CA-IR-424

Ref: June 2007 Update, HECO T-6, pages 6 to 14; Attachments 7 and 8 (Generation Bidding – Additional Labor and Non-Labor Expenses).

Please provide the following regarding the additional $66,000 of labor expenses and additional $243,000 of non-labor expenses now being proposed:

a. Provide copies of the approved Job Vacancy Requisition forms for each of the five new positions set forth on Attachment 7 or explain why each of such forms does not exist.

b. Provide copies of the Position Description forms for each of the five new positions set forth on Attachment 7 or explain why each of such forms does not exist.

c. Provide the date of hire and starting work date for each new employee in each of the five new positions set forth on Attachment 7.

d. Provide complete copies of all studies, reports, analyses, workpapers, projections and other documents prepared by or for HECO to evaluate work requirements and the adequacy of existing staffing associated with planned activities related to the Competitive Bidding process.

e. Explain how HECO interpreted the information provided in your response to part (d) of this information request to determine that exactly 2,088 hours per year for three new positions would be required for the incremental work requirements.

f. What is meant by "For purposes of simplification…" at page 9 where labor costs for the three new positions is discussed?

g. Describe each of the known deliverable work products to be produced by the three new employees in 2007, including but not limited to the HECO RFP and MECO work described on page 9.

h. Explain the basis for and provide supporting calculations/documentation associated with the assumed 40% to MECO and 10% to HELCO labor allocations described on page 9.

i. State whether HECO plans to defer and amortize any of the line item non-labor expenses on Attachment 8 and provide copies of any accounting or regulatory authority that is being relied upon for such deferral accounting.

j. Provide a detailed itemization of actual June 2007 year-to-date non-labor expenses incurred within each of the categories of cost set forth in Attachment 8.

k. Provide complete copies of available documentation supportive of each listed "FY07 Update" non-labor cost estimate in Attachment 8, including but not limited to requests for proposals, contracts, work orders and correspondence with each of the planned vendors.

l. Provide complete copies of available documentation supportive of each listed "FY08 Forecast" non-labor cost estimate in Attachment 8, including but not limited to requests for proposals, contracts, work orders and correspondence with each of the planned vendors.

m. Provide complete copies of available documentation supportive of each listed "FY09 Forecast" non-labor cost estimate in Attachment 8, including but not limited to requests for proposals, contracts, work orders and correspondence with each of the planned vendors.

n. Explain the planned division of responsibility between the multiple outside consultants listed in Attachment 8 and the three incremental new full time employees set forth for "Generation Bidding-Labor" on Attachment 7, indicating how overall work requirements were identified and assigned between new in-house employees and outside contractors.

HECO Response:

a. See below for the Job Vacancy Requisition and the Position Description forms for each of the five positions:

   1. Director, Generation Bidding – See Attachment 1[1]

   2. Project Manager, Generation Bidding (2 each) – See Attachment 1

   3. Director, Fuels Infrastructure – See Attachment 1

   4. Administrator, PSO&M – See CA-IR-425, Attachment 1

b. The Position Description forms for the Director, Generation Bidding; Project Manager, Generation Bidding; and Director, Fuels Infrastructure, are included in Attachment 2 to this response. Please refer to CA-IR-425, Attachment 2, for the Position Description for the Administrator, PSO&M position.

c. The hiring status for each of the five positions is as follows:

   1. Director, Generation Bidding: position filled June 11, 2007.

[1] Note that the Staffing Information section was historically included in the JVR form to allow for austerity periods when staffing activity would be significantly constrained (e.g., 2004). Currently, departments may complete the fields using either 2005 or 2007 test year counts; however, these counts serve as reference points for budget comparison. Departments may proceed to fill their positions, irrespective of whether they may be over or under that "staffing cap" number provided they have received the necessary approvals.

2. Project Manager, Generation Bidding: offer accepted, tentative start in mid-August.

3. Project Manager, Generation Bidding: recruitment in progress.

4. Director, Fuels Infrastructure: position filled May 28, 2007.

5. Administrator, PSO&M: position filled July 9, 2007.

d. The determination of staffing levels necessary for support of competitive bidding was made after an evaluation of the requirements of the PUC's Decision and Order No. 23121, dated December 8, 2006 (Docket No. 03-0372), adopting the Framework for Competitive Bidding ("Framework"). It included input by HECO's outside consultant (Merrimack Energy) based on experience in other jurisdictions as well as consideration of the work loads of the existing Power Supply staff. While a specific written assessment or analysis of HECO staffing levels for competitive bidding was not prepared, the anticipated resource needs were discussed internally by the management personnel involved and resulted in a determination that a reorganization and new division were reasonable and necessary to address these new requirements. See Attachment 3 to this response, "HECO Splicer" announcing the organization changes and the creation of the Generation Bidding Division. Attachments 4 and 5 to this response are copies of an email and an Interoffice Correspondence that request approval for filling the positions of Director and Project Managers, respectively, for the Generation Bidding Division.

e. A review of the scope of the Commission's Framework (Docket No. 03-0372) indicated significant labor and non-labor resources would be required. As this was a new requirement mandated by the PUC and supported by the Consumer Advocate, and heavy workloads were anticipated, it was determined that a Director level position and two full-time staff Project

Managers (to be assigned to manage the initial bidding efforts required for HECO and MECO) were necessary to effectively and efficiently carry out the objectives of the Framework. Competitive bidding efforts are not currently anticipated for the immediate future for HELCO based on the present HELCO IRP-3 Action Plan (Docket No. 04-0046). If such plans change for HELCO and competitive bidding needs are identified, a third PM position may be considered at that time depending on workloads of the Generation Bidding staff and experience gained in the process to that point. Hence the language of "…at least two project managers in addition to the Director…" from HECO T-6, June 2007 Update, page 9. While the Consumer Advocate's information request attempts to evaluate the reasonableness of an assessment of the 2,088 hours estimated for these positions, due to the heavy front-end work associated with developing these new processes and procedures, labor resource hours are more than likely expected to exceed the full-time equivalent once the positions are fully staffed, at least for the initial year of development work. Because these three new positions are merit positions, no overtime is included in the labor forecast.

