botts for $28,800. |
| | | | General Compliance Support - Green House Gas Issues | $15,000 | Outside consultant services to assist with evaluation of HB 226 implementation and participation in the Climate Registry. |

**WORK AUTHORIZATION NO. 69**

**Under Consultant Services Master Agreement MSTR-JB-05-02**

Contract No. PJB-07-001, Portion 01, Element 01, Category 01

HECO Miscellaneous Services for 2007

**I. Request for Quote**

Under the terms and conditions of the Consultant Services Master Agreement, dated February 9, 2005, by and between JIM CLARY & ASSOCIATES, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

Consultant is to provide support for miscellaneous non-project specific services.

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The minimum insurance limits and warranty defect discovery period specified in the Consultant Services Master Agreement shall be modified for this Work Authorization only:

Warranty

Section 7.3 - __na__ year discovery period for defects

Employers' Liability

Section 8.1 - $__na__ per each accident

$__na__ for bodily injury from disease - each employee
$__na__ for bodily injury from disease - each policy limit

Commercial General Liability

Section 8.2 - $__na__ per occurrence
$__na__ general aggregate

Automobile Liability

Section 8.3 - $__na__ per accident

Professional Errors and Omissions

Section 8.4 - $__na__ per each claim
$__na__ per aggregate

Pollution Liability and/or Asbestos Abatement Liability and/or Lead Abatement Liability

Section 8.5 - $__na__ per occurrence

Marine

Section 8.6 - $__na__ per occurrence

## II. Consultant's Proposal

Consultant hereby proposes to perform the Work described above in Section I, under said terms and conditions, for the amounts described below:

Total not-to-exceed cost is $ 20,000 . Total not-to-exceed manhours required is 400 .

Work will begin no later than February 28, 2007 and be completed on or before December 31, 2007 .

James Clary will act as Consultant's Designated Representative during the performance of this Work.

Date 12/19/06

Consultant

## III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be Nathan Yuen.

Date 12-21-2006 _____ _____
Company

Date _____ _____
Company

**WORK AUTHORIZATION NO. 70**

**Under Consultant Services Master Agreement MSTR-JB-05-02**

Contract No. PJB-07-002, Portion 01, Element 01, Category 01

Voluntary GHG Reporting for 2007

## I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated February 9, 2005, by and between JIM CLARY & ASSOCIATES, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

Consultant is to provide support for Green House Gases (GRG) emissions & prepare the voluntary reports under Section 1605(b) of the Energy Policy Act for HECO, MECO and HELCO..

The minimum insurance limits and warranty defect discovery period specified in the Consultant Services Master Agreement shall be modified for this Work Authorization only:

Warranty

Section 7.3 - __na__ year discovery period for defects

Employers' Liability

Section 8.1 - $__na__ per each accident

$__na__ for bodily injury from disease - each employee
$__na__ for bodily injury from disease - each policy limit

Commercial General Liability

Section 8.2 - $__na__ per occurrence
$__na__ general aggregate

Automobile Liability

Section 8.3 - $__na__ per accident

Professional Errors and Omissions

Section 8.4 - $__na__ per each claim
$__na__ per aggregate

Pollution Liability and/or Asbestos Abatement Liability and/or Lead Abatement Liability

Section 8.5 - $__na__ per occurrence

Marine

Section 8.6 - $__na__ per occurrence

## III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be Nathan Yuen.

Date 12-21-2006 _____ Company

Date _____ _____ Company

**WORK AUTHORIZATION NO. 71**

**Under Consultant Services Master Agreement MSTR-JB-05-02**

Contract No. PJB-07-003, Portion 01, Element 01, Category 01

Honolulu Air Compliance for 2007

## I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated February 9, 2005, by and between JIM CLARY & ASSOCIATES, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

Consultant is to provide support for air compliance issues for the Honolulu Power Plant. Issues include, but are not limited to the preparation of the annual emission fee report and the annual compliance certification.

The minimum insurance limits and warranty defect discovery period specified in the Consultant Services Master Agreement shall be modified for this Work Authorization only:

Warranty

Section 7.3 - __na__ year discovery period for defects

Employers' Liability

Section 8.1 - $__na__ per each accident

$__na__ for bodily injury from disease - each employee
$__na__ for bodily injury from disease - each policy limit

Commercial General Liability

Section 8.2 - $__na__ per occurrence
$__na__ general aggregate

Automobile Liability

Section 8.3 - $__na__ per accident

Professional Errors and Omissions

Section 8.4 - $__na__ per each claim
$__na__ per aggregate

Pollution Liability and/or Asbestos Abatement Liability and/or Lead Abatement Liability

Section 8.5 - $__na__ per occurrence

Marine

Section 8.6 - $__na__ per occurrence

## II. Consultant's Proposal

Consultant hereby proposes to perform the Work described above in Section I, under said terms and conditions, for the amounts described below:

Total not-to-exceed cost is $ 12,000 . Total not-to-exceed manhours required is 240 .

Work will begin no later than February 28, 2007 and be completed on or before December 31, 2007 .

James Clary will act as Consultant's Designated Representative during the performance of this Work.

Date 12/19/06

Consultant

## III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be Nathan Yuen.

Date 12-21-2006 _____ _____
Company

Date _____ _____
Company

**WORK AUTHORIZATION NO. 72**

**Under Consultant Services Master Agreement MSTR-JB-05-02**

Contract No. PJB-07-004, Portion 01, Element 01, Category 01

Kahe Air Compliance for 2007

## I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated February 9, 2005, by and between JIM CLARY & ASSOCIATES, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

Consultant is to provide support for air compliance issues for the Kahe Power Plant. Issues include, but are not limited to the preparation of the annual emission fee report and the annual compliance certification.

## II. Consultant's Proposal

Consultant hereby proposes to perform the Work described above in Section I, under said terms and conditions, for the amounts described below:

Total not-to-exceed cost is $ 15,000 . Total not-to-exceed manhours required is 240 .

Work will begin no later than February 28, 2007 and be completed on or before December 31, 2007 .

James Clary will act as Consultant's Designated Representative during the performance of this Work.

Date 12/19/06

Consultant

## III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be Nathan Yuen.

Date 12-21-2006 _____ Company

Date _____ _____ Company

**WORK AUTHORIZATION NO. 73**

**Under Consultant Services Master Agreement MSTR-JB-05-02**

Contract No. PJB-07-005, Portion 01, Element 01, Category 01

Waiau Air Compliance for 2007

## I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated February 9, 2005, by and between JIM CLARY & ASSOCIATES, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

Consultant is to provide support for air compliance issues for the Waiau Power Plant. Issues include, but are not limited to the preparation of the annual emission fee report and the annual compliance certification.

The minimum insurance limits and warranty defect discovery period specified in the Consultant Services Master Agreement shall be modified for this Work Authorization only:

Warranty

Section 7.3 - __na__ year discovery period for defects

Employers' Liability

Section 8.1 - $__na__ per each accident

$__na__ for bodily injury from disease - each employee
$__na__ for bodily injury from disease - each policy limit

Commercial General Liability

Section 8.2 - $__na__ per occurrence
$__na__ general aggregate

Automobile Liability

Section 8.3 - $__na__ per accident

Professional Errors and Omissions

Section 8.4 - $__na__ per each claim
$__na__ per aggregate

Pollution Liability and/or Asbestos Abatement Liability and/or Lead Abatement Liability

Section 8.5 - $__na__ per occurrence

Marine

Section 8.6 - $__na__ per occurrence

## II. Consultant's Proposal

Consultant hereby proposes to perform the Work described above in Section I, under said terms and conditions, for the amounts described below:

Total not-to-exceed cost is $ 15,000 . Total not-to-exceed manhours required is 240 .

Work will begin no later than February 28, 2007 and be completed on or before December 31, 2007 .

James Clary will act as Consultant's Designated Representative during the performance of this Work.

Date 12/19/06

Consultant

## III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be Nathan Yuen.

Date 12-21-2006 _____ Company

Date _____ _____ Company

**WORK AUTHORIZATION NO. 74**

**Under Consultant Services Master Agreement MSTR-JB-05-02**

Contract No. PJB-07-006, Portion 01, Element 01, Category 01

Kahe Blackstart Modification

## I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated February 9, 2005, by and between JIM CLARY & ASSOCIATES, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

Consultant is to prepare an update to the renewal application seeking an increase in the annual blackstart operating hours. This will require an update of the annual ISCST & CTDMPLUS modeling runs. Consultant will also provide necessary support as this request is processed by DoH.

Date 1-3-2007

Company

The minimum insurance limits and warranty defect discovery period specified in the Consultant Services Master Agreement shall be modified for this Work Authorization only:

Warranty

Section 7.3 - __na__ year discovery period for defects

Employers' Liability

Section 8.1 - $__na__ per each accident

$__na__ for bodily injury from disease - each employee
$__na__ for bodily injury from disease - each policy limit

Commercial General Liability

Section 8.2 - $__na__ per occurrence
$__na__ general aggregate

Automobile Liability

Section 8.3 - $__na__ per accident

Professional Errors and Omissions

Section 8.4 - $__na__ per each claim
$__na__ per aggregate

Pollution Liability and/or Asbestos Abatement Liability and/or Lead Abatement Liability

Section 8.5 - $__na__ per occurrence

Marine

Section 8.6 - $__na__ per occurrence

## II. Consultant's Proposal

Consultant hereby proposes to perform the Work described above in Section I, under said terms and conditions, for the amounts described below:

Total not-to-exceed cost is $ 6,000 . Total not-to-exceed manhours required is 120 .

Work will begin no later than 01/02/2007 and be completed on or before 06/30/2008.

James Clary will act as Consultant's Designated Representative during the performance of this Work.

Date 01/02/2007

Consultant

## III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be Nathan Yuen.

Date 1-3-2007 _____ _____
Company

Date _____ _____
Company

**BAKER BOTTS LLP**

THE WARNER
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202.639.7700
FAX 202.639.7890

AUSTIN
BAKU
DALLAS
HOUSTON
LONDON
MOSCOW
NEW YORK
RIYADH
WASHINGTON

November 28, 2006

Mr. Barry Nakamoto
Hawaiian Electric Company
P.O. Box 2750
Honolulu, HI 96840

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Fees for Activities of the Class of '85 Regulatory Response Group

| | |
|---|---|
| **Payment for:** | |
| January-December 2007 | $28,800 |
| **TOTAL AMOUNT DUE** | **$28,800** |

**Taxpayer I.D. # 74-1195457**

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE

Air Quality & Noise Division (JB)
Actual Annual Expenditures for Cost Type 508 Services
(Reference CA-IR-2, Exhibit HECO T-6, Attachment 7B, page 1)

| | Actuals 2003 | Actuals 2004 | Actuals 2005 | Actuals 2006 | Forecast 2007 |
|---|---|---|---|---|---|
| Kahe CSP Renewal | $0 | $0 | $0 | $28,538 | $7,500 |
| Waiau Air Permit Renewal | $0 | $0 | $19,299 | $2,934 | $7,500 |
| Honolulu Air Permit Renewal | $2,196 | $157 | $0 | $0 | $10,000 |
| Honolulu Air Compliance | $0 | $787 | $2,479 | $2,680 | $30,000 |
| Kahe Air Compliance | $10,858 | $97,346 | $41,739 | $29,891 | $60,000 |
| Waiau Air Compliance | $8,907 | $18,732 | $21,306 | $14,989 | $60,000 |
| General Compliance Support | $3,303 | $4,535 | $24,971 | $72,386 | $65,000 |
| | $25,263 | $121,557 | $109,793 | $151,418 | $240,000 |

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE

Air Quality & Noise Division (JB)
Actual 2007 Monthly Expenditures for Cost Type 508 Services
(Reference CA-IR-2, Exhibit HECO T-6, Attachment 7B, page 1)

| | Actual Jan-07 | Actual Feb-07 | Actual Mar-07 |
|---|---|---|---|
| Kahe CSP Renewal | $0 | $265 | $212 |
| Waiau Air Permit Renewal | $0 | $0 | $0 |
| Honolulu Air Permit Renewal | $0 | $0 | $0 |
| Honolulu Air Compliance | $99 | $1,017 | $928 |
| Kahe Air Compliance | $5,382 | $1,333 | $1,634 |
| Waiau Air Compliance | $2,471 | $1,211 | $1,411 |
| General Compliance Support | $32,517 | $1,708 | $1,390 |
| | $40,468 | $5,535 | $5,575 |

CA-IR-247

**Ref: CA-IR-2, HECO T-6, Attachment 9, pages 2-6 (ITS Allocations).**

Please provide the following information regarding test year proposed ITS charges to the Production Departments:

a. Provide monthly actual charges to date in 2007 to production expense accounts for RA=PEZ.

b. Explain the causes for any significant variances in relation to the projected test year monthly spending amounts.

c. Explain and provide updated calculations supporting any revisions to be made by the Company regarding ITS expenses and allocations.

HECO Response:

a. The monthly actual charges to date in 2007 for production expense accounts for RA PEZ are shown on Attachment 1.

b. Per Attachment 1, the recorded YTD expense as of April is $70,624 less than the budgeted amount. For budgeting purposes, the monthly budget was established at 1/12 of the annual budget amount. The actual amounts in the January through April period do not reflect larger budget expense items which will be incurred in the latter portion of 2007. These larger items are discussed in the responses to CA-IR-273, 274, 275 and 276.

c. No revisions have been made by the Company regarding ITS expenses and allocations.

**Hawaiian Electric Company, Inc.**
**Rate Case - 2007 Test Year**
**Production Operation and Maintenance**

**ITS Allocation - Line-Up - Summarized**
**RA = PEZ; EE = 451**

| | Jan-07 | Feb-07 | Mar-07 | Apr-07 | 2007 YTD |
|---|---|---|---|---|---|
| Actual | $114,422 | $117,042 | $129,091 | $103,077 | $463,632 |
| Budget | $133,359 | $133,359 | $133,769 | $133,769 | $534,256 |
| Diff | ($18,937) | ($16,317) | ($4,678) | ($30,692) | ($70,624) |

CA-IR-248

**Ref: CA-IR-2, HECO T-6, Attachment 12A (Vehicle Expense).**

a. Please state all assumptions and provide calculations of the various test year hourly rates used to apportion vehicle expenses among RA's and expense accounts.

b. Provide a summary of the distribution of total test year vehicle clearing costs, indicating the portion charged to expense accounts by NARUC and RA as well as the portion charged to capital and other accounts.

HECO Response:

a. The vehicle on-cost hourly rate is based on the budgeted vehicle usage hours and the estimated charges to the vehicle clearing account for the year. The estimated charges to the vehicle clearing account are allocated to each vehicle class based on a historical distribution of charges to each vehicle class. See Attachment 1 for the workpapers supporting the vehicle on-cost hourly rate.

b. See Attachment 2 for the summary of the distribution of the total test year vehicle clearing costs to the various NARUC accounts by RA code.

## 2007 Forecast Overhead Rates

| | 2007 |
|---|---|
| Payroll Taxes | 8.18% |
| Employee Benefits | $ 12.30 |
| Non-Productive Wages | $ 4.26 |
| Corporate Administration | $ 3.73 |
| Customer Engineering | $87.25 |
| Stores | 11.05% |
| Power Supply | $9.56 |
| Energy Delivery | $38.87 |
| **Vehicle:** | |
| Heavy Trucks | $16.50 |
| Medium Trucks | $11.75 |
| Light Trucks | $6.25 |
| Sedans | $3.50 |
| Condor 150I | $77.00 |
| Caterpillar | $5.50 |
| Misc Equip/Vehicles | $1.25 |

**2007 Vehicle Rate Calculation**

| Description | % Allocation | Allocated Charges | (1) Forecasted 2007 hours | Calculated Rate | Proposed Rate |
|---|---|---|---|---|---|
| Heavy Trucks | 29.96% | 2,383,935 | 144,404 | 16.51 | 16.50 |
| Medium Trucks | 15.95% | 1,269,465 | 108,780 | 11.67 | 11.75 |
| Light Trucks | 36.62% | 2,914,436 | 458,284 | 6.36 | 6.25 |
| Sedans | 9.29% | 739,100 | 216,951 | 3.41 | 3.50 |
| Condor 150I | 1.91% | 151,628 | 1,968 | 77.05 | 77.00 |
| Caterpillar | 0.14% | 10,756 | 1,968 | 5.47 | 5.50 |
| Misc | 6.14% | 488,922 | 408,152 | 1.20 | 1.25 |
| | 100.00% | 7,958,242 | 1,340,507 | | |

| | | |
|---|---|---|
| Labor | 1,879 | |
| Nonlabor | 2,384 | (1) |
| On-costs | 1,857 | |
| Depreciation | 1,838 | (2) |
| Total to be allocated | 7,958 | |

| | | |
|---|---|---|
| Labor $ | 1,879 | (1) |
| Labor Hrs | 63 | (1) |
| Payroll Taxes | 154 | |
| Emp Ben | 775 | |
| Stores | 192 | (3) |
| Eng Del | 233 | (3) |
| Corp Admin | 235 | |
| NPW | 268 | |
| | 1,857 | |

(1) Source: HECO rate case Pillar file
(2) Source: Property Accounting
(3) Source: HECO rate case Pillar file and forecasted overhead rates

| **Vehicle Costs** | (4) Recorded Amt | Allocation |
|---|---|---|
| Vehicle Costing - CAT | 2,787.77 | 0.14% |
| Vehicle Costing - CONDOR | 39,299.24 | 1.91% |
| Vehicle Costing - H TRK | 617,874.77 | 29.96% |
| Vehicle Costing - L TRK | 755,371.31 | 36.62% |
| Vehicle Costing - M TRK | 329,023.38 | 15.95% |
| Vehicle Costing - MISC | 126,720.17 | 6.14% |
| Vehicle Costing - SEDAN | 191,561.85 | 9.29% |
| | 2,062,638.49 | |

(4) Recorded charges to the vehicle clearing account during 2003

| TRCT_CO | ct grp | acct group desc | acct | acct desc | ra | ra desc | ee | ee desc | SumOf07fctn |
|---|---|---|---|---|---|---|---|---|---|
| HECO | G30 | O&M | 500020 | OPER SUPV & ENG-W | PYA | Admin-Plng & Engr | 301 | Vehicles | 7,308 |
| HECO | G30 | O&M | 502020 | STEAM EXP-WAIAU | PIO | Operations Admin | 301 | Vehicles | 11,984 |
| HECO | G30 | O&M | 502020 | STEAM EXP-WAIAU | PIW | Waiau Stn Oper | 301 | Vehicles | 19,344 |
| HECO | G30 | O&M | 502030 | STEAM EXP-KAHE | PIK | Kahe Stn Oper | 301 | Vehicles | 6,944 |
| HECO | G30 | O&M | 506020 | MISC STEAM POWER | PIA | Admin-PS Services | 301 | Vehicles | 34,720 |
| HECO | G30 | O&M | 506030 | MISC STEAM POWER | PJB | Air Quality & Noise | 301 | Vehicles | 28,710 |
| HECO | G30 | O&M | 506030 | MISC STEAM POWER | PJC | Chemistry | 301 | Vehicles | 7,308 |
| HECO | G30 | O&M | 506030 | MISC STEAM POWER | PJW | Water & Haz Mat | 301 | Vehicles | 39,150 |
| HECO | G30 | O&M | 510020 | MAINT SUPV & ENG-W | PIP | Plan & Engr | 301 | Vehicles | 6,944 |
| HECO | G30 | O&M | 512010 | MAINT BOILER & FO P | PIN | Honolulu Stn Maint | 301 | Vehicles | 39,184 |
| HECO | G30 | O&M | 512020 | MAINT BOILER & FO P | PIM | Maintenance Admin | 301 | Vehicles | 19,344 |
| HECO | G30 | O&M | 512020 | MAINT BOILER & FO P | PIX | Waiau Stn Maint | 301 | Vehicles | 130,944 |
| HECO | G30 | O&M | 512030 | MAINT BOILER & FO P | PIL | Kahe Stn Maint | 301 | Vehicles | 96,224 |
| HECO | G30 | O&M | 512030 | MAINT BOILER & FO P | PIT | Traveling Maintenance | 301 | Vehicles | 48,112 |
| HECO | G30 | O&M | 513030 | MAINT ELECTRIC PLA | PIL | Kahe Stn Maint | 301 | Vehicles | 24,800 |
| HECO | G30 | O&M | 513030 | MAINT ELECTRIC PLA | PIT | Traveling Maintenance | 301 | Vehicles | 49,104 |
| HECO | G30 | O&M | 514030 | MAINT MISC STEAM P | PIP | Plan & Engr | 301 | Vehicles | 6,944 |
| HECO | G30 | O&M | 546 | OPER SUPV & ENG- O | PNG | EnergyProjects | 301 | Vehicles | 3,192 |
| HECO | G30 | O&M | 571 | MAINT OF OVERHEAD | PDS | Operations | 301 | Vehicles | 162,360 |
| HECO | G30 | O&M | 572 | MAINT OF UNDERGRN | PVL | Electric & Welding Svcs | 301 | Vehicles | 13,000 |
| HECO | G30 | O&M | 586 | METER EXPENSES - D | PCG | Fld Svc & Collection | 301 | Vehicles | 46,794 |
| HECO | G30 | O&M | 586 | METER EXPENSES - D | PWX | Engineering & Meter | 301 | Vehicles | 75,888 |
| HECO | G30 | O&M | 587 | CUSTOMER INSTALLA | PCG | Fld Svc & Collection | 301 | Vehicles | 13,114 |
| HECO | G30 | O&M | 901 | SUPERVISION- CUSTO | PCA | Admin-Cust Svc | 301 | Vehicles | 7,308 |
| HECO | G30 | O&M | 902 | METER READING EXP | PCG | Fld Svc & Collection | 301 | Vehicles | 53,808 |
| HECO | G30 | O&M | 902 | METER READING EXP | PCM | Meter Reading | 301 | Vehicles | 201,376 |
| HECO | G30 | O&M | 903 | CUSTOMER RECORDS | PCG | Fld Svc & Collection | 301 | Vehicles | 67,820 |
| HECO | G30 | O&M | 910 | CUSTOMER ASSISTAN | PQE | Educ & Cons Affairs | 301 | Vehicles | 13,600 |
| HECO | G30 | O&M | 910 | CUSTOMER ASSISTAN | PSD | Cust Efficiency Pgms | 301 | Vehicles | 9,954 |
| HECO | G30 | O&M | 910 | CUSTOMER ASSISTAN | PSM | Forecasts & Research | 301 | Vehicles | 301 |
| HECO | G30 | O&M | 910 | CUSTOMER ASSISTAN | PSN | Marketing Services | 301 | Vehicles | 15,505 |
| HECO | G30 | O&M | 910 | CUSTOMER ASSISTAN | PSR | Cust Tech Applicatns | 301 | Vehicles | 4,998 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | P3V | VP-Govt & Comm Affairs | 301 | Vehicles | 6,944 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | P5V | VP-Gen Counsel | 301 | Vehicles | 7,392 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | P9S | Sr VP-Energy Solutions | 301 | Vehicles | 630 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PEM | Mailing Services | 301 | Vehicles | 31,500 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PFD | Client Svcs & Consult | 301 | Vehicles | 385 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PHA | Admin-Facilities | 301 | Vehicles | 13,050 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PHB | Facilities Operation | 301 | Vehicles | 49,875 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PHF | Facilities Planning | 301 | Vehicles | 7,308 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PHS | Security | 301 | Vehicles | 53,097 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PJA | Admin-Environ | 301 | Vehicles | 7,308 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PNA | Internal Audit | 301 | Vehicles | 126 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PNL | Land & Rights of Way | 301 | Vehicles | 1,680 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PNX | Admin-Audit & Complnc | 301 | Vehicles | 126 |

| TRCT_CO | ct gro | acct group desc | acct | acct desc | ra | ra desc | ee | ee desc | SumO07fcln |
|---|---|---|---|---|---|---|---|---|---|
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PPA | Admin-Ind Rel | 301 | Vehicles | 630 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PPI | Labor Rel & Wage Adm | 301 | Vehicles | 2,100 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PVA | Admin-Supp Svcs | 301 | Vehicles | 12,400 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PVP | Purchasing | 301 | Vehicles | 12,600 |
| HECO | G30 | O&M | 921 | ADMIN & GENL EXP - N | PYP | Integrated Res Plng | 301 | Vehicles | 126 |
| HECO | G30 | O&M | 925 | INJURIES & DAMAGES | PFS | Corporate Safety | 301 | Vehicles | 184,683 |
| HECO | G30 | O&M | 925 | INJURIES & DAMAGES | PKI | Risk Management | 301 | Vehicles | 1,764 |
| HECO | G30 | O&M | 926000 | EMPLOYEE PENSIONS | PFB | Employee Benefits | 301 | Vehicles | 140 |
| HECO | G30 | O&M | 9302 | MISCELLANEOUS GEN | PQC | Corp Communications | 301 | Vehicles | 13,050 |
| HECO | G30 | O&M | 932 | ADMIN AND GENL MA | PVL | Electric & Welding Svcs | 301 | Vehicles | 39,000 |
| HECO | G40 | Other Income Statement | 417200 | EXPENSES FROM NO | PSR | Cust Tech Applicatns | 301 | Vehicles | 1,200 |
| HECO | G50 | Construction Work-In-Progress | 107 | CONSTRUCTION WOR | PBY | Substn, Protect & Tel | 301 | Vehicles | 42 |
| HECO | G50 | Construction Work-In-Progress | 107 | CONSTRUCTION WOR | PRC | Communications | 301 | Vehicles | 1,875 |
| HECO | G50 | Construction Work-In-Progress | 107 | CONSTRUCTION WOR | PWP | Planning & Design | 301 | Vehicles | 74,292 |
| HECO | G50 | Construction Work-In-Progress | 107 | CONSTRUCTION WOR | PWX | Engineering & Meter | 301 | Vehicles | 63,488 |
| HECO | G80 | Charges to Clrg Accts | 163 | STORES EXPENSE | PVL | Electric & Welding Svcs | 301 | Vehicles | 10,400 |
| HECO | G80 | Charges to Clrg Accts | 163 | STORES EXPENSE | PVM | Materials Management | 301 | Vehicles | 303,576 |
| HECO | G80 | Charges to Clrg Accts | 184050 | CLR-POWER SUPPLY | PIB | Admin-PS O&M | 301 | Vehicles | 6,944 |
| HECO | G80 | Charges to Clrg Accts | 184050 | CLR-POWER SUPPLY | PYA | Admin-Plng & Engr | 301 | Vehicles | 7,308 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PBA | Admin-ED Engr | 301 | Vehicles | 90,306 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PDA | Admin-C&M | 301 | Vehicles | 61,008 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PDS | Operations | 301 | Vehicles | 4,552,476 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PDV | Vegetation Management | 301 | Vehicles | 24,600 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRA | Admin-Sys Op | 301 | Vehicles | 84,000 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRC | Communications | 301 | Vehicles | 57,375 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRD | Operating Dispatch | 301 | Vehicles | 7,392 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRI | Instrument & Control | 301 | Vehicles | 66,000 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRR | Relay | 301 | Vehicles | 93,600 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRS | Substation | 301 | Vehicles | 535,496 |
| HECO | G80 | Charges to Clrg Accts | 184060 | CLR-ENERGY DELIVE | PRX | Construction Mgt | 301 | Vehicles | 194,142 |
| HECO | G80 | Charges to Clrg Accts | 184080 | CLEARINGS-CUSTOM | PWA | Admin-CID | 301 | Vehicles | 6,944 |
| HECO | G80 | Charges to Clrg Accts | 184110 | CLEARINGS-VEHICLE | | | 301 | Vehicles | (7,956,984) |
| HECO | G80 | Charges to Clrg Accts | 184120 | CLEARINGS-ITS DEPT | PEA | Admin-Info Tech&Svcs | 301 | Vehicles | 2,520 |
| | | | | | | | | | 0 |

CA-IR-249

**Ref: HECO-608, HECO-WP-412, page 20.**

The outage start dates and durations on HECO-608 do not correspond with the outage start dates and durations on HECO-WP-412, page 20. Please see the table below.

| Generating Unit | HECO-WP-412, Page 20 | | HECO-608 | |
|---|---|---|---|---|
| | Outage Start Date | Duration (days) | Outage Start Date | Duration (days) |
| Honolulu 8 | 4/15/07 | 13 | | |
| Honolulu 8 | 11/30/07 | 32 | 12/3/07 | 71 |
| Honolulu 9 | 1/1/07 | 12 | | |
| Honolulu 9 | 11/4/07 | 13 | 10/16/06 | 91 |
| Waiau 3 | 4/1/07 | 13 | 4/3/07 | 7 |
| Waiau 4 | 6/17/07 | 13 | | |
| Waiau 5 | 9/16/07 | 62 | 5/28/07 | 5 |
| Waiau 5 | | | 10/1/07 | 63 |
| Waiau 6 | 8/12/07 | 13 | | |
| Waiau 7 | 2/24/07 | 70 | 2/12/07 | 71 |
| Waiau 7 | 12/9/07 | 20 | | |
| Waiau 8 | 1/14/07 | 13 | 1/15/07 | 13 |
| Waiau 8 | | | 12/3/07 | 13 |
| Waiau 9 | 11/25/07 | 13 | 5/14/07 | 34 |
| Kahe 1 | 1/1/07 | 40 | 10/30/06 | 99 |
| Kahe 2 | 3/11/07 | 20 | 3/12/07 | 20 |
| Kahe 3 | 6/9/07 | 91 | 6/18/07 | 91 |
| Kahe 4 | 10/20/07 | 14 | | |
| Kahe 5 | 5/6/07 | 20 | 3/15/07 | 6 |
| Kahe 6 | 5/27/07 | 12 | 4/30/07 | 14 |

Please identify the maintenance and overhaul outage start dates and durations for all HECO generating units that were used in the HECO production simulation for the test year.

HECO Response:

The table above contains two errors in its portrayal of HECO-WP-412, page 20. The table above lists "Waiau 9, 11/25/07, 13 days." HECO-WP-412, page 20, correctly lists the actual entries as "Waiau 8, 11/25/07, 13 days" and "Waiau 9, 5/6/07, 34 days."

As explained in HECO T-6, page 20, at lines 9-10, HECO-608 reflects the February 14, 2006 revision of the Planned Maintenance Schedule, and was utilized, in part, to develop the 2007 budget expenses. As explained in HECO T-6, page 20, at lines 11-13, the July 21, 2006 version of the Planned Maintenance Schedule, provided in HECO-611, was used as the basis for the Production Simulation model calculations performed for the 2007 rate case filing and for revisions to the 2007 estimate for Other Production O&M Expense. For HECO units, the July 21, 2006 Planned Maintenance Schedule is consistent with the P-MONTH inputs provided in HECO-WP-412, page 20.

CA-IR-250

**Ref: HECO-608.**

The referenced exhibit contains outage dates and durations for HECO generating units and purchased power maintenance outages.

a. Please explain how the MW loss value in the Remarks column on HECO-608 was derived.

b. Please explain how the MW loss value in the Remarks column of HECO-608 was used in the production simulation model.

c. Please provide a comprehensive list of all maintenance and overhaul outages for all purchased power units, and provide the start and end dates of each outage and the available capacity from each unit during the outage that was used in the production simulation.

HECO Response:

a. The "MW Loss" value in the Remarks column of HECO-608 is used to indicate the amount of generating capacity lost during outages at the IPP site when only partial capability is available. Because each of the IPP sites have redundant steam generators (i.e., two boilers at AES and HPOWER and two heat recovery steam generators (HRSGs) at Kalaeloa), outages can be scheduled where only one or both of the steam generators is removed from service. For planning purposes, it is necessary to distinguish between the two types of outages for each IPP. AES can be scheduled for outages of one boiler (90 MW Loss) or two boilers (180 MW Loss). HPOWER can be scheduled for outages of one boiler (23 MW Loss) or two boilers (46 MW Loss). Kalaeloa can be scheduled for outages of one CT and HRSG (118 MW Loss) or two CTs and HRSGs (208 MW Loss). HECO-608 erroneously lists the Kalaeloa outages as "104.5 MW Loss" or "209 MW Loss". (Kalaeloa's individual

unit capacities were updated following the initial development of the 2007 Planned Maintenance Schedule shown in HECO-608.) HECO-611 and -612 correctly states the capability loss for Kalaeloa outages. Because the HECO units have only one steam generator, all planned outages of the HECO units result in complete loss of capability and there is no need to distinguish the type of outage scheduled.

b. HECO-608 refers to the 2/14/06 version of the Planned Maintenance Schedule which was not used in the production simulation model. However, the same types of remarks are found in HECO-611, the 7/21/06 version of the Planned Maintenance Schedule used in the production simulation model. The partial capabilities shown in the Planned Maintenance Schedule are translated into pattern files, which reduce a generating unit's capability for the targeted time slot. As noted in response to CA-IR-206, there are no pattern files for HECO generating units. This is consistent with HECO-611, where the only "MW Loss" entries are for IPP units, and not for HECO generating units.

c. The purchased power outages shown below on page 3 of this response were modeled in the production simulation, for both direct testimony and subsequent update (i.e., the July 21, 2006 revision of the planned maintenance schedule was used for both the updated production simulation and the production simulation discussed in the direct testimony of HECO T-6).

## Updated Production Simulation Outages For Purchased Power

| Unit | Start | End | MW Out |
|---|---|---|---|
| AES | 10/1/07 | 10/10/07 | 90 |
| HPOWER | 1/20/07 | 2/4/07 | 23 |
| | 7/14/07 | 7/29/07 | 23 |
| Kalaeloa* | 1/28/07 | 2/13/07 | 118 |
| | 2/14/07 | 2/22/07 | 208 |
| | 2/23/07 | 3/3/07 | 118 |
| | 9/22/07 | 9/22/07 | 118 |
| | 9/29/07 | 9/29/07 | 118 |

* Kalaeloa performs weekend CT washes where each CT is separately taken off line for a 12 hour period, once per week. The washes were modeled in PMONTH from Friday 9pm to Saturday 9am (for CT1) and from Saturday 9pm to Sunday 9am (for CT2) each weekend. Washes were eliminated when Kalaeloa CT's were on maintenance.

CA-IR-251

**Ref: HECO T-8, page 3 (Performance Metrics).**

At page 3, Mr. Yamamoto lists the activities undertaken within the customer accounts block. Please provide the following information regarding the referenced activities:

a. List and describe the performance metrics that are monitored by management to evaluate how well customers are being served by HECO.

b. For each of the metrics listed in your response to part a. of this information request, provide comparable periodic data for all available periods of 2004, 2005, 2006 and 2007, to date.

c. Explain any unusual fluctuations are trends in the quantitative data provided in your response to part b. of this information request, indicating any measures taken or planned to improve performance.

d. State and quantify the Company's goals and objective regarding each of the performance measures used by management to track performance.

HECO Response:

a. The performance metrics that are monitored by management to evaluate how well customers are being served by HECO are listed below.

1. Service Level – Percentage of customer calls answered within 30 seconds;
2. Average Speed of Answer (seconds) – Average amount of elapsed time between the time a customer call leaves the call queue and is answered by a Company agent.;
3. Abandoned Rate – Percentage of calls that are disconnected (i.e., callers who hang up) prior to being answered by Company agents;
4. Average Call Handling Time (minutes) – The average time agents spend on a call with a customer, including time spent after the call, finalizing notes and updating a customer's account record before taking the next customer call.

5. Customer Transaction Survey – Quarterly survey conducted by an external company to measure customers' ratings of HECO's service by type of transaction (by calling to start, stop or change their electric service or by initiating a billing field investigation). The survey provides data to enable historical tracking of key customer satisfaction measures and provides information to management on ways to improve satisfaction through management of how the calls made by customers are being handled.
6. Meter Reading Accuracy Rate – The percentage of meter reading errors identified prior to billing and after billing that are processed for each month;
7. Same Day Payment Processing – The percentage of payments that are processed within a day of receipt;

b. Periodic data for the Service Level, Average Speed of Answer, Abandoned Rate and Average Call Handling Time performance metrics are shown in Attachment 1. The requested Customer Transaction Survey results are shown in Attachment 2. Meter Reading Accuracy rates from 2004 are shown in Attachment 3 and Same Day Payment Processing percentages are reflected in Attachment 4.

c. The decline in the Service Level, Average Speed of Answer, Abandoned Rate and Average Call Handling Time is due to the implementation of new processes and systems such as Check-Free and the new HECO.com site. These new processes and systems have caused spikes in call volumes in 2005 and 2006. To address the declining results for these three measures of customer service, the Company is currently reviewing the need to implement a virtual queuing system ("VQS"). A VQS would announce the estimated wait time and offers callers options to continue to hold, hang up and receive a callback when the next agent is available, and receive a callback at a later time or even another day as requested by

the caller. The anticipated impact of VQS would be to reduce average speed of answer time and lower the abandoned rate.

The Customer Transaction Survey results in Attachment 2 indicate that a consistently high percentage of customers are satisfied with the Company's handling of requests for start and change of service and their billing inquiries, as evidenced by the increase in results from 2004 to 2006. Meter Reading Accuracy Rates have steadily improved over time due to the Company's measures such as handheld programming to audit meter reads and ongoing monitoring of individuals' meter reading accuracy levels.

The recent dips in the Same Day Payment Processing percentages are attributable to unplanned maintenance emergencies, less then optimal staffing levels, coupled with the learning curve for replacement hires. With a more stable set of personnel, it is anticipated that the results will improve.

d. Attachments 1, 2, 3 and 4 reflect the target benchmarks for the performance metrics discussed above. These benchmarks have been developed by the Customer Service department throughout the years to assess and evaluate the department's performance by the department's management.

**CUSTOMER ASSISTENANCE CENTER**
Responsibility Center PCH

| | TARGET BENCHMARK | | | |
|---|---|---|---|---|
| | 80% | < 45 sec. | < 5% | 3.5 min. |
| Year | Service Level | Avg. Speed of Answer | Abandon Rate | Avg. Call Handling Time |
| 2004 | 49% | No stat in '04 | 9.60% | No stat in '04 |
| 2005 | 50% | 82 seconds | 8.50% | 3.65 minutes |
| 2006 | 37% | 133 seconds | 12.60% | 3.84 minutes |
| 2007 (as of April '07) | 39% | 127 seconds | 12.40% | 3.87 minutes |

The above periodic table is compared to the Department's Target Benchmark

## CUSTOMER TRANSACTION SURVEY

**Overall Rating of Results of Contact with HECO by Reason for Contact**

| RA* | | 2004 | 2005 | 2006 | Goal |
|---|---|---|---|---|---|
| PCH | Start/Change Service | 91.5 | 91.9 | 92.4 | 90.0 |
| PCG | Billing/Field Investigation | 75.9 | 77.5 | 79.2 | N/A |

Mean (average) rating. Mean scores are for 0-100 scales converted from the five-point scale questions used in the survey.

*Responsibiltiy Area. "PCH" = Customer Assistance Center.
"PCG" = Field Services and Collection Center.

**METER READING SECTION**

Responsibility Area (PCM)

| Read Errors TARGET BENCHMARK =0.20%* | | | | |
|---|---|---|---|---|
| | **2004** | **2005** | **2006** | **2007** |
| Jan | 0.22% | 0.22% | 0.13% | 0.09% |
| Feb | 0.21% | 0.23% | 0.12% | 0.08% |
| Mar | 0.22% | 0.17% | n/a | 0.07% |
| Apr | 0.25% | 0.22% | 0.11% | |
| May | 0.19% | 0.18% | 0.11% | |
| Jun | 0.20% | 0.17% | 0.10% | |
| July | 0.22% | 0.18% | 0.13% | |
| Aug | 0.18% | 0.14% | 0.13% | |
| Sept | n/a | 0.14% | 0.13% | |
| Oct | n/a | 0.16% | 0.09% | |
| Nov | n/a | 0.11% | 0.10% | |
| Dec | n/a | 0.10% | 0.08% | |

**2 errors for every 1,000 reads*

**PAYMENT PROCESSING SUPPORT SECTION**
Responsibility Area (PCP)

| Department Target Benchmark: 99% same day | |
|---|---|
| Mo./Yr. | Same Day % |
| Jan '04 | 92% |
| Feb '04 | 91% |
| Mar '04 | 91% |
| Apr '04 | 97% |
| May '04 | 100% |
| Jun '04 | 96% |
| Jul '04 | 100% |
| Aug '04 | 98% |
| Sep '04 | 100% |
| Oct '04 | 100% |
| Nov '04 | 91% |
| Dec '04 | 95% |
| Jan '05 | 100% |
| Feb '05 | 98% |
| Mar '05 | 100% |
| Apr '05 | 98% |
| May '05 | 99% |
| Jun '05 | 98% |
| Jul '05 | 98% |
| Aug '05 | 97% |
| Sep '05 | 98% |
| Oct '05 | 97% |
| Nov '05 | 100% |
| Dec '05 | 100% |
| Jan '06 | 100% |
| Feb '06 | 97% |
| Mar '06 | 99% |
| Apr '06 | 94% |
| May '06 | 100% |
| Jun '06 | 97% |
| Jul '06 | 98% |
| Aug '06 | 97% |
| Sep '06 | 96% |
| Oct '06 | 100% |
| Nov '06 | 90% |
| Dec '06 | 98% |
| Jan '07 | 96% |
| Feb '07 | 94% |
| Mar '07 | 95% |

CA-IR-252

**Ref: T-8, page 5, lines 22-24, HECO-804 (Filling Vacant Positions).**

According to the testimony, "The filling of these vacant positions for replacement of staff will allow the Company to continue to maintain its daily operations and provide for new or additional work and projects during the test year." Please provide the following information:

a. Confirm that each of the vacant positions have been approved for hiring and explain the efforts undertake by HECO to fill such positions.

b. Please provide a more detailed breakdown by position (in the format of CA-IR-1, Attachment 2, pages 43-36) of the values summarized on HECO-804 and provide monthly actual recorded staffing in each position for all available months subsequent to September 2006.

c. Provide a monthly statement of temporary staffing used to augment customer accounting work requirements in each month of 2006 and 2007, to date.

d. Explain the Company's policies regarding the use of temporary staffing and how temporary staff counts in your response to part (c) of this information request relate to any vacancies indicated in the response to part d.

e. Explain and provide copies of information relied upon by management to determine that filling of vacancies is necessary to "maintain its daily operation."

f. Identify and describe with particularity the efforts planned in connection with identity theft measures, revenue protection processes and any other discrete new projects adding to work requirements.

HECO Response:

a. Two of the three vacant positions, the call center supervisor and the account services clerk positions, have been approved for hiring. The filling of the operations analyst position has been deferred, pending the review of organizational needs for the new Customer Information System. Job vacancy notices (JVNs) have been posted for the two approved vacancies.

b. Please see Attachment 1 for a more detailed breakdown by position (in the format of CA-IR-1, Attachment 2, pages 43-46) of the values summarized on HECO-804 for October 2006 through April 2007.

c. Please see Attachment 2 for a monthly statement of temporary staffing, both agency temps and HECO temps, that are hired to augment customer accounting work requirements in each month of 2006 through April 2007.

d. The Company has general guidelines for the hiring of temporary employees. Temporary positions may be filled by agency temps as well as HECO temps. The agency temps identified in Attachment 2 were hired due to the vacancies that exist in RA (responsibility area) PCP, the Payment Processing area (see Attachment 1, page 2).

e. Please refer to T-8, Page 3, lines 21-25 and T-8, Page 13, lines 2-4 for explanations for determining the filling of vacancies to maintain daily operations.

f. Please see Attachment 3, the Revenue Protection Work Proposal 2007, Attachment A of Contract PCF-06-080, which describes the additional revenue protection efforts planned to be undertaken in 2007.