f. The phrase "For purposes of simplification…" was used to characterize the Company's use of a half year of labor basis for the three new Generation Bidding positions in the June 2007 Update of the test year estimate rather than attempting to predict the precise day that the positions would be filled and the associated labor expense that would be incurred. In addition, a simplified process using rounded–off figures was used to show how the one-half year of labor costs ($66,049 rounded to $66,000) was derived for 2007. The standard labor rates for each of the three new positions (Director and two Project Managers) were calculated on a full year equivalent ($132,098 rounded to $132,000).

g. The deliverable work products to be produced by the three new employees in the Generation

Bidding Division are expected to include the following:

1. Code of Conduct for Competitive Bidding.
2. Rule 19 Tariffs for Interconnection and Transmission Upgrades (for HECO, MECO and HELCO).
3. Petition to identify and obtain PUC approval for candidate Independent Observers.
4. Procedures Manual for Competitive Bidding.
5. Scope of Work for and contract documents between HECO and Independent Observer(s) and Outside Consultant(s).
6. Requests for Waiver(s) from the PUC to allow competitive bidding for the next increment of generation.
7. Solicitation of Interest for non-firm generation resources for HECO.
8. Request for Proposal(s) and supporting documents for HECO and MECO including scope, performance requirements, and evaluation criteria.
9. Standard contract documents (i.e., "terms and conditions") for inclusion in HECO and MECO RFPs.
10. Documentation for supporting the development of internal organizational teams and other information needs to manage the competitive bidding process. This information will be reviewed by the Independent Observer.
11. Project schedules and status reports for the HECO and MECO projects.
12. Testimony and other supporting documentation associated with the scope and responsibilities of the Generation Bidding Division for the Integrated Resource Planning and Rate Case dockets.
13. Documentation determined suitable by the Independent Observer as necessary for

demonstrating Company compliance with the requirements of the Framework and Code of Conduct.

14. Regular status reports on the Generation Bidding Division's management of labor and non-labor costs for the HECO and MECO projects.

15. Regular status reports on the Generation Bidding Division's management of general and administrative labor and non-labor costs for the Division.

h. The allocations were based on the projects currently identified for competitive bidding. These projects are the HECO Non-Firm Renewable Energy project and the MECO Firm Capacity project. Based on the anticipated amount of work required for each, an allocation of 50% for HECO and 40% for MECO was estimated. Since HELCO had no projects identified for competitive bidding, a 10% allocation was used for HELCO's share of administrative costs related to common items applicable to all three Companies (e.g. Code of Conduct, candidate Independent Observers, etc.).

i. No, HECO currently does not plan to defer or amortize any of the non-labor expense line items on Attachment 8 to the June 2007 Update, HECO T-6.

j. A detailed itemization of actual June 2007 year-to-date non-labor expenses incurred within each of the categories of cost set forth in Attachment 8 to the June 2007 Update, HECO T-6, is provided as Attachment 6 to this response.

k. The cost estimates for the Outside Services needed to support the respective competitive bidding efforts identified in HECO's, MECO's and HELCO's IRP reports were prepared based primarily on discussions with consultants and candidate Independent Observers regarding their respective experiences on competitive bidding projects in other jurisdictions. A copy of the work authorization for consulting services by Merrimack Energy is provided

as Attachment 7 to this response. Records of telephone conversations with two of the candidate Independent Observers (IO), which provide an expected range of costs for their respective potential services, are also provided as Attachments 8 and 9 to this response.

l. Please refer to the response to subpart k.

m. Please refer to the response to subpart k.

n. The distribution of responsibilities among the new HECO employees assigned to the Competitive Bidding effort and the outside contractors (e.g., legal services, consultants, etc.) are described below.

Director of Generation Bidding – will be responsible for implementing the Commission's Framework for Competitive Bidding for HECO, MECO, and HELCO, and will work closely with the Manager of the System Planning Department, the project managers on staff, outside consultants, other HECO employees, and the Independent Observer(s) to manage the overall process. The Director will be responsible for all administrative functions for the Division whereas the project managers will be responsible for the generation bidding projects for which they have been assigned.

Project Managers in Generation Bidding – will be assigned the projects for HECO and MECO, and possibly HELCO in the future, and will be responsible for developing the project schedule and managing the day to day activities for competitive bidding on their assigned projects. The Project Managers will be expected to draw on the services and expertise of the outside consultants to facilitate their work.

Outside Consultant – Framework Requirements – The outside consultant, Merrimack Energy, has been retained to assist with preparing the Code of Conduct and meeting other requirements of the Commission's Framework. Merrimack has assisted with the drafting of

the proposed Code of Conduct and has worked with HECO to incorporate comments and prepare the document for submittal and approval by the Commission.

Outside Legal - Various – Services are required from outside legal counsel to provide guidance, advice and support for activities such as but not limited to preparation of power purchase and other forms of contract, review of RFP material, advice on communication with prospective bidders and regulatory compliance, contract negotiations, and preparation of regulatory filings and representation in regulatory proceedings, all in accordance with the requirements of the Framework.

Outside Consultant - RFPs for HECO and MECO – The outside consultant, Merrimack Energy, will be retained to assist HECO with developing the processes and procedures for implementing the Framework for Competitive Bidding for the HECO and MECO projects and providing assistance to the Project Manager with preparing the RFP and contract documents, evaluating the RFP bids, and assisting with negotiating the contract with the winning bidder(s). The draft scope of work for the consultant is provided in response to subpart (k) above. Other consultants may also be retained to assist with various work scopes.

Independent Observer – Scope and responsibilities are as defined in the PUC's Framework. HECO intends to retain separate Independent Observers for each of the HECO and MECO projects. While an Independent Observer for the anticipated HECO RFP is not required by the Framework since HECO does not intend to submit a bid. HECO intends to retain these services to provide their expertise in this first RFP under the Commission's new Framework for Competitive Bidding and to help verify that the bidding processes employed by the Company are sound and fair.

Job Vacancy Requisition (JVR)

HAWAIIAN ELECTRIC COMPANY

JVR # **STATUS** **VP Approval Necessary?** VP Approved

For Human Resources Use:

☐ Org Structure Change ☐ Reorganization ☐ Grandfather Rights

Job Information

Position ID: 5127 **Position Title:** DIR, GENERATION BIDDING
Department: SYSTEM PLANNING
Division: GENERATION BIDDING **No Needed:** 1
Mail Stop/Work Loc: WA4 **RA:** PXB **Home Cost Center:** PXB098PHENDNPZZZZZZ
Labor Class: FS **Award Code:** MERR
Primary Resource: N/A **Workorder Prefix:** HP
Position Reports To: Leon Roose **Phone No:** 543-4210

Work Schedule From: 0730 **To:** 1600 **Lunch (Minutes):** 30
Roster Pattern: DK5D **Roster Position:**

Category: Regular Full-Time **Start Date:** 03/26/07 **End Date:** N/A
Position Type: Addition **Replaces:** N/A
Reason: newly-created position.

Compensation Information

Merit
Reference Job Code: S2600 **EEO:** OFFICIALS AND MANAGERS **Role:** MFS
Market Rate: 97,500

Note: N/A

Staffing Information

Present Dept Total (include JVR): 20 **Staffing Cap:** 22

Recruitment Information

Internal Posting Type:

- [X] N/A
- [ ] Agency Temporary
- [ ] Department
- [ ] Company
- [ ] Affiliate

External:
Posting Type:

- [ ] Local Ad
- [ ] Internet
- [ ] Professional Publication
- [ ] Employment Hotline
- [ ] Other

Advertisement Start Date: N/A
Postmarked Deadline: N/A
Charge #: N/A

Note: N/A

Job Vacancy Requisition (JVR)

HAWAIIAN ELECTRIC COMPANY

JVR # **STATUS** **VP Approval Necessary?** VP Approved

For Human Resources Use:

☐ Org Structure Change ☐ Reorganization ☐ Grandfather Rights

Job Information

Position ID: 5154 **Position Title:** PROJECT MANAGER
Department: SYSTEM PLANNING
Division: GENERATION BIDDING **No Needed:** 2
Mail Stop/Work Loc: WA3 **RA:** PXB **Home Cost Center:** PXB098PHENDNPZZZZZZ
Labor Class: TC-I **Award Code:** MERR
Primary Resource: TPEPM **Workorder Prefix:** HP
Position Reports To: Barry Nakamoto **Phone No:** 543-4515

Work Schedule From: 0700 **To:** 1530 **Lunch (Minutes):** 30
Roster Pattern: DG5D **Roster Position:**

Category: Regular Full-Time **Start Date:** 06/01/07 **End Date:** N/A
Position Type: Addition **Replaces:** N/A
Reason: to fill positions in a newly-formed division - Generation Bidding under System Planning Dept.

Compensation Information

Merit
Reference Job Code: S2602 **EEO:** PROFESSIONALS **Role:** MT
Market Rate: 96,000

Note: N/A

Staffing Information

Present Dept Total (include JVR): 21 **Staffing Cap:** 22

Recruitment Information

Internal Posting Type:

- ☐ N/A
- ☐ Agency Temporary
- ☐ Department
- ☒ Company
- ☐ Affiliate

External:
Posting Type:

- ☒ Local Ad
- ☐ Internet
- ☐ Professional Publication
- ☐ Employment Hotline
- ☐ Other

Advertisement Start Date: N/A
Postmarked Deadline: N/A
Charge #: HP002506

Note: N/A

Job Vacancy Requisition (JVR)

HAWAIIAN ELECTRIC COMPANY

JVR # **STATUS** **VP Approval Necessary?** VP Approved

For Human Resources Use:

☐ Org Structure Change ☐ Reorganization ☐ Grandfather Rights

Job Information

Position ID: 5117 **Position Title:** DIR, FUELS INFRASTRUCTURE
Department: POWER SUPPLY SERVICES
Division: FUELS INFRASTRUCTURE **No Needed:** 1
Mail Stop/Work Loc: WP3 **RA:** PIJ **Home Cost Center:** PIJ098PHENDNPZZZZZZ
Labor Class: FS-I **Award Code:** MERR
Primary Resource: N/A **Workorder Prefix:** HP
Position Reports To: Ron Cox **Phone No:** 7051

Work Schedule From: 0730 **To:** 1600 **Lunch (Minutes):** 30
Roster Pattern: DK5D **Roster Position:**

Category: Regular Full-Time **Start Date:** 01/22/07 **End Date:** N/A
Position Type: Addition **Replaces:** N/A
Reason: New Position per Splicer dated 1/11/07

Compensation Information

Merit
Reference Job Code: S2599 **EEO:** OFFICIALS AND MANAGERS **Role:** MFS
Market Rate: 97,500

Note: N/A

Staffing Information

Present Dept Total (include JVR): 28 **Staffing Cap:** 31

Recruitment Information

Internal Posting Type:

☐ N/A
☐ Agency Temporary
☐ Department
☒ Company
☐ Affiliate

External:
Posting Type:

☒ Local Ad
☐ Internet
☐ Professional Publication
☐ Employment Hotline
☐ Other

Advertisement Start Date: 02/04/07
Postmarked Deadline: N/A
Charge #: HP001929

Note: N/A

HAWAIIAN ELECTRIC COMPANY
MERIT
POSITION DESCRIPTION

Position Title:	**Director, Generation Bidding**
Department:	**System Planning**
Reports to:	**Manager, System Planning**

Job Code:	**S2600**	***FLSA:***	**E**
Role:	**FS**	***Date:***	

Primary Role/Function

Plans, directs and manages the functions and activities of the Generation Bidding Division to develop, administer and implement competitive bidding as a mechanism for acquiring future generation resources for HECO, MECO and HELCO (the "Companies") under the guidance of the Competitive Bidding Framework ("Framework") issued by the Public Utilities Commission ("PUC"). Serves as the focal point for all matters related to competitive bidding for the Companies and is directly responsible for meeting all process and project related objectives.

Job Responsibilities

* 75% Plan, direct and manage the functions and activities of all aspects of the Division and its personnel in the acquisition of future generation resources for the Companies under the guidance of the Framework.

Develop and obtain necessary regulatory approval of those processes, procedures and practices (such as a competitive bidding *Code of Conduct*) to implement competitive bidding in accordance with Commission requirements.

Manage the interaction and dealings of the competitive bidding process and participants with other processes such as Integrated Resource Planning ("IRP") to effectively determine generation resource needs, preferred means of resource acquisition, scope of request for proposal(s) ("RFP"), and resource acquisition strategy and action plan justification for the Companies.

Implement generation resource competitive bidding. Actions include RFP development, bid evaluation, generation resource selection, interface with internal and external process participants and stakeholders (bidders, independent observer, PUC, Consumer Advocate, etc.), and timely acquisition of regulatory approvals needed for process implementation. Ensure fairness and integrity in the competitive bidding process and manage the potential or perception of conflicts of interest and information confidentiality.

Provide external and internal planning and communications strategy development and leadership related to competitive bidding issues and process. Develop and provide supporting testimony in regulatory proceedings relating, but not limited to, competitive bidding process and policy issues and RFP project specifics.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

*	20%	Set priorities for the Division. Develop, implement and administer policies and procedures to support Division's mission and departmental and corporate goals and strategies. Supervises and administers divisional personnel matters including performance appraisals, interviews, and employee guidance, recognition, and support. Ensures sufficient trained staff and resources are made available to effectively meet division, department, and corporate objectives.
*	5%	Develop and manage Division operation forecast and budget.

*** Denotes a "Fundamental Responsibility"**

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Director, Generation Bidding

Minimum Qualifications

Knowledge Requirements:

- Thorough knowledge of engineering and business principles and theories normally acquired through a college level curriculum resulting in a bachelor's degree, or equivalent training and experience. Strong engineering, commercial/finance, and business law background and experience desirable.
- Thorough knowledge of competitive procurement processes and principles of project management, including the principles of matrix management and cost analysis.
- Working knowledge of generation resource planning methodologies, transmission planning considerations, power system operations, and utility economic analysis desirable.
- Thorough knowledge of the principles of supervision, normally acquired through related training, and several years experience in supervising people.
- Working knowledge of budgeting/forecast process.
- Working knowledge of personal computers and/or mainframe systems and related software applications such as; spreadsheets, word processing, etc.

Skills Requirements

- Must have ability to manage complex company, commercial, community, regulatory and governmental issues related to generation resource acquisition and competitive procurement processes.
- Ability to handle difficult and/or sensitive issues while using tact, courtesy and discretion.
- Excellent written, oral communication and presentation skills.
- Strong interpersonal skills to influence, motivate, and persuade various groups or individuals.
- Supervisory/leadership skills and abilities to work with a variety of individuals occasionally dealing with sensitive, difficult or confrontational issues.
- In-depth analytical, organizational, and computational skills.
- Ability to remain flexible in a demanding work environment and adapt to rapidly changing priorities.
- Ability to conceptualize new ideas quickly.
- Must have or be able to qualify for State of Hawaii's driver's license and HECO driver's license to attend meetings.

Experience Requirements

- Multiple (6+) years experience in power systems planning, operations, project management or resource procurement.
- Experience in preparing and providing testimony in regulatory proceedings of the PUC, before other public agencies, or at governmental or public meetings.

Requirements are representative of minimum levels of knowledge, skills, and abilities. To perform the position successfully, the incumbent will need to demonstrate the use of these knowledge, skills, and abilities at an "Effective" level.

Positions Supervised

Title

Project Manager (2)

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Director, Generation Bidding

Physical Requirements

Only items that are necessary to perform the "fundamental" responsibilities of the position are indicated.

"F" for Frequently: Daily, several times a week, weekly
"O" for Occasionally: Monthly, Couple times a year

O	Standing
O	Walking
F	Sitting
	Climbing Ascending or descending ladders, stairs, or other objects.
	Balancing on narrow, slippery, or erratically moving surfaces.
	Stooping, kneeling, crouching, crawling, and/or squatting
F	Handling Working with hands, arms or fingers.
	Feeling Perceiving attributes such as size, share, temperature or texture.
F	Ability to follow written/oral instructions

F	Lifting/Carrying below 25 lbs.
O	26 to 50 lbs.
	above 50 lbs.
	Vision acuity the ability to see clearly 20 feet or more
O	Color vision the ability to identify and distinguish different colors.
	Night vision the ability to perform work at night with the use of portable lighting.
F	Talking
F	Hearing
F	Ability to perform simple, repetitive tasks for an extended period of time
F	Ability to perform complex and varied tasks for an extended period

Environmental Conditions

The employee will be exposed to the following environmental conditions in performing the "fundamental" responsibilities of the position.