Source Documents DARS 635 & 638

HECO - Customer Service Department
Oct. 2006 - Apr. 2007 Actual Employee Count by Responsibility Area

| | | | 2006 | | | 2007 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Position Title | RA | BU/ Merit | 11/01 Oct | 12/01 Nov | 1/1/07 Dec | 2/01 Jan | 3/02 Feb | 4/01 Mar | 5/01 Apr | | |
| **Administration - PCA** | | | | | | | | | | | |
| Mgr, Customer Service _E | PCA | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Administrator _TC | PCA | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Operations Analyst _TC | PCA | M | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Customer Care and Solutions Analyst _TC | PCA | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Secretary _I | PCA | M | 1 | 1 | 1 | 0 | 0 | 0 | 1 | | |
| Total | PCA | | **4** | **4** | **4** | **3** | **3** | **3** | **4** | **0** | **0** |
| | | | | | | | | | | | |
| **Total Administration** | | | **4** | **4** | **4** | **3** | **3** | **3** | **4** | **0** | **0** |
| **2007 Adj. Bud. Admin.** (1) _TC Op Anal | | | | | | **4** | **4** | **4** | **4** | **4** | **5** |
| | | | | | | | | | | | |
| **Customer Accounts - PCS, PCB, PCH** | | | | | | | | | | | |
| Dir, Customer Account Svs _FS | PCS | M | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| Billing & Accounting Analyst _TC | PCS | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Customer Service Analyst _TC | PCS | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Customer Account Services Clerk _BUOC | PCS | BU | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| **Total** | **PCS** | | **5** | **5** | **5** | **5** | **5** | **5** | **5** | **0** | **0** |
| 2007 Budget | PCS | | | | | 5 | 5 | 5 | 5 | 5 | 5 |
| | | | | | | | | | | | |
| Supv, Customer Acctg & Billing _TCS | PCB | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Translation System Coordinator _I | PCB | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Customer Billing Representative _BUOC | PCB | BU | 4 | 4 | 4 | 4 | 4 | 4 | 3 | | |
| Total | PCB | | **6** | **6** | **6** | **6** | **6** | **6** | **5** | **0** | **0** |
| 2007 Budget | PCB | | | | | 6 | 6 | 6 | 6 | 6 | 6 |
| | | | | | | | | | | | |
| Supv, Customer Assistance Center _TC | PCH | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| Customer Assistance Representatives _BUOC | PCH | BU | 27 | 26 | 26 | 27 | 27 | 27 | 28 | | |
| Total | PCH | | **28** | **27** | **27** | **28** | **28** | **28** | **29** | **0** | **0** |
| 2007 Adj.Budget (1) _TCS | PCH | | | | | 29 | 29 | 30 | 30 | 30 | 30 |
| | | | | | | | | | | | |
| **Actual Total Customer Accounts** | | | **39** | **38** | **38** | **39** | **39** | **39** | **39** | **0** | **0** |
| **2007 Total Adj. Bud. Cust. Acct.** | | | | | | **40** | **40** | **41** | **41** | **41** | **41** |

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Source Documents DARS 635 & 638

HECO - Customer Service Department
Oct. 2006 - Apr. 2007 Actual Employee Count by Responsibility Area

| | | | 2006 | | | 2007 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Position Title | RA | BU/ Merit | 11/01 Oct | 12/01 Nov | 1/1/07 Dec | 2/01 Jan | 3/02 Feb | 4/01 Mar | 5/01 Apr | | |
| | | | | | | | | | | | |
| **Credit - PCD, PCP** | | | | | | | | | | | |
| Credit Manager _FS | PCD | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Credit Analyst _TC, _I | PCD | M | 2 | 2 | 2 | **2** | 2 | 2 | 2 | | |
| Customer Service Analyst _TC | PCD | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Customer Service Assistant _I | PCD | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Total | PCD | | **5** | **5** | **5** | **5** | **5** | **5** | **5** | **0** | **0** |
| 2007 Budget | | | | | | **5** | **5** | **5** | **5** | **5** | **5** |
| | | | | | | | | | | | |
| Supv, Paymt Procg & Supp Cntr _TCS | PCP | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Acc. Svs Clks _BUOC | PCP | BU | 13 | 15 | 15 | **15** | 14 | 15 | 16 | | |
| HECO TEMPS hired 3-12-07 to reg empl 4-07 BUOC | PCP | BU | | | | | | 1 | 0 | | |
| Total | PCP | | **14** | **16** | **16** | **16** | **15** | **17** | **17** | **0** | **0** |
| 2007 Adj. Budget - (3)_BUOC) | | | | | | 14 | 14 | 17 | 17 | 17 | 17 |
| | | | | | | | | | | | |
| **Total Credit** | | | **19** | **21** | **21** | **21** | **20** | **22** | **22** | **0** | **0** |
| **2007 Adj. Bud. PCD & PCP** | | | **0** | **0** | **0** | **19** | **19** | **22** | **22** | **22** | **22** |
| | | | | | | | | | | | |
| **Field Services & Collections - CF, CG, CM** | | | | | | | | | | | |
| Director, Customer Field Services _FS | PCF | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Customer Field Services Admin. _TC | PCF | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Credit Analyst _I | PCF | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Cust. Service Analyst _TC | PCF | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Cust. Serv Assist. *temps in 2007; 1 temp in Jan. Replaced Temp hire 5/7/07. | PCF | M | **0** | **0** | **0** | **1** | 0 | 0 | 0 | | |
| Total | PCF | | **4** | **4** | **4** | **5** | **4** | **4** | **4** | **0** | **0** |
| 2007 Adj. Budget - 1 ( _I) | | | | | | **4** | 4 | 4 | 4 | 4 | 5 |

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Source Documents DARS 635 & 638

HECO - Customer Service Department
Oct. 2006 - Apr. 2007 Actual Employee Count by Responsibility Area

| | | | 2006 | | | 2007 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Position Title** | **RA** | **BU/ Merit** | **11/01 Oct** | **12/01 Nov** | **1/1/07 Dec** | **2/01 Jan** | **3/02 Feb** | **4/01 Mar** | **5/01 Apr** | | |
| | | | | | | | | | | | |
| Supv, Field Svs & Collec. **_TCS** | PCG | M | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| Cust. Fld Svs Planner/Analyst **_TC** | PCG | M | 1 | 1 | 1 | 1 | 1 | 1 | 1 | | |
| SR Customer Field Investigator **_BUOC** | PCG | BU | 4 | 4 | 4 | 4 | 4 | 4 | 4 | | |
| Customer Fld Sve Representative **_BUOC** | PCG | BU | 17 | 17 | 17 | 17 | 17 | 17 | 17 | | |
| Field Service Clerk **_BUOC** | PCG | BU | 2 | 2 | 2 | 2 | 2 | 2 | 2 | | |
| Total | PCG | | **26** | **26** | **26** | **26** | **26** | **26** | **26** | **0** | **0** |
| **2007 Budget** - (1)_TC full yr | | | | | | 26 | 26 | 26 | 26 | 26 | 26 |
| | | | | | | | | | | | |
| Supv, Meter Reading, **_TCS** | PCM | M | 1 | 1 | 1 | **1** | 1 | 1 | 1 | | |
| Meter Reader **_BUOC** | PCM | BU | 31 | 30 | 30 | **32** | 32 | 32 | 31 | | |
| Meter Reading Clerk **_BUOC** | PCM | BU | 1 | 2 | 2 | **1** | 1 | 1 | 1 | | |
| Total | PCM | | **33** | **33** | **33** | **34** | **34** | **34** | **33** | **0** | **0** |
| 2007 Budget | | | | | | **34** | 34 | 34 | 34 | 34 | 34 |
| | | | | | | | | | | | |
| **Total Field Services & Collections** | | | **63** | **63** | **63** | **65** | **64** | **64** | **63** | **0** | **0** |
| **2007 Adj. Bud. Fld Svc & Collec.** | | | **0** | **0** | **0** | **64** | **64** | **64** | **64** | **64** | **65** |
| | | | | | | | | | | | |
| **Grand Total Actual - CSD** (incl. HECO Temps) | | | **125** | **126** | **126** | **128** | **126** | **128** | **128** | **0** | **0** |
| **2007 Adj. Budget** | | | **0** | **0** | **0** | **127** | **127** | **131** | **131** | **131** | **133** |

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TEMPORARY STAFFING CUSTOMER SERVICE DEPARTMENT
January 2006 - April 2007

| RA | Position | Jan '06 | Feb '06 | Mar '06 | Apr '06 | May '06 | Jun '06 | Jul '06 | Aug '06 | Sep '06 | Oct '06 | Nov '06 | Dec '06 | Jan '07 | Feb '07 | Mar '07 | Apr '07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | | | | |
| PCP | Acct Svc Clk | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| PCP | Acct Svc Clk | 1 | 1 | | | | | | | | | | | | | | |
| PCP | Acct Svc Clk | | | 1 | 1 | 1 | 1 | 1 | 1 | | | | | | | | |
| PCP | Acct Svc Clk | | | | 1 | 1 | 1 | 1 | | | | | | | | | |
| PCP | Acct Svc Clk | | | | | | | | 1 | 1 | | | | | | | |
| PCP | Acct Svc Clk | | | | | | | | | | | 1 | 1 | 1 | 1 | | |
| PCP | Acct Svc Clk | | | | | | | | | | | | 1 | 1 | 1 | 1 | |
| PCP | Acct Svc Clk | | | | | | | | | | | | | | 1 | 1 | |
| | | | | | | | | | | | | | | | | | |
| PCF | Cust Svc Asst | | | | | | | | | | | 1 | 1 | | | | |
| | Total Temps | **2** | **2** | **2** | **3** | **3** | **3** | **3** | **3** | **2** | **1** | **3** | **4** | **3** | **4** | **3** | **1** |

*Note: HECO Temps listed below are included in Employee Count by RA CA-IR-252, Attach. 1*

| | | | | | | |
|---|---|---|---|---|---|---|
| PCP | Acct Svc Clk | | | | 1 | |
| PCF | Cust Svc Asst | | 1 | | | |

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# ATTACHMENT A

## Revenue Protection Work Proposal 2007

**Anticipated action:**

1. Establish a policy for the Revenue Protection Section. Areas of responsibility and authorization. Must have approval of upper management.
2. Work with Field Service, Meter Department and Operating to establish a locking and sealing policy. I.e. locking and sealing meters, inspecting metering facilities, security of seals and sealing devices, control of high security keys.
3. Work with Field Service, Customer Service and Regulatory in establishing new and or revising existing tariffs in matters related to the unauthorized use of service. Specifically revisions to rules 7 and 11. This is extremely important because right now HECO does not have the needed authorization to do what has to be done to adequately and properly bill those responsible for HECO's lost revenues.
4. Work with HECO's governmental liaison to introduce new civil legislation that will enable HECO to recover its losses by civil actions when necessary. The basics of this legislation would be similar to the criminal statues in existence now and the proposed PCU tariff revisions.
5. Provide awareness and training for meter reading, field service, operating and customer service departments regarding the detection and reporting of potential instances of unauthorized use of service or incorrect billing.
6. With regard to the reports of "metering irregularities" received by the Revenue Protection, work with the Field Service and Meter Departments to set up procedures for inspecting metering facilities and resealing meters. Both the Field Service and Meter Departments could and probably should provide support to the Revenue Protection Section in protecting the integrity of HECO's metering facilities and systems.
7. Set up procedure for checking the State, C&C and privately owned street light systems to insure they are being billed properly.

8. Investigate the feasibility of obtaining the equipment necessary to check HECO's entire CT rated meters for accuracy and theft.
9. Work with Field Service, Credit and Legal in establishing policies and procedures for collecting unauthorized use of service billings.
10. Look into matters related to the handling of Zero use reports and accounts that are disconnected for non payment and not reconnected within a certain time span.
11. Check the process for getting new accounts "on line". New meter installations and proper billing.
12. With the assistance of a Field Service Rep establish procedures and a work schedule so the FSR can assist the Revenue Protection Section. Having a FSR available, to handle the more routine cases will permit H. Dean to carry on, more effectively, the administrative and planning functions of the section.
13. Lead, supervise and /or participate in Revenue Protection investigations as necessary to obtain favorable outcome.
14. Train dedicated personnel in roles to support the Revenue Protection program as they become available to the RP team and program. Roles may include FSR assistant, Revenue Protection Investigator, administrative support, etc.
15. Provide software programming and updating as necessary to maintain the Revenue Protection databases, forms and reports.

CA-IR-253

**Ref: Response to CA-IR-3, HECO T-8, Attachment 1 (Staffing Adjustments).**

Please provide comparable actual data for all available months to replace the estimated information set forth in calculations supporting the Company's proposed budget adjustment, indicating actual amounts spent on temporary personnel and actual positions vacant by month.

HECO Response:

Please refer to Attachment 1, showing the comparable actual data for January through April 2007.

| | | | | | Stand. Labor Hrly Rate | Annual Hours | 2007 STAFFING PLAN CUSTOMER SERVICE DEPARTMENT | | | | | 2007 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACCT # | Quan. | RA | Activity | Description | | 2080 | Jan | Feb | Mar | Apr | May | Total |
| | | | | | | | 173.3 | 173.3 | 173.3 | 173.3 | 173.3 | |
| | | | | | | | | | | | | |
| 903 | 1 | PCA | 700 | Op Anal $ | $32.79 | | -$2,841 | -$2,841 | -$2,841 | -$2,841 | -$2,841 | -$14,206 |
| | | PCA | 720 | Op Anal $ | | | -$2,841 | -$2,841 | -$2,841 | -$2,841 | -$2,841 | -$14,206 |
| | | PCA | 700 | Op Anal Hr | | | -86.65 | -86.65 | -86.65 | -86.65 | -86.65 | |
| | | PCA | 729 | Op Anal Hr | | | -86.65 | -86.65 | -86.65 | -86.65 | -86.65 | |
| | | | | As of May 15, 2007 | | | Operations Analyst vacancy pending approval | | | | | |
| | | | | | | | | | | | | |
| 903 | 1 | PCH | 600 | Call Ctr Sup $ | $33.28 | | -$5,658 | -$5,658 | | | | -$11,315 |
| | | | 789 | Call Ctr Sup $ | | | -$100 | -$100 | | | | -$200 |
| | | | 600 | Call Ctr Sup Hr | | | -170 | -170 | | | | |
| | | | 789 | Call Ctr Sup Hr | | | -3 | -3 | | | | |
| | | | | As of May 15, 2007 | | | Call Center Supervisor Job Vacancy Notice (JVN) posted | | | | | |
| | | | | | | | | | | | | |
| 903 | 1 | PCF | 600 | Admin Assist $ | $23.22 | | -$1,307 | -$1,307 | -$1,307 | -$1,307 | -$1,307 | -$6,536 |
| | | | 604 | Admin Assist $ | | | -$1,307 | -$1,307 | -$1,307 | -$1,307 | -$1,307 | -$6,536 |
| | | | 611 | Admin Assist $ | | | -$1,108 | -$1,108 | -$1,108 | -$1,108 | -$1,108 | -$5,538 |
| | | | 777 | Admin Assist $ | | | -$302 | -$302 | -$302 | -$302 | -$302 | -$1,509 |
| | | | 600 | Admin Assist Hr | | | -56.3 | -56.3 | -56.3 | -56.3 | -56.3 | |
| | | | 604 | Admin Assist Hr | | | -56.3 | -56.3 | -56.3 | -56.3 | -56.3 | |
| | | | 611 | Admin Assist Hr | | | -47.7 | -47.7 | -47.7 | -47.7 | -47.7 | |
| | | | 777 | Admin Assist Hr | | | -13.0 | -13.0 | -13.0 | -13.0 | -13.0 | |
| | | | | As of May 15, 2007 | | | Vacancy approved for HECO Temp | | | | | |
| | | | | | | | | | | | | |
| 903 | 3 | PCP | 616 | Pay Proc Clk $ | $24.23 | | -$12,597 | -$12,597 | | | | -$25,194 |
| | | | | Pay Proc Clk Hr | | | -519.9 | -519.9 | | | | |
| | | | | | | | | | | | | |
| **903** | | | | **sub total** | | | **-$28,061** | **-$28,061** | **-$9,706** | **-$9,706** | **-$9,706** | **-$85,242** |
| | | | | | | | | | | | | |
| | | | **STAFFING LEVELS Adj. Budget** | | | | **127** | **127** | **131** | **131** | **131** | |
| | | | **Actual Staffing Levels less HECO temps** | | | | **127** | **126** | **127** | **128** | | |
| | | | | **HECO temps actual** | | | **1** | **0** | **1** | **0** | | |
| | | | **Diff. Actual Staff vs. Adj. Staff Budget** | | | | **1** | **-1** | **-3** | **-3** | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | **Offsets OT $** | | | | | | | | |
| | | | | Pay Proc | $24.23 | | $848 | $848 | $848 | | | **$2,544** |
| | | | | Call Ctr | $24.23 | | $1,720 | $1,720 | $1,720 | $1,720 | $1,720 | **$8,602** |
| | | | | sub total OT | | | **$2,568** | **$2,568** | **$2,568** | **$1,720** | | **$11,146** |
| | | | | Net Labor | | | | | | | | **-$74,096** |
| | | | | | | | | | | | | |
| | | | | **Overtime Hrs. (Est)** | | | hrs | hrs | hrs | hrs | hrs | |
| | | PCP | 616 | Pay Process | PCP | | 35 | 35 | 35 | | | 105 |
| | | PCH | 600 | Call Center | PCH | | 71 | 71 | 71 | 71 | 71 | 355 |
| | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **Actual Overtime Hrs.** | | | **Actual 2007** | | | | | |
| | | PCP | | Pay Process | | | 88 | 80 | 85 | 144 | | **396** |
| | | PCH | | Call Center | | | 526 | 250 | 150 | 118 | | **1,044** |
| | | | | | | | | | | | | |
| | | | | **Actual OT $** | **p/r rate** | | | | | | | |
| | | PCP | | Pay Proc | $30.36 | | $2,681 | $2,423 | $2,565 | $4,366 | | **$12,035** |
| | | PCH | | Call Ctr | $43.95 | | $23,109 | $11,001 | $6,606 | $5,177 | | **$45,893** |
| | | | | sub total OT | | | **$25,790** | **$13,423** | **$9,171** | **$9,543** | | **$57,927** |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | **Offset Temps Est** | | hrs | | | | | | |
| | 1 | PCF | 600 | Temp Rate | $15.25 | 2080 | $2,643 | $2,643 | $2,643 | $2,643 | | **$31,720** |
| | 1 | PCP | 616 | Temp Rate | $15.25 | 2080 | $2,643 | $2,643 | $2,643 | $2,643 | | **$31,720** |
| | | | | **O/S Svc** | $15.25 | 2080 | $5,287 | $5,287 | $5,287 | $5,287 | | **$63,440** |
| | | | | | | | | | | | | |
| | | | | **Actual HECO Temps as of Apr. 30, 2007** | | | | | | | | |
| | 1 | PCF | Merit | HECO Temp | $15.00 | | $1,440 | 0 | 0 | | | $1,440 |
| | 1 | PCP | BU | HECO Temp | $12.98 | | | | $1,558 | $1,038 | | $2,596 |
| | | | | | | | | | | | | **$4,036** |
| | | | | | | | | | | | | |
| | | | | | | | **SUMMARY** | | | | | |
| | | | | | | | **Jan '07** | **Feb '07** | **Mar '07** | **Apr '07** | 4 mo.Avg | |
| | | | | **Staffing estimate** | | | **127** | **127** | **131** | **131** | **129** | |
| | | | | **Staffing actual** | | | **128** | **126** | **128** | **128** | **128** | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | 4 mo.Tot. | |
| | | | | **Temp estimate** | | | $5,286 | $5,286 | $5,286 | $5,286 | **$21,144** | |
| | | | | **Temp actual** | | | **$1,440** | **$0** | **$1,558** | **$1,038** | **$4,036** | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | 4 mo.Tot. | |
| | | | | **Overtime estimate** | | | $2,568 | $2,568 | $2,568 | $1,720 | **$9,425** | |
| | | | | **Overtime actual** | | | **$25,790** | **$13,423** | **$9,171** | **$9,543** | **$57,927** | |
| | | | | | | | | | | | | |

CA-IR-254

**Ref: T-8, page 6, line 7 (Meter Tampering).**

a. Has HECO experienced any significant amounts of meter tampering in 2005, 2006 or 2007, to date?

b. If yes, please explain and quantify the extent of this problem, indicating any individual cases of consequence (timing, kwh, lost revenues), and describe all planned measures to "safeguard against actions such as meter tampering."

HECO Response:

a. Since 2005, HECO has experienced a significant amount of meter tampering. In 2006, 73 cases resulted in billings to recover revenue associated with unauthorized use of electricity. For 2007, the number of billings is anticipated to increase, based on the accounts billed to date.

b. The extent of meter tampering is quantified as follows:

| | 2005 | 2006 | 2007 To Date |
|---|---|---|---|
| Accounts Billed | 38 | 73 | 40 |
| Total Billed | $ 114,342 | $ 268,381 | $ 166,247 |

There were 19 individual cases of consequence during the 2005 – 2007 (to date) period:

| Time Period | KWH | Revenue $ |
|---|---|---|
| 12/21/98 – 7/18/05 | 81,469 | 9,478.86 |
| 8/21/00 – 7/27/05 | 155,539 | 22,617.39 |
| 1/15/03 – 9/9/05 | 424,905 | 56,134.62 |
| 4/1/98 – 11/1/05 | 141,115 | 18,090.57 |
| 2/18/03 – 1/26/06 | 61,144 | 9,717.66 |
| 11/6/02 – 6/20/05 | 38,793 | 5,959.72 |
| 2/27/03 – 12/27/05 | 309,018 | 31,929.69 |
| 5/17/06 – 7/14/06 | 21,060 | 4,364.96 |
| 4/8/02 – 9/8/05 | 29,936 | 4,711.97 |
| 9/30/04 – 9/8/06 | 25,595 | 4,803.20 |
| 12/5/03 – 9/7/06 | 22,590 | 4,284.30 |

| Time Period | KWH | Revenue $ |
|---|---|---|
| 1/7/04 – 4/13/06 | 34,500 | 5,746.56 |
| 5/7/84 – 9/18/06 | 74,711 | 9,033.96 |
| 3/3/05 – 10/18/06 | 24,807 | 4,646.70 |
| 12/7/98 – 12/13/06 | 145,038 | 21,494.10 |
| 8/29/06 – 10/30/06 | 354,720 | 103,292.47 |
| 12/7/04 – 2/13/06 | 15,078 | 2,787.08 |
| 1/16/01 – 3/1/07 | 58,681 | 8,531.79 |
| 10/30/06 – 1/29/07 | 966,720 | 135,696.84 |
| Total | 2,985,419 | $ 463,322.44 |

To address meter tampering, HECO has contracted a Revenue Protection Consultant, specializing in meter tampering on a full-time basis, beginning in May, 2006. Prior to this time, the consultant was contracted on a part-time or case-by-case basis. This consultant has been contracted to provide investigation work as well as consulting work to train HECO personnel and to recommend, develop, and assist in implementing internal and external policies, programs, and procedures including legislation that will enable HECO to recover losses by civil actions when necessary and tariff changes to authorize HECO to adequately and properly bill those responsible for HECO's lost revenues. The scope of the consultant's work is described in the Company's response to CA-IR-252, item f.

CA-IR-255

**Ref: T-8, page 12, lines 1-6; CA-IR-114; Response to CA-IR-1, HECO T-8, Attachment 2, pages 2-41 (Labor Input Sheets-CIS Deferrals).**

Please provide the following additional information:

a. Identify each of the "seven clerical and administrative staff who are dedicated…."

b. Provide a summary of the hours by position projected to be charged to the CIS project for deferral, rather than expense treatment.

c. Confirm that CIS deferred labor hours and costs are not included in test year expenses.

d. Identify and describe the criteria/procedures employed to isolate employees or activities eligible for deferral as part of the CIS project.

HECO Response:

a. Attachment 1 identifies the clerical and administrative staff who are developing the database for CIS. The associated hours for these nine positions equate to 7 full time employee equivalents.

b. Please see Attachment 1 for the summary of the hours by position projected to be charged to the CIS project for deferral, rather than expense treatment.

c. Yes, CIS deferred labor hours and costs are not included in test year expenses.

d. Please see Attachment 2, HECO's accounting guideline, which provides direction regarding the identification and recording of costs that are deferred for the CIS project.

| *RA # | *Loc # | *Ind # | _Lbr# | *EE # | Line item | 2007 Fore. Hrs |
|---|---|---|---|---|---|---|
| PCB | OAH | ND | _TCS | 150 | LEAD SME-CS BILL/RATES-L.Shibata-Ph4 | 880 |
| PCD | OAH | ND | _TC | 150 | BUS ANAL.-G.Maglasang-Ph4 | 1760 |
| PCD | OAH | ND | _I | 150 | BUS ANAL.-L.Fung-Ph4 | 1760 |
| PCF | OAH | ND | _TC | 150 | PROJ CONTROLLER-J.Reppun-Ph4 | 1760 |
| PCG | OAH | ND | _TCS | 150 | BUS ANAL/LEAD SME-CS FLD/METER-Oda-Ph4 | 1760 |
| PCP | OAH | ND | _TCS | 150 | LEAD SME-CS PMT/CREDIT-Hirashima-Ph4 | 880 |
| PCS | OAH | ND | _TC | 150 | BUS ANAL.-R.Tanaka-Ph4 | 1760 |
| PCS | OAH | ND | _FS | 150 | LEAD SME-CS CALL-Chock-Ph4 | 880 |
| PCS | OAH | ND | _FS | 150 | PROJ DIRECTOR-W.Uehira-Ph4 | 1760 |
| | | | | | **Total Phase 4 Hours** | **13200** |

# ACCOUNTING FOR THE COSTS OF COMPUTER SOFTWARE DEVELOPED OR OBTAINED FOR INTERNAL USE

(Updated as of April 1, 2006)

Introduction

The following guidelines are provided to assist in the accounting for computer hardware and software costs (acquired, internally developed, or modified solely to meet the entity's needs). This is not meant to be all-inclusive, however we will continue to add or revise the information below, as needed, to provide additional clarification. Questions with respect to these guidelines should be addressed to the Controller or Director of Corporate and Property Accounting.

As a general rule, the costs of computer software, including applicable labor to install the software, and ongoing maintenance are generally charged to the appropriate functional operation and maintenance (O&M) expense account(s), i.e. expensed as incurred, based on the benefiting organization unless:

1. *Deferrable software costs have been identified in accordance with applicable accounting* standards AND approval has been obtained from the PUC allowing the Company to defer those costs,
2. The computer software is an operating system-type (e.g., Windows XP) software needed to render the new computer hardware "used or useful",
3. Specific overhead costs allowed to be applied to deferrable software costs,
4. AFUDC on deferrable software costs.

Costs for software development projects less than $500K would generally be expensed as incurred. (The $500K threshold refers to the amount of costs that would be deferred during the application development stage described below. It does not refer to the total costs that would be incurred during all three project stages described below.) Please notify the Controller or Director of Corporate and Property Accounting of projects that are less than $500K that will be expensed.

Accounting for Computer Software Guidelines

The costs of software upgrades and enhancements that do not provide additional functionality to the existing software (i.e., modifications to the existing software that would enable the software to perform tasks that it was previously incapable of performing) should be charged to the appropriate functional O&M expense account(s), i.e. expensed as incurred, based on the benefiting organization.

Software that is acquired, internally developed, or modified solely to meet the entity's needs should adhere to the guidance set forth below. In general, software development can be segregated into three stages as follows (also summarized in Exhibit 1):

- Preliminary Project Stage. This stage includes conceptual formulation of software alternatives, evaluation of the alternatives, determination of the existence of needed technology, and final selection of alternatives. Internal and external costs incurred during this stage should be charged as incurred to the appropriate functional O&M expense account(s), based on the benefiting organization, i.e. expensed as incurred.

- Application Development Stage. This stage includes the design of a chosen path, including software configuration and software interface, coding, software installation, and testing, including parallel processing. Certain internal and external costs incurred during this stage should be deferred, including costs to develop or obtain software that allows for access of old data by new systems. Certain applicable overhead and AFUDC costs on the deferrable software costs is also deferred.

  The process of data conversion from old to new systems may include purging or cleansing of existing data, reconciliation or balancing of the old data and the old/new system, creation of new/additional data, and conversion of old data to the new system. Data conversion often occurs during the Application Development Stage; however, data conversion costs, other

than the costs to develop or obtain software that allows for access of old data by new systems, should be charged as incurred to the appropriate functional O&M expense account(s), based on the benefiting organization, i.e. expensed as incurred.

- Post-Implementation/Operation Stage. This stage includes training and application maintenance. Internal and external costs incurred during this stage should be charged as incurred to the appropriate functional O&M expense account(s), based on the benefiting organization, i.e. expensed as incurred.

Further, costs of activities typically associated with business process reengineering should be charged as incurred to the appropriate functional O&M expense account(s), based on the benefiting organization, i.e. expensed as incurred. Note that these activities can occur during any stage above. Examples include the following:

- Preparation of a request for proposal
- Current state assessment – The process of documenting the entity's current business process, except as it relates to current software structure. Often referred to as *mapping, developing an "as-is" baseline, flow charting,* and *determining current business process structure.*
- Process reengineering – The effort to reengineer the entity's business process to increase efficiency and effectiveness. This activity is sometimes referred to as *analysis, determining "best-in-class," profit/performance improvement development,* and *developing "should-be" processes.*
- Restructuring the work force – The effort to determine what employee is necessary.

Accounting for Computer Hardware Guidelines:
Any computer hardware costs incurred relative to the development or acquisition of software should be capitalized following existing Company policies and procedures. Computer operating system software which is acquired in connection with new hardware should be capitalized together with the hardware under the basis that the operating system is needed to deem the hardware "used or useful".

# ACCOUNTING FOR THE COSTS OF COMPUTER SOFTWARE DEVELOPED OR OBTAINED FOR INTERNAL USE

(Updated as of April 1, 2006)

**Exhibit 1**

The following table sets forth the accounting for typical components of a software development project based on whether the item should be expensed, deferred, or capitalized. Please note that some of the activities listed below may occur in multiple stages.

| | Internal or Third Party | | |
|---|---|---|---|
| **Steps** | **Expensed** | **Deferred** | **Capitalized** |
| | | | |
| **Business process reengineering and information technology transformation (these activities primarily occur, but not limited to, prior to preliminary project stage):** | | | |
| Preparation of request for proposal (RFP) | X | | |
| Current state assessment (*i.e., mapping, developing an "as-is" baseline, flow charting, determining current business process structure.*) | X | | |
| Process reengineering (*i.e., analysis, determining "best-in-class," profit/ performance improvement development, developing "should-be" processes.)* | X | | |
| Restructuring work force | X | | |
| | | | |
| **Preliminary software project stage activities:** | | | |
| Conceptual formulation of alternatives | X | | |
| Evaluation of alternatives | X | | |
| Determination of existence of needed technology | X | | |
| Final selection of alternatives | X | | |
| Examples of the preliminary project stage include:<br>• Strategic decisions to allocate resources between alternative projects at a given point in time (e.g., should programmers develop a new payroll system or direct their efforts toward correcting existing problems in an operating payroll system?)<br>• Determine the performance requirements (i.e., what the software needs to do) and systems requirements for the project<br>• Invite vendors to perform demonstrations of how their software will fulfill an entity's needs<br>• Explore alternative means of achieving specified performance requirements (e.g., should an entity | X | | |

# ACCOUNTING FOR THE COSTS OF COMPUTER SOFTWARE DEVELOPED OR OBTAINED FOR INTERNAL USE

(Updated as of April 1, 2006)

| | Internal or Third Party | | |
|---|---|---|---|
| **Steps** | **Expensed** | **Deferred** | **Capitalized** |
| | | | |
| make or buy the software? Should the software run on a mainframe or a client server system?)<br>• Determine that the technology needed to achieve performance requirements exists<br>• Select a vendor if an entity chooses to obtain software<br>• Select a consultant to assist in the development or installation of the software | | | |
| **Application development stage activities:** | | | |
| Design of chosen path, including software configuration and software interface | | X | |
| Coding | | X | |
| Installation to hardware | | X | |
| Testing, including parallel processing phase | | X | |
| Data conversion costs:<br>a. Costs to develop or obtain software that allows for access of old data by new system | | X | |
| b. Process of converting data from old to new systems (e.g., purging or cleansing of existing data), reconciliation or balancing of the old data and the new data in the new system, creation of new/additional data, and conversion of the old data to the new system. | X | | |
| Training | X | | |
| | | | |
| **Post-implementation/ operation stage activities:** | | | |
| Training | X | | |
| Application maintenance | X | | |
| Ongoing support | X | | |
| | | | |
| **Acquisition of fixed assets:** | | | |
| Purchase of hardware, office furniture, or work stations, including operating system | | | X |
| Reconfiguration of work area - architect fees and hard construction costs | | | X |

CA-IR-256

**Ref. CA-IR-120, (Postage Expenses).**

The referenced document refers to historically forecasted cost amounts for postage. Please provide the following information:

a. Actual postage expense incurred by HECO in each year 2005, 2006 and 2007, to date.

b. Allocation data used to apportion postage costs between HECO, HELCO and MECO in each historical year 2005 and 2006.

c. Approximately what portion of HECO mailings were first class versus presorted first class in 2006?

HECO Response:

a. Actual postage expenses incurred by HECO for 2005, 2006, and 2007 to date are noted in the chart below.

| Item | 2005 | 2006 | 2007 Jan - April |
|---|---|---|---|
| Postage Expense – HECO | $1,037,207 | $1,137,284 | $387,017 |

b. The historical postage expenses are booked based on actual usage.

c. Approximately .9% of HECO mailings were first class versus presorted first class in 2006.

CA-IR-257

**Ref: CA-IR-2, HECO T-8, Attachment 2, page 2 (CSI Revenues).**

The referenced document indicates projected test year revenues and expenses for customer payment insurance. Please provide the following:

a. Detailed description of the terms and conditions of the CSI offering made by HECO.

b. Annual CSI participation statistics, revenues and expenses for each year from 2004, 2005, 2006 and 2007, to date.

c. Explain whether HPUC approval was ever requested or received regarding the CSI program, indicating by reference any Commission Dockets or filings that were made.

HECO Response:

a. Please see Attachment 1 for the detailed description of the terms and conditions of the CSI offering made by HECO.

b. Please see Attachment 2 for the CSI revenues and expenses for each year for 2004 through 2006 and 2007 through April.

c. Please see Attachment 3 regarding notification to the Commission for the HECO Payment Protection Program.

CSI
Central States Indemnity Co. of Omaha

# PAYMENT PROTECTION

Payment Protection provides protection for the outstanding balance of insured accounts. Please refer customers to Central States' Customer Service Department. The toll-free number below can be used by customers who have questions about the program, who want to file a claim or cancel their insurance. This number can also be used by employees of Hawaiian Electric.

1-888-838-0054
Monday Through Friday 8:00 a.m. – 11 p.m.
Eastern Time

**The following overview provides a brief description of the insurance plan offered at Hawaiian Electric.**

***The Product***

This optional program is offered to residential utility customers. It pays the insured customers' monthly utility bill up to $500 if the customer loses their full-time income due to:

...involuntary unemployment
...total disability
...an unpaid leave of absence to care for a newborn or adopted child or a seriously ill family member

***The Details***

* No charge to the customer for the first 2 months of coverage
* Self-employed customers are eligible
* Strikes and lockouts are covered
* Loss of income must be continuous for at least 30 days
* Benefits are payable for up to 6 months
* Claim payments are sent directly to the utility company

***Advantages***

* Easy for customers to understand
* Simple to enroll and obtain benefits

***Exclusions***

* Customers must be in good standing and have been employed on a full-time basis with the same employer for 9 consecutive months
* Benefits are not payable for loss of income due to layoff, termination or business failure that occurs within the first 60 days of coverage
* Unpaid leaves of absence due to the care of a newborn or adopted child are payable for up to 3 months.
* Pre-existing conditions that are treated within the 6 months prior to enrollment are not covered during the first 6 months.

***Premium Rate***

6.5% of the customers average service charge for the past 12 months if single coverage is selected or 11.7% per $100 for joint coverage

***Termination***

All coverage terminates at age 71

**Central States Indeminity Co. (CSI)**

| | 2004 | 2005 | 2006 | Y-T-D Apr-07 |
|---|---|---|---|---|
| Expenses | $2,609 | $542 | $82 | $320 |
| Revenues | $131,758 | $71,029 | $139,382 | $96,291 |

Source: work orders CS000165 & CS000166

**Hawaiian Electric Company, Inc.** • PO Box 2750 • Honolulu, HI 96840-0

Lloyd
xcc: Lynn

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December 30, 2003

William A. Bonnet
*Vice President*
*Government and Community Affairs*

FILED
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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: HECO Payment Protection Program
October 2002 to September 2003 Report

This is the final HECO Payment Protection Program ("Program")[1] with Central States Indemnity Co. of Omaha ("CSI") annual report to the Commission. This report provides the Program's annual results for the 12-month period ending September 30, 2003, and cumulative results for the Program's initial five-year term.[2] This report is synchronized with CSI's September 30 fiscal year-end reporting.[3]

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1 By letter dated June 18, 1998, HECO informed the Commission of this Program. In the same letter, *HECO stated that it would provide the Commission and the Consumer Advocate with a semi-annual* report for the first year, and an annual report for the remaining four years of the HECO-CSI Agreement. This report covers the fifth year of the five-year agreement (Initial Term).

2 The contract states that the Agreement will continue throughout an initial term of five (5) program years and shall automatically renew for successive renewal periods of two (2) program years ("Renewal Periods") unless terminated by either party. A program year is defined as twelve full months of insurance program operation. To-date the parties have no immediate plans to terminate this Agreement.

3 See last year's annual report dated December 23, 2002 to the Commission. HECO changed its reporting period to simplify the reporting process and to synchronize with CSI's September 30 fiscal year-end reporting.

WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP

Background

This Program was introduced in July 1998 and is available to HECO residential customers. The Program is a bill payment insurance plan that pays customers' utility bills when income is lost as a result of total disability, unpaid leave of absence to care for a newborn/adopted child or seriously ill family member, or involuntary unemployment[4]. To be eligible for coverage, on the effective date of insurance[5], the customer must be less than 71 years of age, have a Schedule R account in good standing with HECO, and must have earned a full-time employment income for nine consecutive months prior to the effective date of the insurance.

October 2002 to September 2003 Promotional Campaign and Enrollment Results

CSI held two promotional campaigns that offered, to eligible new customers, two months free insurance coverage as an enrollment incentive.

The promotional campaigns were held in December 2002 and July 2003. Both campaigns involved mailing a payment envelope to all HECO residential customers[6]. As a result of these campaigns, 341 new customers enrolled in response to the December 2002 solicitation and 403 new customers enrolled in response to the July 2003 solicitation.

Some customers cancel after the free trial period. The expected retention rate for the campaigns as of September 30, 2003 was 78 percent for the December 2002 campaign and 93 percent for the July 2003 campaign. The actual retention rate to-date for the December 2002 campaign was 77 percent and the July 2003 campaign was 94 percent with a retention rate for the program to-date of 50 percent.

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[4] Involuntary unemployment may be due to layoff or termination by employer, business failure, strike, lock-out or unionized labor dispute.

[5] Effective date of insurance is the date the insurance coverage begins, as shown on the Schedule of Insurance Certificate issued to each customer.

[6] See HECO's March 25, 1999 letter to the Commission, Attachment B, for copy of the payment envelope.

As of the end of the September 2003 billing, CSI insurance premiums were billed to 3,536 customers, with 253 other customers receiving coverage under the free introductory offer as follows:

| | (A) | (B) | (C=A+B) |
|---|---|---|---|
| **Period Ending** | *9/30/02* | *Net Change* | *9/30/03* |
| **Free Coverage** | 43 | 210 | 253 |
| **Billed Customers** | 3,297 | (14) | 3,283 |
| **Total Customers Enrolled** | 3,340 | 196 | 3,536 |

Notes to table

1) "Free Coverage" is the number of new customers under the two months free insurance coverage promotion.
2) "Billed Customers" is the number of customers that are no longer eligible for the two months free insurance coverage, and are now insurance billable customers.
3) *"Total Customers Enrolled" is the total number of free coverage customers and billed* customers enrolled in the Payment Protection Program.

October 2002 to September 2003 Annu. and Cumulative Financial Results

Between October 2002 and September 2003, HECO billed $314,120 of CSI insurance premiums to customers. Of this amount, CSI received 80% of the total CSI billed premiums or $251,296 to cover its fees and administrative expenses and for a reserve for HECO claims. HECO retained the remaining 20% or $62,824 as service fees. In addition, HECO received $29,483 or 50 percent share of the program Net Revenue Sharing for fiscal year ending September 30, 2003[7].

During this period, HECO also received $57,767 from CSI as payments for claims filed by insured customers. These payments were directly applied to the customers' HECO accounts. These payments increased HECO's Program receipts to $150,074[8].

---

[7] In accordance with the CSI-HECO agreement, if the Program has "excess revenues", HECO and CSI will share net revenue equally, ("Net Revenue Sharing"). The Net Revenue Sharing formula is based on an inception-to-date calculation as follows: net collected premium less 1) HECO service fee, 2) CSI's retention, 3) incurred claims, 4) taxes, fees and assessments to equal net revenue. Net revenue is then reduced by any prior period loss carryforward and the remaining excess revenue is distributed equally to CSI and HECO.

[8] $29,483 of net revenue sharing plus $62,824 service fees plus $57,767 claim payments equals $150,074.

During October 2002 to September 2003, HECO allocated the following expenses to the Program:

| | |
|---|---|
| Customer Account & Billing | $3,677 |
| PSC taxes & PUC fees | 4,011 |
| Total Expenses | $7,688 |

After deducting the expenses, HECO's Program net receipts for October 2002 to September 2003 totaled $142,386. A summary of the results[9] for the 12-month period is provided in column B on Attachment A.

For the Commission's convenience, also provided on Attachment A, (column C), is the Program's inception-to-date results for the period beginning July 1998 through September 2003.

HECO Claim Reserve on CSI's Books

A claim reserve balance has been established by CSI to cover the payments for HECO customer insurance claims. CSI uses an actuarial method to establish reserves, however it does not isolate the reserve on a program year basis. As a regulated insurance company, CSI is required to maintain a specified reserve or emergency fund to cover open claims and incurred but not reported claims. The reserve is not used unless needed and current program year premiums are used to pay ongoing claims regardless of when the claim opened.

At the beginning of October 2002, this reserve balance was $31,841. As of September 30, 2003, the reserve balance is $65,514. The reserve balance increased because the actuarial results indicated that an additional $33,673 needed to be withheld to cover open claims and incurred but not reported claims. The reserve amount is part of the 80% of the premiums remitted to CSI.

[9] For explanations of July to December 1998 results, and January 1999 to June 1999 results, see HECO's March 25, 1999 letter and October 6, 1999 letter to the Commission, respectively. For explanation of July 1999 to June 2000 results, see HECO's September 22, 2000 letter to the Commission. For explanation of July 2000 to June 2001 results, see HECO's October 2, 2001 letter to the Commission. For July 2001 to September 2002 results, see HECO's December 23, 2002 letter to the Commission.

| LINE | | |
|---|---|---|
| 1 | Ending Balance HECO Claims Reserve @ 9/30/02 | $31,841 |
| 2 | Additions to Reserve | 33,673 |
| 3 | Ending Balance HECO Claims Reserve @ 9/30/03 | $65,514 |

Notes to table
Line 1 = HECO report to the PUC dated December 23, 2002, page 5, line 3 of table.
Line 3 = Balance reported by CSI to HECO.

Future CSI Marketing Campaigns

Another payment envelope solicitation is currently planned for the calendar year 2004.

Program Effect on Utility Operations

HECO continues to see improvements in its collection efforts as a result of this Program. Prior to the offering of this Program, HECO would pursue the delinquent customer for payment or disconnect his/her electric service for nonpayment. Now, once HECO verifies that the delinquent customer is covered under the Program and has a valid claim, HECO no longer pursues the customer since payments are received directly from CSI. This has saved HECO's Credit Division some follow-up time and potential bad debt expense.

Between October 2002 and September 2003, HECO received $57,767 of insurance claim payments for 104 customers covering 413 months of electric service. Adding this total to the Program's prior four-year results[10], HECO to-date has received $194,134 for payments for 393 customers covering 1,577 months of electric service.

[10] HECO received a total of $136,367 for payments for 289 customers covering 1,164 months of electric service.

If you have any questions about this Program, please contact Patsy Nanbu at 543-4702.

Sincerely,

Attachment

cc: Division of Consumer Advocacy

ATTACHMENT A

HAWAIIAN ELECTRIC COMPANY, INC.

| PAYMENT PROTECTION PROGRAM FINANCIAL RESULTS | | | | |
|---|---|---|---|---|
| | | (A) | (B) | (C=A+B) |
| | | 7/98-9/02 | 10/02-9/03 | 7/98- 9/03 |
| LINE | | CUMULATIVE FOUR-YEAR TOTAL | 12-MONTH TOTAL | CUMULATIVE FIVE-YEAR TOTAL |
| 1 | HECO Service Fees (20%) | $179,555 | $62,824 | $242,379 |
| 2 | Payable to CSI (80% for fees, administrative expenses and HECO Claims Reserve) | 718,218 | 251,296 | 969,514 |
| 3 | Total Billed Premiums | **$897,773** | **$314,120** | **$1,211,893** |
| 4 | *HECO 50% Net Revenue Sharing* | *100,238* | *29,483* | *129,721* |
| 5 | HECO Service Fees | 179,555 | 62,824 | 242,379 |
| 6 | Paid Claims Received | 136,367 | 57,767 | 194,134 |
| 7 | Total HECO Service Revenues and Claims Paid | **$416,160** | **$150,074** | **$566,234** |
| 8 | *Expenses:* | | | |
| 9 | Customer Account & Billing | 17,159 | 3,677 | 20,836 |
| 10 | Payment Process & Support Center | 2,806 | 0 | 2,806 |
| 11 | Administrative & Regulatory Affairs | 9,020 | 0 | 9,020 |
| 12 | PSC Taxes & PUC Fees | 11,447 | 4,011 | 15,458 |
| 13 | State Insurance License (Annual) | 500 | 0 | 500 |
| 14 | Total HECO Expenses | **$40,932** | **$7,688** | **$48,620** |
| | | | | |
| 15 | Program Net Receipts | **$375,228** | **$142,386** | **$517,614** |

Notes to table

1) Line 3 = sum of lines 1 and 2.
2) Line 4, Column B = 50% of program net revenue sharing as of 9/30/03.
3) Line 7 = sum of lines 4, 5 and 6.
4) Line 14 = sum of lines 9 to 13.
5) *Line 15 = line 7 minus line 14.*

CA-IR-258

**Ref: CA-IR-2, HECO T-8, Attachment 2, pages 2, 4 and 6 (Materials and Services Cost Estimates).**

The referenced documents contain test year projections for Customer Accounting supplies and outside services. Please provide supporting documentation for current unit prices as well as any available "price times quantity" calculations supportive of the following individual line items, indicating whether any further adjustment of the projected amounts is warranted at present unit price levels:

| | | |
|---|---|---|
| a. | Standard Register-HECO | $78,436. |
| b. | Temp Services | $38,400. |
| c. | Bill Envelopes | $132,000. |
| d. | Maint. Wausau | $ 76,300. |
| e. | O/S-BOH ABP | $ 74,000. |
| f. | O/S-BOH Rtn Check Fee | $ 36,000. |
| g. | O/S Checkfree | $ 86,400. |
| h. | O/S Temp Hire | $ 57,000. |
| i. | Pmt. Envelopes | $117,600. |
| j. | Rev Pro Consultant | $ 96,000. |

k. Provide comparative data quantifying actual annual expenses for each of the line items listed as items a. through j. for each of the years 2004 through 2006.

HECO Response:

a. Standard Register – HECO. Please refer to Attachment 1, Page 1 for the price times quantity calculation for the 2007 Test Year estimate. The price used in the development of the test year estimate of $36.93 is only 0.35% higher than the current price (see Attachment 1, Page 2). No adjustment of the projection is warranted at this time.

b. Temp Services – The calculation for the 2007 Test Year estimate was based on an estimated cost of a Departmental Administrative Assistant ($18.40 per hour multiplied by 2,088 hours for the year). An assessment of departmental staffing requirements indicates no adjustment of the projection is warranted at this time. The temp position was initially budgeted to cover the department secretarial duties in anticipation of the secretary's full-time assignment to special projects. However, the department secretary left her position in late 2006 and was permanently replaced in April 2007. Although this temp position is no longer planned to cover the department secretary's position, it will cover positions in the other divisions within the department that are assigned to special projects such as Mosaic which is a training and procedural tool.

c. Bill Envelopes – Please refer to CA-IR-2, Attachment 2, Page 16 and 17, for the 2007 Test Year estimate. For documentation of current prices, please see Attachment 2. The estimate of 2007 projected costs based on the first four months of 2007 actual amounts is provided in the table below. The test year estimate is about $4,000 less than the calculation reflected in the table below. No further adjustment of the projected amount is warranted at this time.

**January –April 2007**
**Price X Quantity Calculation**

| | **B-102** Bill Envelopes Presort/Window | **B-103** Bill Envelopes Non-Presort Window | **B-103A** Urgent Window |
|---|---|---|---|
| No. Bill Envelopes (Actuals Jan - April 2007) | 1,030,000 | 400,000 | 110,000 |
| (a) Average per Month | 257,500 | 100,000 | 27,500 |
| (b) Unit Price | $0.0284 | $0.0284 | $0.0425 |
| (c) 2007 Forecast (a) X (b) X 12 = ( c ) | 87,756 | 34,080 | 14,025 |
| **Bill Envelopes Total Forecast 2007** | | **135,861** | |

d. Maint. Wausau – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year estimate support. For documentation of current prices for Maint. Wausau (check processing maintenance and software support provided by WAUSAU), please see Attachment 3. No further adjustment of the projected amount is warranted at this time.

e. O/S – BOH ABP – The 2007 Test Year estimate was based on a review of the fees charged by the bank historically. The O/S-BOH ABP projection based on 2007 actual fee charges to date is provided in the table below. Credits were applied to the 2007-to-date fees due to the "account analysis" performed by the bank. An account analysis allows a bank's customers with multiple accounts (e.g., HECO, HELCO, MECO and HEI) to offset its bank service fees with credits earned for having available deposit balances or investable balances. Current money market rates are used to determine the amount of credits earned which recently have been sufficient to offset the current level of fees. However, it should be noted that the account analysis, for HECO's general account (to which ABP fees are charged and accounted for), usually results in a deficit, whereby the fees exceed the earnings credits, due primarily to the high volume of transactions related to this account. Excess credits from the other accounts were used to offset HECO's fees.

Because these credits consider the investable balances of multiple accounts, it is very possible that the current favorable situation which allows credits to flow to HECO to offset these charges may not exist in the future and the charges, as estimated, will be incurred by the Company on an annual basis. Thus, no further adjustment of the projected amount is warranted at this time.

**January – April 2007**

**Price X Quantity Calculation**

| | January - April 2007 | | |
|---|---|---|---|
| **Volume - ABP Transactions** | Total | Unit Price | Fee |
| Retn Item Handling | 1004 | $2.10 | $2,108.40 |
| File Process - Trans | 246 | $3.50 | $861.00 |
| ACH Transactions | 0 | $0.0665 | $0.00 |
| | 3239 | $0.0595 | $192.72 |
| | 415589 | $0.0525 | $21,818.42 |
| January - April 2007 Total - ABP Fees | | | $24,980.54 |
| **2007 Annualized ABP Fees** | | | **$49,961.09** |

Note 1: "ACH Transactions" stands for Automated Clearing House, a national electronic fund transfer system that clears debit and credit transactions, e.g., customer payments between a customer's bank and HECO's bank.

Note 2: ABP Fees for January through April 2007 were offset by credits due to the account analysis performed by the bank.

f. O/S-BOH Rtn Check Fee – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year Budget. The calculation of the O/S-BOH Rtn Check Fee (Outside Service – Bank of Hawaii Return Check Fee) based on 2007-to-date actual amounts is provided in the chart below. The 2007-to-date fees were offset by credits applied by the bank due to the account analysis described in item e above. Without these credits, the estimate reflected in the table below is approximately $3,500 less than that estimated for the test year. Because of this small difference, no further adjustment of the projected amount is warranted at this time.

**January – April 2007**

**Price X Quantity Calculation**

| | January - April 2007 - Revised | | |
|---|---|---|---|
| **Return Check Fees** | Volume | Unit Price | Fee |
| Returned Items Charged Back | 1459 | $ 3.50 | $ 5,106.50 |
| Returned Items Resubmitted | 2183 | $ 4.20 | $ 9,168.60 |
| January - April 2007 Total - Rtn Check | 3642 | | $ 14,275.10 |
| **2007 Annualized Rtn Check Fees** | **$28,550.20** | | |

g. O/S Checkfree – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year Budget. For documentation of current prices, please refer to Attachment 4. Actual 2007 billings for Outside Services (O/S) – Checkfree are provided in the table below. Based on these recorded amounts through May and an assumed growth of 750 customers per month for June through December, the estimate for this service is $71,268. No further adjustment of the projected amount is warranted at this time.

**January – December 2007**

**Price X Quantity Calculation**

| 2007 Actual Recorded | | | | |
|---|---|---|---|---|
| Month recorded | (a) No. of Customers | (a) X $0.30 Monthly Total | Month of invoice | |
| Jan | 0 | $0 | - | |
| Feb | 0 | $0 | - | |
| Mar | 52,027 | $15,693 | 12/06, 01/07,2/07 | |
| Apr | 18,731 | $5,468 | 3/07 | |
| May | 17,224 | $5,636 | 4/07 | |
| Jun | 17,974 | $5,392 | | |
| Jul | 18,724 | $5,617 | | |
| Aug | 19,474 | $5,842 | | |
| Sept | 20,224 | $6,067 | | |
| Oct | 20,974 | $6,292 | | |
| Nov | 21,724 | $6,517 | | |
| Dec | 22,474 | $6,742 | | |
| | | **$69,267** | | |
| tax Jun-Dec | 4.71% | $2,000 | | |
| | | $71,268 | Proj. Yr end 2007 | |

h. O/S Temp Hire – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year estimate. For documentation of current prices, please refer to Attachment 5. The calculation for Outside Services (O/S) – Temp Hire based on the 2007 actual rates is provided in the table below and results in an amount that is close to the test year estimate. No further adjustment of the projected amount is being made.

| | Rate | Annual Costs (based on 2080 annual hours) |
|---|---|---|
| Full Time Temp - #1 | 16.36 | $34,029 |
| Part Time Temp (4 hrs/day) - #1 | 12.39 | $12,886 |
| Part Time Temp (4 hrs/day) - #2 | 11.38 | $11,835 |
| **O/S Temp Forecast 2007** | | **$58,750** |

i. Pmt Envelopes – Please refer to CA-IR-2, Attachment 2, Page 16 & 17, for the 2007 Test Year. For documentation of current prices, please see Attachment 2. Based on the 2007-to-date actuals, an estimate of the Pmt Envelopes is provided in the table below. An adjustment of the projected amount is not warranted at this time.