	Extreme Cold cold temperatures for an hour or more
	Extreme Heat warm/hot temperatures for an hour or more
	Wetness
	Use of personal protective equipment (hard hats, respirator, leather gloves, rubber glove, safety shoes, nomex clothing)
F	Work in emergency/potentially "high stress" situations
	Noise At least 80 decibels

	Working Outdoors may be during prevailing weather/climate conditions
	Hazardous Conditions potentially life-threatening situations
	Work above 5 feet
	Work above 70 feet
	Work on mountain trails/cliff sides

Job responsibilities are subject to possible modification to reasonably accommodate individuals with disabilities.

Some job requirements may exclude individuals who pose a direct threat or significant risk to the health and safety of themselves or other individuals.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

HAWAIIAN ELECTRIC COMPANY
MERIT
POSITION DESCRIPTION

Position Title:	**Project Manager**
Department:	**System Planning**
Reports to:	**Director, Generation Bidding**

Job Code:	**S2602**	***FLSA:***	**P**
Role:	**T**	***Date:***	**5/17/07**

Primary Role/Function

Manages the functions and activities of the generation bidding procedures under the guidance of the Competitive Bidding Framework (Framework") for HECO, MECO, and HELCO. Serves as the focal point for all competitive bid project specific matters and is responsible for meeting all project-related objectives consistent with the Framework.

Job Responsibilities

*	75%	Assists Director with the implementation of generation resource competitive bidding. Actions include supporting RFP development, bid evaluation, generation resource selection, interface with internal and external process participants and stakeholders (bidders, independent observer, PUC, Consumer Advocate, etc.), and timely acquisition of regulatory approvals needed for process implementation. Ensure fairness and integrity in the competitive bidding process and manage the potential or perception of conflicts of interest and information confidentiality. As a "matrix" manager, negotiates priorities with and supports completion of project tasks through project team members, others in the organization, and consultants. Ensures that team members have all resources, information, and direction necessary to successfully complete their assignments. Informs team members of their roles, project information, and obtains their support in meeting project goals.
*	15%	Develops strategies to meet competitive bidding project goals. Identifies potential problem areas and initiates redirection of resources as necessary to maintain competitive bid project objectives within the Framework, on schedule, and within budget. Serves as the focal point for all competitive bidding project matters. Works with and through designated Company personnel, stakeholders, consultants, government and regulatory agencies to develop and disseminate information, address concerns and resolve competitive bidding project-related issues.
*	10%	Develops and maintains competitive bidding project schedules. Prepares and presents project progress and cost reports as required.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

*** Denotes a "Fundamental Responsibility"**

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

PROJECT MANAGER

Minimum Qualifications

Knowledge Requirements:

- Thorough knowledge of engineering and business principles and theories normally acquired through a college level curriculum resulting in a bachelor's degree, or equivalent training and experience. Strong engineering, commercial/finance, and business law background and experience desirable.
- Thorough knowledge of competitive procurement processes and principles of project management, including the principles of matrix management and cost analysis.
- Working knowledge of permitting, siting, and operational issues associated with developing and constructing power plants in Hawaii.
- Working knowledge of generation resource planning methodologies, transmission planning considerations, power system operations, and utility economic analysis desirable.
- Working knowledge of budgeting/forecast process.
- Working knowledge of personal computers and/or mainframe systems and related software applications such as; spreadsheets, word processing, etc.

Skills Requirements

- Must have ability to manage complex company, commercial, community, regulatory and governmental issues related to generation resource acquisition and competitive procurement processes.
- Ability to handle difficult and/or sensitive issues while using tact, courtesy and discretion.
- Excellent written, oral communication and presentation skills.
- Strong interpersonal skills to influence, motivate, and persuade various groups or individuals.
- Strong skills and abilities to work with a variety of individuals occasionally dealing with sensitive, difficult or confrontational issues.
- In-depth analytical, organizational, and computational skills.
- Ability to remain flexible in a demanding work environment and adapt to rapidly changing priorities.
- Ability to conceptualize new ideas quickly.
- Must have or be able to qualify for State of Hawaii's driver's license and HECO driver's license to attend meetings.

Experience Requirements

- Multiple (7+) years experience in power systems planning, operations, project management or resource procurement.
- Experience in preparing and providing testimony in regulatory proceedings of the PUC, before other public agencies, or at governmental or public meetings is highly desirable.
- State of Hawaii Professional Engineering License is highly desirable.

Requirements are representative of minimum levels of knowledge, skills, and abilities. To perform the position successfully, the incumbent will need to demonstrate the use of these knowledge, skills, and abilities at an "Effective" level.

Positions Supervised

0

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

PROJECT MANAGER

Physical Requirements

Only items that are necessary to perform the "fundamental" responsibilities of the position are indicated.

"F" for Frequently: Daily, several times a week, weekly
"O" for Occasionally: Monthly, Couple times a year

	Standing
F	Walking
F	Sitting
F	Climbing Ascending or descending ladders, stairs, or other objects.
	Balancing on narrow, slippery, or erratically moving surfaces.
F	Stooping, kneeling, crouching, crawling, and/or squatting
F	Handling Working with hands, arms or fingers.
	Feeling Perceiving attributes such as size, share, temperature or texture.
F	Ability to follow written/oral instructions

O	Lifting/Carrying below 25 lbs.
	26 to 50 lbs.
	above 50 lbs.
F	Vision acuity the ability to see clearly 20 feet or more
F	Color vision the ability to identify and distinguish different colors.
	Night vision the ability to perform work at night with the use of portable lighting.
F	Talking
F	Hearing
F	Ability to perform simple, repetitive tasks for an extended period of time
F	Ability to perform complex and varied tasks for an extended period

Environmental Conditions

The employee will be exposed to the following environmental conditions in performing the "fundamental" responsibilities of the position.

	Extreme Cold cold temperatures for an hour or more
	Extreme Heat warm/hot temperatures for an hour or more
	Wetness
O	Use of personal protective equipment (hard hats, respirator, leather gloves, rubber glove, safety shoes, nomex clothing)
	Work in emergency/potentially "high stress" situations
O	Noise At least 80 decibels

O	Working Outdoors may be during prevailing weather/climate conditions
O	Hazardous Conditions potentially life-threatening situations
	Work above 5 feet
	Work above 70 feet
	Work on mountain trails/cliff sides

Job responsibilities are subject to possible modification to reasonably accommodate individuals with disabilities.

Some job requirements may exclude individuals who pose a direct threat or significant risk to the health and safety of themselves or other individuals.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

HAWAIIAN ELECTRIC COMPANY
MERIT
POSITION DESCRIPTION

Position Title:	**Director, Fuel Infrastructure**
Department:	**Power Supply**
Reports to:	**Manager Power Supply Services**

Job Code:	**S2599**	***FLSA:***	**E**
Role:	**FS**	***Date:***	**12/31/06**

Primary Role/Function

Responsible for HECO, MECO, HELCO Fuel Infrastructure planning, budgeting, development, implementation, regulatory and statutory compliance with state and federal regulations. Manages fuel infrastructure capital projects for HECO, MECO and HELCO from inception through budgeting, regulatory approvals, design, equipment and material procurement, construction, and commercial operation. Serves as the focal point for all project matters and is responsible for meeting all project-related objectives.

Job Responsibilities

*	50%	Plans, develops and executes HECO fuel infrastructure program goals and objectives. Coordinates planning, development, and advises HELCO and MECO on strategies to meet fuel infrastructure program objectives. Serves as a major interface between HECO, MECO and HELCO for Biofuels development and all aspects of regulatory and statutory compliance. Informs and involves the HECO Executive Team with the ongoing implementation and operational integration of a long term fuel infrastructure technology plan.
*	10%	Plans, initiates, directs and monitors all divisional activities and programs to ensure company goals and objectives are achieved. Determines present and forecasted operational needs for budgeting purposes.
*	10%	Oversees HECO oil spill prevention program and provides technical support for operations to ensure response requirements are being met. Provides technical advice and support to MECO, HELCO.
*	10%	*Develops strategies to meet program goals. Identifies potential problem areas* and initiates redirection of planning, design permitting, purchasing or construction personnel as necessary to maintain project scope, schedule and budget. Conducts inspections of sites as necessary.
*	10%	Performs supervisory/administrative activities for Fuels Infrastructure Division to include recruitment, performance evaluations, coaching, training, and employee development. Provides input to the department operations budget. Provides technical assistance to other departments and subsidiaries.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

*	10%	As a "matrix" manager, negotiates priorities with, and depends on accomplishing project tasks through project team members, others in the organization, consultants and outside contractors. Insures that team members have all resources, information, and direction necessary to successfully complete their assignments. Informs team members of their roles, project information, and obtains their support in meeting project goals.

*** Denotes a "Fundamental Responsibility"**

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Director, Fuels Infrastructure and Compliance

Minimum Qualifications

Knowledge Requirements:

- Thorough knowledge of the theories and principles of engineering normally acquired through advanced college level courses or equivalent experience.
- Thorough knowledge of the principles and practices of engineering, project engineering, project management, and construction methods associated with fuel infrastructure and systems including normally acquired through extensive professional engineering experience.
- Working knowledge of federal, state and local laws and regulations related to fuel handling technologies and associated activities of HECO, MECO and HELCO.
- Working knowledge of the budgeting and forecasting process.
- Working knowledge of personal computers and/or mainframe systems and related software applications such as spreadsheets, word processing, etc.

Skills Requirements

- Demonstrated leadership skills including effective written, oral and listening communication skills and interpersonal skills, in order to work effectively with all levels of the company, with outside contractors and consultants, governmental agencies, community groups and customers.
- Demonstrated in-depth analytical and administrative skills for such tasks as preparing and monitoring project requirements and resolving cost and time constraints, conflicting priorities.
- Demonstrated customer relation skills to handle confrontational, difficult and/or sensitive issues. Ability to handle such issues with professionalism while using tact, courtesy and discretion.
- Demonstrated presentation and platform skills for effective group presentations.
- Ability to remain flexible in a demanding work environment and to adopt to rapidly changing priorities.
- Must have or be able to qualify for State of Hawaii and HECO driver licenses to travel to various field sites to monitor projects.

Experience Requirements

Extensive (10 years) of relevant experience and a BS in engineering, or equivalent.

Requirements are representative of minimum levels of knowledge, skills, and abilities. To perform the position successfully, the incumbent will need to demonstrate the use of these knowledge, skills, and abilities at an "Effective" level.

Positions Supervised

Staff Engineer (1)

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Director, Fuels Infrastructure and Compliance

Physical Requirements

Only items that are necessary to perform the "fundamental" responsibilities of the position are indicated.