**January – April 2007**

**Price X Quantity Calculation**

| | **B-105** Return Payment Window | **E-104** Return Payment No Window |
|---|---|---|
| No. Pmt Envelopes (Actuals Jan - April 2007) | 975,000 | |
| No. Pmt Envelopes (Actuals 2006) | | 50000 |
| (a) Average per Month | 243,750 | 4167 |
| (b) Unit Price | $0.0235 | $0.0358 |
| ( c ) 2007 Forecast (a) X (b) X 12 = ( c ) | $68,738 | $1,790 |
| **Pmt Envelopes Total Forecast 2007** | **$70,528** | |

j. Rev Pro Consultant – Please refer to CA-IR-2, Attachment 2, Page 6 for the 2007 Test Year estimate. The actual monthly consultant fee may be found on Attachment 6, Page 1. No changes are required to be made to the estimate at this time due to the small difference between the annualized actual month amount and the test year estimate.

k. Actual annual expenses for line items a- j for the period 2004-2006 are provided on Attachment 7.

# Standard Register Bill Forms
# Inter-company Billings 2007
**3/11/06**

| YEAR 2007 | |
|---|---|
| 23 | (estimated for 1/2 year in 06) |
| x2 | |
| 46 | annual releases |
| x68 | cartons per release (2,000 per carton) |
| 3128 | (total forms 3,128 * 2,000 = 6,256,000 forms annually) |
| $36.93 | (est. costs calculation is actual cost of 34.84, 3/06 x 6%=36.93) |
| **$115,517** | **TOTAL FOR 2007** |

| COMPANY | % PORTION | AMOUNT |
|---|---|---|
| HECO | 67.9% | 78,436 |
| HELCO | 17.2% | 19,869 |
| MECO | 14.9% | 17,212 |
| **Total** | **100%** | **115,517** |

Review Transaction Record ( HAWAIIAN ELECTRIC COMPANY , INC. )

File Edit Tools Help

OK | Revert | Next File

Tran Id: 20070228313737580002747P

Category: P Purchase Req Order Receipts

Status: 0 Posted

General | Category Details

```
Work Order     : None
Project No.    : None
Equipment No.  : None
Purchase req.  : 123999/001  BOL 8734993; V09059
Purchase Order: V09059/008
Warehouse      : TD01        WARD AVE BASEYARD
Respons. Code  : 0000009005  RADFORD,CYNTHIA J
S/Tax Code     : S           G.E. TAX            Tax percentage: 4.50
Supplier       : 006134      THE STANDARD REGISTER COMPANY
Quantity Rec.  : UOI 68.00       Net Price: 36.8000
U. of Purchase: BX           BOX
```

Unit Price

MSM903A

Cenveo

CENVEO
HONOLULU
91-280 HANUA STREET
KAPOLEI, HI 96707
800-682-2055

INVOICE NO. 072 - 364807

REMIT TO:
CENVEO
P.O. BOX 31001-1187
PASADENA, CA 91110-1187

DATE 1/27/07 ACCOUNT NUMBER 36151

SOLD TO:
HAWAIIAN ELECTRIC CO
ATTN: ROXIE YOUNG
PO BOX 2750
HONOLULU HI 968400001

SHIP TO:
HAWAIIAN ELECTRIC CO
900 RICHARDS STREET
BASEMENT
HONOLULU HI 96813

| TERMS | SALESPERSON | CUSTOMER ORDER NO. | | SHIPPED VIA |
|---|---|---|---|---|
| NET 30 DAYS | BRAD MORIOKA | V09003 | 120030050 | |

| REFERENCE NUMBER | DATE SHIPPED | B/L NO | COL | PREPAID | PPD/CHG | F.O.B. |
|---|---|---|---|---|---|---|
| 564589-00 | 1/11/07 | | | X | | |

| ITEM | QUANTITY SHIPPED | STOCK NUMBER | DESCRIPTION | UNIT PRICE | AMOUNT | Per unit |
|---|---|---|---|---|---|---|
| 1 | 70000 | 773105 | 10 SPL NON OSDS IT 24 WHT WOVE FORM: B-102 500/2500 | 28.40 M | 1988.00 | .0284 |
| 2 | 60000 | 773103 | 9 SPL NON WEB 24 WHITE WOVE FORM: B-105 500/2500 | 23.50 M | 1410.00 | .02350 |
| 3 | 25000 | 778134 | 10 SPL NON OSDS IT 24 WHT WOVE FORM: B-103 500/2500 | 28.40 M | 710.00 | .0284 |
| 4 | 10000 | 765035 | 10 SPL NON OSDS IT 24 WHT WOVE FORM: B-103A 500/2500 | 40.25 M | 402.50 | .0425 |
| | | | ORDER TOTAL WITH TAX 4713.47 | | | |

SEE REVERSE SIDE FOR TERMS AND CONDITIONS
ORIGINAL

TOTAL DUE ▶ *NEXT PAGE*

WAUSAU
FINANCIAL SYSTEMS

575 INDIANHEAD DRIVE • P. O. BOX 37
MOSINEE, WI 54455-0037
715 / 359-0427 • FAX 715 / 241-2286

REMIT TO: NW 5551
P O BOX 1450
MINNEAPOLIS, MN 55485-5551

# SUPPORT CONTRACT INVOICE

| | |
|---|---|
| Invoice: | INV163598 |
| Date: | 01/01/2007 |
| Payment Terms: | Upon receipt |
| Customer ID: | H021 |
| Salesperson: | 5603 UNISYS |
| Purchase Order: | |

req# 122651

PO#: V01450

BILL TO:
HAWAIIAN ELECTRIC CO INC
ATTN JUDY HIRASHIMA
900 RICHARDS ST FL 1
P O BOX 2750
HONOLULU HI 96840-0001

SHIP TO:
HAWAIIAN ELECTRIC CO INC
ATTN JUDY HIRASHIMA
900 RICHARDS ST FL 1
P O BOX 2750
HONOLULU HI 96840-0001

| | | | | | | |
|---|---|---|---|---|---|---|
| * | 1 RSC 6 | Unisys Uplift Charges | | 0.00 | 2,037.00 | 2,037.00 |
| * | 1 DP250-SNT | NDP250 Standard Height NT System | 392854709 | 0.00 | 2,773.00 | 2,773.00 |
| * | 1 DP250-SNT | NDP250 Standard Height NT System | 392854717 | 0.00 | 2,773.00 | 2,773.00 |
| * | 1 DP501-2FD | Secondary Merge Feeder | | 0.00 | 205.00 | 205.00 |
| * | 1 DP501-2FD | Secondary Merge Feeder | | 0.00 | 205.00 | 205.00 |
| * | 1 DP552-3RE | Reader: E13B MICR w/Dual OCR | | 0.00 | 5,675.00 | 5,675.00 |
| * | 1 DP552-3RE | Reader: E13B MICR w/Dual OCR | | 0.00 | 5,675.00 | 5,675.00 |
| * | 1 DP503-EME | STR CMP, UNISYS, 135DPM MICR ENCODER | | 0.00 | 205.00 | 205.00 |
| * | 1 DP503-EME | STR CMP, UNISYS, 135DPM MICR ENCODER | | 0.00 | 205.00 | 205.00 |
| * | 1 DP205-RMJ | Endorser: Rear Ink Jet (MJE) | | 0.00 | 270.00 | 270.00 |
| * | 1 DP205-RMJ | Endorser: Rear Ink Jet (MJE) | | 0.00 | 270.00 | 270.00 |
| * | 1 DP212-SHP | Standard Height 12 Pocket Stacker | | 0.00 | 873.00 | 873.00 |
| * | 1 DP212-SHP | Standard Height 12 Pocket Stacker | | 0.00 | 873.00 | 873.00 |
| * | 1 DP215-SIP | Standard Height Image Capture System | | 0.00 | 1,027.00 | 1,027.00 |
| * | 1 DP215-SIP | Standard Height Image Capture System | | 0.00 | 1,027.00 | 1,027.00 |
| * | 1 DP529-CFR | Image Camera Front/Rear | | 0.00 | 3,390.00 | 3,390.00 |
| * | 1 DP529-CFR | Image Camera Front/Rear | | 0.00 | 3,390.00 | 3,390.00 |
| * | 2 DP530-CCI | CCITT (Binary) Compressor | | 0.00 | 852.00 | 1,704.00 |
| * | 2 DP530-CCI | CCITT (Binary) Compressor | | 0.00 | 852.00 | 1,704.00 |
| * | 1 DP575-NT4 | NT Track Control PC | 84670547 | 0.00 | 852.00 | 852.00 |
| * | 1 DP575-NT4 | NT Track Control PC | 84760429 | 0.00 | 852.00 | 852.00 |
| * | 1 C4120A#ABA | HP LaserJet 4000 N Printer | USMC082089 | 0.00 | 480.00 | 480.00 |
| * | 1 KV-S2065W | Panasonic.SCANNER, 65PPM DUPLEX | 61344DE1011 | 0.00 | 2,023.00 | 2,023.00 |
| * | 1 11-2243-05 | 15" COLOR TOUCH SCREEN | 315283 | 0.00 | 477.00 | 477.00 |
| * | 1 11-2243-05 | 15" COLOR TOUCH SCREEN | 315285 | 0.00 | 477.00 | 477.00 |
| * | 1 622793 | 29160N SCSI Card PCI U160 Kit | BB0C414072W | 0.00 | 102.00 | 102.00 |
| * | 1 SUPP.EXT | EXTENDED SOFTWARE SUPPORT | | 0.00 | 2,133.00 | 2,133.00 |
| * | 1 RPSX-FPRO-FMAT | FoxPro Reformatter | | 0.00 | 836.00 | 836.00 |
| * | 2 RPSX-6210 | Low Speed Image | | 0.00 | 5,004.00 | 10,008.00 |
| * | 1 RPSX-SERT-0010 | IMAGE RPS SERVR(NT) 1-10 USERS | | 0.00 | 2,515.00 | 2,515.00 |
| * | 4 RPSX-RIDT-0013 | IMAGERPS (IDT) S/W 1-10 USRS | | 0.00 | 1,253.00 | 5,012.00 |

WAUSAU
FINANCIAL SYSTEMS

875 INDIANHEAD DRIVE • P.O. BOX 37
MOSINEE, WI 54475-0037
715/359-0427 • FAX 715/241-2286

REMIT TO: NW 5551
P O BOX 1450
MINNEAPOLIS, MN 55485-5551

# SUPPORT CONTRACT INVOICE

| | |
|---|---|
| Invoice: | INV163598 |
| Date: | 01/01/2007 |
| Payment Terms: | Upon receipt |
| Customer ID: | H021 |
| Salesperson: | 5603 UNISYS |
| Purchase Order: | |

req#: 122651
PO#: V01450

BILL TO:
HAWAIIAN ELECTRIC CO INC
ATTN JUDY HIRASHIMA
900 RICHARDS ST FL 1
P O BOX 2750
HONOLULU HI 96840-0001

SHIP TO:
HAWAIIAN ELECTRIC CO INC
ATTN JUDY HIRASHIMA
900 RICHARDS ST FL 1
P O BOX 2750
HONOLULU HI 96840-0001

| | | | | | |
|---|---|---|---|---|---|
| * | 1 RPSX-RCAR-0001 | S/W Recog Eng/CAR Mod Interfac | 0.00 | 4,237.00 | 4,237.00 |
| * | 1 RPSX-ARCH-CDCR | ImageRPS Archive Base | 0.00 | 2,503.00 | 2,503.00 |
| * | 2 RPSX-ARCH-SNGL | ImageRPS Archive Single User | 0.00 | 377.00 | 754.00 |
| * | 1 BITRECOUPG | Recognition Software Upgrade | 0.00 | 609.00 | 609.00 |
| * | 1 LAR-RECO-1MIL | Legal Amount Recognition One (1) million ticks | 0.00 | 1,192.00 | 1,192.00 |
| * | 1 FP_CLASS3-04 | RPS TWAIN Scanning Class 3 | 0.00 | 1,053.00 | 1,053.00 |
| * | 2 FPOCR-RECO-10-04 | Rubberbanding Software Recognition Licenses | 0.00 | 379.00 | 758.00 |
| * | 1 AMRCD120WM5 | Archimedia Jukebox Software | 0.00 | 817.00 | 817.00 |
| * | 1 458277 | SOFTWARE, Visual FoxPro, v8 | 0.00 | 116.00 | 116.00 |
| * | 1 WINZIP | WinZIP | 0.00 | 9.00 | 9.00 |
| * | 1 PC-ANYWHERE32 | SOFTWARE, PC-ANYWHERE 32 V.11 | 0.00 | 47.00 | 47.00 |
| | | | | | 72,143.00 |

Annual maintenance renewal
invoice for 2/1/07 - 1/31/08

Invoice: INV163598

* = taxable

| | |
|---|---|
| Subtotal: | 72,143.00 |
| Discount: | 0.00 |
| Downpayment: | 0.00 |
| Tax: | 3,246.56 |
| Total: | 75,389.56 |

**Billed By: Melissa Meyer**

30 DAY WRITTEN NOTICE REQUIRED TO REMOVE ITEMS /ADJUST COVERAGE

**CheckFree**

Electronic Commerce HPRCVD MAR 23 '07 AM 9:11

**Please Remit to:**
CheckFree Services Corporation
P.O. Box 409287
Atlanta, GA 30384-9287

Billing Inquiries:
Rachel L Mack 678-375-3000
www.checkfree.com

# Invoice

**Billing Address**

ATTN: ACCOUNTS PAYABLE
HAWAIIAN ELECTRIC COMPANY INC
PO# P87655
PO BOX 2750
HONOLULU HI 96840

**Information**

| | |
|---|---|
| **Invoice Number** | 90152322 |
| **Invoice Date** | 03/15/2007 |
| **Payment Terms** | Net 10 days |
| **Customer Number** | 900336 |
| **Contracted Period** | 02/01/2007 - 02/28/2007 |

**Invoice Details**

Page 1 of 1

| Description | Tax | Unit Measure | Quantity | Unit Price | Amount |
|---|---|---|---|---|---|
| **Ebill Fees** | | | | | |
| EBILL: Bills Delivered | | EA | 16,630 | 0.3000 | 4,989.00 |
| | | | | **Sub Total** | 4,989.00 |
| | | | | **Total Due USD** | $ 4,989.00 |

USE TAX

**Terms:** *The service charge on past due accounts is computed at a periodic rate of 1.5% per month.*

Staffing Solutions OF HAWAII.COM

# INVOICE

Invoice #: 40054
Invoice Date: 04/22/07
**DUE UPON RECEIPT**
Amount Due: $685.24

Amount Due After 05/22/07
$733.21

Amount Enclosed:

*Bill To:*
**Hawaiian Electric Company Inc.**
**Accounts Payable**
**P.O. Box 2750**
**HONOLULU, HI 96840-0001**

*Remit To:*
**Staffing Solutions of Hawaii**
**Accounts Receivable**
**1357 Kapiolani Blvd., Ste. 810**
**Honolulu, HI 96814**

DETACH AND RETURN TOP PORTION WITH PAYMENT

Invoice #: 40054
Invoice Date: 04/22/07

**Thank you for the opportunity to serve you.**
**Accounts payable #V09007**

STAFFING SOLUTIONS OF HAWAII

| WEEK ENDING DATE | STAFFING ASSOCIATE (Last Name, First Name) | ASSIGNMENT Position Title | HOURS | Type | HOURLY BILL RATE | TOTAL AMOUNT |
|---|---|---|---|---|---|---|
| 04/22/07 | [redacted] | Administrative Assistant | 40.00 | 1.00 | 16.36 | 654.40 |

| | | |
|---|---|---|
| SUBTOTAL | | $654.40 |
| HAWAII GENERAL EXCISE TAX | 4.712% | $30.84 |
| TOTAL AMOUNT DUE | | $685.24 |
| AMOUNT DUE AFTER 05/22/07 | | $733.21 |

**Honolulu Office:**
1357 Kapiolani Blvd., Suite 810
Honolulu, HI 96814
Phone: 808-949-3669
Fax: 808-949-4022

**Kapolei Office:**
563 Farrington Hwy., Suite 207
Kapolei, HI 96707
Phone: 808-674-9200
Fax: 808-674-9201

**E-mail:**
ssoh@staffingsolutionsofhawaii.com

Fed ID # 99-0307054

**Visit our website:**
www.staffingsolutionsofhawaii.com

**We appreciate your business!**

APRCVD APR 27 '07 AM 9:45

STAFFING PARTNERS
A DIVISION OF SOS STAFFING SERVICES, INC.

AP RCVD MAR 30 '07 AM 8:38

# INVOICE

**REMIT ADDRESS**
Mail Code 61010 PO BOX 1300
HONOLULU, HI 96807-1300

**INVOICE NUMBER**
889122Z

**INVOICE TOTAL**
317.86

**AMOUNT PAID**

**BILL TO:** 11592 510
HAWAIIAN ELECTRIC
ATTN: ACCTS PAYABLE
P.O. BOX 2750
HONOLULU, HI 96840

| INVOICE DATE | INVOICE NUMBER | CUSTOMER PO |
|---|---|---|
| 03/18/07 | 889122Z | V09008 (2007 PO #) |

| SERVICES OF | WEEK ENDING | HOURS | RATE | AMOUNT |
|---|---|---|---|---|
| 51011592-Z | | | | |
| CUSTOMER SERVICE | | | | |
| VICKI GOTO | | | | |
| WORK SITE ADDRESS: 900 RICHARDS ST | | | | |
| [redacted] | 03/18/07 | 24.50 | 12.39 | 303.56 |
| GE TAX | 03/18/07 | | | 14.30 |
| Invoice Total | | 24.50 | | 317.86 |

IT'S A PLEASURE SERVING YOU!

**TERMS ARE DUE UPON RECEIPT** FINANCE CHARGES ON PAST DUE ACCOUNTS ARE 1.5% PER MON.(18% PER ANNUM).
POST AUDITS WILL NOT BE HONORED 3 MONTHS AFTER THIS INVOICE.

ACC203 07/04

STAFFING SP PARTNERS
A DIVISION OF SOS STAFFING SERVICES, INC.

AP RCVD MAR 20 '07 AM 9:19

# INVOICE

**REMIT ADDRESS**
Mail Code 61010 PO BOX 1300
HONOLULU, HI 96807-1300

**INVOICE NUMBER**
885166V

**INVOICE TOTAL**
47.66

**AMOUNT PAID**

**BILL TO:** 11592 510
HAWAIIAN ELECTRIC
ATTN: ACCTS PAYABLE
P.O. BOX 2750
HONOLULU, HI 96840

| INVOICE DATE | INVOICE NUMBER | CUSTOMER PO |
|---|---|---|
| 03/11/07 | 885166V | V09008 (2007 PO #) |

| SERVICES OF | WEEK ENDING | HOURS | RATE | AMOUNT |
|---|---|---|---|---|
| 51011592-V | | | | |
| WORK SITE ADDRESS: | 900 Richards Street,1st FL | | | |
| [redacted] | 03/11/07 | 4.00 | 11.38 | 45.52 |
| GE TAX | 03/11/07 | | | 2.14 |
| | Invoice Total | 4.00 | | 47.66 |

IT'S A PLEASURE SERVING YOU!

**TERMS ARE DUE UPON RECEIPT** FINANCE CHARGES ON PAST DUE ACCOUNTS ARE 1.5% PER MON.(18% PER ANNUM).
POST AUDITS WILL NOT BE HONORED 3 MONTHS AFTER THIS INVOICE.

ACC201 07/04

# ATTACHMENT B

## RevenueProtection.Com

45-424 Loli'i Street
Kaneohe, HI 96744
Bus. (808) 247-1992 Cell (808) 780-9123
Fax (808) 432-9696

**Client:** Hawaiian Electric Co.
Address: Accounts Payable
PO Box 2750
City/State: Honolulu, HI 96840

Contact: Curtis Tominaga
Phone No.: (808)543-7344

**Invoice No.** 1268

**Submitted** 11/30/2006

**P. O. # 68183**

| Date | Reference | Description of Services | Charge |
|---|---|---|---|
| | | Proposed contract extension related to the above P. O. | |
| 1/1/07 to 12/31/07 | Consultation & Mgmt | Consultation and management services related to HECO's Revenue Protection Section for the year 2007.<br><br>This is a proposal to extend the existing 2006 contract between Howard Dean and Hawaiian Electric Co. Adjusted compensation shall be 7,700.00 per month which includes a 3% annual escalation and mileage expense. | |
| | | Sub Total | |
| | | Gen Excise Tax (.04166) | |
| | | **Total Due** | |

**2004 - 2006**
**Annual Expenses**

| Line Item | 2004 | 2005 | 2006 |
|---|---|---|---|
| a. Standard Register - HECO | $64,965 | $79,160 | $84,999 |
| b. Temp Services | $9,334 | $29,417 | $0 |
| c. Bill Envelopes | $123,344 | $112,576 | $117,372 |
| d. Maint. Wausau | $110,639 | $68,904 | $71,242 |
| e. O/S - BOH ABP (N.1) | $45,028 | $36,012 | $12,506 |
| d. O/S - BOH Rtn Check Fee (N.2) | $8,067 | $18,769 | $8,414 |
| g. O/S Checkfree | $30,219 | $35,637 | $60,340 |
| h. O/S Temp Hire | $37,468 | $46,962 | $43,958 |
| i. Pmt. Envelopes | $68,528 | $55,956 | $89,748 |
| j. Rev Pro Consultant | $18,000 | $34,000 | $67,600 |

N.1 Although the actual annual expenses for 2004 – 2006 for the BOH ABP fees appear to be decreasing since 2004, the fees have averaged about $47,000 per year. In 2005, the fees were adjusted by applying a credit to reverse erroneous wire transfer charges for prior months. Without this credit, the ABP fees would have been $47,703 in 2005. While credits earned through account analysis offset most of the fees in 2006, the BOH ABP fees for 2006 would have been $49,192 without the offsetting credits.

N.2 Expenses were low for 2004 because of lower pricing and fee structure for the first four months. In 2005, as for the BOH ABP fees, the return check fees were adjusted by applying a credit to reverse erroneous wire transfer charges for prior months which was partially offset by a mid-year price increase for returned check fees. Fees in 2006 were higher due to the full year's effect of the 2005 price increase, but which, for the most part, were offset by credits earned through account analysis. Without any credits or adjustments, 2005 and 2006 fees would have been $21,806 and $31,960, respectively.

CA-IR-258

**Ref: CA-IR-2, HECO T-8, Attachment 2, pages 2, 4 and 6 (Materials and Services Cost Estimates).**

The referenced documents contain test year projections for Customer Accounting supplies and outside services. Please provide supporting documentation for current unit prices as well as any available "price times quantity" calculations supportive of the following individual line items, indicating whether any further adjustment of the projected amounts is warranted at present unit price levels:

| | | |
|---|---|---|
| a. | Standard Register-HECO | $78,436. |
| b. | Temp Services | $38,400. |
| c. | Bill Envelopes | $132,000. |
| d. | Maint. Wausau | $ 76,300. |
| e. | O/S-BOH ABP | $ 74,000. |
| f. | O/S-BOH Rtn Checkfree | $ 36,000. |
| g. | O/S Checkfree | $ 86,400. |
| h. | O/S Temp Hire | $ 57,000. |
| i. | Pmt. Envelopes | $117,600. |
| j. | Rev Pro Consultant | $ 96,000. |

k. Provide comparative data quantifying actual annual expenses for each of the line items listed as items a. through j. for each of the years 2004 through 2006.

HECO Response:

a. Standard Register – HECO. Please refer to Attachment 1, Page 1 for the price times quantity calculation for the 2007 Test Year estimate. The price used in the development of the test year estimate of $36.93 is only 0.35% higher than the current price (see Attachment 1, Page 2). No adjustment of the projection is warranted at this time.

b. Temp Services – The calculation for the 2007 Test Year estimate was based on an estimated cost of a Departmental Administrative Assistant ($18.40 per hour multiplied by 2,088 hours for the year). An assessment of departmental staffing requirements indicates no adjustment of the projection is warranted at this time. The temp position was initially budgeted to cover the department secretarial duties in anticipation of the secretary's full-time assignment to special projects. However, the department secretary left her position in late 2006 and was permanently replaced in April 2007. Although this temp position is no longer planned to cover the department secretary's position, it will cover positions in the other divisions within the department that are assigned to special projects such as Mosaic which is a training and procedural tool.

c. Bill Envelopes – Please refer to CA-IR-2, Attachment 2, Page 16 and 17, for the 2007 Test Year estimate. For documentation of current prices, please see Attachment 2. The estimate of 2007 projected costs based on the first four months of 2007 actual amounts is provided in the table below. The test year estimate is about $4,000 less than the calculation reflected in the table below. No further adjustment of the projected amount is warranted at this time.

**January –April 2007**

**Price X Quantity Calculation**

| | **B-102** Bill Envelopes Presort/Window | **B-103** Bill Envelopes Non-Presort Window | **B-103A** Urgent Window |
|---|---|---|---|
| No. Bill Envelopes (Actuals Jan - April 2007) | 1,030,000 | 400,000 | 110,000 |
| (a) Average per Month | 257,500 | 100,000 | 27,500 |
| (b) Unit Price | $0.0284 | $0.0284 | $0.0425 |
| (c) 2007 Forecast (a) X (b) X 12 = ( c ) | 87,756 | 34,080 | 14,025 |
| **Bill Envelopes Total Forecast 2007** | | **135,861** | |

d. Maint. Wausau – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year estimate support. For documentation of current prices for Maint. Wausau (check processing maintenance and software support provided by WAUSAU), please see Attachment 3. No further adjustment of the projected amount is warranted at this time.

e. O/S – BOH ABP – The 2007 Test Year estimate was based on a review of the fees charged by the bank historically. The O/S-BOH ABP projection based on 2007 actual fee charges to date is provided in the table below. Credits were applied to the 2007-to-date fees due to the "account analysis" performed by the bank. An account analysis allows a bank's customers with multiple accounts (e.g., HECO, HELCO, MECO and HEI) to offset its bank service fees with credits earned for having available deposit balances or investable balances. Current money market rates are used to determine the amount of credits earned which recently have been sufficient to offset the current level of fees. However, it should be noted that the account analysis, for HECO's general account (to which ABP fees are charged and accounted for), usually results in a deficit, whereby the fees exceed the earnings credits, due primarily

to the high volume of transactions related to this account. Excess credits from the other accounts were used to offset HECO's fees.

Because these credits consider the investable balances of multiple accounts, it is very possible that the current favorable situation which allows credits to flow to HECO to offset these charges may not exist in the future and the charges, as estimated, will be incurred by the Company on an annual basis. Thus, no further adjustment of the projected amount is warranted at this time.

**January – April 2007**

**Price X Quantity Calculation**

| | January - April 2007 | | |
|---|---|---|---|
| **Volume - ABP Transactions** | Total | Unit Price | Fee |
| Retn Item Handling | 1152 | $2.10 | $2,419.20 |
| File Process - Trans | 286 | $3.50 | $1,001.00 |
| ACH Transactions | 0 | $0.0665 | $0.00 |
| | 3847 | $0.0595 | $228.90 |
| | 482290 | $0.0525 | $25,320.23 |
| January - April 2007 Total - ABP Fees | | | $28,969.32 |
| **2007 Forecast - ABP Fees** | | | **$57,938.64** |

Note 1: "ACH Transactions" stands for Automated Clearing House, a national electronic fund transfer system that clears debit and credit transactions, e.g., customer payments between a customer's bank and HECO's bank.

Note 2: ABP Fees for January through April 2007 were offset by credits due to the account analysis performed by the bank.

f. O/S-BOH Rtn Check Fee – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year Budget. The calculation of the O/S-BOH Rtn Check Fee (Outside Service – Bank of Hawaii Return Check Fee) based on 2007-to-date actual amounts is provided in the chart below. The 2007-to-date fees were offset by credits applied by the bank due to the account analysis described in item e above. Without these credits, the estimate reflected in the table

below is approximately $3,500 less than that estimated for the test year. Because of this small difference, no further adjustment of the projected amount is warranted at this time.

**January – April 2007**

**Price X Quantity Calculation**

| | January - April 2007 | | |
|---|---|---|---|
| Return Check Fees | Volume | Unit Price | Fee |
| Returned Items Charged Back | 1648 | $ 3.50 | $ 5,768.00 |
| Returned Items Resubmitted | 2474 | $ 4.20 | $ 10,390.80 |
| January - April 2007 Total - Rtn Check | 4122 | $ 7.70 | $ 16,159 |
| **2007 Forecast - Rtn Check Fees** | **$32,318** | | |

g. O/S Checkfree – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year Budget. For documentation of current prices, please refer to Attachment 4. Actual 2007 billings for Outside Services (O/S) – Checkfree are provided in the table below. Based on these recorded amounts through May and an assumed growth of 750 customers per month for June through December, the estimate for this service is $71,268. No further adjustment of the projected amount is warranted at this time.

**January – December 2007**

**Price X Quantity Calculation**

| 2007 Actual Recorded | | | | |
|---|---|---|---|---|
| Month recorded | (a) No. of Customers | (a) X $0.30 Monthly Total | Month of invoice | |
| Jan | 0 | $0 | - | |
| Feb | 0 | $0 | - | |
| Mar | 52,027 | $15,693 | 12/06, 01/07,2/07 | |
| Apr | 18,731 | $5,468 | 3/07 | |
| May | 17,224 | $5,636 | 4/07 | |
| Jun | 17,974 | $5,392 | | |
| Jul | 18,724 | $5,617 | | |
| Aug | 19,474 | $5,842 | | |
| Sept | 20,224 | $6,067 | | |
| Oct | 20,974 | $6,292 | | |
| Nov | 21,724 | $6,517 | | |
| Dec | 22,474 | $6,742 | | |
| | | **$69,367** | | |
| tax Jun-Dec | 4.71% | $2,000 | | |
| | | $71,268 | Proj. Yr end 2007 | |

h. O/S Temp Hire – Please refer to CA-IR-2, Attachment 2, Page 16, for the 2007 Test Year estimate. For documentation of current prices, please refer to Attachment 5. The calculation for Outside Services (O/S) – Temp Hire based on the 2007 actual rates is provided in the table below and results in an amount that is close to the test year estimate. No further adjustment of the projected amount is being made.

| | Rate | Annual Costs (based on 2080 annual hours) |
|---|---|---|
| Full Time Temp - #1 | 16.36 | $34,029 |
| Part Time Temp (4 hrs/day) - #1 | 12.39 | $12,886 |
| Part Time Temp (4 hrs/day) - #2 | 11.38 | $11,835 |
| **O/S Temp Forecast 2007** | | **$58,750** |

i. Pmt Envelopes – Please refer to CA-IR-2, Attachment 2, Page 16 & 17, for the 2007 Test Year. For documentation of current prices, please see Attachment 2. Based on the 2007-to-date actuals, an estimate of the Pmt Envelopes is provided in the table below. An adjustment of the projected amount is not warranted at this time.

**January – April 2007**

**Price X Quantity Calculation**

| | B-104 Return Payment Window | E-104 Return Payment No Window |
|---|---|---|
| No. Pmt Envelopes (Actuals Jan - April 2007) | 975,000 | |
| No. Pmt Envelopes (Actuals 2006) | | 50000 |
| (a) Average per Month | 243,750 | 4167 |
| (b) Unit Price | $0.0235 | $0.0358 |
| ( c ) 2007 Forecast (a) X (b) X 12 = ( c ) | $68,738 | $1,790 |
| **Pmt Envelopes Total Forecast 2007** | **$70,528** | |

j. Rev Pro Consultant – Please refer to CA-IR-2, Attachment 2, Page 6 for the 2007 Test Year estimate. The actual monthly consultant fee may be found on Attachment 6, Page 1. No changes are required to be made to the estimate at this time due to the small difference between the annualized actual month amount and the test year estimate.

k. Actual annual expenses for line items a- j for the period 2004-2006 are provided on Attachment 7.

CA-IR-259 **Ref: T-9, page 61, lines 17-19, HECO-937, page 1, and HECO-WP-936, pages 3-4.**

HECO-WP-936, page 4 indicates that the total Central Station fuel consumed and the percent of Central Station sales are used to calculate the HECO Other Sales Heat Rate. HECO-WP-936, page 3 indicates that LSFO and Diesel make up the Central Station generation.

Please explain the basis for the Central Station being represented twice in the weighted efficiency factors on HECO-937, page 1, once as the LSFO and Diesel fixed efficiency factors and again as the other fixed efficiency factor.

HECO Response:

Central Station is represented twice – once in the LSFO and diesel fixed efficiency factors, and again in the fixed efficiency factor for "Other" generation (HECO-owned renewable generation, such as wind and hydro) because the "Other" generation is assigned a fixed efficiency factor equal to the system sales heat rate, which is made up of LSFO and diesel generation.

The purpose of HECO-937 is to show that the fixed efficiency factors for LSFO generation, Diesel generation, and "Other" generation, when weighted by the percent test year megawatthour generation of total HECO generation, result in the system generation sales heat rate of 0.011225 mbtu/kwh. Thus, the breakout of heat rates by type of generation does not affect the operation of the Energy Cost Adjustment ("ECA") Clause at test year generation levels. HECO does not currently operate any "Other" generation, which is defined as zero energy cost renewable generating units owned by HECO. Therefore, the Generation Mwh % weight applied to "Other" generation is 0.00%, as shown on line 2 of HECO-937, which at this time results in no impact of "Other" generation on the weighted efficiency factor.

The inclusion of a category of "Other" generation in the HECO ECA Clause is consistent with HELCO's 2006 Test Year Rate Case (Docket No. 05-0315). The treatment of "Other"

generation in HELCO's rate case is more apparent. HELCO proposed a weighted efficiency factor, with a three part sales heat rate for HELCO's central station steam, central station diesel units and wind and hydro renewable generation units. The HELCO-owned renewable generation units of hydro and wind generate energy at zero energy cost (i.e., there is no fuel cost).

In order to account for the zero energy cost renewable generation in HELCO's composite cost of generation the HELCO-owned renewable generation units are assigned HELCO's test year system heat rate to derive the amount of central station steam and diesel energy replaced by zero cost renewable generation. The calculation of the composite cost of generation is derived using the cost per btu for each type of fuel weighted by the btu mix percentage.

Use of the system sales heat rate for "Other" generation for the purposes of calculating the weighted efficiency factor also reflects the replacement of HELCO's central station steam and central station diesel generation by zero energy cost HELCO-owned renewable generation.

To be consistent with HELCO's proposed ECA Clause, HECO is proposing a similar weighted efficiency factor in the ECA clause with a three part sales heat rate of central station LSFO, central station diesel units and any future HECO-owned zero energy cost, renewable generation units, such as hydro and wind. Since the sales heat rate applied to any energy provided by HECO-owned renewable generation reflects the replacement of HECO central station LSFO and diesel generation, Central Station must be represented twice – once in the LSFO and diesel efficiency factors, and again in the fixed efficiency factor for "Other" generation.

CA-IR-260 **Ref: HECO-934, page 1 and HECO-936, pages 1-2.**

Please provide supporting documentation for the Loss Factor found on HECO-934, page 1, line 53, HECO-936, page 1, line 34, and HECO-936, page 2, line 67.

HECO Response:

The ECA loss factor at present rates on HECO-934, page 1, line 53 is based on the last rate case proceeding which determined the base electricity rates into which are embedded test year levels of gwh net to system and gwh sales. Refer to Attachment 1.

For the ECA loss factor at proposed rates as shown on HECO-936, page 1, line 34 and HECO-963, page 2, line 67, refer to HECO-WP-936 page 9.

95x234nr
cshigeta
09/02/94



Hawaiian Electric Company, Inc.

**1995 TEST YEAR GENERATION AND PURCHASED POWER**
**Rebuttal Testimony**

| Line | | 1995 Norm. Energy (gwh) | |
|---|---|---|---|
| 1 | Sales | 6,812.9 | |
| 2 | Company Use[1] | 16.4 | |
| 3 | Sales + NC | 6,829.3 | |
| 4 | Losses[2] | 387.5 | |
| 5 | Net System Input | 7,216.8 | 100.00% |
| 6 | – Purchase Power[3] | 2,984.7 | 41.36% |
| 7 | Net HECO | 4,232.1 | 58.64% |
| 8 | Station Use* | 275.1 | |
| 9 | Gross HECO Gen | 4,507.2 | |

[1] CA's Attachment to HECO/CA-IR-411, page 2.
[2] Losses at 5.37% of Net-to-System, per Transmission and Distribution Planning's April 1993 HECO System Loss Analysis, including the reduction in losses of 0.5 MW * 8760 hrs/yr (4.38 GWh), and adjustment for mix. See HECO-RWP-220.
[3] HECO-RWP-220.
* 6.5% of Net HECO Generation based on 01/93 – 12/93 recorded

95x14ar.wk3
cshigeta
09/02/94

HAWAIIAN ELECTRIC COMPANY, INC. – ENERGY COST ADJUSTMENT FACTOR
**Proposed Rates with Fixed Efficiency Factor**

HECO–R–238
Docket No. 7766
Page 1 of 1

| Line | | |
|---|---|---|
| 1 | Effective Date – Rebuttal 1995 Norm. Test Yr | |
| 2 | Supersedes Factors of | |
| | GENERATION COMPONENT | |
| | FUEL PRICES, ¢/mbtu | |
| 3 | Honolulu | 291.06 |
| 4 | Kahe | 287.11 |
| 5 | Waiau–Steam | 287.87 |
| 6 | Waiau–Waste | 0.00 |
| 7 | Waiau–Diesel | 393.11 |
| | BTU MIX, % | |
| 8 | Honolulu | 4.18 |
| 9 | Kahe | 69.07 |
| 10 | Waiau–Steam | 26.42 |
| 11 | Waiau–Waste | 0.00 |
| 12 | Waiau–Diesel | 0.33 |
| 13 | COMPOSITE COST OF GENERATION, ¢/mbtu | 287.83 |
| 14 | % Input to System kwh Mix | 58.64 |
| 15 | Efficiency Fctr, mbtu/kwh | 0.011170 |
| 16 | Weighted Composite Gen Cost, $/kwh (lines (13x14x15)) | 1.88531 |
| 17 | BASE GENERATION COST, ¢/mbtu | 287.83 |
| 18 | Base % Input to Sys kwh Mix | 58.64 |
| 19 | Efficiency Fctr, mbtu/kwh | 0.011170 |
| 20 | WEIGHTED BASE GEN COST, ¢/kwh (line (17x18x19)) | 1.88531 |
| 21 | Cost Less Base (line (16–20)) | 0.00000 |
| 22 | Rev. Tax Req. Multiplier | 1.0975 |
| 23 | GENERATION FACTOR, ¢/kwh | 0.00000 |

| Line | PURCHASED ENERGY COMPONENT | |
|---|---|---|
| | PURCHASED ENERGY PRICE, ¢/kwh | |
| 24 | Waialua – On Peak | 6.700 |
| 25 | – Off Peak | 5.190 |
| 26 | Oahu – On Peak | 6.350 |
| 27 | – Off Peak | 4.920 |
| 28 | C&H | 0.000 |
| 29 | BHP – On Peak | 4.220 |
| 30 | – Off Peak | 3.350 |
| 31 | Makani Uwila – On Peak | 6.680 |
| 32 | – Off Peak | 5.170 |
| 33 | Makani Uwila (MOD5B) – On Peak | 6.680 |
| 34 | – Off Peak | 5.170 |
| 35 | HRRV (LEO) – On Peak | 7.210 |
| 36 | – Off Peak | 5.600 |
| 37 | HRRV (As Available) – On Peak | 6.700 |
| 38 | – Off Peak | 5.190 |
| 39 | Kapaa – On Peak | 6.700 |
| 40 | – Off Peak | 5.190 |
| 41 | Chevron – On Peak | 4.220 |
| 42 | – Off Peak | 3.350 |
| 43 | Kalaeloa | 2.827 |
| 44 | AES–BP | 2.193 |
| | PURCHASED ENERGY KWH MIX, % | |
| 45 | Waialua – On Peak | 0.52 |
| 46 | – Off Peak | 0.37 |
| 47 | Oahu – On Peak | 0.00 |
| 48 | – Off Peak | 0.00 |
| 49 | C&H | 0.00 |
| 50 | BHP – On Peak | 0.20 |
| 51 | – Off Peak | 0.15 |
| 52 | Makani Uwila – On Peak | 0.05 |
| 53 | – Off Peak | 0.03 |
| 54 | Makani Uwila (MOD5B) – On Peak | 0.05 |
| 55 | – Off Peak | 0.03 |
| 56 | HRRV (LEO) – On Peak | 6.84 |
| 57 | – Off Peak | 2.88 |
| 58 | HRRV (As Available) – On Peak | 0.00 |
| 59 | – Off Peak | 1.52 |
| 60 | Kapaa – On Peak | 0.20 |
| 61 | – Off Peak | 0.14 |
| 62 | Chevron – On Peak | 0.03 |
| 63 | – Off Peak | 0.02 |
| 64 | Kalaeloa | 41.73 |
| 65 | AES–BP | 45.24 |
| 66 | COMPOSITE COST OF PURCHASED ENERGY, ¢/kwh | 3.005 |
| 67 | % Input to System kwh Mix | 41.36 |
| 68 | WTD CMP PURCH ENRGY COST, ¢/kwh | 1.24287 |
| 69 | BASE PURCH ENERGY COMP. COST | 3.005 |
| 70 | Base % Input to Sys kwh Mix | 41.36 |
| 71 | WTD BASE PRCH ENRGY COST, ¢/kwh | 1.24287 |
| 72 | Cost Less Base (line (64–67) | 0.00000 ① |
| 73 | Loss Factor | 1.059 |
| 74 | Rev. Tax Req. Multiplier | 1.0975 |
| 75 | PURCHASED ENERGY FCTR, ¢/kwh | 0.00000 |

| Line | SYSTEM COMPOSITE | |
|---|---|---|
| 76 | Fuel & Purchased Energy Factor, ¢/kwh (line 23 + 71) | 0.00000 |
| 77 | Adjustment, ¢/kwh | 0.000 |
| 78 | ECA Reconciliation Adjustment | 0.000 |
| 79 | Energy Cost Adjustment Factor, ¢/kwh (lines 72+73+74) | 0.000 |

① Source: HECO-R-222
Net System 7216.8
Sales 6812.9

7216.8 ÷ 6812.9 = 1.059

CA-IR-261

**Ref: Response to CA-IR-54, Part a.**

HECO's response to CA-IR-54 part (a) indicates that pattern files 2 through 4 represent the maintenance schedule for Kalaeloa.

Please indicate which Kalaeloa generating unit is represented by which pattern file.

HECO Response:

Pattern file 2 is used to remove 90 MW of KPLP's capacity from operation during both 118 MW outages and 208 MW outages. When Kalaeloa is scheduled for a 118 MW outage, the outage appears in pattern file 2 only (and not in pattern file 3). When Kalaeloa is scheduled for a 208 MW outage, the same outage dates are listed in both pattern file 2 and pattern file 3, which will remove 180 MW of KPLP's capacity from operation. There are no occurrences of an outage in pattern file 3 alone (they are coincident with pattern 2 outages, or not at all). Pattern file 4 represents a 28 MW increment that is only available in dual-train combined cycle mode, and is identical to pattern file 2 since this capacity is unavailable with both the 118 MW or 208 MW outages.

CA-IR-262 **Ref: T-9, page 24, line 5; Response to CA-IR-125 (*Hoa Hana*).**

The referenced publication is referenced as one of the responsibilities of the Corporate Communications Division. Please provide the following information:

a. Provide an estimate of the actual labor hours and direct non-labor costs incurred by HECO to create and distribute this publication.

b. Provide an estimate of the costs of this publication in the test year.

c. What approximate share, if any, of the total costs of creating and distributing this publication were borne by HEI or other non-utility subsidiaries of HEI in 2005 and in 2006?

HECO Response:

a. HECO is not responsible for the overall production or distribution of the publication. HEI coordinates and pays for those activities (e.g., design, layout, printing, mailing). HECO is only responsible for the labor costs incurred to research, write and review the articles written about the utility in the publication. For 2007, only 210 regular employee labor hours were budgeted for researching, writing and reviewing utility articles for the publication on topics such as energy conservation and efficiency, renewable energy and reliability improvements. No HECO nonlabor costs were budgeted.

It should be noted that in April 2007, HEI notified HECO that it had ceased production of the publication. The remaining labor hours originally forecast for this work will be redeployed to other utility communication activities.

b. Estimated costs of this publication in the test year are $6,800 for direct labor and $4,900 for labor overhead costs.

c. As discussed in response to part a., HEI pays for the outside services costs to produce and mail the publication. HEI incurred an estimated $89,500 and $81,400 in 2005 and 2006 respectively for these services. As HECO does, American Savings Bank also absorbs the labor costs for the stories written about the bank's programs and activities.

CA-IR-263 **Ref: T-9, page 4; lines 11-19; HECO-904; Responses to CA-IR-122, CA-IR-130 (DSM Classifications).**

According to the testimony, "Because the Commission's decision regarding the appropriate DSM program cost recovery mechanism is pending, for the purposes of this proceeding, the company is using the method of cost recovery that is currently in place; namely, that DSM program costs currently being recovered in base rates continue to be recovered in base rates, and incremental DSM program costs currently being recovered through the DSM Surcharge continue to be recovered though that surcharge." In response to CA-IR-122 and CA-IR-130, this position is modified somewhat, including a statement, "the Company uses the following decision and orders ("D&O") to determine the classification of DSM costs for either base rates or surcharge recovery." Please provide the following:

a. For each past Commission D&O relied upon to classify expenses between base rates and surcharge recovery, provide pinpoint citation into the language relied upon by HECO to consider certain of its labor positions and related labor costs as "incremental" and eligible for surcharge recovery.

b. For each past Commission D&O relied upon to classify expenses between base rates and surcharge recovery, provide pinpoint citation into the language relied upon by HECO to consider certain of its non-labor costs as "incremental" and eligible for surcharge recovery.

c. To the extent HECO has based its "incremental" DSM cost classifications upon previously submitted DSM program budget estimates and underlying budget staffing assumptions, rather than explicit Commission language regarding cost classification definitions, please provide the estimates and explain how they relate to each of the "incremental" positions listed in HECO-904.

d. Provide an estimate of the approximate dates when each of the positions listed in HECO-904 under "Base Rates" was initially approved and filled, indicating whether each position was created to support any particular DSM related responsibilities.

e. Provide an estimate of the approximate dates when each of the positions listed in HECO-904 under "Incremental" was initially approved and filled, indicating whether each position was created to support any particular DSM related responsibilities.

f. At page 2 of its response to CA-IR-122, the Company quotes from the EE Docket D&O to support a revision to its filing to include additional labor costs in base rates. Please provide the following information:

    1. Explain whether HECO or other parties to the EE docket were advocating a reclassification of labor costs, so that all labor costs would be recovered solely through base rates.

    2. Provide citation into any evidence or other information relied upon by HECO to determine that the EE Docket D&O intended to change the cost recovery mechanism for DSM labor costs from existing procedures.

g. Explain how the Company intends to adjust its staffing shown in HECO-904 to transition toward independent (rather than utility administration) administration of DSM programs in 2009, indicating how many of the 11 positions now in base rates (plus 2 positions to be added per CA-IR-122) will be needed under a non-utility market structure.

h. If HECO is allowed to include 11 or more DSM-related employee positions in its base rate revenue requirement in this proceeding, and DSM is moved outside of utility administration starting in 2009, how does HECO propose to avoid over-recovery of labor costs for DSM positions no longer required after 2008?

HECO Response:

a. HECO has classified as "incremental", labor charges for DSM program positions that are not included in its base rates, and, therefore, eligible for recovery through the DSM component of the IRP Clause. The DSM program positions that are included in base rates were determined in HECO's last rate case, Docket No. 7766, using a 1995 test year.

The final Decision and Order ("D&O") No. 14412, dated December 11, 1995, in Docket No. 7766 (see pages 10 and 11) provides the basis for the DSM program positions in base rates. The approved test year results of operation included $3,292,000 for Customer Service Expense. This expense was based on the test year employee count as shown in rebuttal exhibit HECO-R-804, and the rebuttal Customer Service Expense of $3,301,000 reduced by an inflation adjustment of $9,000 ($3,301,000 - $9,000 = $3,292,000). These documents are attached as pages 12 to 15.

The approved year-end customer count included the following five DSM positions in base rates:

- Director, Demand Side Programs
- Three analysts
- One clerk

These positions are the same positions identified in HECO-904 (in this proceeding) under base rates as:

- Director, Customer Efficiency Programs ("CEP")
- Program Manager ("PM"), Residential
- Program Manager, Commercial
- One of the CEP Analysts
- Clerk

The other CEP Analyst currently included in base rates in the Energy Services Department ("ESD") CEP Division transferred from the Customer Installations Department ("CID") in 2004. The employee and the position were moved from CID to ESD at that time. In the 1995 test year the labor costs associated with this position in CID were allocated to capital clearings. Upon transfer of the employee and position to ESD, the labor costs for this position were classified as base labor.

The two Senior Technical Services Engineers in the Customer Technology Applications ("CTA") Division were also included in the 1995 test year base rates. The CTA Division expanded from 7 employees to the current 10 employee positions since the 1995 test year and the roles and position names have evolved. However, no labor expenses for time devoted to DSM program work by regular HECO employees in the CTA Division have been recovered through the IRP Clause. Furthermore, the work for these two CTAD engineers is related to the CIDLC Program and other non-DSM related efforts that are not eligible for recovery through the IRP Clause.

The remaining three base rate employees in HECO-904 are associated with the two Load Management Programs, the Commercial and Industrial Direct Load Control

("CIDLC") Program and the Residential Direct Load Control ("RDLC") Program. In the CIDLC Program and RDLC Program dockets, Docket Nos. 03-0415 and 03-0166, and D&O Nos. 21421 and 21415, the Commission ordered the inclusion of the labor expenses for those three employees (RDLC Program Manager, CIDLC Program Manager, and Load Management ("LM") Engineer) in base rates. In those D&Os the Commission approved the stipulation between the Company and Consumer Advocate allowing HECO to seek recovery of direct labor costs in base rates (pages 16 to 22).

In D&O No. 13839 in Docket No. 7257, HECO's first IRP docket, the Commission approved HECO's proposed program cost recovery mechanism, which was detailed in Appendix I to its IRP Summary Report. That mechanism allowed HECO to recover non-recurring DSM costs through a surcharge (the IRP Clause) adjusting base rates (pages 23 to 26).

With the establishment of the positions included in base rates per the above referenced documents, HECO considers all other costs for labor as incremental cost and recoverable through the IRP Clause. However, as indicated in its response to CA-IR-122, HECO intends to add to the positions recoverable in base rates, the labor expenses for two additional positions (a CEP Analyst and the Commercial & Industrial ("C&I") Engineer) that are currently being recovered as incremental labor expenses through the IRP Clause.

b. In D&O No. 13839 in Docket No. 7257, HECO's first IRP docket, the Commission approved HECO's proposed program cost recovery mechanism, which was detailed in Appendix I to its IRP Summary Report. That mechanism allowed HECO to recover non-recurring DSM costs through a surcharge (the IRP Clause) adjusting base rates (pages 23 to 26).

The Commission's approval of the cost recovery for HECO's energy efficiency programs was supplemented by the Commission's approval of cost recovery mechanisms for the Company's two Load Management programs. As discussed in part a. above, in the dockets for the RDLC and CIDLC Programs the Commission permitted HECO to seek the recovery of direct labor costs in base rates. The decisions also directed HECO to seek through base rates the recovery of RDLC Advertising/Marketing, Training, and Materials and Miscellaneous costs, and CIDLC Materials, Travel, and Miscellaneous costs.

The decisions permitted HECO to recover RDLC Customer Incentives, Equipment Purchases, and Outside Services costs, as well as CIDLC Dispatchable Demand Incentives, Energy Reduction Incentives, Equipment Purchases and Outside Services costs, through the IRP Cost Recovery Provision (the IRP Clause) (pages 16 to 22).

c. As the Company explained in its response to parts a. and b. above, the recovery of base labor expenses in base rates and the recovery of non-labor expenses (including contract labor costs) as non-recurring DSM costs through the IRP Clause are the result of explicit Commission language.

Also as indicated in part a. above, HECO has classified as "incremental", labor charges for DSM program positions that are not included in its base rates, and, therefore, eligible for recovery through the DSM component of the IRP Clause. This classification includes HECO's two regular employees, the CEP Analyst hired in 1996 and the C&I Engineer hired in 2005 (see response to part e. below). The CEP Analyst works primarily on HECO's Residential Efficient Water Heating ("REWH") and Residential New Construction ("RNC") Programs. The C&I Engineer works on HECO's Commercial and Industrial Customized Rebate ("CICR") Program. The recovery of the labor expenses associated with these two

positions through the IRP Clause has been evident in HECO's DSM program budget estimates and/or cost recovery reports since the inception of its DSM programs in 1996.

HECO's DSM program budget estimates for the following year are filed with the Commission in its Annual Program Modifications and Evaluation ("M&E") Reports in and around November of each year. An exception is HECO's first M&E Report dated November 1996 (pages 27 to 33), which provided estimates for both 1996 and 1997. In HECO's November 1996 M&E Report all labor costs (including labor costs associated with the incremental CEP Analyst position for the REWH and RNC Programs) were categorized as Direct Labor in the budget 1996 and 1997 forecasts. However, in the following Accomplishments and Surcharge ("A&S") Report dated April 1997 (pages 34 to 36) in which HECO filed actual 1996 DSM program expenses, the incremental nature of the CEP Analyst direct labor expenses is identified.

In HECO's November 1997 M&E Report for the 1998 program year (pages 37 to 39) and November 1998 M&E Report for the 1999 program year (pages 43 to 45), the Company again provided Direct Labor budget estimates which included the labor costs associated with the incremental CEP Analyst position. HECO identified the incremental nature of the CEP Analyst in its March 1998 A&S Report (pages 40 to 42) and March 1999 A&S Report (pages 46 to 48).

Beginning with the November 1999 M&E Report and for subsequent annual M&E Reports (pages 49 to 67) incremental Direct Labor has been separately identified. With the hiring of the C&I Engineer in 2005, the December 2005 M&E Report (pages 62 to 64) included incremental labor expenses associated with that position in the CICR Program budget estimate.

In HECO's 2006 M&E Report for the 2007 program year filed November 30, 2006 (see pages 65 to 67), the estimate of Direct Labor costs assumed that all incremental positions were to become HECO regular employees. However, when testimony was filed in this instant rate case on December 22, 2006, HECO clarified that it was removing incremental DSM program costs from its rate case. (HECO has subsequently proposed including DSM-related labor costs for two incremental regular HECO employees into base rates. See HECO's response to CA-IR-122 and 130. The proposed classification of labor costs associated with these two regular HECO employees as base labor is consistent with the treatment by the Energy Services Department of all other regular HECO employee labor costs as base labor.)

d. The current Base Rates positions are:

- Director – filled in 1992, assigned to all programs*
- PM, Residential – filled in 1993, assigned to REWH and RNC Programs*
- PM, Commercial – filled in 1992, assigned to CIEE, CINC and CICR Programs*
- PM, RDLC – filled in 2005, assigned to RDLC Program
- PM, CIDLC – filled in 2004, assigned to CIDLC Program
- CEP Analyst – filled in 1995, assigned to all programs
- CEP Analyst – transferred from Customer Installations Department in 2004, assigned to CIEE, CINC and CICR Programs
- LM Engineer – filled in 2007, assigned to CIDLC and RDLC Programs
- Clerk – filled in 1992, assigned to all programs*
- 2 Sr. Technical Service Engineers from the Customer Technology Applications Division are base positions who were assigned to the load control programs beginning in 2007.

* The positions that were filled before 1995 were originally incremental positions and costs were recovered through the IRP Clause. These positions were subsequently rolled into the 1995 rate case, Docket No. 7766.

e. The Incremental positions are:

- CEP Analyst – filled in 1996, assigned to REWH and RNC Programs
- C&I Engineer – first filled in 1996 as a temporary hire, assigned to the C&I Programs, this position became a regular HECO employee in 2005 assigned to the CICR Program
- All other nine incremental positions were filled in 1996 as temporary hires. One position was assigned to the REWH and RNC Programs, six positions were assigned to the C&I Programs, the Energy Services Aide was assigned to all programs and the Marketing Specialist was assigned to the CIEE and REWH and RNC Programs.

f. 1. In HECO's 2005 test year rate case, HECO advocated for the inclusion of all DSM labor costs, including both direct and contract labor costs, in base rates. However, following the bifurcation of the Energy Efficiency Docket from the rate case, HECO supported the recovery of all DSM program costs, including labor costs, through the IRP Clause. In this rate case proceeding, HECO is proposing that all direct labor be included in base rates. This is consistent with page 16 of the Commission's Order No. 23448 in the Energy Efficiency Docket, dated May 21, 2007, which clarifies that base labor costs shall be recovered through base rates. HECO is proposing to include in base labor costs the labor costs associated with the CEP Analyst and C&I Engineer identified in part c. above and recover those costs through base rates. The positions of

the other parties to the Energy Efficiency Docket can be found in the testimony and transcripts of that docket.

2. Please see part f. 1. above for the citation.

g. 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. The Commission is expected to open a docket to select a Public Benefits Fund administrator and refine the new market structure. However, HECO anticipates that efforts to assist with the transition will extend beyond the January 2009 date that the administrator begins to provide DSM and energy efficiency services. In addition, HECO may become an implementer of a portion of the energy efficiency programs and, thus, may need DSM-related staff for that purpose. The number of staff required during and after the transition will not be clear until both the new docket and the process to select DSM program implementers is completed.

However, should the number of staff for DSM-related work need to be reduced, HECO expects to find the DSM staff comparable positions within the Company that can benefit from the diverse skills and experience possessed by those employees.

h. As indicated in part g. above, HECO will avoid over-recovery of labor costs for DSM positions no longer required by placing those affected employees in comparable positions within the Company. Those comparable positions will be located in areas of the Company that can benefit from the diverse skills and experience possessed by those employees.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

| | |
|---|---|
| In the Matter of the Application of<br><br>HAWAIIAN ELECTRIC COMPANY, INC.<br><br>For Approval of Rate Increases and Revised Rate Schedules and Rules. | DOCKET NO. 7766 |

DECISION AND ORDER NO. 14412

Filed December 11, 1995

At 2:30 o'clock P. .M.

Leatrice G Aluli

for Chief Clerk of the Commission

ATTEST: A True Copy
MILTON Y. HIGA
Administrative Director
Public Utilities Commission
State of Hawaii

Milton Y. Higa

DOCKET NO. 7766

HAWAIIAN ELECTRIC COMPANY, INC.

RESULTS OF OPERATIONS
($ IN 000'S)

| | PRESENT RATES | ADDITIONAL AMOUNT | APPROVED RATES |
|---|---|---|---|
| Operating Revenues: | | | |
| Electric | 691,706 | 10,355 | 702,061 |
| Other | 2,820 | 11 | 2,831 |
| Gain on Sale of Land | 2,478 | | 2,478 |
| Total Operating Revenues | 697,004 | 10,366 | 707,370 |
| Operating Expenses: | | | |
| O&M: | | | |
| Fuel | 132,826 | | 132,826 |
| Purchased Power | 235,072 | | 235,072 |
| Production | 35,156 | | 35,156 |
| Transmission | 8,434 | | 8,434 |
| Distribution | 17,648 | | 17,648 |
| Customer Accounts | 7,567 | | 7,567 |
| Allow. for Uncollectibles | 968 | 14 | 982 |
| Customer Service | 3,292 | | 3,292 |
| Administrative & General | 53,924 | | 53,924 |
| Salary/Wage Adjustment | (1,083) | | (1,083) |
| Merit Salary Increase | 1,321 | | 1,321 |
| Bargaining Unit Wage Inc. | 1,243 | | 1,243 |
| Computer Adjustment | (24) | | (24) |
| Strategic Plan Adjustment | (2,500) | | (2,500) |
| Labor Adjustment | (1,043) | | (1,043) |
| Total O&M | 492,801 | 14 | 492,815 |
| Depreciation & Amortization | 42,425 | | 42,425 |
| Taxes, Other Than Income Tax | 65,708 | 920 | 66,628 |
| Interest on Customer Deposit | 102 | | 102 |
| Income Taxes | 27,560 | 3,670 | 31,230 |
| Total Operating Expenses | 628,596 | 4,604 | 633,200 |
| Net Operating Income | 68,408 | 5,762 | 74,170 |
| Average Depreciated Rate Base | 809,808 | (144) | 809,665 |
| Rate of Return | 8.45% | | 9.16% |

HAWAIIAN ELECTRIC COMPANY, INC.
CUSTOMER SERVICE EXPENSE
YEAR-END EMPLOYEE COUNT

ACCOUNT 910.1

| Line | DIVISION | HECO Direct | Rebuttal Adj | Revised Test Year 1995 | Strategic Plan Adj | Net Test Year 1995 |
|---|---|---|---|---|---|---|
| | Demand Side Management (DSM) | | | | | |
| 1 | Director, Demand Side Programs | 1.0 | | 1.0 | | 1.0 |
| 2 | Director, Research and Evaluation | 1.0 | | 1.0 | | 1.0 |
| 3 | Analysts | 3.0 | | 3.0 | | 3.0 |
| 4 | Clerk | 1.0 | 0.0 | 1.0 | | 1.0 |
| 5 | Total DSM | 6.0 | 0.0 | 6.0 | | 6.0 |
| | Technical Services | | | | | |
| 6 | Director | 1.0 | | 1.0 | | 1.0 |
| 7 | Heat Pump Specialist | 0.2 | | 0.2 | | 0.2 |
| 8 | Electro Technology Specialist | 1.0 | | 1.0 | | 1.0 |
| 9 | Power Quality Specialist | 1.0 | | 1.0 | | 1.0 |
| 10 | Marketing Specialist | 1.0 | | 1.0 | | 1.0 |
| 11 | Cool Storage Specialist | 1.0 | | 1.0 | | 1.0 |
| 12 | EMF Technicians | 2.0 | (2.0) *(a)* | 0.0 | | 0.0 |
| 13 | Clerk | 1.0 | 0.0 | 1.0 | 0.0 | 1.0 |
| 14 | Total Technical Services | 8.2 | (2.0) | 6.2 | 0.0 | 6.2 |
| | Education and Consumer Affairs | | | | | |
| 15 | Director | 1.0 | | 1.0 | | 1.0 |
| 16 | Administrator/Analysts | 5.0 | | 5.0 | | 5.0 |
| 17 | Education Specialist | 2.0 | (1.0) *(b)* | 1.0 | | 1.0 |
| 18 | Secretary | 1.0 | | 1.0 | | 1.0 |
| 19 | Clerk | 1.0 | 0.0 | 1.0 | | 1.0 |
| 20 | Total Education and Consumer Affairs | 10.0 | (1.0) | 9.0 | | 9.0 |
| | Administration | | | | | |
| 21 | Area Development Specialist | 1.0 | (1.0) *(a)* | 0.0 | | 0.0 |
| 22 | Total Administration | 1.0 | (1.0) | 0.0 | | 0.0 |
| | Marketing Services | | | | | |
| 23 | Director | 1.0 | | 1.0 | | 1.0 |
| 24 | Marketing Services Representative | 5.0 | | 5.0 | | 5.0 |
| 25 | Clerk | 1.0 | | 1.0 | | 1.0 |
| 26 | Total Marketing Services | 7.0 | | 7.0 | | 7.0 |
| | VP-Customer Relations' Office | | | | | |
| 23 | Director, On-Site Generation | 1.0 | 0.0 | 1.0 | (1.0) | 0.0 |
| 24 | Engineer | 2.0 | | 2.0 | (2.0) | 0.0 |
| 25 | Clerk | 1.0 | 0.0 | 1.0 | (1.0) | 0.0 |
| 26 | Total VP-Customer Relations' Office | 4.0 | 0.0 | 4.0 | (4.0) | 0.0 |
| 27 | Total Account 910.1 | 36.2 | (4.0) | 32.2 | (4.0) | 28.2 |
| 28 | Total Account 909.0 | 2.0 | | 2.0 | | 2.0 |
| 29 | Total Customer Service Expense (O&M) | 38.2 | (4.0) | 34.2 | (4.0) | 30.2 |
| 30 | Less: On-site Generation (8V) | (4.0) | 0.0 | (4.0) | 4.0 | 0.0 |
| 31 | **Net Energy Services Department O&M** | 34.2 | (4.0) | 30.2 | 0.0 | 30.2 |
| 32 | Add: Billable | 1.0 | 1.0 | 2.0 | | 2.0 *(c)* |
| 33 | Incremental (Other) | 21.0 | (21.0) | 0.0 | | 0.0 |
| 34 | Below-the-Line (Heat Pump) | 0.8 | 0.0 | 0.8 | 0.0 | 0.8 *(c)* |
| 35 | **Total Energy Services Department** | 57.0 | (24.0) | 33.0 | 0.0 | 33.0 |

*(a) Per Attachment 27, HECO transmittal letter dated July 18, 1994*
*(b) Per Attachment 20, HECO transmittal letter dated July 13, 1994*
*(c) Labor dollars for these positions are not included in HECO's revenue requirements.*

HAWAIIAN ELECTRIC COMPANY, INC.
CUSTOMER SERVICE EXPENSE
TEST YEAR 1995 ($1000s)

| | HECO DIRECT | ADJUSTMENT | HECO ESTIMATED | |
|---|---|---|---|---|
| CUSTOMER SERVICE | | | | |
| 90900 SUPERVISION | | | | |
| LABOR | 24 | 101 | 125 | |
| NON-LABOR | 16 | | 16 | |
| TOTAL 90900 | 40 | 101 | 141 | |
| 91010 CUSTOMER/CONSUMER EXPENSES | | | | |
| LABOR | 2,171 | (254) | 1,917 | |
| NON-LABOR | 1,346 | (419) | 927 | |
| TOTAL 91010 | 3,517 | (673) | 2,844 | |
| 91100 INFORMATIONAL ADVERTISING EXPENSES | | | | |
| LABOR | 8 | | 8 | |
| NON-LABOR | 251 | (6) | 245 | |
| TOTAL 91100 | 259 | (6) | 253 | |
| 91200 MISC CUSTOMER SERVICE EXPENSES | | | | |
| LABOR | 34 | | 34 | |
| NON-LABOR | 36 | (7) | 29 | |
| TOTAL 91200 | 70 | (7) | 63 | |
| TOTAL CUSTOMER SERVICE | 3,886 | (585) | 3,301 | |
| | | | | Agreement |
| LABOR | 2,237 | (153) | 2,084 | — |
| NON-LABOR | 1,649 | (432) | 1,217 | <9> |
| TOTAL | 3,886 | (585) | 3,301 | 3292 |

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-00

HECO-R-102

November 14, 1994

Edward Y. Hirata
*Vice President*
*Planning*

Mr. Charles W. Totto
Executive Director
Department of Commerce and
Consumer Affairs
Division of Consumer Advocacy
250 South King Street, Room 825
Honolulu, Hawaii 96813

Mr. Sam DeFrawi
Director, Rate Intervention
Navy Rate Intervention
CHESNAVFACENGCOM
Building 212, 4th Floor
901 M Street S.E.
Washington, D.C. 20374-5018

Dear Messrs. Totto and DeFrawi:

Subject: Docket No. 7766 - HECO Rate Case (1995 Test Year)

This is to document agreements HECO, the CA, and the DOD have reached regarding the following matters in this proceeding:

1) list of remaining differences,

2) the order of examination,

3) the areas in which HECO, the CA, and the DOD have reached agreement and will not pursue further in this proceeding, and areas in which HECO, the CA, and the DOD have been unable to reach agreement, by line item in the Results of Operations, and

4) a summary of the parties' positions on other matters in this proceeding.

The agreements are for the purpose of simplifying and expediting this proceeding, and represent a negotiated compromise of the matters agreed upon, and should not be deemed to be an admission by any party with respect to any of the matters agreed upon herein. The parties expressly reserve their right to take different positions regarding the matters agreed to herein in other proceedings.

Allowance for Uncollectibles:

The parties are in agreement on a test year estimate of Allowance for Uncollectibles at present rates of $947,000[10]. (See HECO-R-702.)

HECO and the CA are in agreement on the methodology for the determination of the test year estimate for Allowance for Uncollectibles at present and proposed rates, including the use of a 0.14% bad debt rate percentage factor. The parties disagree on the test year estimate at proposed rates because of disagreements in other areas.

HECO, the CA, and the DOD have no remaining differences in this area.

Customer Service Expense:

With HECO's agreement to the Labor Adjustment (discussed later in this letter), HECO, the CA, and the DOD agree that the appropriate test year estimate of Customer Service Expense is $3,292,000. This estimate was derived as follows:

| | |
|---|---|
| $ 3,301,000 | HECO Customer Service (HECO-R-801) |
| - 9,000 | Inflation Adjustment (HECO-RWP-1250, page 5) |
| $ 3,292,000 | |

The parties have no further differences in this area.

A&G Expense:

With HECO agreement to the Labor Adjustment (discussed later in this letter), the following are the parties' positions with respect to A&G Expenses.

Acct. No. 920.00 - A&G salaries

| | |
|---|---|
| $12,253,000 | HECO-R-901 and HECO-R-902 |
| - 25,000 | Legal Dept. charges to capital (HECO response to CA-RIR-1206) |
| $12,228,000 | |

[10] The difference in revenues at present rates resulting from the difference with respect to the in-service date for both parts of the Waiau-CIP line will not result in a significant change to the Allowance for Uncollectible.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

| | |
|---|---|
| In the Matter of the Application of)<br>)<br>HAWAIIAN ELECTRIC COMPANY, INC. )<br>)<br>For Approval of a Commercial and )<br>Industrial Direct Load Control )<br>Program, and Recovery of Program )<br>Costs. )<br>) | DOCKET NO. 03-0415 |

DECISION AND ORDER NO. 21421

Filed Oct. 19, 2004

At 2 o'clock P.M.

Karen Higashi

Chief Clerk of the Commission

ATTEST: A True Copy
KAREN HIGASHI
Chief Clerk, Public Utilities
Commission, State of Hawaii.

K. Higashi

costs through the IRP Cost Recovery Provision. In addition, the Consumer Advocate questioned the extent to which certain administrative and other direct costs included by HECO in the program budget would be incremental costs that should be recovered through the IRP Cost Recovery Provision.

In addressing the Consumer Advocate's concerns and in the interest of expediting this proceeding, HECO agreed to exclude certain costs that it expects to incur from the program budgeted costs to be recovered through the IRP Cost Recovery Provision. Thus, HECO now estimates the five-year program costs to be recovered through the IRP Cost Recovery Provision to be $4.8 million instead of $5.5 million.

Specifically, the Parties agreed to the following changes to the CIDLC Program:

1. HECO will modify the program budget for the five-year program. HECO will not seek to recover the following CIDLC Program operation and maintenance costs through the IRP Cost Recovery Provision: (1) Direct Labor (which is comprised of Administration, Annual Relay Service and Inspection, Tracking and Evaluation, and Clerical Support) and (2) Materials, Travel, and Miscellaneous.[8] Instead, the Parties agreed to allow HECO to seek the recovery of these operation and maintenance costs in base rates in HECO's next rate case. HECO shall be permitted to recover the following CIDLC Program costs through the IRP Cost Recovery

[8]See Exhibit A to this decision and order.

Provision: (1) Dispatchable Demand Incentives; (2) Energy Reduction Incentive; (3) Equipment Purchases (which are comprised of Central equipment, Distributed equipment, and Communications Upgrades); and (4) Outside Services (which are comprised of Engineering support and Site assessments). The CIDLC Program costs incurred and recovered through the IRP Cost Recovery Provision will be subject to review in conjunction with the review of the Annual Program Modification and Evaluation ("M&E") Report and the Annual Accomplishments and Surcharge ("A&S") Report. Subsequent to the completion of the commission's and the Consumer Advocate's reviews, any costs determined to be inappropriate by the commission for cost recovery under the Settlement Agreement will be refunded with interest. The Parties agreed that recovery of these costs through the IRP Cost Recovery Provision will be allowed until such time that a different mechanism to recover the costs is established. The Parties further agree that HECO may recover the program costs for the CIDLC Program, as modified, accrued through the date that estimated program costs are incorporated into rates as a result of the next rate case through the IRP Cost Recovery Provision.

2. The Parties will work to discuss the specific information to be contained in the tracking, monitoring, and impact evaluation discussed in Section VII. of HECO's Application.

3. The Parties agreed to allow HECO the program flexibility it requested, provided that HECO, prior to making such amendments, requests commission approval by either filing an

V.

Orders

THE COMMISSION ORDERS:

1. The Parties' Settlement Agreement, filed on July 15, 2004, is approved in its entirety.

2. HECO's proposed CIDLC Program, as amended by the Settlement Agreement, is approved as a pilot program, effective from the date of this decision and order, and subject to the terms and conditions stated below and in the Settlement Agreement.

3. HECO's request to recover program costs, as modified by the Settlement Agreement, that are accrued through the date that estimated program costs are incorporated into rates as a result of the next rate case through the IRP Cost Recovery Provision, is approved.

4. HECO's request to allow the program flexibility described in its Application is approved, provided that it receives commission approval by either filing an application or a letter agreement describing the modifications to be implemented prior to effectuating any amendments to the pilot program.

5. HECO's request for approval of its standard CIDLC Program Contract is approved, provided that it omits the requirement that participants must maintain HECO as their sole source of energy and demand supply for the duration of the contract term, except to the extent provided by existing customer facilities, or by facilities designed exclusively as the customer's emergency supply.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

| | | |
|---|---|---|
| In the Matter of the Application of<br><br>HAWAIIAN ELECTRIC COMPANY, INC.<br><br>For Approval of a Residential Direct Load Control Program, and Recovery of Program Costs. | ) | DOCKET NO. 03-0166 |

DECISION AND ORDER NO. 21415

Filed Oct. 14, 2004

At 2:45 o'clock P .M.

Karen Higashi

Chief Clerk of the Commission

Specifically, the Parties agreed to the following changes to the RDLC Program:

1. HECO will modify the program budget for the five-year program. HECO will not seek to recover the following RDLC Program operation and maintenance costs through the IRP Cost Recovery Provision: (1) Direct Labor (which is comprised of Administration, Tracking and Evaluation, and Database and Technical Support); (2) Advertising/Marketing (fixed and variable); (3) Training; and (4) Materials and Miscellaneous.[8] Instead, the Parties agreed to allow HECO to seek the recovery of these operation and maintenance costs in base rates in HECO's next rate case. HECO shall be permitted to recover the following RDLC Program costs through the IRP Cost Recovery Provision: (1) Customer Incentives; (2) Equipment Purchases (which are comprised of Central equipment, Distributed equipment, and Communications Expenses/Upgrades); and (3) Outside Services (which are comprised of Equipment installation and Equipment maintenance/removals). The RDLC Program costs incurred and recovered through the IRP Cost Recovery Provision will be subject to review in conjunction with the review of the Annual Program Modification and Evaluation ("M&E") Report and the Annual Accomplishments and Surcharge ("A&S") Report. Subsequent to the completion of the commission's and the Consumer Advocate's reviews, any costs determined to be inappropriate by the commission for cost

[8]See Exhibit A to this decision and order.

V.

Orders

THE COMMISSION ORDERS:

1. The Parties' Settlement Agreement, filed on June 30, 2004, is approved in its entirety.

2. HECO's proposed RDLC Program, as amended by the Settlement Agreement, is approved as a pilot program, effective from the date of this decision and order, and subject to the terms and conditions stated below and in the Settlement Agreement.

3. HECO's request to recover program costs, as modified by the Settlement Agreement, that are accrued through the date that estimated program costs are incorporated into rates as a result of the next rate case through the IRP Cost Recovery Provision, is approved.

4. HECO's request to allow the program flexibility described in its Application is approved, provided that it receives commission approval of either an application or a letter agreement describing the modifications to be implemented prior to effectuating any amendments to the pilot program.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

| | | |
|---|---|---|
| ----- In the Matter of ----- | ) | |
| | ) | |
| HAWAIIAN ELECTRIC COMPANY, INC. | ) | DOCKET NO. 7257 |
| | ) | |
| Regarding Integrated Resource Planning. | ) | |
| | ) | |

RECEIVED
MAR 31 1995
GENERATION PLANNING DEPT.
HAWAIIAN ELECTRIC CO., INC.

DECISION AND ORDER NO. 13839

Filed March 31, 1995
At 9:00 o'clock A.M.

Bertha F. Kurosawa
Chief Clerk of the Commission

ATTEST: A True Copy
BERTHA F. KUROSAWA
Chief Clerk, Public Utilities
Commission, State of Hawaii.
Bertha F. Kurosawa

ratepayers, the non-participant, and society; (5) described the risks and uncertainties associated with its IRP; (6) ranked the various candidate plans; and (7) subjected its selection of resource options to sensitivity analysis by altering assumptions and other parameters. Thus, we find that HECO configured and evaluated candidate plans in a rigorous, methodical, and reasonable manner.

V.

RECOVERY OF DSM COSTS,
LOST MARGINS, AND SHAREHOLDER INCENTIVES

HECO requests in this docket commission approval of its proposals for the recovery of DSM program costs, lost margins, and shareholder incentives, including the factors to be used in the recovery methodologies. Approval of how the factors (or components) will actually be computed will be requested in the DSM program dockets. HECO views the recovery proposals as integral components of the DSM programs included in HECO's proposed IRP, and HECO considered the cost of its proposals in evaluating the cost-effectiveness of the DSM programs. HECO's proposals for the recovery of DSM program costs, lost margins, and shareholder incentives are detailed in Appendix I to its IRP Summary Report. Some of the salient features are as follows.

HECO proposes to treat DSM program costs as expenses. It will recover program costs and lost margins on a prospective (forecast) basis and will recover shareholder incentives on a retrospective (actual) basis. DSM program costs, lost margins, and shareholder incentives will be recovered through a surcharge

adjusting base rates. The level of the surcharge will be established in the DSM application docket for the first year of program operation and will be adjusted annually thereafter. The DSM surcharge amount will not be itemized as a separate item on a customer's bill. HECO proposes that the DSM program costs be allocated and collected from the rate classes eligible to participate in the programs, although it seeks some flexibility in allocation.

Revenues generated through the DSM cost adjustment factor will be reconciled annually with the actual costs incurred. To facilitate review, HECO will file annually an Annual Program Accomplishments and Surcharge Report. The report will delineate the costs incurred by cost categories and programs, the benefits and cost-effectiveness of the programs, and the activities and accomplishments in the prior year. HECO will also file annually an Annual Program Modification and Evaluation Report, which will establish goals for the coming year, describe changes in the program design, forecast costs by cost categories and programs, and provide the result of program evaluation efforts over the past year.

Lost margins and shareholder incentives will be calculated on the basis of the per unit energy and demand reductions. HECO's proposed shareholder incentive for its energy efficiency and load management DSM programs is a "shared savings" approach. For the DSM service programs (such as the proposed low-income program), HECO's shareholder incentive proposal is the "mark-up" approach. Both the shared savings and the mark-up approaches are among the shareholder incentive mechanisms

HECO shall file the required updated materials no later than June 30, 1995.

2. HECO's proposed DSM program costs, lost margin, and shareholder incentive recovery mechanisms are approved, provided that the specific amounts to be recovered and the calculations of the amounts and the allocation of the amounts to be recovered among ratepayers are subject to commission review and approval in the context of specific DSM applications filed by HECO.

3. HECO shall recover general planning costs through base rates and shall use the IRP clause to recover non-recurring integrated resource general planning costs (and non-recurring DSM costs), together with interest on the deferred costs.

4. Pursuant to section III.D.3 of the IRP framework, HECO shall submit its first annual evaluation report of its IRP and program implementation schedule no later than April 1, 1996.

5. Pursuant to section III.B.2 of the IRP framework, HECO shall conduct a major review of its IRP by adopting a new 20-year planning horizon, repeating the planning process, and fully re-analyzing its resource programs. The submission date of HECO's revised IRP is changed to January 1, 1997.

6. HECO shall submit its findings and recommendations, regarding identification, quantification, and utilization of externalities, no later than December 28, 1995, for commission approval. No values derived for externalities shall be used without prior commission approval.

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATIONS AND EVALUATION

# REPORT

NOVEMBER 8, 1996

HECO Residential Efficient Water Heating Program
($)

| Expense Type | Annual Program Cost - Year 1[1] | Recorded Expenses June-Sept. | Deferred Expenses[2] | Forecasted Expenses Oct.- Dec. | 1996 Total Est. Expenditures June - Dec.[3] |
|---|---|---|---|---|---|
| Incentives | 2,130,266 | 75,475 | | 400,000 | 475,475 |
| Direct Labor | | | | | |
| Admin/Implement | 218,423 | 35,285 | | 54,121 | 89,406 |
| Tracking/Evaluation | 81,080 | 0 | | 0 | 0 |
| Adv/Marketing | 29,407 | 0 | | 0 | 0 |
| Subtotal | 328,910 | 35,285 | | 54,121 | 89,406 |
| Outside Services | | | | | |
| Implementation | 361,938 | 107,299 | | 200,374 | 307,673 |
| Evaluation | 199,756 | 13,966 | | 78,026 | 91,992 |
| Design Assistance | 0 | 0 | | 0 | 0 |
| Subtotal | 561,694 | 121,265 | | 278,400 | 399,665 |
| Field Test | | | | | |
| Metering | 172,500 | 0 | | 10,000 | 10,000 |
| Data Recov./Analysis | 108,000 | 0 | | 0 | 0 |
| Cust. Incentives | 5,000 | 0 | | 0 | 0 |
| Subtotal | 285,500 | 0 | | 10,000 | 10,000 |
| Advertising/Marketing | 351,688 | 38,784 | | 163,000 | 201,784 |
| Materials, Travel, & Misc. | 36,175 | 68,489 | 1,162 | 9,043 | 78,694 |
| TOTAL PROGRAM COSTS | 3,694,233 | 339,298 | 1,162 | 914,564 | 1,255,024 |

[1] Application in Docket No. 94-0206, Residential Efficient Water Heating Program, filed July 29, 1994, page 17.
[2] Deferred Expenses are expenses which have been incurred but have not yet been allocated to the program.
[3] Total of Recorded Expenses, Deferred Expenses, and Forecasted Expenses

HECO Residential Efficient Water Heating Program
Projected Forecast to be Recovered Through Surcharge
($)

| Expense Type | Annual Program Cost - Year 2[1] | 1997 Revised Forecast[2] |
|---|---|---|
| Incentives | 2,696,396 | 2,588,660 |
| Direct Labor | | |
| Admin/Implement | 226,723 | 101,236 |
| Tracking/Evaluation | 84,161 | |
| Advertising/Marketing | 30,524 | 4,504 |
| Subtotal | 341,408 | 105,740 |
| Outside Services | | |
| Implementation | 498,518 | 782,152 |
| Evaluation | 207,347 | 223,359 |
| Subtotal | 705,865 | 1,005,511 |
| Field Test | | |
| Metering | 172,500 | 172,500 |
| Data Recovery/Analysis | 108,000 | 108,000 |
| Customer Incentives | 5,000 | 10,000 |
| | 285,500 | 290,500 |
| Advertising/Marketing | 365,052 | 367,150 |
| 1996 Carry Over | | 149,904 |
| Subtotal | | 517,054 |
| Materials, Travel, & Misc. | 37,550 | 74,210 |
| TOTAL PROGRAM COSTS | 4,431,771 | 4,581,675 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208
[2] Application, page 35, Docket No. 94-0206 allows the carry over of unspent funds.

HECO Residential Efficient Water Heating Program
Total Funds Available in 1997 based on Budget Flexibility Provision
($)

| Expense Type | Annual Year 1 Budget[1] | Estimated 1996 Expenditures | 1996 Remaining Budget[2] | Annual Year 2 Budget[3] | Total Funds Available in 1997[4] |
|---|---|---|---|---|---|
| Incentives | 2,130,266 | 475,475 | 1,654,791 | 2,696,396 | 4,351,187 |
| Direct Labor | | | | | |
| Admin/Implement | 218,423 | 89,406 | 129,017 | 226,723 | 226,723 |
| Tracking/Evaluation | 81,080 | 0 | 81,080 | 84,161 | 84,161 |
| Adv/Marketing | 29,407 | 0 | 29,407 | 30,524 | 30,524 |
| Subtotal | 328,910 | 89,406 | 239,504 | 341,408 | 341,408 |
| Outside Services | | | | | |
| Implementation | 361,938 | 307,673 | 54,265 | 498,518 | 498,518 |
| Evaluation | 199,756 | 91,992 | 107,764 | 207,347 | 315,111 |
| Design Assistance | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 561,694 | 399,665 | 162,029 | 705,865 | 813,629 |
| Field Test | | | | | |
| Metering | 172,500 | 10,000 | 162,500 | 172,500 | 335,000 |
| Data Recov./Analysis | 108,000 | 0 | 108,000 | 108,000 | 216,000 |
| Cust. Incentives | 5,000 | 0 | 5,000 | 5,000 | 10,000 |
| Subtotal | 285,500 | 10,000 | 275,500 | 285,500 | 561,000 |
| Advertising/Marketing | 351,688 | 201,784 | 149,904 | 365,052 | 514,956 |
| Materials, Travel, & Misc. | 36,175 | 78,694 | (42,519) | 37,550 | 37,550 |
| TOTAL PROGRAM COSTS | 3,694,233 | 1,255,024 | 2,439,209 | 4,431,771 | 6,619,730 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208
[2] Annual Year 1 Budget less Estimated 1996 Expenses
[3] Exhibit HECO-R-402, page 1, in Docket No. 94-0208
[4] Annual Year 2 Budget plus 1996 Unspent Costs for Incentives, Outside Services - Evaluation, Field Test, and Advertising/Marketing

HECO Residential New Construction Program
($)

| Expense Type | Annual Program Cost - Year 1[1] | Recorded Expenses June-Sept. | Deferred Expenses[2] | Forecasted Expenses Oct.- Dec. | 1996 Total Est. Expenditures June - Dec.[3] |
|---|---|---|---|---|---|
| Incentives | 857,655 | 6,000 | | 225,500 | 231,500 |
| Direct Labor | | | | | |
| Admin/Implement | 70,709 | 10,613 | | 7,960 | 18,573 |
| Tracking/Evaluation | 7,857 | 0 | | 0 | 0 |
| Adv/Marketing | 39,283 | 0 | | 0 | 0 |
| Subtotal | 117,849 | 10,613 | | 7,960 | 18,573 |
| Outside Services | | | | | |
| Implementation | 54,926 | 10,657 | | 7,964 | 18,621 |
| Evaluation | 77,325 | 4,062 | | 26,336 | 30,398 |
| Design Assistance | 0 | 0 | | 0 | 0 |
| Subtotal | 132,251 | 14,719 | | 34,300 | 49,019 |
| Advertising/Marketing | 42,650 | 0 | | 14,000 | 14,000 |
| Materials, Travel, & Misc. | 9,331 | 7,752 | 209 | 2,333 | 10,294 |
| TOTAL PROGRAM COSTS | 1,159,736 | 39,084 | 209 | 284,093 | 323,386 |

[1] Application in Docket No. 94-0216, Residential New Construction Program, filed July 29, 1994, page 13

[2] Deferred Expenses are expenses which have been incurred but have not yet been allocated to the program.

[3] Total of Recorded Expenses, Deferred Expenses, and Forecasted Expenses

HECO Residential New Construction Program
Projected Forecast to be Recovered Through Surcharge
($)

| Expense Type | Annual Program Cost - Year 2[1] | 1997 Revised Forecast[2] |
|---|---|---|
| Incentives | 1,356,633 | 1,356,633 |
| Direct Labor | | |
| Admin/Implement | 73,396 | 33,886 |
| Tracking/Evaluation | 8,155 | |
| Advertising/Marketing | 40,776 | 4,504 |
| Subtotal | 122,327 | 38,390 |
| Outside Services | | |
| Implementation | 89,315 | 147,914 |
| Evaluation | 80,263 | 96,275 |
| *Subtotal* | *169,578* | *244,189* |
| Advertising/Marketing | 44,271 | 44,271 |
| 1996 Carry Over | | 28,650 |
| Subtotal | | 72,921 |
| Materials, Travel, & Misc. | 9,686 | 19,012 |
| TOTAL PROGRAM COSTS | 1,702,495 | 1,731,145 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208
[2] Application, page 29, Docket No. 94-0216 allows the carry over of unspent funds.

HECO Residential New Construction Program
Total Funds Available in 1997 based on Budget Flexibility Provision
($)

| Expense Type | Annual Year 1 Budget[1] | Estimated 1996 Expenditures | 1996 Remaining Budget[2] | Annual Year 2 Budget[3] | Total Funds Available in 1997[4] |
|---|---|---|---|---|---|
| Incentives | 857,655 | 231,500 | 626,155 | 1,356,633 | 1,982,788 |
| Direct Labor | | | | | |
| Admin/Implement | 70,709 | 18,573 | 52,136 | 73,396 | 73,396 |
| Tracking/Evaluation | 7,857 | 0 | 7,857 | 8,155 | 8,155 |
| Adv/Marketing | 39,283 | 0 | 39,283 | 40,776 | 40,776 |
| Subtotal | 117,849 | 18,573 | 99,276 | 122,327 | 122,327 |
| Outside Services | | | | | |
| Implementation | 54,926 | 18,621 | 36,305 | 89,315 | 89,315 |
| Evaluation | 77,325 | 30,398 | 46,927 | 80,263 | 127,190 |
| Design Assistance | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 132,251 | 49,019 | 83,232 | 169,578 | 216,505 |
| Advertising/Marketing | 42,650 | 14,000 | 28,650 | 44,271 | 72,921 |
| Materials, Travel, & Misc. | 9,331 | 10,294 | (963) | 9,686 | 9,686 |
| TOTAL PROGRAM COSTS | 1,159,736 | 323,386 | 836,350 | 1,702,495 | 2,404,227 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208
[2] Annual Year 1 Budget less Estimated 1996 Expenses
[3] Exhibit HECO-R-402, page 1, in Docket No. 94-0208
[4] Annual Year 2 Budget plus 1996 Unspent Costs for Incentives, Outside Services - Evaluation, and Advertising/Marketing

**HAWAIIAN ELECTRIC COMPANY, INC.**

**Demand-Side Management Programs**

# *Accomplishments and Surcharge Report*

## *April 1997*

HECO

1996 DSM BUDGET
RESIDENTIAL EXISTING WATER HEATING PROGRAM

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | | | | | (c+d) | (e-b) | (f/b) |
| | Annual Program Budget[1] | Cost Recovery Budget[2] | Base Costs Incurred | Incremental Costs Incurred | Base + Incr. Total Costs Incurred | Variance | Percent |
| INCENTIVES | 2,130,266 | 1,057,133 | | 236,965 | 236,965 | (820,168) | -78% |
| DIRECT LABOR | | | | | | | |
| Admin/Implement | 218,423 | | 41,960 | 31,601 | 73,561 | 73,561 | ***** |
| Tracking/Evaluation | 81,080 | | | | | | |
| Adv/Marketing | 29,407 | | | | | | |
| Subtotal | 328,910 | | 41,960 | 31,601 | 73,561 | 73,561 | ***** |
| OUTSIDE SERVICES | | | | | | | |
| Implementation | 361,938 | 364,974 | | 366,587 | 366,587 | 1,613 | 0% |
| Evaluation | 199,756 | 198,068 | | 109,883 | 109,883 | (88,185) | -45% |
| Evaluation Rebate | 0 | 0 | | 1,850 | 1,850 | 1,850 | ***** |
| Subtotal | 561,694 | 563,042 | | 478,320 | 478,320 | (84,722) | -15% |
| FIELD TEST | | | | | | | |
| Metering | 172,500 | 0 | | | | 0 | ***** |
| Data Recovery/Analysis | 108,000 | 58,000 | | | | (58,000) | -100% |
| Evaluation | 0 | 0 | | | | 0 | ***** |
| Customer Incentives | 5,000 | 5,000 | | | | (5,000) | -100% |
| Subtotal | 285,500 | 63,000 | | | | (63,000) | -100% |
| ADVERTISING/MARKETING | 351,688 | 353,710 | | 282,499 | 282,499 | (71,211) | -20% |
| MATERIALS, TRAVEL, MISC. | 36,175 | 24,745 | | 81,948 | 81,948 | 57,203 | 231% |
| TOTAL | 3,694,233 | 2,061,630 | 41,960 | 1,111,333 | 1,153,293 | (908,337) | -44% |

[1] Exhibit HECO-R-402 in Docket No. 94-0206 reflecting reduced customer incentives.
[2] Exhibit 5, page 3, DSM Cost Recovery Adjustments filed 6/25/96. The budget was revised for a partial year and estimates were based on costs expected to be incurred in 1996.

HECO

1996 DSM BUDGET
RESIDENTIAL EXISTING WATER HEATING PROGRAM
(without showerhead program expenses)

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | Annual Program Budget[1] | Cost Recovery Budget[2] | Base Costs Incurred | Incremental Costs Incurred | (c+d) Base + Incr. Total Costs Incurred | (e-b) Variance | (f/b) Percent |
| INCENTIVES | 2,130,266 | 1,057,133 | | 236,965 | 236,965 | (820,168) | -78% |
| DIRECT LABOR | | | | | | | |
| Admin/Implement | 218,423 | | 41,960 | 31,601 | 73,561 | 73,561 | ***** |
| Tracking/Evaluation | 81,080 | | | | | | |
| Adv/Marketing | 29,407 | | | | | | |
| Subtotal | 328,910 | | 41,960 | 31,601 | 73,561 | 73,561 | ***** |
| OUTSIDE SERVICES | | | | | | | |
| Implementation | 361,938 | 364,974 | | 227,508 | 227,508 | (137,466) | -38% |
| Evaluation | 199,756 | 198,068 | | 109,883 | 109,883 | (88,185) | -45% |
| Evaluation Rebate | 0 | 0 | | 1,850 | 1,850 | 1,850 | ***** |
| Subtotal | 561,694 | 563,042 | | 339,241 | 339,241 | (223,801) | -40% |
| FIELD TEST | | | | | | | |
| Metering | 172,500 | 0 | | | | 0 | ***** |
| Data Recovery/Analysis | 108,000 | 58,000 | | | | (58,000) | -100% |
| Evaluation | 0 | 0 | | | | 0 | ***** |
| Customer Incentives | 5,000 | 5,000 | | | | (5,000) | -100% |
| Subtotal | 285,500 | 63,000 | | | | (63,000) | -100% |
| ADVERTISING/MARKETING | 351,688 | 353,710 | | 80,408 | 80,408 | (273,302) | -77% |
| MATERIALS, TRAVEL, MISC. | 36,175 | 24,745 | | 81,948 | 81,948 | 57,203 | 231% |
| TOTAL | 3,694,233 | 2,061,630 | 41,960 | 770,163 | 812,123 | (1,249,507) | -61% |

[1] Exhibit HECO-R-402 in Docket No. 94-0206 reflecting reduced customer incentives.
[2] Exhibit 5, page 3, DSM Cost Recovery Adjustments filed 6/25/96. The budget was revised for a partial year and estimates were based on costs expected to be incurred in 1996.