"F" for Frequently: Daily, several times a week, weekly
"O" for Occasionally: Monthly, Couple times a year

	Standing
F	Walking
F	Sitting
O	Climbing Ascending or descending ladders, stairs, or other objects.
	Balancing on narrow, slippery, or erratically moving surfaces.
O	Stooping, kneeling, crouching, crawling, and/or squatting
F	Handling Working with hands, arms or fingers.
	Feeling Perceiving attributes such as size, share, temperature or texture.
F	Ability to follow written/oral instructions

O	Lifting/Carrying below 25 lbs.
	26 to 50 lbs.
	above 50 lbs.
F	Vision acuity the ability to see clearly 20 feet or more
F	Color vision the ability to identify and distinguish different colors.
	Night vision the ability to perform work at night with the use of portable lighting.
F	Talking
F	Hearing
F	Ability to perform simple, repetitive tasks for an extended period of time
F	Ability to perform complex and varied tasks for an extended period

Environmental Conditions

The employee will be exposed to the following environmental conditions in performing the "fundamental" responsibilities of the position.

	Extreme Cold cold temperatures for an hour or more
	Extreme Heat warm/hot temperatures for an hour or more
	Wetness
O	Use of personal protective equipment (hard hats, respirator, leather gloves, rubber glove, safety shoes, nomex clothing)
	Work in emergency/potentially "high stress" situations
O	Noise At least 80 decibels

O	Working Outdoors may be during prevailing weather/climate conditions
O	Hazardous Conditions potentially life-threatening situations
	Work above 5 feet
	Work above 70 feet
	Work on mountain trails/cliff sides

Job responsibilities are subject to possible modification to reasonably accommodate individuals with disabilities.

Some job requirements may exclude individuals who pose a direct threat or significant risk to the health and safety of themselves or other individuals.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

*****HECO Splicer*****

Sent on behalf of Tom Simmons and Tom Joaquin:

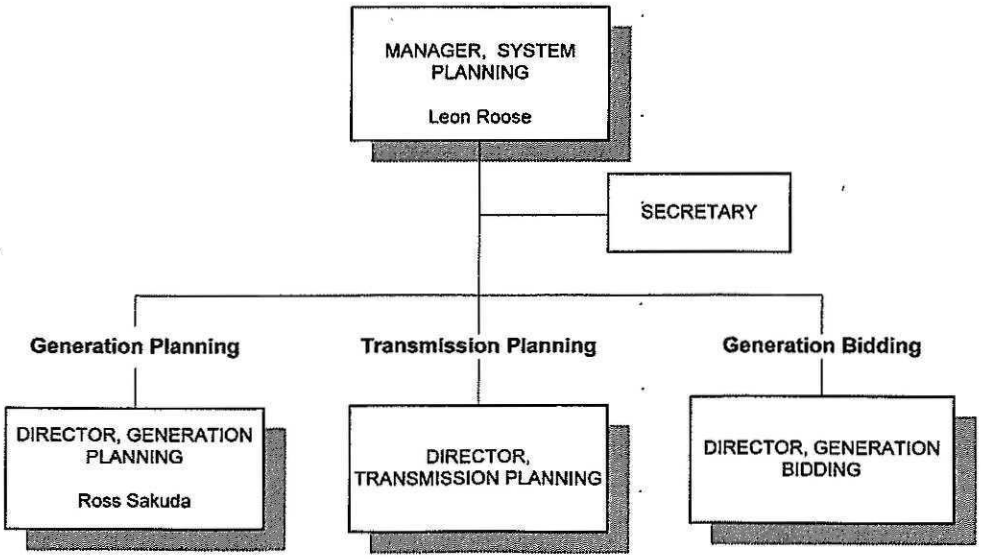
In support of Operation's Strategic Roadmap initiatives for new generating capacity and renewable energy development, and in particular to implement the Public Utilities Commission's recent mandate that the Companies competitively bid the acquisition of new generation resources and to guide the Companies efforts to assess and acquire renewable energy in the form of biofuels for generation resources, the following organizational changes will occur in Power Supply effective 1/22/07.

Manager, System Planning

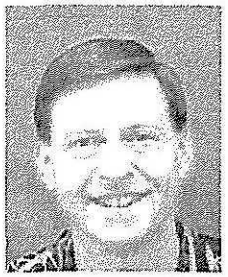
Leon Roose will become **Manager, System Planning**, and will continue to report to Tom Simmons, Vice President, Power Supply. Leon is the current Manager for Power Supply Services and has approximately 13 years of experience with HECO. Previous departments in which Leon worked include Planning & Engineering, Rates & Regulatory Affairs, System Planning, and Legal Departments. Leon holds both a Bachelor of Science degree in Electrical Engineering and a Juris Doctorate degree from the University of Hawaii, Manoa.

The System Planning department will include the Generation Planning Division, Transmission Planning Division and a new division, Generation Bidding. The Generation Bidding Division will lead the competitive bidding effort for HECO, HELCO, and MECO, which will include the development and implementation of new competitive bidding processes and activities to ensure that the acquisition of new generating resources complies with the Commission's new requirements. In addition to coordinating the efforts of various cross-functional teams, the Generation Bidding Division will interface with the Commission, the Consumer Advocate, independent observers, and prospective bidders in these processes.