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATIONS AND EVALUATION REPORT

NOVEMBER 26, 1997

HECO Residential Efficient Water Heating Program

| Expense Type | Annual Program Cost - Year 3[1] | 1998 Revised Forecast | 1998 Cost Recovery Forecast |
|---|---|---|---|
| Incentives | 3,554,191 | 2,384,605 | 2,384,605 |
| Direct Labor | | | |
| Admin/Implement | 235,339 | 165,379 | 110,321 |
| Tracking/Evaluation | 87,359 | 0 | 0 |
| Advertising/Marketing | 31,684 | 4,559 | 0 |
| Subtotal | 354,382 | 169,938 | 110,321 |
| Outside Services | | | |
| Implementation | 729,917 | 707,719 | 707,719 |
| Tracking | | 19,975 | 19,975 |
| Evaluation | 215,225 | 268,680 | 268,680 |
| Field Testing | 100,000 | 25,000 | 25,000 |
| Cust. Incentives | 10,000 | 1,000 | 1,000 |
| Subtotal | 1,055,142 | 1,022,374 | 1,022,374 |
| Advertising/Marketing | 378,924 | 532,565 | 532,565 |
| Materials, Travel, & Misc. | 38,977 | 65,233 | 65,233 |
| TOTAL PROGRAM COSTS | 5,381,616 | 4,174,715 | 4,115,098 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208

HECO Residential New Construction Program

| Expense Type | Annual Program Cost - Year 3[1] | 1998 Revised Forecast | 1998 Cost Recovery Forecast |
|---|---|---|---|
| Incentives | 1,949,460 | 997,770 | 997,770 |
| Direct Labor | | | |
| Admin/Implement | 76,185 | 29,462 | 19,654 |
| Tracking/Evaluation | 8,466 | | |
| Advertising/Marketing | 42,325 | 4,559 | |
| Subtotal | 126,976 | 34,021 | 19,654 |
| Outside Services | | | |
| Implementation | 132,306 | 126,218 | 126,218 |
| Tracking | | 3,825 | 3,825 |
| Evaluation | 83,313 | 82,430 | 82,430 |
| Subtotal | 215,619 | 212,473 | 212,473 |
| Advertising/Marketing | 45,953 | 45,599 | 45,599 |
| Materials, Travel, & Misc. | 10,054 | 47,947 | 47,947 |
| TOTAL PROGRAM COSTS | 2,348,062 | 1,337,810 | 1,323,443 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208

# HAWAIIAN ELECTRIC COMPANY, INC.

## Demand-Side Management Programs

# *Accomplishments and Surcharge Report*

## *March 1998*

HECO

1997 DSM BUDGET
RESIDENTIAL EXISTING WATER HEATING PROGRAM

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | | | | | (c+d) | (e-b) | (f/b) |
| | Annual Program Budget[1] | Revised Program Budget[2] | Base Costs Incurred | Incremental Costs Incurred | Base + Incr. Total Costs Incurred | Variance | Percent |
| INCENTIVES | 2,696,396 | 1,553,196 | | 1,629,775 | 1,629,775 | 76,579 | 5% |
| DIRECT LABOR | | | | | | | |
| Admin/Implement | 226,723 | 101,236 | 41,326 | 85,378 | 126,704 | 25,468 | 25% |
| Tracking/Evaluation | 84,161 | | | | | | |
| Adv/Marketing | 30,524 | 4,504 | | | | | ***** |
| Subtotal | 341,408 | 105,740 | 41,326 | 85,378 | 126,704 | 20,964 | 20% |
| OUTSIDE SERVICES | | | | | | | |
| Implementation | 498,518 | 633,085 | | 399,293 | 399,293 | (233,792) | -37% |
| Tracking | | 22,425 | | 15,040 | 15,040 | (7,385) | -33% |
| Evaluation | 207,347 | 195,412 | | 162,485 | 162,485 | (32,927) | -17% |
| Subtotal | 705,865 | 850,922 | | 576,818 | 576,818 | (274,104) | -32% |
| FIELD TEST | | | | | | | |
| Metering | 172,500 | 0 | | | | 0 | ***** |
| Data Recovery/Analysis | 108,000 | 50,000 | | 4,905 | 4,905 | (45,095) | -90% |
| Evaluation | 0 | 0 | | | | 0 | |
| Customer Incentives | 5,000 | 2,000 | | 600 | 600 | (1,400) | -70% |
| Subtotal | 285,500 | 52,000 | | 5,505 | 5,505 | (46,495) | -89% |
| ADVERTISING/MARKETING | 365,052 | 517,054 | | 725,489 | 725,489 | 208,435 | 40% |
| MATERIALS, TRAVEL, MISC. | 37,550 | 74,210 | | 80,606 | 80,606 | 6,396 | 9% |
| TOTAL | 4,431,771 | 3,153,122 | 41,326 | 3,103,571 | 3,144,897 | (8,225) | 0% |

[1] Exhibit HECO-R-402 in Docket No. 94-0206 reflecting reduced customer incentives.
[2] Attachment G of HECO's Annual Program Accomplishments & Surcharge Report filed 4/30/97 in Docket Nos. 94-0010, 94-0011, 94-0012, 94-0206 and 94-0216.

HECO

1997 DSM BUDGET
RESIDENTIAL NEW CONSTRUCTION PROGRAM

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | Annual Program Budget[1] | Revised Program Budget[2] | Base Costs Incurred | Incremental Costs Incurred | (c+d) Base + Incr. Total Costs Incurred | (e-b) Variance | (f/b) Percent |
| INCENTIVES | 1,356,633 | 813,980 | | 599,795 | 599,795 | (214,185) | -26% |
| DIRECT LABOR | | | | | | | |
| Admin/Implement | 73,396 | 33,886 | 13,892 | 27,097 | 40,989 | 7,103 | 21% |
| Tracking/Evaluation | 8,155 | | | | | | |
| Adv/Marketing | 40,776 | 4,504 | | | 0 | (4,504) | -100% |
| Subtotal | 122,327 | 38,390 | 13,892 | 27,097 | 40,989 | 2,599 | 7% |
| OUTSIDE SERVICES | | | | | | | |
| Implementation | 89,315 | 139,675 | | 90,278 | 90,278 | (49,397) | -35% |
| Tracking | | 4,026 | | 8,001 | 8,001 | 3,975 | 99% |
| Evaluation | 80,263 | 62,612 | | 42,789 | 42,789 | (19,823) | -32% |
| Design Assistance | 0 | 0 | | 0 | 0 | 0 | ***** |
| Subtotal | 169,578 | 206,313 | | 141,068 | 141,068 | (65,245) | -32% |
| ADVERTISING/MARKETING | 44,271 | 44,271 | | 2,087 | 2,087 | (42,184) | -95% |
| MATERIALS, TRAVEL, MISC. | 9,686 | 19,012 | | 14,340 | 14,340 | (4,672) | -25% |
| TOTAL | 1,702,495 | 1,121,966 | 13,892 | 784,387 | 798,279 | (323,687) | -29% |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0206.
[2] Attachment G of HECO's Annual Program Accomplishments & Surcharge Report filed 4/30/97 in Docket Nos. 94-0010, 94-0011, 94-0012, 94-0206 and 94-0216.

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION

# REPORT

NOVEMBER 30, 1998

HECO Residential Efficient Water Heating Program

| Expense Type | Recorded Expenses Jan. - Sept. | Forecasted Expenses Oct. - Dec. | 1998 Total Estimated Expenses | 1998 Revised Annual Forecast[1] | Difference |
|---|---|---|---|---|---|
| Incentives | 1,421,275 | 486,840 | 1,908,115 | 2,384,605 | (476,490) |
| Direct Labor | | | | | |
| Admin/Implement | 91,042 | 30,347 | 121,389 | 165,379 | (43,990) |
| Information Services | 0 | 0 | 0 | 0 | 0 |
| Adv/Marketing | 124 | 0 | 124 | 4,559 | (4,435) |
| Subtotal | 91,166 | 30,347 | 121,513 | 169,938 | (48,425) |
| Outside Services | | | | | |
| Implementation | 367,871 | 122,624 | 490,495 | 707,719 | (217,224) |
| Tracking | 7,584 | 2,528 | | 19,975 | (19,975) |
| Evaluation | 108,218 | 36,073 | 144,291 | 268,680 | (124,389) |
| Design Assistance | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 483,673 | 161,225 | 644,898 | 996,374 | (351,476) |
| Field Test | | | | | |
| Metering | 25,705 | 500 | 26,205 | 25,000 | 1,205 |
| Data Recov./Analysis | 0 | 0 | 0 | 0 | 0 |
| Cust. Incentives | 0 | 0 | 0 | 1,000 | (1,000) |
| Subtotal | 25,705 | 500 | 26,205 | 26,000 | 205 |
| Advertising/Marketing | 680,029 | 75,000 | 755,029 | 532,565 | 222,464 |
| Materials, Travel, & Misc. | 52,050 | 17,350 | 69,400 | 65,233 | 4,167 |
| TOTAL PROGRAM COST | 2,753,898 | 771,262 | 3,525,160 | 4,174,715 | (649,555) |

[1] See Attachment A of HECO's Modification and Evaluation Report filed November 28, 1997.

HECO Residential New Construction Program

| Expense Type | Recorded Expenses Jan. - Sept. | Forecasted Expenses Oct. - Dec. | 1998 Total Estimated Expenses | 1998 Revised Annual Forecast[1] | Difference |
|---|---|---|---|---|---|
| Incentives | 466,472 | 504,000 | 970,472 | 997,770 | (27,298) |
| Direct Labor | | | | | |
| Admin/Implement | 29,621 | 9,874 | 39,495 | 29,462 | 10,033 |
| Information Services | 0 | 0 | 0 | 0 | 0 |
| Adv/Marketing | 0 | 0 | 0 | 4,559 | (4,559) |
| Subtotal | 29,621 | 9,874 | 39,495 | 34,021 | 5,474 |
| Outside Services | | | | | |
| Implementation | 84,897 | 28,299 | 113,196 | 126,218 | (13,022) |
| Tracking | 1,345 | 448 | | 3,825 | (3,825) |
| Evaluation | 19,927 | 6,642 | 26,569 | 82,430 | (55,861) |
| Design Assistance | 0 | 0 | 0 | 0 | 0 |
| Subtotal | 106,169 | 35,389 | 141,558 | 212,473 | (70,915) |
| Advertising/Marketing | 7,555 | 0 | 7,555 | 45,599 | (38,044) |
| Materials, Travel, & Misc. | 30,775 | 10,258 | 41,033 | 47,947 | (6,914) |
| TOTAL PROGRAM COSTS | 640,592 | 559,521 | 1,200,113 | 1,337,810 | (137,697) |

[1] See Attachment A of HECO's Modification and Evaluation Report filed November 28, 1997.

# HAWAIIAN ELECTRIC COMPANY, INC.

## Demand-Side Management Programs

# *Accomplishments and Surcharge Report*

## *March 1999*

HECO

1998 DSM BUDGET
RESIDENTIAL EXISTING WATER HEATING PROGRAM

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | | | | | (c+d) | (e-b) | (f/b) |
| | Annual Program Budget[1] | Revised Program Budget[2] | Base Costs Incurred | Incremental ~~Costs~~ Incurred | Base + Incr. otal Costs Incurred | Variance | Percent |
| INCENTIVES | 3,554,191 | 2,384,605 | | 1,809,080 | 1,809,080 | (575,525) | -24% |
| DIRECT LABOR | | | | | | | |
| Admin/Implement | 235,339 | 165,379 | 46,809 | 76,738 | 123,547 | (41,832) | -25% |
| Tracking/Evaluation | 87,359 | | | | | | ***** |
| Adv/Marketing | 31,684 | 4,559 | 149 | | 149 | (4,410) | -97% |
| Subtotal | 354,382 | 169,938 | 46,958 | 76,738 | 123,696 | (46,242) | -27% |
| OUTSIDE SERVICES | | | | | | | |
| Implementation | 729,917 | 707,719 | | 467,040 | 467,040 | (240,679) | -34% |
| Tracking | | 19,975 | | 12,010 | 12,010 | (7,965) | -40% |
| Evaluation | 215,225 | 268,680 | | 159,883 | 159,883 | (108,797) | -40% |
| Subtotal | 945,142 | 996,374 | | 638,933 | 638,933 | (357,441) | -36% |
| FIELD TEST (Evaluation) | | | | | | | |
| Data Recovery/Analysis | 100,000 | 25,000 | | 27,240 | 27,240 | 2,240 | 9% |
| Customer Incentives | 10,000 | 1,000 | | 0 | 0 | (1,000) | -100% |
| Subtotal | 110,000 | 26,000 | | 27,240 | 27,240 | 1,240 | 5% |
| ADVERTISING/MARKETING | 378,924 | 532,565 | | 763,723 | 763,723 | 231,158 | 43% |
| MATERIALS, TRAVEL, MISC. | 38,977 | 65,233 | | 62,066 | 62,066 | (3,167) | -5% |
| TOTAL | 5,381,616 | 4,174,715 | 46,958 | 3,377,780 | 3,424,738 | (749,977) | -18% |

[1] Exhibit HECO-R-402 in Docket No. 94-0206 reflecting reduced customer incentives.
[2] Attachment A of HECO's Annual Program Modification and Evaluation Report filed November 28, 1997 in Docket Nos. 94-0010, 94-0011, 94-0012, 94-0206 and 94-0216.

HECO

1998 DSM BUDGET
RESIDENTIAL NEW CONSTRUCTION PROGRAM

| | a | b | c | d | e | f | g |
|---|---|---|---|---|---|---|---|
| | | | | | (c+d) | (e-b) | (f/b) |
| | Annual Program Budget[1] | Revised Program Budget[2] | Base Costs Incurred | Incremental ~~Costs~~ Incurred | Base + Incr. otal Costs Incurred | Variance | Percent |
| INCENTIVES | 1,949,460 | 997,770 | | 1,044,120 | 1,044,120 | 46,350 | 5% |
| DIRECT LABOR | | | | | | | |
| Admin/Implement | 76,185 | 29,462 | 14,511 | 25,549 | 40,060 | 10,598 | 36% |
| Tracking/Evaluation | 8,466 | | | | | | |
| Adv/Marketing | 42,325 | 4,559 | 0 | 0 | 0 | (4,559) | -100% |
| Subtotal | 126,976 | 34,021 | 14,511 | 25,549 | 40,060 | 6,039 | 18% |
| OUTSIDE SERVICES | | | | | | | |
| Implementation | 132,306 | 126,218 | | 114,321 | 114,321 | (11,897) | -9% |
| Tracking | | 3,825 | | 2,128 | 2,128 | (1,697) | -44% |
| Evaluation | 83,313 | 82,430 | | 24,067 | 24,067 | (58,363) | -71% |
| Design Assistance | 0 | 0 | | 0 | 0 | 0 | ***** |
| Subtotal | 215,619 | 212,473 | | 140,516 | 140,516 | (71,957) | -34% |
| ADVERTISING/MARKETING | 45,953 | 45,599 | | 31,950 | 31,950 | (13,649) | -30% |
| MATERIALS, TRAVEL, MISC. | 10,054 | 47,947 | | 43,234 | 43,234 | (4,713) | -10% |
| TOTAL | 2,348,062 | 1,337,810 | 14,511 | 1,285,369 | 1,299,880 | (37,930) | -3% |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0206.
[2] Attachment A of HECO's Annual Program Modification and Evaluation Report filed November 28, 1997 in Docket Nos. 94-0010, 94-0011, 94-0012, 94-0206 and 94-0216.

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

NOVEMBER 30, 1999

HECO Residential Efficient Water Heating Program

| Expense Type | Annual Program Cost - Year 5[1] | 2000 Revised Forecast | 2000 Cost Recovery Forecast |
|---|---|---|---|
| Incentives | 3,787,684 | 1,150,000 | 1,150,000 |
| Direct Labor | | | |
| Base Labor | 357,205 | 117,722 | 0 |
| Incremental Labor | 0 | 41,561 | 41,561 |
| Subtotal | 357,205 | 159,283 | 41,561 |
| Outside Services | | | |
| Implementation | 811,395 | 573,147 | 573,147 |
| Tracking | | 12,285 | 12,285 |
| Evaluation | 256,514 | 260,964 | 260,964 |
| Field Testing | 0 | 0 | 0 |
| Cust. Incentives | 0 | 0 | 0 |
| Subtotal | 1,067,909 | 846,396 | 846,396 |
| Advertising/Marketing | 408,269 | 616,341 | 616,341 |
| Materials, Travel, & Misc. | 41,997 | 62,814 | 62,814 |
| TOTAL PROGRAM COSTS | 5,663,064 | 2,834,834 | 2,717,112 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208

HECO Residential New Construction Program

| Expense Type | Annual Program Cost - Year 5[1] | 2000 Revised Forecast | 2000 Cost Recovery Forecast |
|---|---|---|---|
| Incentives | 3,206,787 | 708,265 | 708,265 |
| Direct Labor | | | |
| Base Labor | 132,249 | 29,781 | 0 |
| Incremental Labor | 0 | 6,862 | 6,862 |
| Subtotal | 132,249 | 36,643 | 6,862 |
| Outside Services | | | |
| Implementation | 223,687 | 123,141 | 123,141 |
| Tracking | | 2,205 | 2,205 |
| Evaluation | 94,325 | 55,548 | 55,548 |
| Subtotal | 318,012 | 180,894 | 180,894 |
| Advertising/Marketing | 49,512 | 63,202 | 63,202 |
| Materials, Travel, & Misc. | 10,833 | 16,126 | 16,126 |
| TOTAL PROGRAM COSTS | 3,717,393 | 1,005,130 | 975,349 |

[1] Exhibit HECO-R-402, page 1, in Docket No. 94-0208

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

NOVEMBER 30, 2000

~~EXHIBIT A
PAGE 1 OF 2~~

HECO's DSM Programs Estimated Budgets for 2001

| Expense Type | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program |
|---|---|---|---|---|---|
| Incentives | $1,026,730 | $375,197 | $630,144 | $925,556 | $303,444 |
| Direct Labor | | | | | |
| Base Labor[1] | 160,000 | 20,000 | 20,000 | 78,376 | 32,153 |
| Incremental Labor | 0 | 0 | 0 | 42,119 | 7,352 |
| Subtotal | 160,000 | 20,000 | 20,000 | 120,495 | 39,505 |
| Outside Services | | | | | |
| Implementation | 370,000 | 135,000 | 335,000 | 431,524 | 141,475 |
| Tracking | 10,000 | 5,000 | 5,000 | 0 | 0 |
| Evaluation | 0 | 0 | 0 | 0 | 0 |
| Design Assistance | 100,000 | 75,000 | 50,000 | 0 | 0 |
| Subtotal | 480,000 | 215,000 | 390,000 | 431,524 | 141,475 |
| Advertising/Marketing | 115,000 | 35,000 | 35,000 | 308,017 | 100,963 |
| Materials, Travel, & Misc. | 85,000 | 40,000 | 55,000 | 65,519 | 21,481 |
| TOTAL PROGRAM COSTS | $1,866,780 | $685,197 | $1,130,144 | $1,851,111 | $606,889 |

HECO's DSM Programs Estimated Impacts (System Level) for 2001

| | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program | TOTAL |
|---|---|---|---|---|---|---|
| Gross kW | 2,203 | 805 | 1,352 | 1,105 | 484 | 5,949 |
| Gross MWh | 15,420 | 5,975 | 13,913 | 4,257 | 1,230 | 40,795 |
| Net kW[2] | 1,282 | 564 | 841 | 811 | 370 | 3,868 |
| Net MWh[3] | 9,206 | 4,046 | 6,038 | 3,125 | 941 | 23,355 |

HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for 2001

| | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program |
|---|---|---|---|---|---|
| Utility Cost Test | 2.51 | 2.86 | 2.67 | 1.41 | 1.40 |
| Total Resource Cost Test | 1.38 | 1.34 | 0.96 | 0.76 | 0.83 |
| Participant Test | 3.36 | 2.01 | 1.62 | 1.12 | 1.17 |
| Rate Impact Measure Test | 0.85 | 0.85 | 0.63 | 0.62 | 0.69 |

10/18/00HECO Year6 Exhibit A.xls

Source: Oct. 20, 2000 letter to the Commission, Docket Nos. 94-0010, 94-0011, 94-0012, 94-0206, 94-0216, 00-0169, and 00-0209.

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

NOVEMBER 30, 2001

**HECO's DSM Programs Estimated Budgets for 2002**

| Expense Type | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Incentives | $1,026,780 | $375,197 | $630,144 | $2,032,121 | $1,026,250 | $473,000 | $1,499,250 |
| Showerheads | | | | | $120,000 | | $120,000 |
| Direct Labor | | | | | | | |
| Base Labor[1] | $160,000 | $20,000 | $20,000 | $200,000 | $72,000 | $24,000 | $96,000 |
| Incremental Labor | | | | | $48,000 | $16,000 | $64,000 |
| Outside Services | | | | | | | |
| Implementation | $370,000 | $135,000 | $335,000 | $840,000 | $429,750 | $143,250 | $573,000 |
| Tracking | $10,000 | $5,000 | $5,000 | $20,000 | 0 | 0 | $0 |
| Evaluation | 0 | 0 | 0 | $0 | 0 | 0 | $0 |
| Design Assistance | $100,000 | $75,000 | $50,000 | $225,000 | 0 | 0 | $0 |
| Subtotal | $480,000 | $215,000 | $390,000 | $1,085,000 | $429,750 | $143,250 | $573,000 |
| Advertising/Marketing | $115,000 | $35,000 | $35,000 | $185,000 | $300,000 | $74,031 | $374,031 |
| Materials, Travel, & Misc. | $85,000 | $40,000 | $55,000 | $180,000 | $65,000 | $21,750 | $86,750 |
| TOTAL PROGRAM COSTS | $1,866,780 | $685,197 | $1,130,144 | $3,682,121 | $2,061,000 | $752,031 | $2,813,031 |

**HECO's DSM Programs Estimated Impacts (System Level) for 2002**

| | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Gross kW | 2,064 | 755 | 1,267 | 4,085 | 2,486 | 487 | 2,973 |
| Gross MWh | 14,820 | 5,416 | 9,095 | 29,331 | 8,324 | 1,397 | 9,721 |
| Net kW[2] | 1,548 | 566 | 950 | 3,064 | 1,865 | 365 | 2,230 |
| Net MWh[3] | 11,115 | 4,062 | 6,821 | 21,998 | 6,243 | 1,048 | 7,291 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for 2002[4]**

| | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program |
|---|---|---|---|---|---|
| Utility Cost Test | 2.45 | 2.44 | 2.47 | 1.28 | 1.09 |
| Total Resource Cost Test | 1.35 | 0.61 | 0.86 | 0.71 | 0.75 |
| Participant Test | 3.73 | 1.32 | 1.97 | 1.30 | 1.53 |
| Rate Impact Measure Test | 0.48 | 0.48 | 0.48 | 0.47 | 0.46 |

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

NOVEMBER 29, 2002

**HECO's DSM Programs Estimated Budgets for 2003**

| Expense Type | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Incentives | $794,131 | $238,229 | $661,838 | $1,694,198 | $1,120,000 | $379,000 | $1,499,000 |
| Direct Labor | | | | | | | |
| Base Labor[1] | $164,800 | $20,600 | $20,600 | $206,000 | $74,160 | $24,720 | $98,880 |
| Incremental Labor | | | | | $49,440 | $16,480 | $65,920 |
| Outside Services | | | | | | | |
| Implementation | $381,100 | $139,050 | $345,050 | $865,200 | $438,345 | $146,115 | $584,460 |
| Tracking | $4,000 | $3,000 | $3,000 | $10,000 | 0 | 0 | 0 |
| Evaluation | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Design Assistance | $103,000 | $77,250 | $51,500 | $231,750 | 0 | 0 | 0 |
| Subtotal | $488,100 | $219,300 | $399,550 | $1,106,950 | $438,345 | $146,115 | $584,460 |
| Advertising/Marketing | $118,450 | $36,050 | $36,050 | $190,550 | $300,000 | $74,032 | $374,032 |
| Materials, Travel, & Misc. | $87,550 | $41,200 | $56,650 | $185,400 | $65,880 | $21,960 | $87,840 |
| TOTAL PROGRAM COSTS | $1,653,031 | $555,379 | $1,174,688 | $3,383,098 | $2,047,825 | $662,307 | $2,710,132 |

**HECO's DSM Programs Estimated Impacts (System Level) for 2003**

| | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Gross kW | 1,633 | 491 | 1,331 | 3,455 | 1,093 | 487 | 1,580 |
| Gross MWh | 11,463 | 3,439 | 9,552 | 24,454 | 4,203 | 1,397 | 5,600 |
| Net kW[2] | 1,225 | 368 | 998 | 2,591 | 820 | 365 | 1,185 |
| Net MWh[3] | 8,597 | 2,579 | 7,164 | 18,340 | 3,152 | 1,048 | 4,200 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for Program Year 2[4] (2003)**

| | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program |
|---|---|---|---|---|---|
| Utility Cost Test | 2.27 | 2.03 | 2.47 | 1.28 | 1.09 |
| Total Resource Cost Test | 1.29 | 0.56 | 0.86 | 0.71 | 0.75 |
| Participant Test | 3.64 | 1.29 | 1.97 | 1.30 | 1.53 |
| Rate Impact Measure Test | 0.48 | 0.46 | 0.48 | 0.47 | 0.46 |

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

NOVEMBER 28, 2003

**HECO's DSM Programs Estimated Budgets for 2004**

| Expense Type | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Incentives | $833,957 | $325,073 | $694,930 | $1,853,960 | $1,120,000 | $742,972 | $1,862,972 |
| Direct Labor | | | | | | | |
| Base Labor[1] | $169,744 | $27,583 | $21,218 | $218,545 | $76,385 | $24,720 | $101,105 |
| Incremental Labor | | | | $0 | $50,923 | $16,480 | $67,403 |
| Outside Services | | | | | | | |
| Implementation | $392,533 | $186,189 | $355,402 | $934,124 | $447,112 | $230,611 | $677,723 |
| Tracking | $4,120 | $4,017 | $3,090 | $11,227 | 0 | 0 | 0 |
| Evaluation | 50,000 | 65,000 | 100,000 | 215,000 | 150,000 | 50,000 | 200,000 |
| Design Assistance | $106,090 | $103,438 | $53,045 | $262,573 | 0 | 0 | 0 |
| Subtotal | $552,743 | $358,644 | $511,537 | $1,422,924 | $597,112 | $280,611 | $877,723 |
| Advertising/Marketing | $122,004 | $48,272 | $37,132 | $207,408 | $300,000 | $23,512 | $323,512 |
| Materials, Travel, & Misc. | $90,177 | $55,167 | $58,350 | $203,694 | $66,523 | $14,501 | $81,024 |
| TOTAL PROGRAM COSTS | $1,768,625 | $814,739 | $1,323,167 | $3,906,531 | $2,210,943 | $1,102,796 | $3,313,739 |

**HECO's DSM Programs Estimated Impacts (System Level) for 2004**

| | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Gross kW | 1,716 | 671 | 1,397 | 3,784 | 1,093 | 899 | 1,992 |
| Gross MWh | 12,036 | 4,692 | 10,031 | 26,759 | 4,203 | 1,982 | 6,185 |
| Net kW[2] | 1,287 | 503 | 1,048 | 2,838 | 820 | 674 | 1,494 |
| Net MWh[3] | 9,027 | 3,519 | 7,523 | 20,069 | 3,152 | 1,487 | 4,639 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for Program Year 3[4] (2004)**

| | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program |
|---|---|---|---|---|---|
| Utility Cost Test | 2.27 | 1.70 | 2.47 | 1.28 | 1.27 |
| Total Resource Cost Test | 1.29 | 0.91 | 0.86 | 0.71 | 0.80 |
| Participant Test | 3.64 | 2.16 | 1.97 | 1.30 | 1.35 |
| Rate Impact Measure Test | 0.48 | 0.50 | 0.48 | 0.47 | 0.57 |

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

NOVEMBER 30, 2004

**HECO's DSM Energy Efficiency Programs Estimated Budgets for 2005**

| Expense Type | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Incentives | $875,501 | $511,119 | $729,886 | $2,116,506 | $1,120,000 | $697,000 | $1,817,000 |
| Direct Labor | | | | | | | |
| Base Labor[1] | $174,836 | $39,150 | $21,855 | $235,841 | $78,676 | $26,225 | $104,901 |
| Incremental Labor | | | | | $52,451 | $17,484 | $69,935 |
| Outside Services | | | | | | | |
| Implementation | $404,309 | $136,832 | $366,064 | $907,205 | $456,054 | $237,529 | $693,583 |
| Tracking | $4,244 | $4,017 | $3,183 | $11,444 | 0 | 0 | 0 |
| Evaluation | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Design Assistance | $109,273 | $49,333 | $54,636 | $213,242 | 0 | 0 | 0 |
| Subtotal | $517,826 | $190,182 | $423,883 | $1,131,891 | $456,054 | $237,529 | $693,583 |
| Advertising/Marketing | $125,664 | $48,272 | $38,245 | $212,181 | $300,000 | $74,032 | $374,032 |
| Materials, Travel, & Misc. | $92,882 | $26,016 | $60,100 | $178,998 | $67,179 | $22,393 | $89,572 |
| TOTAL PROGRAM COSTS | $1,786,709 | $814,739 | $1,273,969 | $3,875,417 | $2,074,360 | $1,074,663 | $3,149,023 |

**HECO's DSM Programs Estimated Impacts (Gross Generation Level) for 2005**

| | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs | REWH Program | RNC Program | TOTAL Residential Programs |
|---|---|---|---|---|---|---|---|
| Gross kW[2] | 1,945 | 1,020 | 1,276 | 4,241 | 864 | 822 | 1,686 |
| Gross MWh[3] | 15,164 | 7,226 | 9,165 | 31,555 | 3,768 | 1,892 | 5,660 |
| Net kW[4] | 1,291 | 622 | 963 | 2,877 | 765 | 601 | 1,366 |
| Net MWh[5] | 9,902 | 4,307 | 6,956 | 21,165 | 3,169 | 1,379 | 4,548 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for 2005[6]**

| | CIEE Program | CINC Program | CICR Program | REWH Program | RNC Program |
|---|---|---|---|---|---|
| Utility Cost Test | 2.49 | 2.44 | 2.35 | 0.93 | 1.10 |
| Total Resource Cost Test | 1.67 | 1.33 | 0.81 | 0.64 | 0.83 |
| Participant Test | 4.04 | 2.17 | 1.61 | 1.14 | 1.37 |
| Rate Impact Measure Test | 0.62 | 0.70 | 0.53 | 0.43 | 0.60 |

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

DECEMBER 2, 2005

**HECO's DSM Energy Efficiency Programs Estimated Budgets for 2006 ($)**

| Expense Type | Existing CIEE Program | Interim CIEE Program | Existing CINC Program | Interim CINC Program | Existing CICR Program | Interim CICR Program | TOTAL Existing C&I Programs | TOTAL Interim C&I Programs |
|---|---|---|---|---|---|---|---|---|
| Incentives | 675,968 | 1,217,721 | 607,741 | 890,709 | 1,103,896 | 1,090,568 | 2,387,605 | 3,198,998 |
| Direct Labor | | | | | | | | |
| Base Labor[1] | 104,220 | 104,220 | 114,573 | 114,573 | 145,807 | 145,807 | 364,600 | 364,600 |
| Incremental Labor | 0 | 0 | 0 | 0 | 109,003 | 109,003 | 109,003 | 109,003 |
| Total Labor | 104,220 | 104,220 | 114,573 | 114,573 | 254,810 | 254,810 | 473,603 | 473,603 |
| Outside Services | | | | | | | | |
| Implementation | 375,186 | 387,010 | 254,324 | 260,286 | 255,502 | 262,609 | 885,012 | 909,905 |
| Tracking | 18,932 | 18,932 | 15,628 | 15,628 | 18,774 | 18,774 | 53,334 | 53,334 |
| Evaluation | 81,178 | 81,178 | 38,864 | 38,864 | 44,890 | 44,890 | 164,932 | 164,932 |
| Design Assistance | 112,500 | 112,500 | 100,000 | 100,000 | 100,000 | 100,000 | 312,500 | 312,500 |
| Subtotal | 587,796 | 599,620 | 408,816 | 414,778 | 419,166 | 426,273 | 1,415,778 | 1,440,671 |
| Advertising/Marketing | 125,664 | 117,484 | 57,986 | 57,986 | 76,030 | 76,030 | 259,680 | 251,500 |
| Materials, Travel, & Misc. | 95,806 | 115,651 | 23,789 | 50,384 | 43,163 | 62,087 | 162,758 | 228,122 |
| TOTAL PROGRAM COSTS | $1,589,454 | $2,154,696 | $1,212,905 | $1,528,430 | $1,897,065 | $1,909,768 | $4,699,424 | $5,592,894 |

**HECO's DSM Programs Estimated Impacts (Gross Generation Level) for 2006**

| | Existing CIEE Program | Interim CIEE Program | Existing CINC Program | Interim CINC Program | Existing CICR Program | Interim CICR Program | TOTAL Existing C&I Programs | TOTAL Interim C&I Programs |
|---|---|---|---|---|---|---|---|---|
| Gross kW[2] | 1,319 | 1,791 | 1,189 | 1,621 | 2,069 | 2,565 | 4,577 | 5,977 |
| Gross MWh[3] | 12,430 | 13,358 | 9,869 | 12,657 | 16,479 | 18,141 | 38,778 | 44,156 |
| Net kW[4] | 876 | 1,189 | 725 | 753 | 1,562 | 1,937 | 3,163 | 3,879 |
| Net MWh[5] | 8,117 | 8,723 | 5,882 | 7,544 | 12,508 | 13,769 | 26,507 | 30,036 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for 2006[6]**

| | Existing CIEE Program | Interim CIEE Program | Existing CINC Program | Interim CINC Program | Existing CICR Program | Interim CICR Program |
|---|---|---|---|---|---|---|
| Utility Cost Test | 2.49 | 2.23 | 2.39 | 2.44 | 2.72 | 2.90 |
| Total Resource Cost Test | 1.50 | 1.39 | 1.26 | 1.26 | 0.96 | 0.90 |
| Participant Test | 3.34 | 3.40 | 2.59 | 2.61 | 1.56 | 1.53 |
| Rate Impact Measure Test | 0.62 | 0.53 | 0.59 | 0.57 | 0.66 | 0.62 |

**HECO's Residential DSM Energy Efficiency Programs Estimated Budgets for 2006 ($)**

| Expense Type | Existing REWH Program | Existing RNC Program | Interim E$H Program | Total Residential Programs |
|---|---|---|---|---|
| Incentives | 1,120,000 | 878,430 | 450,000 | 2,448,430 |
| Direct Labor | | | | |
| Base Labor[1] | 75,832 | 71,770 | 30,468 | 178,070 |
| Incremental Labor | 22,583 | 31,656 | 9,073 | 63,312 |
| Total Labor | 98,415 | 103,426 | 39,541 | 241,382 |
| Outside Services | | | | |
| Implementation | 516,732 | 329,903 | 120,000 | 966,635 |
| Tracking | 11,111 | 11,111 | 11,111 | 33,333 |
| Evaluation | 65,780 | 21,820 | 15,000 | 102,600 |
| Subtotal | 593,623 | 362,834 | 146,111 | 1,102,568 |
| Advertising/Marketing | 488,000 | 65,500 | 330,000 | 883,500 |
| Materials, Travel, & Misc. | 119,216 | 53,099 | 25,000 | 197,315 |
| TOTAL PROGRAM COSTS | $2,419,254 | $1,463,289 | $990,652 | $4,873,195 |

**HECO's DSM Programs Estimated Impacts (Gross Generation Level) for 2006**

| | Existing REWH Program | Existing RNC Program | Interim E$H Program | Total Residential Programs |
|---|---|---|---|---|
| Gross kW[2] | 767 | 680 | 2,472 | 3,919 |
| Gross MWh[3] | 3,346 | 2,558 | 13,245 | 19,149 |
| Net kW[4] | 559 | 572 | 2,101 | 3,232 |
| Net MWh[5] | 2,439 | 2,152 | 11,258 | 15,849 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios With Shareholder Incentives for 2006[6]**

| | Existing REWH Program | Existing RNC Program | Interim E$H Program |
|---|---|---|---|
| Utility Cost Test | 0.76 | 1.08 | 2.45 |
| Total Resource Cost Test | 0.57 | 0.89 | 1.88 |
| Participant Test | 1.09 | 1.31 | 6.66 |
| Rate Impact Measure Test | 0.40 | 0.66 | 0.54 |

# HAWAIIAN ELECTRIC COMPANY, INC.

# DEMAND-SIDE MANAGEMENT PROGRAMS

# ANNUAL PROGRAM MODIFICATION AND EVALUATION REPORT

November 30, 2006

**HECO's DSM Energy Efficiency Programs Estimated Budgets for 2007 ($)**

| Expense Type | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs |
|---|---|---|---|---|
| Incentives | 2,265,425 | 936,019 | 743,936 | 3,945,380 |
| Direct Labor | | | | |
| Base Labor[1] | 148,476 | 91,008 | 137,854 | 377,338 |
| Incremental Labor | 351,279 | 227,877 | 330,759 | 909,915 |
| Total Labor | 499,755 | 318,885 | 468,613 | 1,287,253 |
| Outside Services | | | | |
| Implementation | 164,855 | 74,677 | 37,312 | 276,844 |
| Tracking | 32,222 | 32,222 | 32,222 | 96,666 |
| Evaluation | 84,262 | 40,341 | 46,595 | 171,198 |
| Design Assistance | 193,125 | 103,000 | 180,250 | 476,375 |
| Subtotal | 474,464 | 250,240 | 296,379 | 1,021,083 |
| Advertising/Marketing | 180,686 | 86,466 | 113,261 | 380,413 |
| Materials, Travel, & Misc. | 113,582 | 56,004 | 69,171 | 238,757 |
| TOTAL PROGRAM COSTS | $3,533,912 | $1,647,614 | $1,691,360 | $6,872,886 |

**HECO's DSM Programs Estimated Impacts (Gross Generation Level) for 2007**

| | CIEE Program | CINC Program | CICR Program | TOTAL C&I Programs |
|---|---|---|---|---|
| Gross kW[2] | 3,439 | 1,432 | 1,649 | 6,520 |
| Gross MWh[3] | 23,379 | 9,770 | 12,626 | 45,775 |
| Net kW[4] | 2,284 | 874 | 1,245 | 4,403 |
| Net MWh[5] | 15,266 | 5,823 | 9,583 | 30,672 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios for 2007[6]**

| | CIEE Program | CINC Program | CICR Program |
|---|---|---|---|
| Utility Cost Test | 4.80 | 3.78 | 5.32 |
| Total Resource Cost Test | 3.17 | 2.24 | 2.16 |
| Participant Test | 4.89 | 3.01 | 2.26 |
| Rate Impact Measure Test | 0.77 | 0.85 | 1.07 |

[1] Base labor and expenses are recovered through base rates and not the IRP Cost Recovery Adjustment. It is presented here to show the total DSM program costs.
[2] Annual Gross kW adjusted using program averaged realization rates from the 2001-2003 Impact Evaluation Report.
[3] Annual Gross MWh adjusted using program averaged realization rates from the 2001-2003 Impact Evaluation Report.
[4] Annual Net kW adjusted for freeridership.
[5] Annual Net MWh adjusted for freeridership.
[6] Benefit/cost ratios were recalculated specifically for 2007 using the avoided costs filed in the Energy Efficiency Docket.

**HECO's Residential DSM Energy Efficiency Programs Estimated Budgets for 2007 ($)**

| Expense Type | REWH Program | RNC Program | E$H Program | Proposed RLI Program | Total Residential Programs |
|---|---|---|---|---|---|
| Incentives | 1,470,000 | 1,459,893 | 1,231,250 | 589,000 | 4,750,143 |
| Direct Labor | | | | | |
| Base Labor[1] | 73,626 | 42,045 | 20,464 | 20,855 | 156,990 |
| Incremental Labor | 67,170 | 26,298 | 0 | 0 | 93,468 |
| Total Labor | 140,796 | 68,343 | 20,464 | 20,855 | 250,458 |
| Outside Services | | | | | |
| Implementation | 512,133 | 368,204 | 120,000 | 120,000 | 1,120,337 |
| Tracking | 22,222 | 22,222 | 11,111 | 11,111 | 66,666 |
| Evaluation | 68,280 | 22,649 | 15,000 | 54,172 | 160,101 |
| Subtotal | 602,635 | 413,075 | 146,111 | 185,283 | 1,347,104 |
| Advertising/Marketing | 506,544 | 117,989 | 500,000 | 75,000 | 1,199,533 |
| Materials, Travel, & Misc. | 124,374 | 66,453 | 25,158 | 40,000 | 255,985 |
| TOTAL PROGRAM COSTS | $2,844,349 | $2,125,753 | $1,922,983 | $910,138 | $7,803,223 |

**HECO's DSM Programs Estimated Impacts (Gross Generation Level) for 2007**

| | REWH Program | RNC Program | E$H Program | Proposed RLI Program | Total Residential Programs |
|---|---|---|---|---|---|
| Gross kW[2] | 864 | 1,373 | 4,768 | 591 | 7,596 |
| Gross MWh[3] | 3,767 | 3,985 | 19,052 | 2,633 | 29,437 |
| Net kW[4] | 631 | 1,215 | 4,053 | 591 | 6,490 |
| Net MWh[5] | 2,746 | 3,351 | 16,194 | 2,633 | 24,924 |

**HECO's DSM Programs Estimated Benefit/Cost Ratios for 2007[6]**

| | REWH Program | RNC Program | E$H Program[7] | Proposed RLI Program[7] |
|---|---|---|---|---|
| Utility Cost Test | 1.42 | 2.56 | 4.53 | 2.41 |
| Total Resource Cost Test | 1.11 | 1.68 | 2.39 | 4.96 |
| Participant Test | 1.39 | 1.54 | 3.73 | Infinite |
| Rate Impact Measure Test | 0.74 | 1.16 | 0.76 | 0.47 |

[1] Base labor and expenses are recovered through base rates and not the IRP Cost Recovery Adjustment. It is presented here to show the total DSM program costs.

[2] Annual Gross kW adjusted using program averaged realization rates from the 2001-2003 Impact Evaluation Report.

[3] Annual Gross MWh adjusted using program averaged realization rates from the 2001-2003 Impact Evaluation Report.

[4] Annual Net kW adjusted for freeridership.

[5] Annual Net MWh adjusted for freeridership.

[6] Benefit/cost ratios were recalculated specifically for 2007 using the avoided costs filed in the Energy Efficiency Docket.

[7] The Energy Solutions for the Home and the Residential Low Income Programs, as proposed in the Energy Efficiency Docket, have never been implemented on Oahu. Therefore, the benefit/cost ratios are based on the analysis conducted and filed in that docket, (Docket No. 05-0069).

CA-IR-264 **Ref: T-9, page 48; Response to CA-IR-130 (DSM Reconciliation Clause).**

According to the response, "HECO will be eliminating the DSM Reconciliation Clause from its test year proposal." Please provide the following:

a. Please explain all reasons why HECO believes it is not necessary to have some reconciliation device in place to account for changes in expenses arising from implementation of the provisions of the EE Docket D&O that occur between rate cases.

b. Does HECO object to the utilization of the existing IRP/DSM surcharge mechanism to account for changes in its overall expenses as a result of transition away from the utility market structure, as envisioned within the EE Docket?

c. Please explain your response to part b. of this information request, with illustrative calculations of how future base rate and incremental DSM costs may wind down for all but the continuing load control programs, and how rate changes to customers should be adjusted for such changes.

HECO Response:

a. HECO believes that it is necessary to have some reconciliation mechanism in place to account for changes in expenses arising from implementation of the provisions of the EE Docket D&O that occur between rate cases. Therefore, HECO proposes to continue the existing DSM component of the IRP Clause to reconcile these changes in expenses. However, if the outcome of this rate proceeding is that all DSM program costs be recovered through base rates (which is not consistent with the Commission's Decision and Order in the Energy Efficiency Docket), then HECO would re-instate its proposal for a DSM Reconciliation Clause.

b. HECO does not object to utilizing the existing IRP/DSM surcharge mechanism to recover incremental DSM program costs. In fact, this is what HECO has proposed in its testimony. (See HECO T-9, page 4, lines 11 – 19.)

c. 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. However, should the number of staff included in base rates for DSM-related work need to be reduced, HECO expects to find the DSM staff comparable positions within the company that can benefit from the diverse skills and experience possessed by those employees. Should HECO's incremental DSM costs decrease as the result of the transition, so then would the DSM surcharge. Note that incremental DSM expenses would still be incurred for the load control programs administered by HECO. See HECO's response to CA-IR-263, parts g. and h.

CA-IR-265 **Ref: Response to CA-IR-1, T-9, page 3 (Staffing-5 Vacant Positions).**

According to the response, "The reason for the higher staffing forecast is because the staffing levels were low at the time the forecast was prepared due to five vacant positions." Please provide the following:

a. Describe and provide documents indicating any significant amounts of work not completed as a direct result of the vacancies that existed.

b. Confirm that no studies, analyses, workpapers or other information was provided in testimony or in your response to support the need for additional staffing of the vacant positions.

c. If your response to part b. is anything but an unqualified confirmation, provide copies of or citation to all studies, analyses, workpapers or other information intended by HECO to support the need for additional staffing.

d. Explain whether the Company has considered gradually reducing its DSM-related headcounts to prepare for the revised market structure prescribed by the Commission in the EE Docket, indicating all steps taken to date.

HECO Response:

The following addresses the work not completed for the five vacancies that existed as of April 1, 2006:

Pricing Analyst Vacancy: For Pricing, the significant amounts of work not completed are:

1. Final Report on HECO's Schedule TOU-R pilot program that terminated in May 2006.

2. HECO cost study to support cost-based Power Factor credits or charges in HECO's next (TY 2007) general rate case. This is part of the settlement agreement in Docket No. 04-0113, HECO's TY 2005 rate case. The Pricing Division has estimated completion of this cost study by mid-July 2007, see HECO's response to CA-IR-169 in this docket. The Pricing Division continues to actively recruit to fill the Pricing Analyst Vacancy. In the mean time, in order to complete the Power Factor study, other Pricing

Division work must be balanced with that effort, including delayed or deferred completion of other Pricing work.

3. HECO cost study to support Schedule P rate design based on service equipment and service voltage for HECO's next (TY 2007) general rate case. This is part of the settlement agreement in Docket No. 04-0113, HECO's TY 2005 rate case. The Pricing Division will pursue completion of this study by August 2007. The Pricing Division continues to actively recruit to fill the Pricing Analyst Vacancy. In the meantime, in order to complete this study, other Pricing Division work must be balanced with that effort, including delayed or deferred completion of other Pricing work.

As indicated in HECO's response to CA-IR-127(c), consultant and temporary hire resources were utilized to partially make up for the vacant Pricing Analyst position and a Pricing Analyst on military leave. However, the consultant and temporary hire did not have the experience necessary to complete the specific work identified above.

<u>Senior Resource Planning Engineer Vacancy</u>: The IRP Division workload during the time period March 31, 2006 to November 13, 2006 (time period of budget preparation date to actual filling of the vacancy) was managed by reassigning immediate work requirements to existing IRP Division personnel. However, the reassignments resulted in a lack of personnel coverage to address issues regarding HECO's IRP-3, which was filed with the Commission in October 2005 and undergoing regulatory review at the time of the vacancy. This contributed to the need for several request to the Commission for extension of time in Docket No. 03-0253.

Load Management Engineer Vacancy: The amount of work not completed in 2006 and early 2007 because of the load management engineer vacancy (between the March 31, 2006 budget preparation date and January 22, 2007 when the position was filled) was not significant. The load management engineer is responsible for site assessments and evaluations of facilities for potential participants in the CIDLC Program, and for ensuring the proper operation of the software that initiates the load reductions and performs bill settlement. The load management engineer is also responsible for ensuring that the load control switches installed on customer premises are located and operating correctly.

As indicated in HECO T-9, pages 52, line 25, to page 53, line 7, CIDLC Program adoption was slow in 2006 due to customer perception of program barriers, such as the requirement that the facility load be downstream of an underfrequency relay. Thus, site assessments and evaluations that were conducted in 2006 were performed by CTAD engineers. However, direct labor requirements for engineering work associated during the test year for CIDLC Program efforts are expected to increase as a result of efforts by EnerNOC and the proposed modifications to the CIDLC Program that are designed to increase customer participation (see HECO T-9, page 43, lines 11 – 21).

For example, the number of participants in the HECO CIDLC Program is expected to increase from 5 in 2006 to 110 in 2007, and 774 in 2008 (see Exhibit B, page 1 of 2, of HECO's filing to Amend the CIDLC Program, filed on December 29, 2006). Many of these participants are expected to be in the Small Business Direct Load Control program element, but the many other participants in the Direct Load Control (DLC) and Voluntary Load Control (VLC) program elements (5 in 2006, 30 in 2007, and 94 in 2008) will need

considerable hand-holding in the form of site visits, assessments, and evaluations. This assistance will occur before actual enrollment in the program. As a result, much of the engineering assistance to enroll the 94 customers in 2008 will occur in 2007. In addition, engineering assistance will be performed for customers who may eventually decide not to enroll. Thus, the 94 customers represent only a portion of the customers for whom engineering assistance is actually conducted.

CTAD Engineers (2) Vacancies: These positions were primarily tasked with supporting DSM Programs, mainly the CIDLC Program. Staffing of these two positions has been slow given the difficulty in finding qualified candidates in the existing labor market. The amount of DSM Programs related work in 2006 and early 2007 (between the March 31, 2006 budget preparation date to April 16, 2007 when one of the positions was filled) was handled by assignment of work-load amongst existing CTAD engineers.

As indicated in the Load Management Engineer Vacancy write-up above, CIDLC Program adoption was slow in 2006 due to customer perception of program barriers. Furthermore, direct labor requirements for engineering work associated with the test year for CIDLC Program efforts are expected to increase as a result of the proposed modifications to the CIDLC Program that are designed to increase customer participation (please refer to Load Management Engineer Vacancy section for more information on expected CIDLC work-load). In addition to CIDLC Program engineering support, it is envisioned that these two CTAD positions will also be providing support on new Division initiatives for 2007 and 2008; such as, Net Energy Metering and the University of Hawaii Manoa Energy Partnership. The University of Hawaii Manoa/HECO partnership focuses on development

and implementation, through educational and research initiatives, of energy efficient and renewable technologies to improve the energy performance of the campus. To meet work requirements, including new Division initiatives and anticipated increase in CIDLC work, CTAD filled one of the two vacancies on April 16, 2007 and plans to fill the second vacancy by the 3rd quarter of 2007.

b. While HECO has not submitted any studies or numerical analyses in testimony or in responses, HECO has submitted information that supports the need for these positions. The actual and expected level of workload and activities during the test year necessitates that the positions vacant in 2006 be filled in 2007. Cited testimony in HECO T-9, and responses to CA-IR-127 and this IR, indicate that work was not performed in 2006 because of position vacancies, and that increases in work expected as the result of proposed increases in the scope of the CIDLC Program will require labor resources to implement that program successfully.

c. See cites referred to in part b above.

d. Refer to response to CA-IR-263 (g). Further, much of the work requirements described above are for the CIDLC program. In D&O No. 23258 in Docket No. 05-0069, the Commission stated that utility control over load management programs is crucial to system stability and ordered the exclusion of load management programs from the third-party administrator's area of responsibility.

CA-IR-266 **Ref: Response to CA-IR-1, HECO T-9, Attachments A through D (Labor Budget Input Sheets).**

Please provide the following:

a. A list of each position charging time to either activity 713 Administer & Implement DSM Programs – Base or activity 714 Administer & Implement DSM Programs – Incremental.

b. For each position listed in your response to part a. of this information request, please provide:

   1. Test year hours charged to 713.

   2. Test year hours charged to 714.

   3. Explain the basis for the labor hour distribution and provide specific pinpoint reference to past Commission orders and any other documents or calculations supportive of the distribution of hours for the position.

   4. Reference to the page(s) within CA-IR-1 Attachments where the labor cost distribution is documented.

c. Provide existing and revised 2007 forecast labor input sheets for the two regular employees HECO now wishes to add for DSM program-related labor costs (CA-IR-130).

HECO Response:

a. See attached page 2.

b. 1. See attached page 2.

   2. See attached page 2.

   3. See HECO's response to CA-IR-263, parts a. through e.

   4. See attached page 2.

c. See attached page 2 for the CA-IR-1 reference to the existing 2007 forecast labor input sheets. See attached pages 3 and 4 for the revised 2007 forecast labor input sheets that categorize DSM program hours as base (Activity 713).

Hawaiian Electric Company, Inc.

**Test Year Base and Incremental DSM Labor Hours**
**Customer Solutions Process Area**

**CA-IR-266 a. and b.**

| NARUC | RA | Position | Base 713 | Incremntl 714 | CA-IR-1 Page No. |
|---|---|---|---|---|---|
| 909 | P1W | VP Customer Solutions | 172 | | Attachment A, page 6 |
| 910 | SA | Manager, Energy Services | 1,336 | | Attachment A, page 10 |
| 910 | SA | Teacher/coach | 1,584 | | Attachment C, page 9 |
| 910 | SA | Implementor | 1,864 | | Attachment C, page 10 |
| 910 | SD | Director, Cust. Efficiency Programs | 1,348 | | Attachment C, page 11 |
| 910 | SD | RDLC Program Manager | 1,602 | | Attachment C, page 12 |
| 910 | SD | C&I Program Manager | 1,821 | | Attachment C, page 13 |
| 910 | SD | Residential Program Manager | 1,862 | | Attachment C, page 14 |
| 910 | SD | CIDLC Program Manager | 1,904 | | Attachment C, page 15 |
| 910 | SD | CEP Analyst | 1,824 | | Attachment C, page 16 |
| 910 | SD | Load Management Engineer | 1,904 | | Attachment C, page 17 |
| 910 | SD | CEP Analyst | 1,614 | | Attachment C, page 18 |
| 910 | SD | Clerk | 1,776 | | Attachment C, page 19 |
| 910 | SD | CEP Analyst * | 614 | 107 | Attachment C, page 20 |
| 910 | SD | C&I Engineer * | | 1,904 | Attachment C, page 21 |
| 910 | SD | Engineering Consultant | | 1,904 | Attachment C, page 22 |
| 910 | SD | Engineering Consultant | | 1,904 | Attachment C, page 23 |
| 910 | SD | Engineering Consultant | | 1,904 | Attachment C, page 24 |
| 910 | SD | Engineering Consultant | | 1,904 | Attachment C, page 25 |
| 910 | SD | Engineering Consultant | | 1,904 | Attachment C, page 25 |
| 910 | SD | C&I Engineer | | 1,922 | Attachment C, page 25 |
| 910 | SD | Engineering Consultant | | 1,904 | Attachment C, page 26 |
| 910 | SM | Marketing Specialist | | 1,904 | Attachment C, page 27 |
| 910 | SM | Energy Services Aide | | 900 | Attachment C, page 28 |
| 910 | SP | Pricing | 352 | | Attachment C, page 29 |
| 910 | SR | Customer Technology Applications | 6,265 | | Attachment C, pages 30-31 |
| | Total | | 27,842 | 18,161 | |

* Positions HECO proposes to include in base rates (see HECO's response to CA-IR-122 and 130).

CA-IR-266.xls

LABOR INPUT SHEET
2007

Employee Class..... Teacher/Coach
Description..... Ron Richmond

Responsibility Areas (RA) PSD
Prepared by
Date

| | (A) Avail Hrs in Month | (B) No.* of Emp | (C)=A*B Total Avail Hours | * ST Rate | Dollar Amount | HOLIDAY Activity 098, Location PHE, Indicator ND, Project/WO NPSZZZZZ, EE # 107 | | | | VACATION Activity 098, Location PHE, Indicator ND, Project/WO NPSZZZZZ, EE # 107 | | Activity 713, Location REWH, Indicator, Project/WO C00002084, EE # 150 | | Activity 713, Location RNC, Indicator, Project/WO C0000310, EE # 150 | | HOURS NET TO BE SPREAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Holiday Hours | No. of Emp | NPW (107)* | Dollar Amount | HOURS NPW(107)* | Dollar Amount | ST(101)* | Dollar Amount | ST(101)* | Dollar Amount | |
| J | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | | 0.00 | 0 | 0.00 | 0 | 0.00 | 176 |
| F | 160 | 1 | 160 | 32.07 | 5,131.20 | 8 | 1 | 8 | 256.56 | | 0.00 | 0 | 0.00 | 0 | 0.00 | 152 |
| M | 176 | 1 | 176 | 32.07 | 5,644.32 | 0 | 1 | 0 | 0.00 | | 0.00 | 0 | 0.00 | 0 | 0.00 | 176 |
| A | 168 | 1 | 168 | 32.07 | 5,387.76 | 8 | 1 | 8 | 256.56 | | 0.00 | 0 | 0.00 | 0 | 0.00 | 160 |
| M | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 176 |
| J | 168 | 1 | 168 | 32.07 | 5,387.76 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 10 | 320.70 | 7 | 224.49 | 143 |
| J | 176 | 1 | 176 | 32.07 | 5,644.32 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 12 | 384.84 | 7 | 224.49 | 149 |
| A | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 12 | 384.84 | 7 | 224.49 | 157 |
| S | 160 | 1 | 160 | 32.07 | 5,131.20 | 8 | 1 | 8 | 256.56 | | 0.00 | 10 | 320.70 | 6 | 192.42 | 136 |
| O | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | | 0.00 | 13 | 416.91 | 7 | 224.49 | 156 |
| N | 176 | 1 | 176 | 32.07 | 5,644.32 | 16 | 1 | 16 | 513.12 | 120 | 3,848.40 | 0 | 0.00 | 0 | 0.00 | 40 |
| D | 168 | 1 | 168 | 32.07 | 5,387.76 | 16 | 1 | 16 | 513.12 | 0 | 0.00 | 10 | 320.70 | 6 | 192.42 | 136 |
| TOT | 2088 | | 2088 | | 66,962.16 | 104 | | 104 | 3,335.28 | 120 | 3,848.40 | 67 | 2,148.69 | 40 | 1,282.80 | 1757 |

| | Total Hours Remaining to be Spread | Activity 745, Location PHE, Indicator NE, Project/WO NPSZZZZZ, EE # 150, Legislative Lobbying | | | | Activity 601, Location OAH, Indicator NE, Project/WO NPSZZZZZ, EE # 150, Netmetering | | | | Activity 713, Location PHE, Indicator NE, Project/WO, EE # 150, PAYS | | Activity, Location, Indicator, Project/WO, EE # 150 | | Activity 0, Location, Indicator, Project/WO, EE # 150 | | HOURS NET TO BE SPREAD (be 0) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | ST(101)* | | | Dollar Amount | ST(101)* | | | Dollar Amount | ST(101)* | Dollar Amount | ST(101)* | Dollar Amount | ST(101)* | Dollar Amount | ** |
| J | 176 | 30 | | | 962.10 | 88 | | | 2,822.16 | 58 | 1,860.06 | 0 | 0.00 | 0 | 0.00 | 0 |
| F | 152 | 26 | | | 833.82 | 76 | | | 2,437.32 | 50 | 1,603.50 | 0 | 0.00 | 0 | 0.00 | 0 |
| M | 176 | 30 | | | 962.10 | 88 | | | 2,822.16 | 58 | 1,860.06 | 0 | 0.00 | 0 | 0.00 | 0 |
| A | 160 | 27 | | | 865.89 | 80 | | | 2,565.60 | 53 | 1,699.71 | 0 | 0.00 | 0 | 0.00 | 0 |
| M | 176 | 30 | | | 962.10 | 88 | | | 2,822.16 | 58 | 1,860.06 | 0 | 0.00 | 0 | 0.00 | 0 |
| J | 143 | 0 | | | 0.00 | 90 | | | 2,886.30 | 53 | 1,699.71 | 0 | 0.00 | 0 | 0.00 | 0 |
| J | 149 | 0 | | | 0.00 | 94 | | | 3,014.58 | 55 | 1,763.85 | 0 | 0.00 | 0 | 0.00 | 0 |
| A | 157 | 0 | | | 0.00 | 99 | | | 3,174.93 | 58 | 1,860.06 | 0 | 0.00 | 0 | 0.00 | 0 |
| S | 136 | 0 | | | 0.00 | 86 | | | 2,758.02 | 50 | 1,603.50 | 0 | 0.00 | 0 | 0.00 | 0 |
| O | 156 | 0 | | | 0.00 | 98 | | | 3,142.86 | 58 | 1,860.06 | 0 | 0.00 | 0 | 0.00 | 0 |
| N | 40 | 0 | | | 0.00 | 27 | | | 865.89 | 13 | 416.91 | 0 | 0.00 | 0 | 0.00 | 0 |
| D | 136 | 0 | | | 0.00 | 86 | | | 2,758.02 | 50 | 1,603.50 | 0 | 0.00 | 0 | 0.00 | 0 |
| TOT | 1757 | 143 | | | 4,586.01 | 1000 | | | 32,070.00 | 614 | 19,690.98 | 0 | 0.00 | 0 | 0.00 | 0 |

* Required Data Entry Field

** Column should be all zeros. (Available hours = Forecast hours)
If numbers other than zero appear, recheck work.

CA-IR-266.xls

LABOR INPUT SHEET
2007

Employee Class..... Teacher/Coach
Description..... Dean Oshiro

Responsibility Areas (RA) FSD
Prepared by
Date

| | (A) Avail Hrs in Month | (B) No.* of Emp | (C)=A*B Total Avail Hours | * ST Rate | Dollar Amount | HOLIDAY Activity 098, Location PHE, Indicator ND, Project/WO NPSZZZZZ, EE # 107: Holiday Hours | No. of Emp | NPW (107)* | Dollar Amount | VACATION Activity 098, Location PHE, Indicator ND, Project/WO NPSZZZZZ, EE # 107: HOURS NPW(107)* | Dollar Amount | Activity 713, Location PHE, Indicator NE, Project/WO C0004995, EE # 150, CICR Program: ST(101)* | Dollar Amount | Activity, Location, Indicator, Project/WO, EE # 150: ST(101)* | Dollar Amount | HOURS NET TO BE SPREAD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 176 | 5,644.32 | 0 | 0.00 | 0 |
| F | 160 | 1 | 160 | 32.07 | 5,131.20 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 152 | 4,874.64 | 0 | 0.00 | 0 |
| M | 176 | 1 | 176 | 32.07 | 5,644.32 | 0 | 1 | 0 | 0.00 | 0 | 0.00 | 176 | 5,644.32 | 0 | 0.00 | 0 |
| A | 168 | 1 | 168 | 32.07 | 5,387.76 | 8 | 1 | 8 | 256.56 | | 0.00 | 160 | 5,131.20 | 0 | 0.00 | 0 |
| M | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | 40 | 1,282.80 | 136 | 4,361.52 | 0 | 0.00 | 0 |
| J | 168 | 1 | 168 | 32.07 | 5,387.76 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 160 | 5,131.20 | 0 | 0.00 | 0 |
| J | 176 | 1 | 176 | 32.07 | 5,644.32 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 168 | 5,387.76 | 0 | 0.00 | 0 |
| A | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | 0 | 0.00 | 176 | 5,644.32 | 0 | 0.00 | 0 |
| S | 160 | 1 | 160 | 32.07 | 5,131.20 | 8 | 1 | 8 | 256.56 | | 0.00 | 152 | 4,874.64 | 0 | 0.00 | 0 |
| O | 184 | 1 | 184 | 32.07 | 5,900.88 | 8 | 1 | 8 | 256.56 | 40 | 1,282.80 | 136 | 4,361.52 | 0 | 0.00 | 0 |
| N | 176 | 1 | 176 | 32.07 | 5,644.32 | 16 | 1 | 16 | 513.12 | 0 | 0.00 | 160 | 5,131.20 | 0 | 0.00 | 0 |
| D | 168 | 1 | 168 | 32.07 | 5,387.76 | 16 | 1 | 16 | 513.12 | 0 | 0.00 | 152 | 4,874.64 | 0 | 0.00 | 0 |
| TOT | 2088 | | 2088 | | 66,962.16 | 104 | | 104 | 3,335.28 | 80 | 2,565.60 | 1904 | 61,061.28 | 0 | 0.00 | 0 |

| | Total Hours Remaining to be Spread | Activity, Location, Indicator, Project/WO, EE #: ST(101)* | Dollar Amount | Activity, Location, Indicator, Project/WO, EE # HECO IRP: ST(101)* | Dollar Amount | Activity, Location, Indicator, Project/WO, EE # 150: ST(101)* | Dollar Amount | Activity, Location, Indicator, Project/WO, EE # 150: ST(101)* | Dollar Amount | Activity, Location, Indicator, Project/WO, EE # 150: ST(101)* | Dollar Amount | HOURS NET TO BE SPREAD (be 0) ** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| F | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| M | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| A | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| M | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| J | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| J | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| A | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| S | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| O | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| N | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| D | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |
| TOT | 0 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 | 0 |

* Required Data Entry Field
** *Column should be all zeros. (Available hours = Forecast hours)*
If numbers other than zero appear, recheck work.

2007 CI Engr 5/29/2007

CA-IR-267 **Ref: T-9, pages 36-37, 41; Response to CA-IR-122 (Informational Advertising).**

According to the testimony at page 41, "the Account 911 - Informational Advertising test year expense estimate includes the additional $750,000" that was previously proposed by HECO within the RCEA program. Please provide the following:

a. Confirm that $750,000 of informational advertising should be removed from the Company's revenue requirement, for recovery through the DSM surcharge as part of the RCEA Program incremental costs, or explain why such removal is inappropriate.

b. Explain whether and why HECO should be allowed any additional informational advertising budget in base rates, beyond the funding permitted for the RCEA program in the EE Docket.

c. Provide complete copies of all studies, reports, analyses, workpapers, projections and other documents associated with or supportive of your response to part b of this information request.

d. Provide an itemization of the $1 million in advertising "using shareholder funds" as referenced at page 37, indicating the amounts by entity and the NARUC accounts charged.

e. Provide copies of advertising (print or scripts for radio/TV ads) associated with the $1 million in advertising "using shareholder funds" as referenced at page 37.

HECO Response:

a. No. The Company believes $750,000 of informational advertising should not be removed from the Company's revenue requirement for recovery through the DSM surcharge as part of the RCEA incremental costs. As stated in T-9 on page 41 of 67, if the RCEA program was approved, the base cost elements of the approved RCEA program would replace the equivalent advertising in the current test year revenue requirements. The Commission's D&O on the RCEA program did not approve any base costs for the RCEA.

Furthermore, since the RCEA is currently approved as a pilot program which may or may not continue if the Commission deems otherwise, it is important to ensure continuing

sufficient resources for advertising on the critical issues of energy conservation and efficiency. Also, given the generation reserves issue for the island of Oahu, even greater levels of energy conservation and efficiency advertising than are provided for in the RCEA program are needed. To support that, the Company is planning to spend the full amount targeted for informational advertising in the test year, in addition to spending the amount approved for the RCEA pilot program.

b. See response to part a. Informational advertising for customers is also used for advertising on topics not directly related to energy conservation and efficiency. Examples include safety, Rule 16 (damage claims procedure), Sun Power for Schools, and Arbor Day "Right Tree, Right Place" education and tree giveaway. HECO included expenses for such items in the 2005 test year revenue requirement in Docket No. 04-0113. Neither the Consumer Advocate nor the DOD objected to inclusion of these expenses, and the interim award approved in Interim Decision and Order No. 22050 included these expenses.

c. No specific studies or reports were commissioned to identify the exact level of advertising expenditures needed.

d. See page 3.

e. See pages 4 through 13 of this response.

CA-IR-267

## Itemization of advertising using shareholder funds 2006 actual costs

Charged to HECO
NARUC Account 911 (expense element NN)

| | | |
|---|---|---|
| TV spots production | $ | 342,500 |
| TV spots media buys | $ | 385,300 |
| Print spots production | $ | 28,000 |
| Print spots media buys | $ | 294,400 |
| Radio spots media buys | $ | 34,900 |
| New internet site production | $ | 25,000 |
| | $ | 1,110,100 |

coregroupone

TV SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | HECO | JOB NUMBER | 364-067 |
| JOB /CAMPAIGN TITLE | Commitment Intro Spot | | |
| LENGTH | :30 | STATION PRODUCED? | |

**"Commitment :30" FINAL**

| | *VIDEO* | *AUDIO* |
|---|---|---|
| **101** | OPEN ON MULTIPLE FOSSIL FUEL IMAGES UTILIZING SPLIT AND/OR TRI-SCREEN TECHNIQUE: DESERT PIPELINES; DESERT PUMPING TOWER; TANKER ON OCEAN. NEWSPAPER HEADLINE REPLACES PIPELINE SHOT: "OIL SKYROCKETS." | JADE: **93% of the energy that powers the Islands comes from far beyond our shores.** |
| **102** | CUT TO FULL-SCREEN SHOT OF JADE ON BLUFF TOP WITH TREES/CLOUDS BLOWING IN WIND AND OCEAN IN DISTANCE. | **We <u>must</u> reduce our dependency on imported oil.**<br><br>**But how?** |
| **103** | CUT TO SPLIT SCREEN WITH JADE ON LEFT. CLOUDS MOVE ACROSS SKY; FOLLOWED BY SHOT OF MAUI WIND TOWERS; FOLLOWED BY UNDERWATER OCEAN SHOT LOOKING TOWARD SURFACE. | **The power of our winds, the ocean and the sun can be harnessed.** |
| **104** | CUT TO SPLIT SCREEN WITH JADE ON LEFT, DIFFERENT ANGLES OF FURROWED | **Our fields can grow crops to fuel our power plants.** |

| | | |
|---|---|---|
| | FIELD ON RIGHT. | |
| **105** | CUT TO MULTI-SCREEN SHOT: TOPS OF PLANTS/TREES BLOWING IN WIND OR CLOUDS MOVING ACROSS SKY; HORIZONTAL SHOT OF LIGHTS IN DOWNTOWN HONOLULU OFFICE BUILDINGS TURNING ON. | **Working together, we can triple the amount of power we produce from clean, local, renewable sources.** |
| | CUT TO FULL SCREEN SHOT OF JADE HOLDING SEEDLING IN HER HANDS. SHE KNEELS TO PLANT SEEDLING IN ROW OF UNPLANTED FIELD. | **But to make it happen, we all must do our part.**<br><br>**The commitment begins now.** |
| | LOGO:<br>**Hawaiian Electric Company** | |

coregroupone

TV SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | **Hawaiian Electric Company** | JOB NUMBER | **364-074** |
| JOB /CAMPAIGN TITLE | **Biofuel/Ethanol (Commitment Campaign)** | | |
| LENGTH | **:30** | STATION PRODUCED? | |

**"Biofuel/Ethanol" FINAL**

| | *VIDEO* | | *AUDIO* |
|---|---|---|---|
| **101** | OPEN ON SHOT OF JADE IN FRONT OF AN OIL BARREL WITH A CFL (ALT: INCANDESCENT) BULB IN IT. BULB GOES OUT AND SHE UNSCREWS IT. | **JADE:** | Without imported oil, how will we power Hawaii's future? |
| **102** | CUT TO MULTI-SCREEN, ARCHIVE FOOTAGE OF HAWAII'S AGRICULTURAL HERITAGE: B&W SHOTS OF WORKERS OF DIFFERENT ETHNICITIES IN FIELDS; PANORAMAS OF CANE FIELDS. | | One answer lies in our rich agricultural heritage.<br><br>Where sugar cane and pineapple once grew,… |
| **103** | CUT TO MULTI-SCREEN SHOTS OF GREEN FIELDS FROM DIFFERENT ISLANDS (STOCK FOOTAGE FROM NEIGHBOR ISLANDS). | | …our fields can be green again with energy crops to fuel vehicles and… |
| **104** | CUT TO MULTI-SCREEN SHOTS OF LIGHTS TURNING ON, FROM HECO CONSERVATIONS SPOTS SHOT LAST YEAR. | | …to generate electricity for island homes and businesses. |
| **105** | CUT TO FULL SCREEN SHOT | | Let's make the switch to biofuels. |

| | | |
|---|---|---|
| | OF JADE'S FACE AND UPPER TORSO, WITH SUGAR CANE AROUND HER. SHE HAS A CFL BULB IN HER HANDS. SHE REACHES TOWARD ONE OF THE PLANTS. (SHOT IN STUDIO). | |
| **106** | CUT TO TIGHT SHOT OF JADE'S HANDS SCREWING CFL INTO SUGAR CANE PLANT. (SHOT IN STUDIO). | Working together, we can create… |
| **107** | DISSOLVE TO FIELD SHOT OF SUGAR CANE AT DUSK. CFLS ON OTHER PLANTS BEGIN ILLUMINATING. | …a clean, local, renewable energy economy… |
| **108** | MORE BULBS TURN ON, REVEALING THOUSANDS OF BULBS ILLUMINATED ON PLANTS IN FIELD.<br><br>LOGO:<br>**Hawaiian Electric Company**<br>**hawaiisenergyfuture.com** | …for generations to come. |

coregroupone

TV SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | HECO | JOB NUMBER | 364-078 |
| JOB /CAMPAIGN TITLE | PBS :15 Version | | |
| LENGTH | :15 | STATION PRODUCED? | |

**"PBS :15" FINAL**

| | *VIDEO* | | *AUDIO* |
|---|---|---|---|
| **101** | OPEN ON SHOT OF JADE NEXT TO BARREL OF IMPORTED OIL. INCANDESCENT LIGHT IN TOP OF BARREL GOES OUT. (OPENING OF "BIOFUELS" SPOT) | **JADE:** | Without imported oil, how will we power Hawaii's future? |
| **102** | CUT TO JIB SHOT OF UNPLANTED FIELD. (FROM "COMMITMENT" SPOT) | | Our fields can grow energy crops. |
| **103** | CUT TO MULTI-SCREEN SHOT OF OCEAN WAVE AND WIND TURBINE. (FROM "COMMITMENT" SPOT) | | The wind, the ocean and the sun can be harnessed. |
| **104** | CUT TO SHOT OF CFL BULBS ILLUMINATING IN SUGAR CAN FIELD. (FROM "BIOFUELS" SPOT) | | Working together, let's create a clean local renewable energy economy. |
| **105** | LOGO:<br>**Hawaiian Electric Company**<br>**hawaiisenergyfuture.com** | | |

coregroupone

TV SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | **Hawaiian Electric Company** | JOB NUMBER | **364-085** |
| JOB /CAMPAIGN TITLE | **Ocean Energy TV Concept** | | |
| LENGTH | **:30** | STATION PRODUCED? | |

**Concept 7: "Downtown Plan" (focus on SWAC) FINAL**

Script:
OPEN ON SPLIT SCREEN STOCK SHOTS OF DOWNTOWN.

JADE AS VO: One of the largest uses of electricity is air conditioning for office buildings. How can these businesses save energy?

CUT TO JADE STANDING ATOP A DOWNTOWN OFFICE BUILDING. AS SHE TALKS, CAMERA PANS TO REVEAL EXPANSE OF OCEAN.

JADE ON CAMERA: By tapping into an endless resource...the ocean.

CUT TO SPLIT SCREEN SHOWING DEEP OCEAN WATERS (STOCK), ALONG WITH SYSTEMS IN MINNEAPOLIS AND NEW YORK (CORNELL).

JADE AS VO: Sea Water Air Conditioning uses cold deep waters to cool buildings. It's an energy-saving system proven to work in other places.

CUT TO COMPUTER GRAPHIC RENDERING OF DOWNTOWN, WITH BLUE LINES REPRESENTING COLD WATER MOVING THROUGH THE BUILDINGS.

JADE AS VO: This technology is now proposed for Downtown Honolulu.

CUT TO JADE ON BOAT OFFSHORE, OCEAN AND DOWNTOWN IN THE DISTANCE BEHIND HER.

JADE ON CAMERA: It's one of many ways the ocean may soon provide clean renewable energy for generations to come.

coregroupone

TV SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | Hawaiian Electric Company | JOB NUMBER | 364-094 |
| JOB /CAMPAIGN TITLE | Concepts for spot #4 | | |
| LENGTH | :30 | STATION PRODUCED? | |

**"Garbage to Energy"**
**FINAL**

101: OPEN ON SPLIT SCREEN FORMAT OF HANDS THROWING TRASH INTO DIFFERENT TYPES OF RECEPTACLES, BOTH RECYCLE AND TRASH CANS: FLIP LID FROM THE KITCHEN, WIRE BASKET BIN FROM THE OFFICE, METAL BARREL FROM AN INDUSTRIAL WORKPLACE, GREEN PLASTIC CAN WITH RECYCLE SYMBOL ON IT. (WE WOULD BRING THESE DIFFERENT RECEPTACLES INTO A LOCATION AND SHOOT THEM AGAINST SEAMLESS BACKGROUNDS OF VARIOUS COLORS.)

JADE AS VO: What fuels the biggest renewable energy project in Hawaii today?

102: CUT TO JADE ON CAMERA IN HPOWER'S HIGH TECH CONTROL ROOM. SPLIT SCREEN SHOT OF THEIR FURNACE/BOILERS (FROM HPOWER VIDEO).

JADE ON CAMERA: Our trash. At the HPOWER plant on Oahu, what isn't recycled is turned into electricity.

103: CUT TO SPLIT SCREEN FORMAT OF LIGHTS GOING ON, FAN CONTROL KNOB BEING TURNED ON, RATTAN CEILING FAN SPINNING, BUTTONS ON WASHING MACHINE PANEL BEING PUSHED, ETC.

JADE AS VO: ...Even better, it's the kind of "firm" renewable energy that's always available!

104: CUT TO (SPLIT SCREEN?) SHOTS OF GARBAGE BEING PUSHED AROUND BY BULLDOZER AND/OR PROCESSED AT H-POWER PLANT.

JADE AS VO: And we're exploring new ways to convert even more of our waste to electricity.

105: CUT TO SPLIT SCREEN FORMAT OF VARIOUS RENEWABLE SOURCES LIKE WIND, SUN, OCEAN (FROM EARLIER SPOTS PERHAPS?) AND TRASH.

JADE AS VO: Working together, let's pursue all options for Hawaii's energy needs.

106: CUT TO JADE ON NEIGHBORHOOD STREET IN EARLY EVENING. LIGHTS OF HOMES GO ON IN SEQUENCE THROUGHOUT NEIGHBORHOOD, THEN ACROSS VALLEY.

JADE ON CAMERA: Each of us has the power to make a difference.

RADIO SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | HECO | JOB NUMBER | 364-096 |
| JOB /CAMPAIGN TITLE | Commitment Radio Perry & Price with Jade Moon | | |
| LENGTH | :60 | FOR STATION PRODUCTION | |

"RENEWABLE ENERGY: P&P with JADE" (Revision 2)

PERRY: Larry, did you know that 93% of the energy we use in Hawaii comes from imported oil?

PRICE: Really!

PERRY: Yep, to power our cars, jet planes, boats…and to generate electricity.

PRICE: So if we use less oil, how do we power our future?

PERRY: I know just the person to ask, Jade Moon.

JADE: Hello, Michael and Larry.

PERRY: Jade, what can we do for our energy future?

JADE: The answer truly is all around us. The sun can provide solar power and wind turbines can generate electricity. The ocean has great potential with technologies like sea water air conditioning. And we can grow energy crops for biofuels to use in our power plants.

PRICE: So how do we get more renewable energy?

JADE: With "people energy." It will take all of us working together to reduce our dependence on imported oil and develop clean local renewable alternatives.

PRICE: We're ready.

PERRY: Where do we start?

JADE: That's easy. Visit Hawaiian Electric's new website, hawaiisenergyfuture.com

coregroupone

RADIO SCRIPT

| | | | |
|---|---|---|---|
| CLIENT | HECO | JOB NUMBER | 364-097 |
| JOB /CAMPAIGN TITLE | Biofuel Radio Perry & Price with Jade Moon | | |
| LENGTH | :60 | FOR STATION PRODUCTION | |

"BIOFUELS: P&P with JADE"

PERRY: Larry, wouldn't it be something if Hawaii's rich agricultural heritage held a key to our energy future?

PRICE: Ah yes, I remember green fields stretching for miles. But wait a minute, you can't GROW oil and gas.

PERRY: No, but we can grow energy crops, right Jade?

JADE: You're right, Michael. Crops like sugar cane and sorghum can be converted to biofuels like ethanol or biodiesel.

PRICE: We already use ethanol in our cars…

JADE: And we can use biofuels in our power plants as well. Imagine a Hawaii where we grow our own energy crops, convert them to biofuels and generate electricity for our homes and businesses.

PERRY: Now that's what I call renewable energy.

JADE: Exactly. Instead of millions of dollars a year leaving Hawaii to pay for imported oil, we can green our fields with energy crops, create jobs in agriculture and manufacturing, keep more money at home AND protect our environment.

PRICE: Like wind, solar and ocean energy, home-grown biofuels just make sense for Hawaii.

JADE: To make it happen, we must all work together. And a good place to start is…

PERRY: We know, Jade, visit Hawaiian Electric's new website…

PERRY & PRICE (IN UNISON):

…HAWAIISENERGYFUTURE.COM!

CA-IR-268 **Ref: Response to CA-IR-2, HECO T-9, Attachment B, page 14 (IRP Forecasts and Budgets).**

Please provide a schedule containing the same level of detail, but substituting 2005 and 2006 actual expenses in place of the budgeted values shown.

HECO Response:

Please refer to page 2 for the Forecasts & Research IRP Recap showing 2005 and 2006 actual expenses and 2007 and 2008 budget information.

**HECO**

**HECO IRP RECAP**
**Year 2005-2006 (Actuals)**
**Year 2007-2008 (Budget)**

**FORECASTS & RESEARCH**
**NONLABOR CHARGES**

Department: (HECO - SD & SM ---> Rollup to Act. 711 starting with 2007 Budg HECO IRP General Planning
'(Forecasted all under SM) [NOTE: IN 2006, HECO IRP INCREMENTAL COSTS WERE FORECASTED TO ACTIVITY 712, INDICATOR NE.]
With Interim D&O Decision, effective Sept. 28, 2005 all HECO IRP costs are recoverable thru base rates.
The Y2007 and Y2008 IRP HECO budgeted items will be forecasted to O&M --> Act. 711, NE

| Cost Type | | 2005 Actuals --SM | 2006 Actuals --SM | 2007 Budget --SM | 2008 Budget--SM |
|---|---|---|---|---|---|
| Non-Labor | | | | | |
| MATERIALS | | | | | |
| (205) | Materials-Purchases | 0 | 0 | 300 | 300 |
| | Furniture | | | | |
| (640) | Postage and Bulk Mail | 0 | 5,816 | 3,218 | 6,336 |
| TRANSPORTATION | | | | | |
| (301) | Pool Vehicle | 0 | 0 | 100 | 100 |
| (302) | Assigned Vehicle | | | | |
| INFORMATION SYSTEM SERVICES | | | | | |
| (451) | IS Expenses-Production | Forecasted by ISD. | Forecasted by ISD. | Forecasted by ISD. | Forecasted by ISD. |
| | Computer Charges | | | | |
| | Lease/Purchase PC | | | | |
| (452) | IS Expenses-Development | | | | |
| | Program Modifications | | | | |
| (461) | IS Expenses - Consultant | | | | |
| (462) | IS Expenses-Software | 0 | 0 | 750 | 750 |
| CONTRACTS/SERVICES | | | | | |
| (501) | Outside Services-General | | | | |
| | Newspaper ads, Radio spots | | | | |
| | Public Meetings | | | | |
| | Newsletter, Brochures, Etc. | 313,610 | 231,375 | 222,400 | 192,050 |
| (502) | Outside Sevices - Legal | 1,454 | 0 | 0 | 0 |
| (520) | Mainland Travel | 0 | 0 | 4,400 | 4,400 |
| (521) | Meals & Entertainment | 0 | 0 | 400 | 400 |
| Total | | 315,064 | 237,191 | 231,568 | 204,336 |

CA-IR-269 **Ref: Response to CA-IR-3, HECO T-9, (CIDLC Modifications).**

Please explain the assumptions involved and provide complete calculations and supporting documentation for the additional $148,416 adjustment being proposed.

HECO Response:

Please refer to the Company's response to part a. of CA-IR-122 and part b. of CA-IR-2 (HECO T-9) (including page 14 of Attachment C of that response) for the assumptions and supporting documentation for the increase in CIDLC nonlabor expenses.

CA-IR-270 **Ref: Response to CA-IR-2, HECO T-9, Attachment B, page 17 (IRP Outside Services).**

Please explain the current status of the "Commercial End Use Survey" and "Market Potential Study" projects and provide a complete copy of all consulting RFP, contracts and other documents indicative of HECO progress in conducting such work.

HECO Response:

HECO is proceeding with design and data collection efforts for the Commercial End Use Survey.

This work is expected to continue through the end of 2007 and into 2008.

Solicitation of a consultant to assist in the development and execution of the project is under way. A copy of a Request for Qualifications (RFQ) is attached. The RFQ was sent to potential suppliers on May 18, 2007. A copy of the RFQ is attached to this response. The firms receiving the RFQ are listed below.

Energy Insights
5 Speen Street
Framingham, MA 01701

Itron
11236 El Camino Real
San Diego, CA 92130-2650

KEMA Inc.
492 Ninth Street, Suite 220
Oakland, CA 94607

TecMarket Works
165 West Netherwood Road
2nd Floor, Suite A

Global Energy Partners, LLC
3569 Mt. Diablo Blvd., Suite 200
Lafayette, CA 94549

Work is also proceeding on the Market Potential Study for demand-side measures. A work authorization with Global Energy Partners, LLC. was signed on February 6, 2007 (attached). On May 23, 2007, Global Energy Partners provided preliminary results of its study at HECO's IRP Advisory Group Technical Session meeting. Those results are also attached.

(TEXT OF EMAIL MESSAGE TO CONSULTANTS)

May 18, 2007

Dear Sir or Madam;

Hawaiian Electric Company is soliciting Qualifications from Consultants in the area of commercial energy use assessment. You or your firm has been identified as a Consultant that may have expertise in this area.

Please review the attached Request for Qualifications (RFQ). If you are interested in responding, or if you have any questions regarding this request, please contact George Willoughby at the address, email, or phone number shown in the RFQ no later than 4:00 p.m. Hawaii Standard Time on May 29, 2007.

Thank you for your attention in this matter.

Sincerely,

George Willoughby, Ph.D.
Director Forecasts and Research
Hawaiian Electric Company, Inc.
PO Box 2750
Honolulu, HI 96840
e-mail: george.willoughby@heco.com
808.543.4741 Phone
808.203.1741 FAX

**Request for Qualifications (RFQ)**
**Hawaiian Electric Company, Inc.**
**Commercial Energy Use Survey**
**May 18, 2007**

Hawaiian Electric Company, Inc. (HECO), is seeking a qualified consultant or consulting firm (Consultant) to design and conduct a survey of energy-using equipment and patterns of energy use by commercial customers of HECO, HELCO (Hawaii Electric Light Company, Inc.), and MECO (Maui Electric Company, Ltd.). The Consultant would be responsible for determining the survey methodology, designing the sample, conducting the survey, analyzing the data, and reporting the analysis.

**Background:** In 1994 HECO, HELCO, and MECO conducted a Commercial Energy Use Survey to support long-term forecasts of commercial energy needs. The objectives of that effort were to:

- Provide baseline market profiles and detailed equipment inventories for specific customer segments.
- Develop segment-level and end-use load shapes.
- Develop long-run commercial end-use forecasts for HECO, HELCO, and MECO.

The survey included 256 on-site surveys and 861 mail surveys of commercial customers. Information collected included equipment inventories and customer characteristics. The sample and survey instruments were designed to provide the necessary data for the analysis by company, segment and end-use.

The survey will be repeated in 2007 to see if saturations, patterns of use and fuel shares have changed appreciably. This project will provide data comparable to the historical survey data, so that the above items can be tracked over time.

**Request for Qualifications:** Interested parties are asked to provide a non-proprietary response to this request for qualifications that includes the following:

1. A discussion of the Consultant's qualifications to undertake these tasks, including any experience or activity directly related to these issues and any experience or activity in Hawai'i. Please provide summaries or descriptions of similar work done by the Consultant. In each case, please include the relevant dates, outcomes, and results of those efforts.
2. A statement identifying any previous or current work performed by the consultant that may affect the consultant being able to act on behalf of HECO, HELCO or MECO and in all three companies' best interest.
3. A listing of the individuals who would be involved in the project, including the specific qualifications of each individual named and their hourly billing rates. Only those individuals who would be actively involved in the project should be included, and the level of each individual's involvement should also be provided.
4. A brief and non-binding outline suggesting how the Consultant might approach these issues.

5. The names and contact information for at least three references that can verify the Consultant's expertise, ability, and experience in these areas.
6. In addition to the hourly billing rates requested in #3 above, please provide a non-binding estimate of the total costs for conducting the survey. More than one pricing option can be presented

**If you are interested in responding to this Request for Qualifications, please advise HECO no later than 4:00 p.m. Hawaii Standard Time on May 29, 2007, by contacting the individual named below: Qualification documents from interested parties are due to HECO no later than 4:00 p.m. Hawaii Standard Time on June 18, 2007.**

HECO's contact for this project is shown below. All communications on this topic should be directed through this individual.

George Willoughby
Director, Forecasts and Research
Hawaiian Electric Company
PO Box 2750
Honolulu, Hawaii 96840-0001

Phone: (808) 543-4741
Fax: (808) 543-4747
Email: George.Willoughby@heco.com

The company reserves the absolute right to withdraw this request and reject all responses at any time for any reason in its sole discretion; the company will not be liable for any expenses or damages with respect thereto.

WORK AUTHORIZATION NO. **PSD-06-002-02**
Under Purchase Order No. **V01807** / Contract No. MSTR-PSD-06-002

I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated **January 1, 2006**, by and between **Global Energy Partners, LLC.** ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

**Proposal for IRP-4 Energy Efficiency Study**
**Phase I: Assessment of MAP**

See attached proposal by Global Energy Partners, LLC, dated January 12, 2007.

II. Consultant's Proposal

Consultant hereby proposes to perform the Work described above in Section I, under said terms and conditions, for the following amount: **$66,564**.

Total not-to-exceed cost is **$66,564**. Total not-to-exceed manhours required is **not applicable**.

Work will begin no later than **February 1, 2007** and be completed on or before **May 31, 2007**.

**Greg Wikler, Vice President**, will act as Consultant's Designated Representative during the performance of this Work.

III. Work Authorization

Consultant's foregoing Proposal is accepted. Consultant is authorized to perform the Work as proposed. Company's Designated Representative for this Work Authorization shall be **Manager, Alan K.C. Hee**.

Dated: 2/6/07 — Company

Dated: 1/23/07 — Consultant

Global Energy Partners, LLC

An Employee-Owned Company

# PROPOSAL FOR IRP-4 ENERGY EFFICIENCY STUDY
# PHASE I: ASSESSMENT OF MAP

***Submitted to:***
HECO

***Submitted by:***
Global Energy Partners, LLC
3569 Mt. Diablo Blvd., Suite 200
Lafayette, CA 94549
Tel: 925-284-3780
Fax: 925-284-3147
Email: gwikler@gepllc.com
Website: www.gepllc.com

Consultant's Contact: _____
Greg Wikler
Vice President
Date: January 12, 2007

# 1 Introduction

Global Energy Partners LLC ("Global") is pleased to submit this proposal to Hawaiian Electric Company ("HECO") to conduct a comprehensive study of energy efficiency potential in support of HECO's anticipated IRP-4 filing in 2008. There will be three phases to the study effort (and associated timeframes):

- Phase I: Assessment of MAP (Q1 2007)
- Phase II: Program Development (Q2-Q03 2007)
- Phase III: Integration Analysis (Q4 2007-Q1 2008)

This proposal addresses the Phase I efforts, which is an assessment of the Maximum Achievable Potential ("MAP") for energy efficiency in preparation for the ultimate development of energy efficiency programs that would be assessed during the IRP-4 process. The purpose of conducting the MAP assessment study as a first phase in the IRP-4 process stems from the fact that an updated assessment is required since the last MAP study was completed for HECO in early 2004. Changes to the baseline forecast, and prices relative to the 2003 study necessitated conductiong a new assessment. In addition, during the recent hearings related to Docket 05-0069 various interveners asked whether the MAP estimates would change in light of higher HECO electricity costs relative to when the MAP study was completed in 2004. Also, various measures that were not looked at during the first MAP study (e.g., Seawater AC and others) are now more commercially viable and deserve consideration during this stage of the analysis. Ultimately, the MAP assessment study will serve as the basis for HECO to document and validate its reasoning behind the Company's position with regards to energy efficiency savings goals.

# 2 Scope of Work

For the MAP assessment study (Phase I), the following tasks will be addressed:

1. *Update Base Case*: In the original study, Global utilized HECO's load forecasts (which were finalized in late 2003) as the basis for representing the starting point from which to develop estimates of future energy efficiency potential. Since that time, several things have happened:

   - Nearly 3 years of DSM impacts have been realized
   - Forecasts have been revised to reflect changes in demand due to elasticity effects of higher energy costs

   The purpose of this task is to update the baseline to represent these updated factors. The newer base case is a necessary starting point for the MAP estimates. We will obtain the forecast information on the updated forecast from HECO (either through the filed IRP-3 report or through inquiries with the appropriate HECO staff). It is likely that we will draw upon the segment and end-use mixes that were used in the 2004 MAP study effort, which various adjustments that represent updated end-use forecasts (e.g., REEPs and COMMEND) as well as newer information regarding market conditions (e.g., underlying assumptions about the military end-use and building type mix).

2. *Identify New and Modified Energy Efficiency and Demand Response Measures (EEM)*: Since the time that the original MAP study was conducted, several new measures have been identified (e.g., Seawater AC and Solar AC). The purpose of this task is to identify the various EEMs (energy efficiency and demand response measures) that were identified during the various forums that occurred following completion of the MAP study (e.g., IRP-3

demand-side advisory group meetings, EE docket hearings, etc.). These measures will be screened using the same criteria that were applied during the original MAP study (qualitative factors such as technological maturity, good match for HECO customers, best measure available and quantifiable savings). All other measures that failed the qualitative screen will be screened once again to see if they pass the screen in the meantime. We will revisit the screening criteria and the basis for inclusion/exclusion with the IRP Advisory Group during the conduct of this task.

3. *Conduct Updated Economic Screen:* All EEMs passing the qualitative screen will be re-screened in the Economic Screen. The basis for the new screen will be updated customer electricity costs, which have risen over 50% relative to when the original economic screen was conducted in late 2003. We will obtain the updated rate information from HECO's current rate tariffs and review those updated price assumptions with HECO staff prior to the conduct of the economic screen. We will draw upon the BEST modeling framework information already established by Global through the conduct of the original MAP study. In addition, we will conduct outside research to support savings and performance estimates of new energy efficiency measures that weren't included in the original MAP study.

4. *Estimate MAP:* The MAP for HECO will be re-estimated based on the new mix of energy efficiency and demand response measures that passed the updated economic screen. Note however that some measures (such as solar water heating) did not pass the original economic screen but were included in the MAP estimates. These measures will continue to be included in the MAP estimates, regardless of the outcome of the updated economic screen. The MAP estimates will be made for a 20-year time horizon (2008-2028) and include energy savings (MWh) and peak demand reductions (MW) resulting from the measures passing the economic screen.

5. *Facilitate AG Meetings:* This task is to facilitate two IRP-4 Advisory Group meetings where we present the preliminary and final results of the MAP assessment study and solicit feedback from the AG participants at each stage of the project. Our goal is to conduct the first AG meeting around the middle of February. This meeting will cover the following topics:

   - Outline the study process and methodology;
   - Update the AG on the baseline forecast and identify he changes to the forecast relative to the last MAP study;
   - Identify the measures that will be looked at during the study; and
   - Solicit input on the measure screening criteria.

   The second meeting will be held around the end of March. This meeting will cover the following topics:

   - Review the results of the measure screening analysis;
   - Present the MAP estimates; and
   - Solicit input on the reasonability of the MAP estimates.

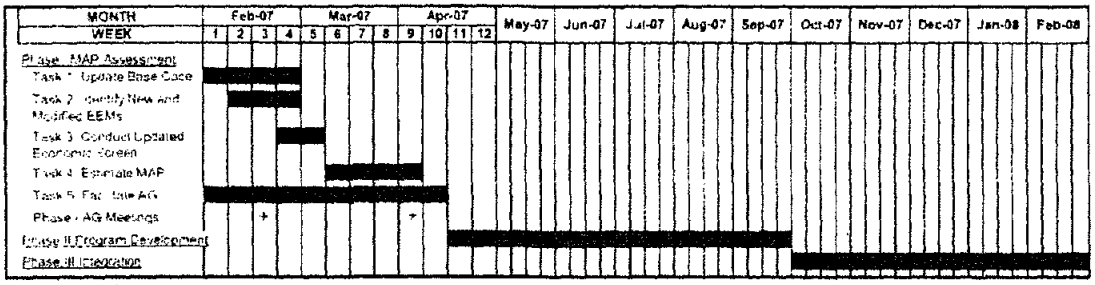
   We will develop the Powerpoint presentations and provide a written minutes for each meeting. HECO will be responsible for organizing the facility space and sending out the invitations.

## 3 Schedule and Staffing

This project will be conducted over a 10-week timeframe with an assumed start-date of February 1, 2007. The project schedule is charted in the figure below. The approximately schedule for

Phases II and III is also indicated in the chart. The project can be initiated immediately once HECO indicates its approval. This work will be directed by Greg Wikler, who was the principal investigator for the Phase I study for HECO. In addition, Global staff (Joe Prijyanonda, Sharon Yoshida and Debyani Ghosh) will conduct much of the research and modeling work to support this effort.

**Figure 1: Schedule for Energy Efficiency Plan Development Efforts under IRP-4**




# 4 Budget and Deliverables

Table 1 provides the estimated budget for the proposed effort.

**Table 1: Estimated Budget for Phase I IRP4 Study**

| Global Staff | 2007 Hourly Rate | Task Number 1 | 2 | 3 | 4 | 5 | Total Hours | Total Cost |
|---|---|---|---|---|---|---|---|---|
| G. Wikler | $237 | 8 | 12 | 16 | 16 | 24 | 76 | $18,004 |
| S. Yoshida | $144 | 24 | 8 | 8 | 40 | 0 | 80 | $11,536 |
| J. Prijyanonda | $144 | 0 | 24 | 24 | 0 | 0 | 48 | $6,922 |
| D. Ghosh | $134 | 40 | 0 | 24 | 80 | 40 | 184 | $24,638 |
| *TOTAL STAFF HOURS* | | *72* | *44* | *72* | *136* | *64* | *388* | *$61,100* |
| *TOTAL LABOR COSTS* | | *$10,712* | *$7,457* | *$11,618* | *$20,270* | *$11,042* | | |
| Other Direct Costs | | | | | | | | |
| Travel-Related | | $0 | $0 | $0 | $0 | $2,500 | | $2,500 |
| Other Direct (copy, phone, etc) | | $100 | $100 | $100 | $100 | $100 | | $500 |
| Hawaii Excise Tax @4% | | $432 | $302 | $469 | $815 | $546 | | $2,564 |
| *Total ODC-Global* | | *$532* | *$402* | *$569* | *$915* | *$3,046* | | *$5,464* |
| *Total Task* | | *$11,244* | *$7,859* | *$12,187* | *$21,185* | *$14,087* | | |
| **TOTAL PROJECT** | | | | | | | | **$66,564** |

Results of each the tasks will be provided to HECO once they are completed. At this time, we estimate the following schedule for task completion:

- Task 1: 4 weeks after initiation
- Task 2: 4 weeks after initiation
- Task 3: 5 weeks after initiation
- Task 4: 9 weeks after initiation
- Task 5: 10 weeks after initiation

A draft report will be submitted to HECO for review and consideration at the end of the eighth week of the project. The draft report will include an outline of the tasks to be completed for the Phase II efforts, which would commence almost immediately following the conclusion of the Phase I efforts. Once comments are received from HECO, along with comments received from the second AG meeting (during Week 9), they will be incorporated and a final draft will be submitted and the project will be concluded.

HAWAIIAN ELECTRIC COMPANY, INC.
P.O. BOX 2750

HONOLULU HI 96840-0001

CP12 -SD
Page : 1

Purchase Order Number: V01807
Change Order:
Change Order Date:

Supplier:
ATTN: JANE V. KOTOWSKI
GLOBAL ENERGY PARTNERS, LLC
3569 MT. DIABLO BLVD.
SUITE 200
LAFAYETTE CA 94549

Ship To: HAWAIIAN ELECTRIC COMPANY, INC.
ENERGY SERVICES DEPARTMENT
220 S. KING ST., 12TH FLOOR
HONOLULU, HI 96813
ATTN: CUSTOMER EFFICIENCY PROGRAMS DIV

Buyer: WONG,ELAINE M
Phone No.: 543-4769
Fax No.: 203-1394
E-Mail:
ELAINE.WONG@HECO.COM

Send Invoice: HAWAIIAN ELECTRIC COMPANY, INC.
ATTN: Accounts Payable
P.O. BOX 2750
HONOLULU HI 96840-0001

Supplier Code: 019568

Freight Terms: NOT APPLICABLE
Payment Terms: Net 30
Original Purchase Order Date: 02/26/07

| P O Line No. | Description | Delivery Date | Quantity Ordered | Unit of Purchase | Unit Price Without Tax | Extended Price Including Tax |
|---|---|---|---|---|---|---|
| 001 | IRP-4 EE Study Ph 1 Assess MAP<br>WA # PSD-06-002-02<br>Start: 2/1/07 End: 5/31/07<br>Greg Wikler / Keith Block | 02/26/08 | 0.00 | NA | 66564.0000 | 66564.0000 |

**Special Instructions:**

1. **The alphanumeric Purchase Order Number shown above must appear on all packages, invoices, shipping documents and correspondence. Failure to supply the correct information will cause a delay in your payment.**
2. **The invoice must be submitted matching each Purchase Order line item.**
3. **Mail original invoice to the address as indicated above.**
4. **Terms and conditions as indicated on the reverse side are part of this order.**

BY Elaine M. Wong
**Authorized Signature**

CA-IR-270
DOCKET NO. 2006-0386
PAGE 11 OF 26
REVISED: 6-12-07

MEETING THE NEEDS OF THE CONSTANTLY CHANGING ENERGY INDUSTRY

Global Energy Partners, LLC
An Employee - Owned Company

# HECO IRP-4 Energy Efficiency Study

## Phase I: Assessment of MAP

**Greg Wikler, Project Manager**
**Global Energy Partners, LLC**

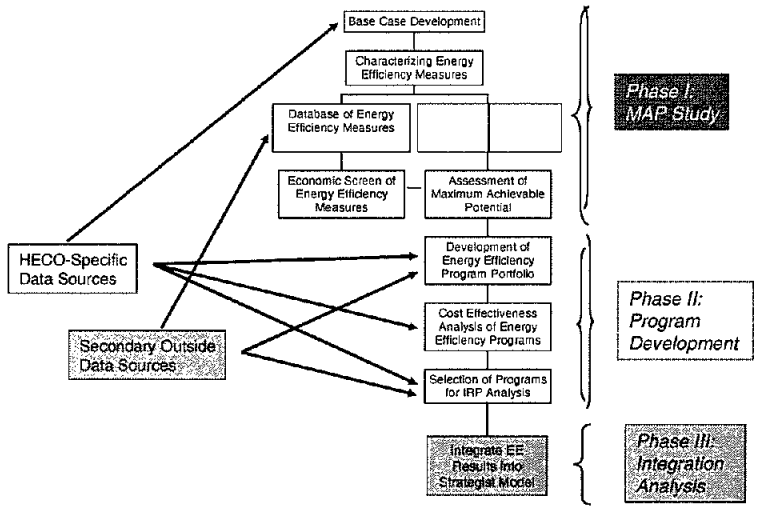
**Meeting #2**
**May 25, 2007**

## Presentation Overview

- Detailed step-by-step review of (MAP) study process and methodology
- Review of the results of the measure screening analysis
- Presentation of the MAP results
- Input and discussion

Global Energy Partners, LLC

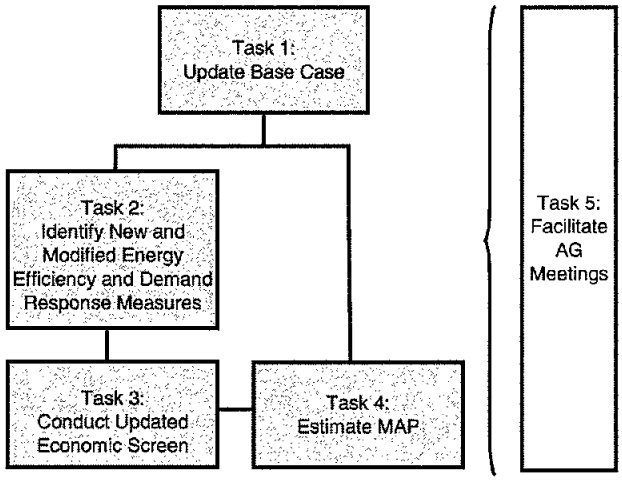
## Overall Energy Efficiency Study Methodology




Global Energy Partners, LLC



## MAP Study Tasks




Global Energy Partners, LLC

## The MAP Formula

Base Case forecast (Represented in GWh and MW)

→ *Generated using most recent HECO load forecast as a control total, with estimates of load determined for individual market segments (residential, commercial, industrial), building types (single family, office building, etc.), and end-uses (cooling, lighting, etc.)*

Multiplied by

End-Use Savings Potential (Represented as a percentage reduction of each end-use)

→ *Generated through a detailed assessment of measures that are filtered through a series of screens with the final set of measures comprised of those that passed an economic screen*

Multiplied by

Market Acceptance Ratios (Represented as a percentage of available market that would participate in the energy efficiency or demand response program)

→ *Generated through a review of energy efficiency program best practices that represent ideal circumstances and market conditions*

Equals

MAXIMUM ACHIEVABLE POTENTIAL

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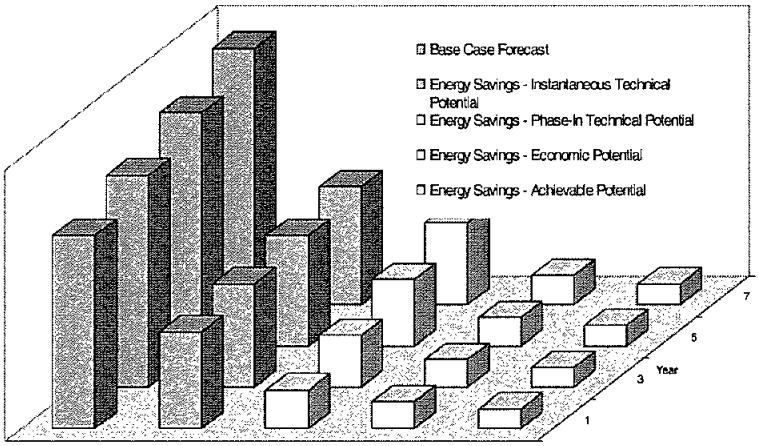
## MAP in Context

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## Task 1: Update Base Case

Step 1: Obtain control totals: We rely exclusively on HECO's load forecast. We start with the unadjusted sales forecast (not including future DSM).

Step 2: Update the residential appliance saturations and equipment efficiencies using newly developed HECO REEPs model runs and other data sources for residential.

- Adjustments for C&I base case input parameters made to reflect Oahu-only scenario.

Step 3: Re-calculate the unit energy consumption estimates (UECs): We run our Building Energy Simulation Tool (BEST) with updated data inputs (including saturations and equipment efficiencies) to determine new UECs.

Step 4: Incorporate new UECs into existing base case models to determine new Base Case forecast.

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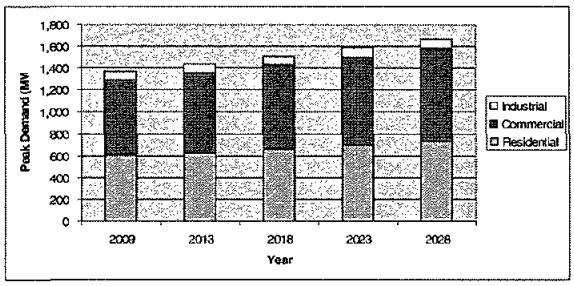
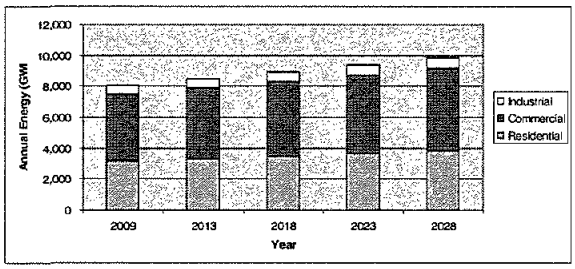
## Base Case Results (updated chart from 3/29)




Notes:

1. Residential=39%
   Commercial=54%
   Industrial=7%
2. Allocations across sectors and sub-sectors are consistent with the previous baseline study (2003)
3. Totals based on HECO unadjusted sales forecast, which has past DSM efficiency gains already embedded

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## Base Case Results – Residential

| Annual Usage and Demand by End-Use | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Space Cooling | 438 | 474 | 505 | 545 | 589 |
| Water Heating | 554 | 573 | 594 | 618 | 642 |
| Refrigeration | 390 | 375 | 374 | 387 | 400 |
| Lighting | 493 | 482 | 510 | 537 | 564 |
| Other Appliances | 582 | 620 | 654 | 689 | 723 |
| Total, tracked uses | 2,458 | 2,524 | 2,637 | 2,776 | 2,919 |
| Miscellaneous End Uses | 710 | 822 | 881 | 921 | 966 |
| **Total** | **3,168** | **3,347** | **3,517** | **3,697** | **3,885** |
| | | | | | |
| **Peak Demand (MW)** | | | | | |
| Space Cooling | 173 | 189 | 203 | 221 | 240 |
| Water Heating | 87 | 91 | 94 | 98 | 102 |
| Refrigeration | 83 | 80 | 79 | 82 | 85 |
| Lighting | 86 | 84 | 89 | 94 | 99 |
| Other Appliances | 80 | 84 | 88 | 93 | 98 |
| Total, tracked uses | 509 | 528 | 555 | 588 | 623 |
| Miscellaneous End Uses | 94 | 107 | 113 | 114 | 115 |
| **Total** | **602** | **635** | **667** | **702** | **737** |

Allocations by Building Type:

- Single Family=39%
- Multi-Family=38%
- Other=22%

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## Base Case Results – Commercial

| Annual Usage and Demand by End-Use | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Cooling | 1,166 | 1,231 | 1,286 | 1,344 | 1,405 |
| Ventilation | 445 | 473 | 497 | 522 | 548 |
| Water Heating | 71 | 76 | 81 | 85 | 90 |
| Refrigeration | 169 | 181 | 190 | 201 | 211 |
| Lighting | 1,320 | 1,402 | 1,472 | 1,545 | 1,623 |
| Miscellaneous | 1,193 | 1,280 | 1,354 | 1,432 | 1,514 |
| **Total** | **4,364** | **4,644** | **4,881** | **5,130** | **5,391** |
| | | | | | |
| **Peak Demand (MW)** | | | | | |
| Cooling | 119 | 125 | 131 | 137 | 144 |
| Ventilation | 52 | 55 | 58 | 60 | 63 |
| Water Heating | 9 | 9 | 10 | 11 | 11 |
| Refrigeration | 23 | 25 | 26 | 28 | 29 |
| Lighting | 304 | 322 | 338 | 355 | 372 |
| Miscellaneous | 189 | 202 | 213 | 225 | 238 |
| **Total** | **695** | **738** | **776** | **816** | **857** |

Allocations by Building Type:

- Large Office=13%
- Small Office=10%
- Hotel=4%
- Resort=6%
- Restaurant=7%
- Retail=14%
- Grocery=6%
- School=12%
- Other=28%

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## Base Case Results – Industrial

| Annual Usage and Demand by End-Use | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Motors | 414 | 441 | 463 | 487 | 512 |
| Refrigeration | 25 | 26 | 28 | 29 | 30 |
| Process Heat | 15 | 16 | 17 | 18 | 19 |
| Lighting | 23 | 24 | 25 | 27 | 28 |
| HVAC | 17 | 18 | 19 | 20 | 21 |
| Miscellaneous | 52 | 55 | 58 | 61 | 64 |
| **Total** | **545** | **580** | **609** | **640** | **673** |
| | | | | | |
| **Peak Demand (MW)** | | | | | |
| Motors | 55 | 58 | 61 | 64 | 68 |
| Refrigeration | 3 | 3 | 4 | 4 | 4 |
| Process Heat | 2 | 2 | 2 | 2 | 2 |
| Lighting | 3 | 3 | 3 | 4 | 4 |
| HVAC | 2 | 2 | 2 | 3 | 3 |
| Miscellaneous | 7 | 7 | 8 | 8 | 8 |
| **Total** | **72** | **77** | **80** | **85** | **89** |

Allocations by Industry Type:

- Food Processing (SIC20) =13%
- Pumping=51%
- Other=36%

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## Task 2: Identify New and Modified EE and DR Measures

Step 1: Develop universal list of measures
- List is built from years of experience (both in Hawaii and from the mainland)
- Included additional measures recommended by AG participants (e.g., seawater A/C, heat pipe A/C, radiant cooling)

Step 2: Conduct qualitative screen to determine which measures are most feasible for Oahu energy users.

Step 3: Estimate Maximum Technical Potential (MTP) (Optional)
- Not developed as part of this study
- Savings represented from all measures passing the qualitative screen multiplied by Base Case forecast

Step 4: For measures passing the qualitative screen, conduct detailed measure-level assessment to determine savings and cost
- Run BEST models for each individual measure at various efficiency levels
- Assess measure costs drawing upon actual market prices

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## Universal List of EE and DR Measures (updated chart from 3/29)

| Sectors | Additional Measures in 2007 Study | | | 2007 Study | 2003 Study |
|---|---|---|---|---|---|
| | EE Measures Added | DR Measures Added | Total Additional Measures | Total Number of Measures | Total Number of Measures |
| Residential | 6 | 1 | 7 | 113 | 107 |
| Commercial | 6 | 1 | 7 | 125 | 119 |
| Industrial | 1 | 0 | 1 | 92 | 91 |
| **Total** | **13** | **2** | **15** | **330** | **317** |

- Changes to 2003 study measures include updated baselines (to reflect new efficiency standards) and updated cost
- Supply-side measures eliminated from universal list of measures
- Additional measures to be screened from qualitative and possibly economic perspectives
- Measures passing economic screen represented in MAP estimates

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## Additional Measures to be Screened in 2007 Study (updated chart from 3/29)

| End-use sector | End-use | Energy Efficiency Measure |
|---|---|---|
| Residential | Cooling | Solar Air Conditioning (SAC) |
| Residential | Cooling | Air Conditioner – Variable Refrigerant Flow (VRF) system |
| Residential | Heating/Cooling | Heat Pump- Cycling Control Device |
| Residential | Lighting | Photosensor Control- Lighting, Outdoors |
| Residential | Lighting | Central Lighting Control System |
| Residential | Other | Energy-Efficient Manufactured Homes (New Construction) |
| Residential | Other | Energy Star Homes (New Construction) |
| Commercial | Cooling | Sea Water Air Conditioning (SWAC) |
| Commercial | Cooling | Solar Air Conditioning (SAC) |
| Commercial | Cooling | Air Conditioner – Variable Refrigerant Flow (VRF) system |
| Commercial | Lighting | Lighting-Automatic Controls |
| Commercial | Lighting | LED Display/Spot lighting |
| Commercial | Cooling | Heat Pipe Assisted Air Conditioning |
| Commercial | Cooling | Radiant Cooling |
| Industrial | Process Heat | Solar Process Heating |

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## The Qualitative Screen: Measure Screening Criteria

- Applicability Elements
  - Is the measure a good match for Hawaii?
  - Are there verifiable and demonstrated sources to confirm the savings estimates?
- Qualitative Elements
  - Is the measure technologically mature?
  - Is there a mature and viable market for the measure?
  - Is the measure acceptable to customers?
  - Are there other benefits that give further advantage to adopting the measure?

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## Preliminary Results of the Qualitative Screen

**Count of Measures Passing the Screens - 2007**

| Sector | Number of Measures | Number of Measures Passing Qualitative Screen (Percent of Total # of Measures) |
|---|---|---|
| Residential | 113 | 57 (50%) |
| Commercial | 125 | 71 (57) |
| Industrial | 92 | 32 (35%) |
| **TOTAL** | **330** | **160 (49%)** |

**Count of Measures Passing the Screens - 2003**

| Sector | Number of Measures | Number of Measures Passing Qualitative Screen (Percent of Total # of Measures) |
|---|---|---|
| Residential | 107 | 51 (48%) |
| Commercial | 119 | 66 (55%) |
| Industrial | 91 | 32 (35%) |
| **TOTAL** | **317** | **149 (47%)** |

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## Task 3: Conduct Updated Economic Screen

Step 1: Obtain latest HECO fuel price forecast to represent customer costs of electricity starting in 2009:

- Residential: 22.15 cents/kWh (R rate class)
- Commercial/Industrial: 20.05 cents/kWh (G/J rate class)

Step 2: Conduct economic screen that compares the first cost of each measure relative to the lifetime savings associated with the measure (lifetime energy savings x electricity costs)

Step 3: Bundle measures that pass the economic screen to determine the sector-specific and end-use specific savings potential

Step 4: Estimate Maximum Economic Potential (MEP)

- Step 3 percent savings multiplied by Base Case forecast
- MEP results not reported in this study because they represent an intermediate result

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**Hawaiian Electric Company, Inc.**

**AVERAGE ELECTRICITY PRICES (CENTS / KWH)**
**CURRENT $**

**March 2007 Forecast**

| Year | Inflation Factor | R | G/J | H/K | P | Total | Comm'l |
|---|---|---|---|---|---|---|---|
| **Forecast** | | | | | | | |
| 2007 | 219.5 | 21.594 | 19.549 | 19.002 | 17.007 | 19.106 | 18.146 |
| 2008 | 227.6 | 21.489 | 19.453 | 18.909 | 16.924 | 19.013 | 18.057 |
| 2009 | 235.2 | 22.151 | 20.053 | 19.492 | 17.446 | 19.599 | 18.614 |
| 2010 | 242.1 | 22.524 | 20.391 | 19.820 | 17.740 | 19.928 | 18.927 |
| 2011 | 248.8 | 22.393 | 20.272 | 19.705 | 17.637 | 19.813 | 18.817 |
| 2012 | 256.1 | 22.174 | 20.074 | 19.512 | 17.464 | 19.619 | 18.633 |
| 2013 | 265.6 | 22.106 | 20.012 | 19.452 | 17.410 | 19.559 | 18.576 |
| 2014 | 277.5 | 22.157 | 20.058 | 19.497 | 17.450 | 19.604 | 18.619 |
| 2015 | 290.4 | 24.344 | 22.038 | 21.421 | 19.172 | 21.538 | 20.457 |
| 2016 | 302.4 | 25.098 | 22.720 | 22.084 | 19.766 | 22.205 | 21.090 |
| 2017 | 312.1 | 25.344 | 22.942 | 22.300 | 19.959 | 22.423 | 21.296 |
| 2018 | 319.7 | 25.802 | 23.357 | 22.703 | 20.320 | 22.828 | 21.681 |
| 2019 | 326.1 | 26.032 | 23.565 | 22.905 | 20.501 | 23.031 | 21.874 |
| 2020 | 332.7 | 26.347 | 23.850 | 23.182 | 20.749 | 23.310 | 22.139 |
| 2021 | 340.0 | 26.721 | 24.188 | 23.511 | 21.043 | 23.640 | 22.453 |
| 2022 | 348.0 | 28.458 | 25.761 | 25.040 | 22.411 | 25.177 | 23.913 |
| 2023 | 356.2 | 30.365 | 27.487 | 26.718 | 23.913 | 26.865 | 25.516 |
| 2024 | 364.1 | 30.748 | 27.834 | 27.055 | 24.215 | 27.204 | 25.838 |
| 2025 | 371.6 | 31.158 | 28.205 | 27.416 | 24.538 | 27.567 | 26.183 |
| 2026 | 378.6 | 31.479 | 28.495 | 27.698 | 24.791 | 27.850 | 26.452 |
| 2027 | 385.4 | 31.884 | 28.861 | 28.054 | 25.110 | 28.208 | 26.792 |
| 2028 | 392.3 | 32.421 | 29.348 | 28.527 | 25.533 | 28.684 | 27.244 |
| 2029 | 399.4 | 32.655 | 29.560 | 28.733 | 25.717 | 28.891 | 27.441 |
| 2030 | 406.7 | 33.040 | 29.908 | 29.072 | 26.020 | 29.231 | 27.764 |

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## Numerical Examples of Economic Screen

**EXAMPLE 1: HEAT PUMP WATER HEATER**
Single-Family House, Existing Vintage
Base Case = Standard Electric Water Heater (EF=0.83)
Efficiency Case = Heat Pump Water Heater (EF=2.0)

- Unit impact = 1,590 kWh/yr per water heater; 0.358 kW per water heater
- Lifetime = 9 years
- Measure first cost = $1,435 per water heater
- Present value of lifetime savings $2,905 per water heater
- Present value of lifecycle costs $2,211 per water heater
- B/C Ratio = 1.31
- Pass Econ Screen? = YES

**EXAMPLE 2: RADIANT BARRIER**
Single-Family House, Existing Vintage
Base Case = Standard Ceiling Insulation
Efficiency Case = Install Ceiling Radiant Barrier

- Unit impact = 0.0787 kWh/yr per ft2 of roof area; 0.000 kW per ft2 of roof area
- Lifetime = 50 years
- Measure first cost = $0.63 per ft2 of roof area
- Present value of lifetime savings $0.51 per ft2 of roof area
- Present value of lifecycle costs $0.63 per ft2 of roof area
- B/C Ratio = 0.81
- Pass Econ Screen? = NO

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## Preliminary Results of the Economic Screen

**Count of Measures Passing the Screens - 2007**

| Sector | Number of Measures | Number of Measures Passing Economic Screen (Percent of Total # of Measures) |
|---|---|---|
| Residential | 113 | 45 (40%) |
| Commercial | 125 | 54 (43%) |
| Industrial | 92 | 8 (9%) |
| **TOTAL** | **330** | **107 (32%)** |

**Count of Measures Passing the Screens - 2003**

| Sector | Number of Measures | Number of Measures Passing Economic Screen (Percent of Total # of Measures) |
|---|---|---|
| Residential | 107 | 35 (33%) |
| Commercial | 119 | 53 (45%) |
| Industrial | 91 | 8 (9%) |
| **TOTAL** | **317** | **96 (30%)** |

Some notable measures now passing the screen:

- Whole-house fan;
- Attic fan;
- High-reflectivity roofs;
- Foundation insulation

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## Task 4: Estimate MAP

Step 1: Develop estimates of market acceptance for energy efficiency and demand response measures drawing upon industry experience

- Estimates intended to represent the hypothetical upper-boundary of customer acceptance
- Predicated on the assumption that all participation barriers are lifted; that budgets are not constrained; and that market infrastructures are well-established
- Estimates represented at the end-use level as a percentage of available market

Step 2: Factor in dynamic changes in efficiency levels and improved measure costs in the future

- Examples: EER improvements to CAC; Reduced capital cost for Seawater A/C

Step 3: Estimate Maximum Achievable Potential (MAP)

- Maximum Economic Potential multiplied by Market Acceptance Ratios
- MAP results represented in the same format as the Base Case forecast (e.g., by segment, building type, and end-use for each of 20 years starting in 2009)

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## MAP Numerical Example 1

**Existing Housing - Lighting Example**
**Year 2011**

| | |
|---|---|
| No. of Single Family Homes | 154,758 homes |
| Saturation of Lighting | 100% |
| Lighting stock | 154,758 homes |
| | |
| Base Case - Lighting UEC | 1375 kWh |
| Economic Potential - Lighting UEC | 799 kWh |
| Savings - Lighting UEC | 576 kWh |
| Lighting Economic Potential Savings | 89 GWh |
| Market Acceptance Rate | 23% |
| MAP Lighting GWh | 21 GWh |

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## MAP Numerical Example 2

**Large Office - Cooling Example**
**Year 2009**

| | (GWh) | | |
|---|---|---|---|
| | Existing Building | New Building | Total |
| Large Office Base Case | 542 | 33 | 575 |
| Cooling Share of Total Large Office GWh | 29% | 26% | |
| Cooling GWh | 157 | 9 | 166 |
| Economic Potential Savings % for Cooling | 57% | 46% | |
| Economic Potential Cooling GWh | 90 | 4 | |
| 15 Year Phase-In - Cumulative GWH by 2009 | 24 | 4 | 28 |
| Market Acceptance Rate | 28% | 23% | |
| MAP | 6.7 | 0.9 | 7.6 |

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## MAP Results – Overall

| | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| Energy (GWH) | | | | | |
| Base Case Forecast | 8,077 | 8,570 | 9,007 | 9,467 | 9,950 |
| Economic Potential Savings (EP) | 762 | 1,518 | 2,114 | 2,302 | 2,410 |
| Maximum Achievable Potential Savings (MAP) | | | | | |
| Residential MAP | 107 | 312 | 435 | 484 | 513 |
| Commercial MAP | 106 | 368 | 730 | 824 | 861 |
| Industrial MAP | 6 | 21 | 36 | 41 | 43 |
| Total MAP - Energy Efficiency | 219 | 701 | 1,201 | 1,349 | 1,418 |
| | | | | | |
| % MEP of Baseline Forecast | 9.4% | 17.7% | 23.5% | 24.3% | 24.2% |
| % MAP of Baseline Forecast | 2.7% | 8.2% | 13.3% | 14.2% | 14.2% |
| | | | | | |
| Peak Demand (MW) | | | | | |
| Baseline Forecast | 1,370 | 1,450 | 1,524 | 1,602 | 1,683 |
| Economic Potential Savings (EP) | 130 | 256 | 356 | 388 | 407 |
| Maximum Achievable Potential Savings (MAP) | | | | | |
| Residential MAP | 23 | 65 | 92 | 103 | 110 |
| Commercial MAP | 17 | 56 | 112 | 125 | 130 |
| Industrial MAP | 1 | 3 | 5 | 5 | 6 |
| Total MAP - Energy Efficiency | 41 | 124 | 208 | 233 | 245 |
| | | | | | |
| % MEP of Baseline Forecast | 9.5% | 17.6% | 23.3% | 24.2% | 24.2% |
| % MAP of Baseline Forecast | 3.0% | 8.5% | 13.7% | 14.5% | 14.6% |

Notes:

1. Most significant MAP appears to be in the commercial sector over time
2. Savings represent 2.7% of base case climbing to 14.2% by 2029

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## MAP Results – Comparison of 2007 vs. 2003 MAP study results (Energy GWh)

**2007 Study**

| | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Base Case Forecast | 8,077 | 8,570 | 9,007 | 9,467 | 9,950 |
| Economic Potential Savings (EP) | 762 | 1,518 | 2,114 | 2,302 | 2,410 |
| Maximum Achievable Potential Savings (MAP) | | | | | |
| Residential MAP | 107 | 312 | 435 | 484 | 513 |
| Commercial MAP | 106 | 368 | 730 | 824 | 861 |
| Industrial MAP | 6 | 21 | 36 | 41 | 43 |
| Total MAP - Energy Efficiency | 219 | 701 | 1,201 | 1,349 | 1,418 |
| | | | | | |
| % MEP of Baseline Forecast | 9.4% | 17.7% | 23.5% | 24.3% | 24.2% |
| % MAP of Baseline Forecast | 2.7% | 8.2% | 13.3% | 14.2% | 14.2% |

**2003 Study**

| | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Baseline Forecast | 8,125 | 8,812 | 9,368 | 9,752 | 10,150 |
| Economic Potential Savings (EP) | 1,091 | 1,715 | 2,191 | 2,308 | 2,439 |
| Maximum Achievable Potential Savings (MAP) | | | | | |
| Residential MAP | 170 | 343 | 429 | 473 | 520 |
| Commercial MAP | 167 | 488 | 773 | 796 | 826 |
| Industrial MAP | 11 | 29 | 40 | 42 | 43 |
| Total MAP - Energy Efficiency | 348 | 860 | 1,242 | 1,311 | 1,389 |
| | | | | | |
| % ETP of Baseline Forecast | 13.4% | 19.5% | 23.4% | 23.7% | 24.0% |
| % MAP of Baseline Forecast | 4.3% | 9.8% | 13.3% | 13.4% | 13.7% |

Notes:

Overall MAP is trending lower than 2003 due to:

- Smaller base case forecast
- Improved equipment efficiencies
- Greater penetration and market effect of HECO programs
- 3 additional years of acquired DSM (148 GWh)

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## MAP Results – Comparison of 2007 vs. 2003 MAP study results (Peak Demand MW)

**2007 Study**

| | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Peak Demand (MW)** | | | | | |
| Baseline Forecast | 1,370 | 1,450 | 1,524 | 1,602 | 1,683 |
| Economic Potential Savings (EP) | 130 | 256 | 356 | 388 | 407 |
| Maximum Achievable Potential Savings (MAP) | | | | | |
| Residential MAP | 23 | 65 | 92 | 103 | 110 |
| Commercial MAP | 17 | 56 | 112 | 125 | 130 |
| Industrial MAP | 1 | 3 | 5 | 5 | 6 |
| Total MAP - Energy Efficiency | 41 | 124 | 208 | 233 | 245 |
| | | | | | |
| % MEP of Baseline Forecast | 9.5% | 17.6% | 23.3% | 24.2% | 24.2% |
| % MAP of Baseline Forecast | 3.0% | 8.5% | 13.7% | 14.5% | 14.6% |

**2003 Study**

| | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Peak Demand (MW)** | | | | | |
| Baseline Forecast | 1,365 | 1,471 | 1,566 | 1,641 | 1,720 |
| Economic Potential Savings (EP) | 190 | 297 | 380 | 405 | 432 |
| Maximum Achievable Potential Savings (MAP) | | | | | |
| Residential MAP | 39 | 79 | 101 | 111 | 123 |
| Commercial MAP | 24 | 70 | 112 | 115 | 120 |
| Industrial MAP | 1 | 4 | 5 | 6 | 6 |
| Total MAP - Energy Efficiency | 64 | 152 | 217 | 232 | 249 |
| | | | | | |
| % ETP of Baseline Forecast | 13.9% | 20.2% | 24.2% | 24.7% | 25.1% |
| % MAP of Baseline Forecast | 4.7% | 10.4% | 13.9% | 14.1% | 14.4% |

Notes:

Similar trend for peak demand:

- Smaller base case forecast
- Improved equipment efficiencies that affect peak demand (e.g., cooling)
- Greater penetration and market effect of HECO programs
- 3 additional years of acquired DSM (21 MW)

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## MAP Results – Residential

| Annual Usage and Demand by End-Use | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Space Cooling | 39 | 84 | 116 | 133 | 142 |
| Water Heating | 41 | 139 | 185 | 193 | 200 |
| Refrigeration | 2 | 9 | 19 | 24 | 25 |
| Lighting | 20 | 63 | 78 | 86 | 94 |
| Other Appliances | 4 | 17 | 37 | 48 | 52 |
| Total, tracked End Uses | 107 | 312 | 435 | 484 | 513 |
| Miscellaneous End Uses | 0 | 0 | 0 | 0 | 0 |
| **Total** | **107** | **312** | **435** | **484** | **513** |
| | | | | | |
| **Peak Demand (MW)** | | | | | |
| Space Cooling | 12 | 27 | 39 | 45 | 48 |
| Water Heating | 6 | 22 | 30 | 31 | 32 |
| Refrigeration | 0 | 2 | 4 | 5 | 5 |
| Lighting | 3 | 10 | 13 | 14 | 16 |
| Other Appliances | 1 | 3 | 6 | 8 | 8 |
| Total, tracked End Uses | 23 | 65 | 92 | 103 | 110 |
| Miscellaneous End Uses | 0 | 0 | 0 | 0 | 0 |
| **Total** | **23** | **65** | **92** | **103** | **110** |

Notes:

- Largest source of available potential lies in water heating (e.g., solar and high efficiency water heating)
- Significant potential in space cooling (Room A/C, Central A/C, Split Systems)

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## MAP Results – Commercial

| Annual Usage and Demand by End-Use | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Cooling | 39 | 145 | 288 | 331 | 345 |
| Ventilation | 9 | 33 | 58 | 66 | 70 |
| Water Heating | 0 | 0 | 0 | 0 | 0 |
| Refrigeration | 2 | 7 | 14 | 16 | 18 |
| Lighting | 39 | 119 | 236 | 252 | 258 |
| Miscellaneous | 17 | 64 | 133 | 158 | 170 |
| **Total** | **106** | **368** | **730** | **824** | **861** |
| | | | | | |
| **Peak Demand (MW)** | | | | | |
| Cooling | 4 | 14 | 28 | 33 | 34 |
| Ventilation | 1 | 4 | 7 | 8 | 9 |
| Water Heating | 0 | 0 | 0 | 0 | 0 |
| Refrigeration | 0 | 1 | 2 | 2 | 3 |
| Lighting | 9 | 28 | 55 | 59 | 60 |
| Miscellaneous | 2 | 9 | 19 | 23 | 24 |
| **Total** | **17** | **56** | **112** | **125** | **130** |

Notes:

- Largest source of potential lies in the commercial cooling
- Significant potential exists for lighting, but at a slower rate of growth.
- Largest rate of growth in miscellaneous end-uses (e.g., motors, pumps, computer gear)

Global Energy Partners, LLC

Page 28 May 25, 2007

## MAP Results – Industrial

| Annual Usage and Demand by End-Use | 2009 | 2014 | 2019 | 2024 | 2029 |
|---|---|---|---|---|---|
| **Energy (GWH)** | | | | | |
| Motors | 5 | 16 | 27 | 30 | 32 |
| Refrigeration | 0 | 1 | 1 | 2 | 2 |
| Process Heat | 0 | 0 | 0 | 1 | 1 |
| Lighting | 1 | 2 | 3 | 3 | 4 |
| HVAC | 0 | 0 | 1 | 1 | 1 |
| Miscellaneous | 0 | 2 | 3 | 4 | 5 |
| **Total** | **6** | **21** | **36** | **41** | **43** |
| | | | | | |
| **Peak Demand (MW)** | | | | | |
| Motors | 0.6 | 2.2 | 3.6 | 4.0 | 4.2 |
| Refrigeration | 0.0 | 0.1 | 0.2 | 0.2 | 0.3 |
| Process Heat | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Lighting | 0.1 | 0.2 | 0.3 | 0.5 | 0.5 |
| HVAC | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| Miscellaneous | 0.1 | 0.2 | 0.4 | 0.6 | 0.6 |
| **Total** | **0.8** | **2.8** | **4.7** | **5.4** | **5.7** |

Notes:

- Motors represent the single largest share of savings potential

Global Energy Partners, LLC



MEETING THE NEEDS OF THE CONSTANTLY CHANGING ENERGY INDUSTRY

Global Energy Partners, LLC
An Employee - Owned Company

# Discussion

CA-IR-270 **Ref: Response to CA-IR-2, HECO T-9, Attachment B, page 17 (IRP Outside Services).**

Please explain the current status of the "Commercial End Use Survey" and "Market Potential Study" projects and provide a complete copy of all consulting RFP, contracts and other documents indicative of HECO progress in conducting such work.

HECO Response:

HECO is proceeding with design and data collection efforts for the Commercial End Use Survey.

This work is expected to continue through the end of 2007 and into 2008.

Solicitation of a consultant to assist in the development and execution of the project is under way. A copy of a Request for Qualifications (RFQ) is attached. The RFQ was sent to potential suppliers on May 18, 2007. A copy of the RFQ is attached to this response. The firms receiving the RFQ are listed below.

Energy Insights
5 Speen Street
Framingham, MA 01701

Itron
11236 El Camino Real
San Diego, CA 92130-2650

KEMA Inc.
492 Ninth Street, Suite 220
Oakland, CA 94607

TecMarket Works
165 West Nedderwood Road
2nd Floor, Suite A

Global Energy Partners, LLC
3569 Mt. Diablo Blvd., Suite 200
Lafayette, CA 94549

(TEXT OF EMAIL MESSAGE TO CONSULTANTS)

May 18, 2007

Dear Sir or Madam;

Hawaiian Electric Company is soliciting Qualifications from Consultants in the area of commercial energy use assessment. You or your firm has been identified as a Consultant that may have expertise in this area.

Please review the attached Request for Qualifications (RFQ). If you are interested in responding, or if you have any questions regarding this request, please contact George Willoughby at the address, email, or phone number shown in the RFQ no later than 4:00 p.m. Hawaii Standard Time on May 29, 2007.

Thank you for your attention in this matter.

Sincerely,

George Willoughby, Ph.D.
Director Forecasts and Research
Hawaiian Electric Company, Inc.
PO Box 2750
Honolulu, HI 96840
e-mail: george.willoughby@heco.com
808.543.4741 Phone
808.203.1741 FAX

**Request for Qualifications (RFQ)**
**Hawaiian Electric Company, Inc.**
**Commercial Energy Use Survey**
**May 18, 2007**

Hawaiian Electric Company, Inc. (HECO), is seeking a qualified consultant or consulting firm (Consultant) to design and conduct a survey of energy-using equipment and patterns of energy use by commercial customers of HECO, HELCO (Hawaii Electric Light Company, Inc.), and MECO (Maui Electric Company, Ltd.). The Consultant would be responsible for determining the survey methodology, designing the sample, conducting the survey, analyzing the data, and reporting the analysis.

**Background:** In 1994 HECO, HELCO, and MECO conducted a Commercial Energy Use Survey to support long-term forecasts of commercial energy needs. The objectives of that effort were to:

- Provide baseline market profiles and detailed equipment inventories for specific customer segments.
- Develop segment-level and end-use load shares.
- Develop long-run commercial end-use forecasts for HECO, HELCO, and MECO.

The survey included 256 on-site surveys and 861 mail surveys of commercial customers. Information collected included equipment inventories and customer characteristics. The sample and survey instruments were designed to provide the necessary data for the analysis by company, segment and end-use.

The survey will be repeated in 2007 to see if saturations, patterns of use and fuel shares have changed appreciably. This project will provide data comparable to the historical survey data, so that the above items can be tracked over time.

**Request for Qualifications:** Interested parties are asked to provide a non-proprietary response to this request for qualifications that includes the following:

1. A discussion of the Consultant's qualifications to undertake these tasks, including any experience or activity directly related to these issues and any experience or activity in Hawai'i. Please provide summaries or descriptions of similar work done by the Consultant. In each case, please include the relevant dates, outcomes and results of those efforts.
2. A statement identifying any previous or current work performed by the consultant that may affect the consultant being able to act on behalf of HECO, HELCO or MECO and in all three companies' best interest.
3. A listing of the individuals who would be involved in the project, including the specific qualifications of each individual named and their hourly billing rates. Only those individuals who would be actively involved in the project should be included, and the level of each individual's involvement should also be provided.

4. A brief and non-binding outline suggesting how the Consultant might approach these issues.
5. The names and contact information for at least three references that can verify the Consultant's expertise, ability, and experience in these areas.
6. In addition to the hourly billing rates requested in #3 above, please provide a non-binding estimate of the total costs for conducting the survey. More than one pricing option can be presented

**If you are interested in responding to this Request for Qualifications, please advise HECO no later than 4:00 p.m. Hawaii Standard Time on May 29, 2007, by contacting the individual named below: Qualification documents from interested parties are due to HECO no later than 4:00 p.m. Hawaii Standard Time on June 18, 2007.**

HECO's contact for this project is shown below. All communications on this topic should be directed through this individual.

George Willoughby
Director, Forecasts and Research
Hawaiian Electric Company
PO Box 2750
Honolulu, Hawaii 96840-0001

Phone: (808) 543-4741
Fax: (808) 543-4747
Email: George.Willoughby@heco.com

The company reserves the absolute right to withdraw this request and reject all responses at any time for any reason in its sole discretion; the company will not be liable for any expenses or damages with respect thereto.

CA-IR-271 **Ref: Response to CA-IR-2, HECO T-9, Attachment B, page 21 (Below the Line Activities).**

Please provide the following information:

a. A detailed description of each element of the Company's "BTL Activities" and explain the procedures used to assign or allocate employee labor and non-labor expenses to such activities.

b. A summary of total annual revenues, expenses, gross profits and investment associated with each element of the Company's "BTL Activities."

c. State whether HECO has ever sought or obtained Commission approval for its "BTL Activities," indicating the Dockets involved (if any).

d. What criteria are employed by the Company to determine when/if a particular activity is to be treated below the line?

e. Provide complete copies of any documents associated with or supportive of your response to part d. of this information request.

HECO Response:

a. Description of CTAD's BTL Activities:

CTAD's BTL activities per HECO T-9, Attachment B, page 21 represent construction related services performed by the Division for selected military and non-military customers to reduce energy consumption. Some of CTAD's prior BTL projects have included energy audits, design and feasibility studies as well as the installation of energy efficiency equipment at customer sites.

For these energy conservation projects, HECO serves as the project or construction manager. HECO agrees, for compensation, to perform services to customer's specifications under a contractual arrangement with the customer. The contract with the customer specifies the work to be performed, specifies the basis of determining the amount and terms of payment of the contract price, and generally requires total performance before HECO's

obligation is discharged. Actual installation work is performed at job sites owned by the customer and work for large contracts could extend beyond one accounting period.

The BTL activity transactions are captured to the following activities:

- Activity 015: BTL Revenues or Income from Nonutility Operations – This activity captures revenue/contract price payments of CTAD's BTL projects (NARUC account 417). This activity includes revenues applicable to operations which are non-utility in character but nevertheless constitutes a distinct operating activity of the Company as a whole.
- Activity 140: BTL Expenses – This activity captures all efforts related to implementing CTAD's BTL projects.
- Activity 040: General Excise Tax – This activity is comprised of state general excise expenses on revenues related to Activity 015 above.

BTL Activities Forecast Development:

Revenue: The level of potential revenue was first estimated. On-going BTL projects and other identified potential projects were reviewed to derive the annual estimated amount.

Labor: The BTL labor forecast was prepared by determining the workload requirements for CTAD /Forecast & Research personnel to support the Division's BTL activities at the forecasted revenue level. Employees were assigned to labor classes. The labor expenses were then established using standard Company-wide labor rates for the respective labor classes.

Other Nonlabor: Nonlabor charges such as materials, outside services and transportation were estimated based on continuing 2006 expenses and the application of recent years' trend review of expenses to estimated revenues.

General Excise Tax: General Excise Tax was computed by first computing taxable revenue [$538,405 revenue less deduction for qualifying subcontractor deductions ($466,425) = $71,980 taxable income] and then multiplying taxable revenue by the 4% GET rate.

b. Refer to page 4 for a detailed recap and assumptions used to derive the Customer Technology Application Division's 2007 BTL Construction related activity budget.

c. HECO has not sought or obtained formal approval for CTAD's BTL Activities, as these activities are non-utility in nature and do not require Commission approval. The Company has no plans to request Commission approval for these activities and for the inclusion of related revenues and costs in the setting of electric rates. Refer to page 5, Accounting for Non-Regulated and Billable Activities – criteria (3) and (4).

However, the Commission is aware that HECO is doing this construction-related type of BTL activity. In HECO Docket 01-0146, (Application to the Commission for Approval of Financing Arrangement with Hannon Armstrong Hawaii Funding Corp.) filed April 26, 2001, background information on the Pearl Harbor Naval Shipyard BTL construction project was provided by HECO to the Commission. In Decision and Order 18584, issued June 6, 2001, the Commission approved the financing arrangement with Hannon Armstrong Hawaii Funding Corp.

d-e. Refer to pages 5-6 for HECO's accounting policy for accounting for Non-Regulated Activities.

BTL Projects

## 2007 PROJECT FORECAST -- Lower Level of Activity Forecast Due To CIDLC and Other Commitments

Note: Forecasted On A Prospective Basis

PSR Division

| | Description | Activity | Ind. | EE# | Jan. | Feb. | March | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PSR | Revenue | 015 | BN | 905 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 44,867 | 538,405 |
| PSR | Expenses: | | | | | | | | | | | | | | | | |
| PSR | Materials | 140 | BN | 201 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1,200 |
| PSR | Contract Hires | 140 | BN | 503 | – | – | – | – | – | – | – | – | – | – | – | – | 0 |
| PSR | Outside Services | 140 | BN | 501 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 38,869 | 466,425 |
| PSR | Transportation | 140 | BN | 301 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 1,200 |
| PSR | GET | 040 | BN | 501 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 240 | 2,879 |
| PSM | HECO Labor/Overhead | 140 | BN | 150/400s | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 232 | 2,787 |
| PSR | HECO Labor/Overhead | 140 | BN | 150/400s | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 3,430 | 41,155 |
| | Estimated Net Income before taxes | | | | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 1,897 | 22,759 |

Assumptions Used:
Revenue and Expenses will be spread proratably over twelve months
Revenue projection based on matching principle with forecasted expenditures. (GAAP reporting)
**For Y2007, amounts will be all projected at the Parent Project level (P0000160 - Non-Government). No forecast made to P0000033 (Government).**

Revenue (905)
No distinction made between governmental and non-governmental projects.

Material Purchases (201)
Most project items will be purchased by subcontractors under a turnkey arrangement.

Contract Hires (503)
No contract hires will be employed.
No forecast made.

Contract Services (501)
Will represent bulk of nonlabor costs. Subcontractors will bill us for services performed including purchase of various supplies/material.

Labor/Overhead (150/400s)
Overhead estimated at 50% of PSR and PSN labor expense
Labor is forecasted in the Labor Forecasting Spreadsheet

Transportation (301)
Assume a limited use of vehicle for job site visits.

September 14, 2004

To: HECO Officers
Direct Reports to Officers
HELCO and MECO Presidents
HELCO and MECO Accounting Managers

From: Ernest Shiraki

Subject: Accounting for Non-Regulated and Billable Activities
Accounting for Start-Up Activities

Discussed herein are accounting policies and procedures related to non-regulated, billable, and start-up activities. Please carefully read and follow the policies and procedures, which are designed to help insure that we comply with financial accounting and regulatory requirements in the conduct of our business. Please disseminate this information to those in your area of responsibility who need to be aware of these policies and procedures. If there are any questions regarding the information discussed herein, please contact the Controller or the Director of Corporate and Property Accounting.

Accounting for Non-Regulated and Billable Activities

Costs incurred by HECO, HELCO and MECO (utility companies) for non-regulated activities and for work in support of HEI's non-utility affiliates (e.g. HEI, ASB and HEI Power Corp.) must be properly charged to appropriate code blocks, projects or workorders as discussed below. We need to insure that regulated operations do not subsidize the operations of HEI's non-utility affiliates, or any utility company activity with respect to non-regulated services and products.

Criteria generally descriptive of non-regulated activities include the following:

1. the activities are not generally considered to be required for utility operations, i.e. the production, purchase, transmission, distribution and sale of electricity;

2. the volume, frequency and value of the services provided are more than incidental;

3. the related revenue and costs have not been reviewed by the PUC in a rate case proceeding;

4. there are no plans to request PUC approval for the activities and for the inclusion of related revenues and costs in the setting of electric rates.

All costs and revenues associated with non-regulated activities must be tracked and classified as such. Anyone involved in activities described by one or more of the criteria above should consult with the Controller or Director of Corporate and Property Accounting to determine if such activities should be classified as regulated or non-regulated. For those activities determined to be non-regulated, specific and unique charge numbers should be established for each non-regulated activity. The charge numbers are projects and/or workorders that have a code block with an indicator segment of "BN" - Billable non-regulated revenue and expense or "NN" - Non-billable non-regulated expense. All costs related to the non-regulated activity should be charged to the established projects and/or workorders.

All costs incurred by the utility companies for work in support of HEI's non-utility affiliates should be authorized under an existing Administrative Services Agreement between the utility and the non-utility affiliate and charged to a project or workorder that has a code block with a "B_" (Billable cost) in the indicator segment and the affiliate to be billed in the location segment. Please remember that there are no labor or non-labor cut-off amounts below which costs need not be billed, i.e., all billable costs should be billed to the benefiting affiliate.

Also, the utilities should not provide services to non-utility affiliates or incur costs for services provided by non-utility affiliates unless there is an existing Administrative Services Agreement between the utility and the non-utility affiliate, and the services to be provided or received are actually authorized under that Administrative Services Agreement. Administrative Services Agreements are filed with the Legal Department. Check with the Legal Department on questions of whether the appropriate Administrative Services Agreement exists and whether it covers the contemplated services.

In addition to the proper charging of costs, please follow the procedures below with respect to work in support of HEI's non-utility affiliates:

1. Billing amounts recorded against project or workorder numbers should be periodically reviewed for accuracy and completeness by the responsible department.

2. Recorded billing amounts should be periodically compared to budget amounts. Significant variations should be researched and evaluated to determine the reasonableness of the recorded amounts.

3. Department managers and other direct reports to executives should periodically evaluate their organization's activities with respect to HEI's non-utility affiliates, and insure that utility operations do not suffer. If an organization's involvement in non-utility affiliate activities is affecting its ability to adequately maintain utility operations, the use of resources external to the organization (e.g. outside consultants) should be considered as a way to assist HEI's non-utility affiliates.

Accounting for Start-up Activities

Start-up activities are broadly defined as those one-time activities related to opening a new facility, introducing a new product or service, conducting business in a new territory, conducting business with a new class of customer or beneficiary, initiating a new process in an existing facility, or commencing some new operation. Start-up activities also include activities related to organizing a new entity. The accounting standards require that one-time costs of start-up activities be charged by the benefiting company to operation and maintenance expense as incurred, rather than to capital. Anyone involved in start-up activities should consult with the Controller or Director of Corporate and Property Accounting to discuss and determine the appropriate charging of start-up costs.

CA-IR-272

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

Note C on the referenced document indicates that the 2007 test year forecast of $128,000 includes $100,000 allowance "for one-time consulting charges to establish a new bill printing and mailing process using the new CIS billing system capabilities and remote printing options which were researched in 2006." Please provide the following:

a. Has HECO officially committed to the implementation of the remote printing and billing process referenced above? Please explain.

b. If the response to part a. above is that HECO has yet to decide whether to commit to remote printing and billing, please explain and describe the planned timeline on which such a decision will be made.

c. Please confirm that the above quote accurately characterizes the consulting charges as "one-time." If this cannot be confirmed, please explain.

d. Does HECO expect that it will incur this $100,000 of consulting charges to establish a new bill printing and mailing process on a recurring annual basis? Please explain.

e. Please explain why HECO did not eliminate or otherwise normalize these one-time consulting charges when assembling its 2007 rate case test year forecast.

HECO Response:

a. HECO has not officially committed to the implementation of remote printing and billing at this time. During the development of the test year estimates, this activity was anticipated to occur during 2007, however, the company has not actively pursued implementation of this strategy in 2007.

b. Remote printing and billing implementation has been put on hold until after the CIS implementation, currently projected for 2008.

c. Yes, the consulting charges were anticipated to be "one-time" to establish the remote printing and billing process.

d. No. This charge will not be incurred on a recurring basis.

e. HECO does not expect to incur this cost in 2007 and will remove the $100,000 from its test

year estimates in the next opportunity for determining revenue requirements. Costs were included in Account No. 903.

CA-IR-273

**Ref: HECO T-10 Response to CA-IR-2, Attachment 13, page 10 (ITS Costs).**

Note B on the referenced document indicates that the 2007 test year forecast of $1,627,550 was based on prior year actuals plus $509,000 for main frame managed services ($509k) ($215k) *[sic]*, Oracle maintenance ($200k) and 2nd year Oracle maintenance ($94k). Please provide the following:

a. Please provide a breakdown of the prior year actuals between materials, outside services and other.

b. Referring to part a. above, please provide a further breakdown of the prior year outside services cost by expected consulting work scope required in the 2007 forecast year.

HECO Response:

a. The reference to prior year actuals is for costs captured in Workorder IT000004. The breakdown of the 2005 prior year actuals, amounting to $1,188,073, which the 2007 estimate was derived from, is as follows:

$ 44,627 Materials
$910,393 Outside Services
$233,053 Other
---
$1,188,073 Total Workorder IT000004 – Data Center

Note that the 2007 budget estimate for Data Center Charges (workorder IT000004) should have been $1,697,073 (which is the $1,188,073 actual expense for 2005 plus $509,000 for the items identified in Note B on Attachment 13, page 10 of HECO T-10 response to CA-IR-2), instead of $1,627,550. The budget for this item is therefore understated by $69,523. An error was made in compiling the prior year (2005) actual expense and estimate additional expenses for 2007.

b. A detailed breakdown of the $1,188,073 Workorder IT000004 2005 charges identified above are provided as follows:

Materials:

$32,767 – Paper
11,860 – Supplies for check printer, copier, and print shop operations
---
$44,627 – Total Materials

Outside Services:

$407,420 – **Software – IBM** for Database (IMS V7/V9 Database Manager and DB2 UDB for OS/390 v7, DB2 Data Prop for OS/390 S&S), Interface communications (MQSeries for OS/390), language (COBOL for OS/390 & VM V2R2 and VS Cobol II Comp Lib & Debug, PPFA/370, OGL/370), Networking (Tivoli NetView for OS/390), On-line communications (CICS TS for z/OS V2), and zSeries (Software Excel Basic Ed., Alert, Resolve)

145,551 – **Software – CIT Systems Leasing** for Base Operating System and other Operating System software including DFSMS (Data Facility Storage Management System, DFSMShsm (Data Facility Storage Management System Hierarchical Storage Manager), RMF (Resource Management Facility, SDSF (Spool Display and Search Facility).

132,515 – **Software – Computer Associates** for CA-Deliver Output Management, CA-View Output Archival and Viewing, CA-View Output Archival and Viewing CICS Interface, CA-View Extended Retention Option, CA-PDSMAN PDS Library Management All 5 components, CA-7 Job Management, CA-VSAMAID VSAM Tools, VISION:Results, VISION:Results Interface to IMS/DB Full-Func, CA-ACF2 Security, Change Manager Base Package, Change Manager Automated Configuration Option, Change Manager Extended Processors Option, Change Manager Interface for External Security, Change Manager Quick Edit Option, CA-FAVER VSAM Data Protection, CA-1 TAPE MANAGEMENT, Change Manager Parallel Development Option.

33,032 – **Software – Compuware Corp** for Abend-aid for CICS, Fileaid for MVS, Xpediter CICS for COBOL, Xpediter CICS for Cobol.

111,411 – **Hardware maintenance – IBM -** for Model OC1-1W, Control Unit, Drive Unit, Virtual Tape Server, Magstar Controllers, Hi-perf Tape Subsystems , Mag Tape Drives, 85 IPM Printers, and Controllers.

57,809 – **IT Recovery Services - IBM** – for Disaster Recovery services.

22,655 – **Other Software and Hardware maintenance** – Other vendors including Allen Systems Group for ESM (Enhancement Support and Maintenance), Group 1 Software for Code 1 Plus Maintenance and Code 1 Plus subscription (monthly updates to Postal Database).

---
$910,393 – Total Outside Services

Other:

$130,229 – Enterprise Server Equipment Lease – CIT Systems Leasing
57,479 – Enterprise Storage (disk drives) – California First Leasing
28,891 – Printer Equipment Lease – CIT Systems Leasing
16,286 – Server component (Ficon channels) Lease
168 – Other
---
$233,053 – Total Other

CA-IR-274

**Ref: HECO T-10 Response to CA-IR-2, Attachment 13, page 10 (ITS Costs).**

Note B on the referenced document indicates that the 2007 test year forecast of $1,627,550 was based on prior year actuals plus $509,000 for mainframe managed services ($215k), Oracle maintenance ($200k) and 2nd year Oracle maintenance ($94k). Please provide the following:

a. Please confirm that the $215,000 for managed services is associated with temporary services for mainframe support while HECO migrates to the Unix/Oracle platform. If this cannot be confirmed, please explain.

   1. Please explain why it was necessary for HECO to retain the temporary services referenced in part a. above.

   2. Does HECO expect to retain temporary mainframe support services on an annually recurring basis subsequent to 2007? Please explain.

   3. Please explain why HECO believes that these temporary services are properly included in the 2007 test year forecast.

b. Please provide a breakdown of and forecast support for the $200,000 of Oracle maintenance fees in 2007.

   1. Referring to part b. above, please explain why it was necessary for HECO to incur Oracle maintenance fees in 2007.

   2. Referring to part b. above, are any of the components of the $200,000 one-time, non-recurring or start-up fees? Please explain.

   3. Does HECO expect to incur $200,000 of Oracle maintenance fees on an annually recurring basis? Please explain.

c. Please provide a breakdown of and forecast support for the $94,000 of 2nd year Oracle maintenance fees.

   1. Why did HECO include the second year of Oracle maintenance fees in the 2007 test year forecast along with the $200,000 of Oracle maintenance fees referenced in part b. above?

   2. Does HECO expect to incur $94,000 of Oracle maintenance fees on an annually recurring basis? Please explain.

d. Referring to parts a, b and c above, please provide a calculation of the portion of the mainframe managed services ($215k), Oracle maintenance ($200k) and 2nd year Oracle maintenance ($94k) costs distributed to O&M expense through the 2007 test year clearing distribution process.

HECO Response:

a. $215,000 is included in the budget to maintain HECO's current mainframe applications until all mainframe applications are established on the new UNIX Server Hardware platform.

   1. These services are retained to provide continuing mainframe support for the existing CIS, Ellipse and HR systems while the new CIS, Ellipse and HRMS systems are installed on the new UNIX Server hardware/ Oracle database software platforms.

   2. HECO will incur the mainframe managed services throughout 2007 and during 2008 until the mainframe is decommissioned in approximately August/September 2008. HECO does not anticipate that these services will continue in 2009 and beyond.

   3. These services are properly included in the test year estimate, as they will be paid in 2007. Furthermore, managed services, to supplement HECO personnel supporting the new UNIX system, may be incurred in years beyond the test year. Thus while these specific managed mainframe services will continue, other managed services may occur.

b. The $200,000 Oracle maintenance is for Oracle database maintenance fees for additional database licenses and 1st year maintenance fees beyond the initial contract described in part c. below. The $200,000 is for approximately three (3) additional database licenses and related 1st year maintenance fees to support new UNIX Servers for additional applications. Each license is anticipated to be $54,000 with 1st year maintenance of $12,000. Therefore: ($54,500 + $12,000) x 3 licenses = $200,000.

   1. Oracle Database maintenance fees are required as servers running this software are placed in service. The servers mentioned above are anticipated to be placed in service in late 2007.

   2. Of the $200,000, $163,500 or approximately 80% of the costs relate to license fees that

are one-time charges. The remaining 20% is for recurring maintenance that must be paid each year.

3. Oracle Database Software maintenance fees will continue to be incurred on an annual basis, based on the number of servers running the software. Oracle License fees will be incurred as new database servers are placed in service. However, at this time, we do not anticipate installing new servers in future years.

c. The $94,000 for Oracle 2nd year maintenance fees is for Oracle database maintenance fees purchased on an initial contract for 21 "enterprise CPU licenses" planned for the requirements of the CIS, OMS, HRMS and Ellipse systems. HECO received a 52.5% discount on license and maintenance fees with this initial contract. The servers (CPUs) were placed in service in 2006.

1. Oracle Database maintenance fees are required as servers running this software are placed in service. As mentioned above, the servers (CPUs) were placed in service in 2006, therefore Oracle maintenance fees were not included in 2005 which is the starting point for the 2007 budget. Thus, 2nd year maintenance fees were included in determining the 2007 budget. (First year maintenance fees were paid in 2006 when the servers began running the Oracle database.)

2. Yes, Oracle Database Software maintenance fees will continue to be incurred on an annual basis based on the number of servers running the application.

d. Approximately $447,000 of the $509,000 (=$215,000 +$200,000+$94,000) is distributed to O&M expenses based on the 2007 test year clearing distribution (PEZ) process. The calculation follows:

$153,000 - Mainframe Managed Services O&M, based on $215K x 71.3%
Where 71.3% =O&M portion of PEZ residual clearing allocations*
$200,000 - O&M Portion of Oracle Database Maintenance Fees (100% O&M)
$ 94,000 - O&M Portion of Oracle 2nd year maintenance fees (100% O&M)
---
$447,000 - Total cleared to O&M

* = 71.3% is shown on HECO-WP-1051, Page 11

CA-IR-275

**Ref: HECO T-10 Response to CA-IR-2, Attachment 13, page 10 (ITS Costs).**

Note D on the referenced document indicates that the 2007 test year forecast of $384,000 of miscellaneous work order amounts was based on prior year actuals plus $332,000 for enterprise software maintenance ($190k) and additional third party software maintenance ($142k). Please provide the following:

a. Please provide a breakdown of and forecast support for the $190,000 of enterprise software maintenance fees in 2007.

   1. Referring to part a. above, please explain why it was necessary for HECO to incur the enterprise software maintenance fees in 2007.

   2. Referring to part a. above, are any of the components of the $190,000 enterprise software maintenance fees one-time or non-recurring? Please explain.

   3. Does HECO expect to incur $190,000 of enterprise software maintenance fees on an annually recurring basis? Please explain.

b. Please provide a breakdown of and forecast support for the $142,000 of additional third party software maintenance fees in 2007.

   1. Referring to part b. above, please explain why it was necessary for HECO to incur the additional third party software maintenance fees in 2007.

   2. Referring to part b. above, are any of the components of the $142,000 additional third party software maintenance fees one-time or non-recurring? Please explain.

   3. Does HECO expect to incur $142,000 of additional third party software maintenance fees on an annually recurring basis? Please explain.

c. Referring to parts a. and b. above, please provide a calculation of the portion of the enterprise software maintenance ($190k) and additional third party software maintenance ($142k) fees distributed to O&M expense through the 2007 test year clearing distribution process.

HECO Response:

a. The $190,000 amount budgeted for enterprise software maintenance fees include

   maintenance for the following types of software:

   Middleware software maintenance for software installed in 2006
   Business Objects software maintenance for software installed in 2006

Additional Business Objects software installed in 2007
MQ support (for IBM product Websphere Message Queue which is the basis of our middleware application)
Toad and Exceed support (Toad is a Database Analyst tool which facilitates changes to databases and Exceed is an application which provides what is referred to X-Windows access from Windows to the UNIX server)
WAS (Websphere Application Server for application level access into Ellipse)
CICS transaction gateway for Ellipse SP7
Code and Version Control (Subversion for Collabnet)

1. These fees are required to maintain the above Middleware, reporting, Analyst tool applications on the HECO computer network.

2. No, these items are not non-recurring as maintenance support is required while software is being used. The identified software are expected to continue to be used, or replacement software will be required, and the replacement software will have similar maintenance support fees.

3. The $190,000 is for recurring software maintenance expense that will continue to be incurred in future years.

b. The $142,000 for additional third party software maintenance fees was included in the budget for the following types of software:

Authentication – Centrify
Audit and Security Reporting (intrusion detection products)
SAR Replacement
UNIX Scheduler
FTP – WebDAV
UNIX Monitor
Printing, Page Def, Form Def

1. These fees were required to maintain applications on the HECO computer network.

2. No these items are not non-recurring as maintenance support is required while software is being used.

3. The $142,000 is for recurring third party software maintenance expense that will continue to be incurred in future years for software purchased in 2006.

c. All of the $332,000 is distributed to O&M expense based on the clearing distribution (PEZ) process for the 2007 budget. The calculation follows:

$190,000 – O&M Portion of Enterprise software maintenance (100% O&M)
$142,000 – O&M Portion of 3rd Party software maintenance (100% O&M)
---
$332,000 - Total cleared to O&M expense

CA-IR-276

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

Note I on the referenced document indicates that the 2007 test year forecast of $1,726,000 of consultant applications work order amount was based on prior year actuals plus $926,000 for CIS application outsourced charges ($450k), HRMS application outsourced charges ($116k), and additional TYC outsourced charges to support legacy CIS ($360k). Please provide the following:

a. Please provide a breakdown of and forecast support for the $450,000 of CIS application outsourced charges in 2007.

   1. Referring to part a. above, please explain why it was necessary for HECO to incur the CIS application outsourced charges in 2007.

   2. Referring to part a. above, are any of the components of the $450,000 CIS application outsourced charges one-time or non-recurring? Please explain.

   3. Does HECO expect to incur $450,000 of CIS application outsourced charges on an annually recurring basis? Please explain.

b. Please provide a breakdown of and forecast support for the $116,000 of HRMS application outsourced charges in 2007.

   1. Referring to part b. above, please explain why it was necessary for HECO to incur the HRMS application outsourced charges in 2007.

   2. Referring to part b. above, are any of the components of the $116,000 HRMS application outsourced charges one-time or non-recurring? Please explain.

   3. Does HECO expect to incur $116,000 of HRMS application outsourced charges on an annually recurring basis? Please explain.

c. Please provide a breakdown of and forecast support for the $360,000 of additional TYC outsourced charges to support legacy CIS in 2007.

   1. Referring to part c. above, please explain why it was necessary for HECO to incur the additional TYC outsourced charges to support legacy CIS in 2007.

   2. Referring to part c. above, are any of the components of the $360,000 additional TYC outsourced charges to support legacy CIS one-time or non-recurring? Please explain.

   3. Does HECO expect to incur $360,000 of additional TYC outsourced charges to support legacy CIS on an annually recurring basis? Please explain.

d. Referring to parts a, b and c above, please provide a calculation of the portion of the CIS

application outsourced charges ($450k), HRMS application outsourced charges ($116k), and additional TYC outsourced charges to support legacy CIS ($360k) distributed to O&M expense through the 2007 test year clearing distribution process.

HECO Response:

a. The $450K CIS outsourced charges are based on an estimated per hour rate of $120 per hour x 3750 hours, or approximately 2 outsourced full-time equivalent employees ("FTE").

   1. These outsourced services are to supplement HECO permanent staff assigned to the CIS implementation during 2007. HECO has established an arrangement with an IT outsourcer to provide IT services and support for HECO IT system while regular HECO staff are assigned to the CIS implementation.

   2. These outsourced services are not anticipated to be non-recurring.

   3. These outsourced services are anticipated to continue to support the CIS application in future years. When CIS goes into service, permanent staff will return to support the new system. However, due to the sophistication and capability of the new CIS, the level of support needed for ongoing maintenance will be greater than that of the predecessor system. Therefore, additional outsourced services (remotely located) will be used to supplement the permanent staff.

b. The $116,000 outsourced charges are based on an estimated per hour rate of $120 per hour x 970 hours, or approximately 0.5 outsourced FTEs.

   1. These outsourced services are to supplement HECO permanent staff assigned to the Human Resources Suites ("HR Suites") implementation in 2007.

   2. These outsourced services are not anticipated to be non-recurring.

   3. These outsourced services are anticipated to continue to support the HRMS application in future years. When HRMS goes into service, outsourced support will be the primary

support for the system. Due to the sophistication and increased capability, the new HR Suite system will require more support than the existing system.

c. The $360,000 outsourced charges are based on an estimated per hour rate of $120 per hour x 3000 hours, or approximately 1.5 outsourced FTEs

1. These outsourced services maintain the Legacy CIS application and other ancillary applications like DARS (enterprise reporting system) and Metering systems while the new CIS application is being implemented.

2. These charges are not expected to be non-recurring. These charges will be incurred through the period of CIS implementation, which is expected in 2008. Thereafter, these services are anticipated to continue to support the new system and the ancillary applications, such as DARS and the metering system in future years.

3 See response to part c.2.

a. $660,000 of the $926,000 is distributed to O&M expense based on the clearing distribution (PEZ) process for the 2007 budget. The calculation follows:

$321,000 CIS Outsourced Charges O&M, based on $450K x 71.3%*
$ 83,000 HRMS Outsourced Charges O&M, based on $116K x 71.3%*
$256,000 CIS (Legacy) Outsourced Charges O&M, based on $360K x 71.3%*
---
$660,000 - Total cleared to O&M Expense

* = Where 71.3% =O&M portion of PEZ residual clearing allocations. 71.3% is shown on HECO-WP-1051, Page 11.

CA-IR-277

**Ref: HECO T-10, page 21 (Ellipse Migration).**

Beginning at line 11 of page 21, HECO T-10 describes the $509,000 cost related to the Ellipse migration to the Unix platform. Please provide the following:

a. Absent plans to operate on a new standard Unix/Oracle platform instead of the IBM mainframe platform, would it have been necessary for the Company to incur the $509,000 of migration cost in 2007? Please explain.

b. Please confirm that the migration process will result in both the IBM mainframe platform and the new standard Unix/Oracle platform to be fully maintained and in operation for a period of time. If this cannot be confirmed, please explain.

c. Does the 2007 test year forecast include any O&M expenses (e.g., maintenance fees, licensing fees, user fees, etc.) associated with continued operations on the IBM mainframe platform? If so, please provide a detailed, descriptive listing of such items and related amounts included in test year expense.

d. Other than the $509,000 of migration costs, does the 2007 test year forecast include any O&M expenses (e.g., maintenance fees, licensing fees, user fees, etc.) associated with the new standard Unix/Oracle mainframe platform? If so, please provide a detailed, descriptive listing of such items and related amounts included in test year expense.

e. Once the migration is complete, how does the annual cost of the new standard Unix/Oracle mainframe platform compare with the annual cost of the IBM mainframe platform? Please explain and provide supporting cost documentation.

f. Why did HECO choose not to normalize the $509,000 for ratemaking purposes? Please explain.

HECO Response:

a. Yes, the Company would incur the $509,000 expense even if there were no plans to operate Ellipse on the new Unix/Oracle platform. (See response to CA-IR-133 for the updated cost related to the Unix migration costs.) The Company would be required to fully maintain and operate the mainframe platform (hardware and software) by staff skilled in the mainframe environment in order to run the Ellipse application. Other costs

associated with the IBM mainframe, such as off-site disaster recovery capabilities would also be incurred.

b. Yes, Ellipse will continue to run on the mainframe until the go-live of the Unix platform which is anticipated for May 2008. From that point, the Ellipse production environment will be switched over to Unix servers. During the course of the project leading up to go-live, HECO plans to purchase Unix servers, which will be used to prepare and test the conversion of code and data to the Unix environment.

c. As noted in response to CA-IR-273, the budget for Data Center charges should have been $1,697,073. The 2007 budget includes $1.188M ($1.697M less $0.509M) charges to clearing for mainframe related expenses based on 2005 (prior year) charges. Workorder IT000004 (Data Center Charges) includes mainframe operations expenses. Ref: Note B on HECO T-10 Response to CA-IR-2, Attachment 13, page 10 (ITS costs). 2005 actual expenses for IT000004, are described in response to CA-IR-273.

d. As described in the response to CA-IR-274, $294,000 ($200,000 + $94,000) of Oracle Database Software fees relate to the UNIX/Oracle platform.

e. The annual cost of the new UNIX enterprise platform, with expanded capabilities, is expected to be approximately the same as those of the Mainframe other than Oracle database fees.

f. HECO chose not to normalize the $509,000 for rate making purposes because the Company is required to implement periodic software upgrades every 4 to 5 years. While HECO may not incur migration to UNIX costs in subsequent years, HECO will incur other costs in subsequent years, based on the vendor software lifecycle (see response to CA-IR-133, part f). Individually the costs for the UNIX migration may appear to be a

one-time cost, however, in each year there are costs related to system upgrades which may not occur each year, and together they are "normal" operating costs for each year. See response to CA-IR-133, for updated costs for 2007 related to the UNIX migration.

CA-IR-278

**Ref: HECO T-10, pages 21-22 (Ellipse Migration).**

Beginning at line 11 of page 21, HECO T-10 describes the $509,000 cost related to the Ellipse migration to the Unix platform. Please provide the following:

a. In preparing the 2007 test year forecast, when did HECO assume the migration work would commence? Please explain.

b. When did the actual migration work commence? Please explain.

c. Please provide HECO's current best estimate of the timetable for completing the following tasks:

   1. Replacement of Access with the new Customer Information System, which HECO T-10 indicates was scheduled in early 2008.

   2. Replacement of Tesseract with the HR Suite project, which HECO T-10 indicates was planned in 2007.

   3. Completion of the migration of the Ellipse application and associated interfaces from the IBM/DB2 mainframe platform to the standard Unix/Oracle platform.

d. At page 22, HECO T-10 indicates that the planned migration will improve vendor support because Mincom's support staff has experience with the Unix/Oracle platform, but not the mainframe or DB2, and the Ellipse application will not need to be converted to IBM/DB2 going forward. Once the migration is completed, does HECO anticipate that cost savings or reductions or improved efficiencies will be realized? Please explain.

HECO Response:

a. The Ellipse Unix migration effort was expected to start in January 2007 and finish by the end of 2008.

a. The actual migration began in January 2007.

c.

   1. The current schedule is for the new Customer Information System to be "go-live" in February 2008.

2. The current schedule for the Phase I of the HR Suites project is July 2008, and December 2008 for Phase II.

3. Completion of the migration of the Ellipse application and associated interfaces from the IMB/DB2 mainframe platform to Unix/Oracle is planned for May 2008.

d. Since Mincom's software support staff is more familiar with the Unix/Oracle environment than with the IBM/DB2 environment, we anticipate that the average duration and number of attempts it takes to resolve a single software problem will be reduced. If this is achieved, HECO support staff can spend less time testing program fixes and more time assisting Ellipse users.

CA-IR-279

**Ref: HECO T-10, page 10 & CA-IR-131 (Account 920).**

The table at page 10 reflects a historical comparison of charges to Account 920 gross and net of incentive compensation pay (PIC). CA-IR-131 provided the actual charges to Account 920 of $13,506,000. Please provide the following:

a. Please provide the actual 2006 PIC that should be deducted from the $13,506,000 to be consistent with the data for other years included in the referenced table.

b. Please identify and describe the primary factors and related amounts that caused Account 920 in 2006 ($13.5 million) to be about $2.2 million less than 2005 actual ($15.76 million) and about $4.7 million less than the $18.2 million included in the 2007 test year forecast.

HECO Response:

a. The actual 2006 PIC that should be deducted is ($935,000).

b. The primary factor that caused Account 920 in 2006 to be about $2.2 million less than in 2005 was performance incentive compensation which decreased from $1.6 million in 2005 to ($.9 ) million in 2006 as shown on page 2.

Primary factors that caused Account 920 in 2006 to be about $4.7 million less than the 2007 test year estimate were:

1. Performance incentive compensation ($2,970,000) as shown on page 2,
2. General wage increases ($476,000) as shown on page 3 and
3. Increase in positions that performance administrative work ($405,000) as shown on page 4.

Charges to Account 920 may also fluctuate depending of whether time is spent in specific functional areas or on specific projects that are not administrative in nature.

Hawaiian Electric Company, Inc.
Performance Incentive Compensation
2005-Test Year 2007

| | 2005 Actual | 2006 Actual | TY 2007 | Variance 2006 vs. 2005 | Variance 2006 vs. 2007 |
|---|---|---|---|---|---|
| **NARUC 920:** | | | | | |
| LTIP/EICP | 1,191,898 | (624,716) | 1,677,109 | (1,816,614) | (2,301,825) |
| OTHER AWARDS | 442,149 | (310,202) | 358,000 | (752,351) | (668,202) |
| TOTAL | 1,634,047 | (934,918) | 2,035,109 | (2,568,965) | (2,970,027) |
| **NARUC 921:** | | | | | |
| OTHER | 43,684 | 44,309 | 38,000 | 625 | 6,309 |
| HEI INCENTIVE COMP | 820,279 | 294,437 | 175,704 | (525,842) | 118,733 |
| TOTAL | 863,962 | 338,746 | 213,704 | (525,216) | 125,042 |

HAWAIIAN ELECTRIC COMPANY, INC.
EFFECT OF GENERAL PAY INCREASE
2006 to 2007

RELATIVE WAGE RATES

| | 2006 | | 2007 | |
|---|---|---|---|---|
| | BU | Merit | BU | Merit |
| JAN | 1.0287 | 1.0375 | 1.0718 | 1.0764 |
| FEB | 1.0287 | 1.0375 | 1.0718 | 1.0764 |
| MAR | 1.0287 | 1.0375 | 1.0718 | 1.0764 |
| APR | 1.0287 | 1.0375 | 1.0718 | 1.0764 |
| MAY | 1.0431 | 1.0738 | 1.0718 | 1.1141 |
| JUN | 1.0431 | 1.0738 | 1.0718 | 1.1141 |
| JUL | 1.0431 | 1.0738 | 1.0718 | 1.1141 |
| AUG | 1.0431 | 1.0738 | 1.0718 | 1.1141 |
| SEP | 1.0431 | 1.0764 | 1.0718 | 1.1168 |
| OCT | 1.0431 | 1.0764 | 1.0718 | 1.1168 |
| NOV | 1.0718 | 1.0764 | 1.1093 | 1.1168 |
| DEC | 1.0718 | 1.0764 | 1.1093 | 1.1168 |
| TOTAL | 12.517 | 12.751 | 12.936 | 13.229 |
| | (A) | (B) | (C) | (D) |

| | | | | BU | Merit | |
|---|---|---|---|---|---|---|
| Percentage increase 2007 over 2006 | | | | | | |
| (E) | BU (C-A)/A | Merit | (D-B)/B | 3.35% | 3.75% | |
| FY2006 Account 92000 Labor ($000) | | | | 1,070 | 11,733 | |
| Increase due to general pay increase ($000) | | | | 36 + | 440 = | 476 |

Assumptions:

| | | |
|---|---|---|
| BU Increases | 5/1/2006 | 1.5% of 11/1/02 rates |
| | 11/1/2006 | 3.0% of 11/1/02 rates |
| | 11/1/2007 | 3.5% of 10/31/07 rates |
| Merit Increases | 5/1/2006 | 3.5% of 4/30/06 rates |
| | 9/1/2006 | 0.25% of 4/30/06 rates |
| | 5/1/2007 | 3.5% of 4/30/07 rates |
| | 9/1/2007 | 0.25% of 4/30/07 rates |

Hawaiian Electric Company, Inc.
Variance due to "New" Positions

| | |
|---|---|
| Total Effect of "New" Positions per HECO-1006 | 411,817 |
| Labor charges of IRP Analyst hired in 2006 | (6,786) |
| Variance between TY 2007 forecast and 2006 due to "new" positions | 405,031 |

CA-IR-280

**Ref: HECO T-10, page 16 & CA-IR-131 (Account 921).**

The table at page 16 reflects a historical comparison of charges to Account 921 gross and net of Apprise amortization and incentive compensation pay (PIC). CA-IR-131 provided the actual charges to Account 921 of $11,529,000. Please provide the following:

a. Please provide the actual 2006 Apprise amortization and PIC amounts that should be deducted from the $11,529,000 amount to be consistent with the data for other years included in the referenced table.

b. Please identify and describe the primary factors and related amounts that caused Account 921 in 2006 ($11.5 million) to be about $2.7 million less than the 2005 actual ($14.27 million) and about $1.4 million less than the $12.9 million included in the 2007 test year forecast.

c. Please explain why the PIC exclusion for 2007 is shown as $214,000 rather than the $452,000 referenced at page 13, line 23.

HECO Response:

a. The actual 2006 PIC that should be deducted is $339,000. There was no Apprise amortization in 2006.

b. The primary factors that caused Account 921 to be about $2.7 million less in 2006 than in 2005 were:

1. Performance incentive compensation ($525,000) as shown in CA-IR-279 page 2,

2. EEI dues recorded in Account 921 rather than Account 9302 in 2005 ($268,000),

3. Deferred IRP costs amortized in 2006 lower than deferred IRP costs amortized in 2005 ($251,000),

4. Certain research and development costs recorded to Account 9302 rather than Account 921 beginning in 2006 ($235,000),

5. Decrease in ITS Clearing charges to NARUC 921 in 2006 primarily due to lower E-business and EFMS program spending in 2006 versus 2005 and one time Enterprise Reporting project costs in 2005 which did not impact 2006 ($233,000),

6. Higher contract services for the Security Division in 2005 primarily due to special duty work at Ena substation and reduced contract services in 2006 ($378,000) and

7. EEO expenses recorded to Account 925 rather than Account 921 beginning in 2006 ($128,000).

The primary factors that caused Account 921 in 2006 to be about $1.4 million less than the 2007 test year estimate were:

1. Ellipse migration to UNIX in 2007 ($509,000) as discussed in HECO T-10, pages 21-22,

2. Axis and Strategizer software implementation in 2007 ($291,000). Axis and Strategizer software implementation is discussed in HECO T-10, page 22 (Note: The estimates included in Test Year 2007 will be adjusted in the next determination of revenue requirements to reflect the current estimates provided in response to CA-IR-135) and

3. No amortization of prior year's deferred IRP costs included in test year 2007 forecast ($382,000).

c. The PIC exclusions on page 16 reflect the amounts shown on HECO-1004 and do not include incentive compensation included in HEI charges to HECO. The incentive compensation included in HEI charges to HECO for the test year 2007 of $238,000 (HECO-1007, page 6) is included in the $452,000 referenced at page 13, line 23.

CA-IR-281

**Ref: HECO T-10 (AFUDC, CIAC & PHFFU).**

During an informal interview on May 4, 2007, the subject of AFUDC was discussed including the interaction with CIAC and Property Held for Future Use ("PHFFU"). Please provide the following:

a. Please confirm that no AFUDC is capitalized on any PHFFU amounts included in rate base. Once the related projected is completed and placed in service, any amounts in PHFFU are transferred directly into the appropriate plant account without any AFUDC capitalization. If this cannot be confirmed, please explain.

b. With regard to CIAC, reference was made to revised procedures resulting from a 2002 docket. Because CIAC billed to a particular party cannot be matched to a specific project through the accounting system, AFUDC was previously recorded on 100% of the construction expenditures, regardless of receipt of third party payments. Now, AFUDC is not started on a particular project that has associated CIAC until cumulative expenditures exceed the contribution amount. Then, AFUDC is capitalized on the entire project expenditure balance for the remainder of the project. Please confirm or correct/revise the above discussion, as necessary and appropriate.

c. Referring to part b. above, it appears that timing and matching may remain a problem. Once cumulative project expenditures exceed related CIAC collections, the Company commences capitalizing AFUDC on the entire amount of cumulative expenditures, not just the excess over CIAC (or customer advances for that matter). Please explain why the Company did not implement or is unable to implement either of the following methodologies to better determine the out-of-pocket expenditures on which AFUDC is capitalized:

    1. Reduce the cumulative project expenditures, on which AFUDC is recorded, by the amount of collected CIAC (or customer advances) for the entire duration of the project.

    2. Record negative AFUDC on the amount of collected CIAC (or customer advance) starting with receipt of the funds and stopping with the completion of the related construction project, which would serve to offset any excessive AFUDC charged as a project cost.

HECO Response:

a. Yes. AFUDC is not capitalized on any PHFFU amounts. When PHFFU is transferred to plant in service, no AFUDC is capitalized.

b. In Docket No. 99-0327 (Manana Infrastructure Improvements project) the Consumer Advocate did not object to the project, however the Consumer Advocate expressed concern

regarding HECO's inclusion of AFUDC for the project, since the City and County of Honolulu was providing contributions to cover the cost of the project. Under a settlement agreement between the Consumer Advocate and HECO dated December 21, 2001 in Docket No. 99-0327, HECO and the Consumer Advocate addressed the application of AFUDC to projects where all or part of the project is covered by either cash CIAC or Customer Advances (collectively, "customer contributions"). The agreement also addressed the subtraction of customer contributions in the calculation of rate base. The modification to the accounting procedures incorporated some simplifying assumptions to mitigate the administrative costs necessary to implement and maintain the revised procedures.

Under the agreement, the application of AFUDC to projects involving customer contributions is based on the set of rules described in the agreement. The approach to applying AFUDC depends on whether the project is defined as "small" or "large":

1. For small projects (i.e., programs, a collection of numerous similar projects each with an estimated construction period of less than six months and an estimated cost of less than $100,000) involving customer contributions, AFUDC is not applied to program costs if the expected construction period is less than or equal to three (3) months. On the other hand, AFUDC is applied if the expected construction period is more than three months.

2. For large projects (i.e., specific projects tracked individually) involving customer contributions, AFUDC is not applied until actual costs exceed the expected customer contribution amount.

As stated in the agreement, for both small and large projects where AFUDC is applied, "AFUDC is applied on total project costs, as opposed to project cost net of the expected contribution amount. The agreement is based on the following simplifying assumptions:

- "For small projects involving customer contributions, the result of accruing AFUDC on gross costs for projects with estimated construction periods of more than 3 months, while not accruing any AFUDC on projects with estimated construction periods of 3 months or less, should be comparable to the result attained by calculating AFUDC on project costs, net of customer contributions, for all projects."
- "For large (i.e., specific) projects, deferring the start date of the AFUDC accrual until the project costs exceed the total expected customer contribution amount will provide for AFUDC on project costs that exceed the amount of customer contributions. In addition, deferring the start date of the AFUDC accrual is intended to offset the impact of accruing AFUDC on total project costs, rather than on costs net of the actual amounts of customer contributions received at any given point in time."

Under the agreement, HECO also continued its current practice of subtracting customer contributions in the calculation of rate base as soon as the customer is billed (i.e., before the funds are actually received.) "This practice would understate rate base, e.g., for purposes of test year revenue requirement calculations, in cases where the cash is not yet received and the related project costs are not yet included in rate base (i.e., construction of the project is not yet complete). In addition, the Company's current

accounting treatment of customer contributions may result in a 'mis-match' between the start of the amortization of the customer contributions and the depreciation of the associated plant in service. However, considering the agreement between the parties as a whole, including the various other simplifying assumptions proposed for adoption, such a 'mis-match' would not result in a significant distortion of rate base and the related depreciation expense for rate setting purposes over the life of the asset for which contributions were received." (See Attachment 1 for the agreement dated December 21, 2001 filed in Docket No. 99-0237.)

c. As stated in the agreement between HECO and the Consumer Advocate in Docket No. 99-0327, the agreed upon methodology incorporates some simplifying assumptions to mitigate the administrative costs necessary to monitor CIAC collections by project, and modifying the accounting system to apply AFUDC on a net project cost amount. HECO's current accounting system is not established to account for AFUDC in such manner. The settlement agreement contemplated that the revised procedures would be evaluated after approximately one year to determine the reasonableness of the simplifying assumptions and to make any procedural adjustments deemed necessary by the parties. The evaluation did not take place within the contemplated one year period, however. HECO had significant other priorities in the year after implementing the simplified procedures, including implementing Sarbanes-Oxley requirements, and there were significant personnel changes in the area. HECO is currently in the process of completing the evaluation of the simplifying assumptions and determining whether any procedural adjustments are necessary. Such evaluation will be provided to the Consumer Advocate and Commission upon completion.

**Hawaiian Electric Company, Inc.** • PO Box 2750 • Honolulu, HI 96840-000



December 21, 2001

FILED
2001 DEC 21 P 4: 09
PUBLIC UTILITIES COMMISSION

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

Dear Commissioners:

Re: Docket No. 99-0327 – Hawaiian Electric Company, Inc. for approval to commit funds in excess of $500,000 for Project P0000105, Installation of Manana Infrastructure Improvements

The purpose of this letter is to inform the Commission of an agreement between Hawaiian Electric Company, Inc. (HECO) and the Division of Consumer Advocacy (Consumer Advocate) with respect to an outstanding issue in the above referenced proceeding. In addition, HECO and the Consumer Advocate (the parties) request the Commission's approval of the agreement.

Background

HECO filed its application in the above referenced proceeding on September 17, 1999. The Consumer Advocate filed its Statement of Position on November 24, 1999. While the Consumer Advocate did not object to the project, it expressed concern regarding HECO's proposed inclusion of allowance for funds used during construction (AFUDC) in the total project cost. The Consumer Advocate believed that AFUDC should not be added to the cost of the project because the City & County would be providing contributions to cover the total cost of the project. On December 2, 1999, HECO filed a letter in response to the Consumer Advocate's November 24, 1999 Statement of Position. On December 9, 1999, the Consumer Advocate filed a letter in response to HECO's December 2, 1999 letter.

The parties met to discuss their differences in this docket, and reached an agreement. In keeping with the agreement, on January 18, 2000, HECO filed a letter modifying its application to exclude any AFUDC from the project costs related to the project described in Docket No. 99-0327. In addition, HECO agreed to continue discussions with the Consumer Advocate with respect to the AFUDC issue, and to

inform the Commission of any changes in accounting procedures.[1] On May 10, 2000, the Commission issued Decision and Order No. 17725, approving HECO's revised application.

The parties have reached agreement on a plan to modify the accounting procedures, and are hereby submitting the plan for Commission approval.

Agreement

The agreement addresses the application of AFUDC to projects where all or part of the project cost is covered by customer contributions, i.e., by either cash Contributions in Aid of Construction or Customer Advances for Construction (collectively "customer contributions").[2] The agreement also addresses the subtraction of customer contributions in the calculation of rate base. The modification to the accounting procedures incorporates some simplifying assumptions to mitigate the administrative costs necessary to implement and maintain the revised procedures. The revised procedures should result in lower amounts of AFUDC on a prospective basis than would be accrued using HECO's existing procedures and, therefore, a prospectively lower rate base.[3]

Application of AFUDC: The amount, if any, of AFUDC applied to projects involving customer contributions will be based on a set of rules, which are summarized on the attached flow chart. The approach to applying AFUDC depends on whether the project is defined as "small" or "large". Small, similar projects are grouped into a "program" (a collection of numerous similar projects each with an estimated construction period of less than six months and an estimated cost of less than $100,000), while large projects are tracked individually as "specific" projects.

For small projects involving customer contributions, AFUDC is not applied to program costs if the expected construction period is less than or equal to three (3) months. On the other hand, AFUDC is applied if the expected construction period is more than three (3) months. For specific projects involving customer contributions, AFUDC is not applied until actual costs exceed the expected customer contribution

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1 HECO and the Consumer Advocate had agreed to inform the Commission of any changes in accounting procedures by April 28, 2000. Due to various circumstances and changes in priorities affecting HECO and/or the Consumer Advocate, the parties were unable to settle their differences prior to April 28, 2000. The parties obtained, therefore, Commission approvals to extend the time allotted to resolve their differences. The last approved extension was requested by letter on January 24, 2001, in which the parties indicated that a mutually agreeable plan could and would be developed to address the Consumer Advocate's concerns.

2 This agreement does not address in-kind contributions since AFUDC is not applied to in-kind contributions.

3 The revised procedures are intended to simplify the remedies deemed necessary to address the Consumer Advocate's concern regarding the application of AFUDC for projects involving customer contributions.

amount. For both small and large projects where AFUDC is applied, AFUDC is applied on total project costs, as opposed to project costs net of the expected customer contribution amount. The agreement is based on the following assumptions:

1. For small projects involving customer contributions, the result of accruing AFUDC on gross costs for projects with estimated construction periods of more than 3 months, while not accruing any AFUDC on projects with estimated construction periods of 3 months or less, should be comparable to the result attained by calculating AFUDC on project costs, net of customer contributions, for all projects.

2. For large (i.e., specific) projects, deferring the start date of the AFUDC accrual until the project costs exceed the total expected customer contribution amount will provide for AFUDC on project costs that exceed the amount of customer contributions. In addition, deferring the start date of the AFUDC accrual is intended to offset the impact of accruing AFUDC on total project costs, rather than on costs net of the actual amounts of customer contributions received at any given point in time. The reasonableness of this assumption will be revisited utilizing the data that will be collected during the trial period.

Rate Base Calculation: HECO will continue its current practice of subtracting customer contributions in the calculation of rate base as soon as the customer is billed, i.e., before the funds are actually received. This practice would understate rate base, e.g., for purposes of test year revenue requirement calculations, in cases where the cash is not yet received and the related project costs are not yet included in rate base (i.e., construction of the project is not yet complete). In addition, the Company's current accounting treatment of customer contributions may result in a "mis-match" between the start of the amortization of the customer contributions and the depreciation of the associated plant in service. However, considering the agreement between the parties as a whole, including the various other simplifying assumptions proposed for adoption, such a "mis-match" would not necessarily result in a significant distortion of rate base and the related depreciation expense for rate setting purposes over the life of the asset for which contributions were received.

Other Provisions: The parties also agree that:

1. The revised procedures will be effective January 1, 2002 for HECO.

2. The revised procedures will be applied on a prospective basis, i.e., it will not be applied to projects currently in progress.

3. The results of the revised procedures will be evaluated after approximately one year to determine the reasonableness of the simplifying assumptions, and to make any procedural adjustments deemed necessary by the parties.

4. The revised procedures will be implemented by only HECO at this time. Hawaii Electric Light Company, Inc. (HELCO) and Maui Electric Company, Ltd. (MECO) will adopt comparable procedures after the parties determine (see item 3. above) that the revised HECO procedures are reasonable and the results are acceptable.

5. For a one year period beginning on January 1, 2002, HECO agrees to maintain information that will allow for the following types of analysis:

   a. For small projects, analyze the reasonableness of using the estimated construction period (i.e., estimated construction periods less than or equal to three (3) months, and estimated construction periods more than three (3) months) as the basis for determining whether AFUDC should be accrued on projects that are funded by customer contributions.

   b. For large projects, analyze whether the application of AFUDC only after project costs exceed the estimated customer contribution amount results in AFUDC that reasonably represents the compensation HECO should be allowed for project costs that exceed the amounts of customer contributions received for the project.

   c. For large projects on which AFUDC was calculated, estimate the time span between when costs were first recorded against the project, and when construction began.

The presentation format of the specific information to be tracked has not yet been determined. HECO agrees to develop and discuss with the Consumer Advocate, during the second quarter of 2002, the reports from which the information needed to perform the analyses described above in parts a. through c. will be obtained.

Request For Approval

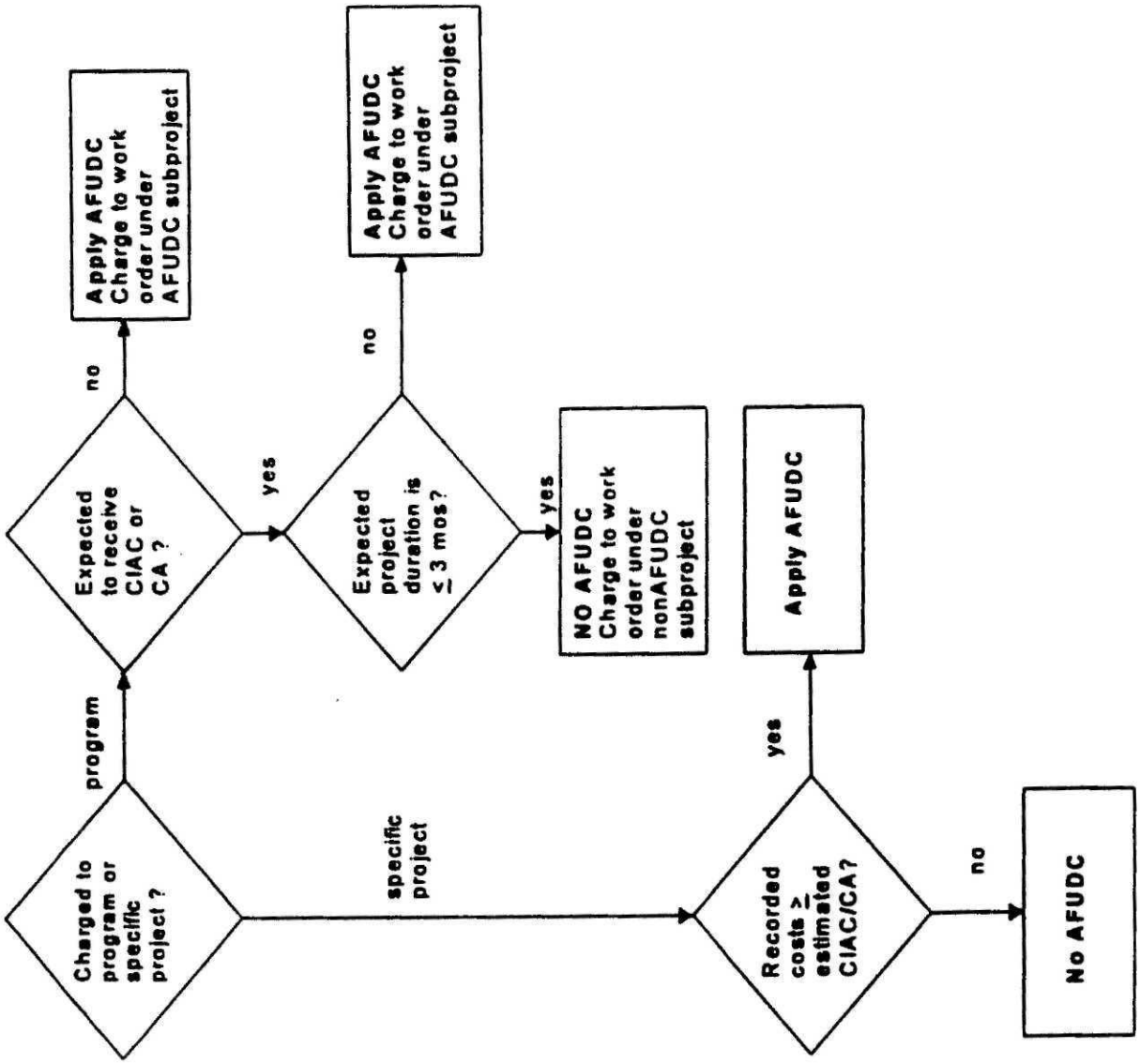
HECO and the Consumer Advocate respectfully request Commission approval of the agreement between the parties. The parties are mindful that the Commission is not bound by any agreement reached between the parties and that the Commission may reject this agreement in part or in full.

Sincerely,

12/21/01
Ernest Shiraki (Date)
Controller
Hawaiian Electric Co., Inc.

12/21/01
Cheryl Kikuta (Date)
Utilities Administrator
Division of Consumer Advocacy

Attachment

**Attachment**

# CIAC/CA Projects-AFUDC Application Overview