SYSTEM PLANNING



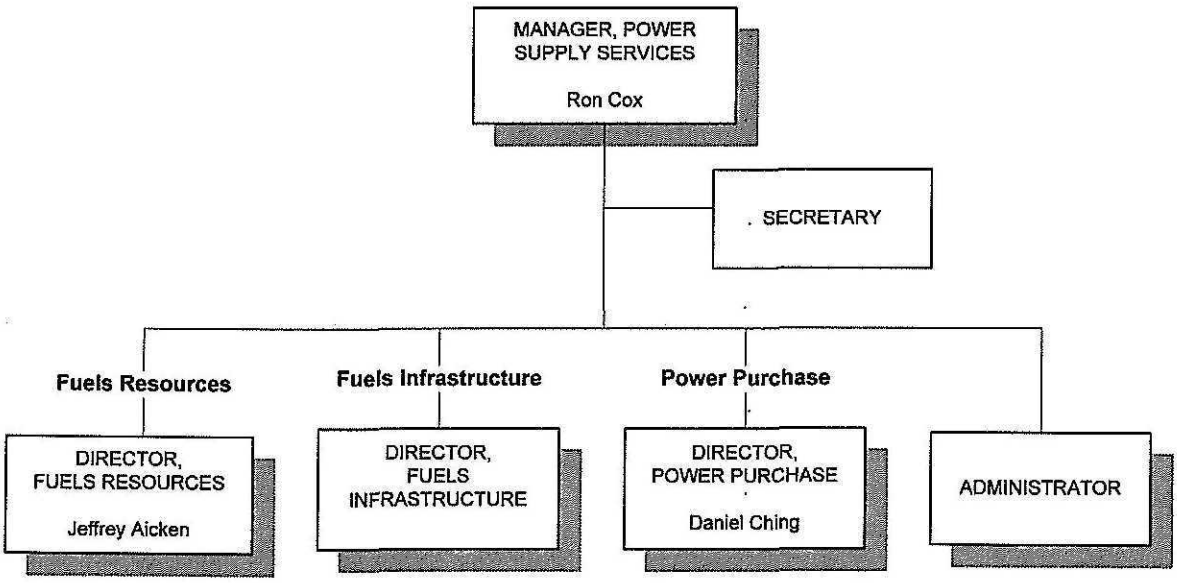
Manager, Power Supply Services



Ron Cox, presently the Manager, Operations Strategic Planning will become **Manager, Power Supply Services**, reporting to Tom Simmons, Vice President, Power Supply. Ron joined HECO in 2006 after retiring from the Navy after a distinguished 26-year career, most recently as the Chief of Staff, Navy Region Hawaii and Commander, Naval Station Pearl Harbor. He brings with him a track record of financial, operational and strategic accomplishments in technical operations and organizational leadership. Ron holds a Bachelor of Science in Chemical Engineering from Northwestern University and a Master of Science in National Security Studies from the National War College.

The Fuels Resources and Power Purchase Divisions will report to Ron. Additionally, a new Fuels Infrastructure Division will be created to facilitate fuel asset management and ensure compliance with the policies, requirements, and regulations regarding the various fuel delivery and storage infrastructure used by HECO, MECO, and HELCO. The Fuels Resources and Infrastructure Divisions will lead the HECO initiative to procure Biofuels for the proposed Campbell Industrial Park Generating Unit and other generating units on the MECO and HELCO systems.

POWER SUPPLY SERVICES



I ask you to support these organizational changes and the leaders within, which will bring about a stronger Company as we manage our day-to-day operations more effectively.

*****Please share or post for those not on e-mail.*****

Daima, Aileen

From: Roose, Leon
Sent: Thursday, March 08, 2007 11:27 PM
To: Simmons, Tom
Subject: Approval to Fill - Director of Generation Bidding

Tom-

I'm requesting executive approval to fill the newly created Director position for the Generation Bidding Division in the System Planning Department.

Please note that I am waiting to hear back from WSD and Compensation on approval of the position description and market rate determination for this position (I submitted it on 2/28/07) and I understand that I cannot initiate the mechanics of filling the position (e.g. initiate JVR, set-up interviews) until then. However, to expedite the overall process, I thought I'd move ahead in parallel and seek needed executive approval to fill this critical new position while I waited.

Following is the justification for this request in the form of responses to the five questions that I understand must first be satisfied to warrant further consideration. Please let me know whether you agree with this request. Thank you.

-Leon

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1. Why is this position critical to operations and maintenance of our power plants?

Response: While this position is not critical to the operation and maintenance of our existing power plants, it is critical to enabling HECO, MECO and HELCO secure any future generation resources to meet our obligation to serve and renewable portfolio goals. Implementation of competitive bidding for future generation resources is mission critical and mandated by the Commission.

2. Can others in house do this work without impacting other equally critical work?

Response: No. None of the Companies are presently staffed to manage the work demands of this entirely new functional area and process. The need for this new Division and its staff was recognized as fundamental to the recently implemented reorganization plan that created the System Planning Department. Work demands within the responsibility of this new area are very high, with a number of competitive procurement processes and many related tasks requiring immediate implementation.

3. Is this mission critical? Can it be delayed a month, 2, 3?

Response: Yes, this is mission critical and it cannot be delayed. As previously noted, competitive bidding is now mandated in this jurisdiction by the Commission. There are numerous new processes to be developed and key Commission filings and other activities with specific near term deadlines that must be met.

4. Are there other ways to meet this in the short term without hiring – i.e., consider a contractor/HECO temp and convert to regular in 2007 (delay pension costs further).

Response: No. Dedicated in-house staff and leadership are critical to successful implementation of competitive bidding for generation resources. An effective competitive procurement process that is consistent with the Commission's extensive requirements and properly identifies and secures needed generation resources requires in-house staff with intimate knowledge of and experience with the specific operational issues and system constraints of our unique, isolated island utility grids. The significance of properly scoping and selecting the right generation resources to fulfill our obligation to serve and that will remain as the backbone of our systems for decades to come justifies a much larger degree of internal control and accountability than can be obtained through reliance upon an outside third-party contractor or temporary worker.

5. Does this position require additional, new or modified facilities? If so, what is the amount estimated by Facilities and is this amount budgeted or unbudgeted?

Response: No. The necessary work space with a work surface, files etc. has already been identified by Facilities Division and is

presently available to be utilized by this position. No additional facilities customization is required.

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INTEROFFICE CORRESPONDENCE

Hawaiian Electric Company

May 17, 2007

To: Tom Simmons

From: Leon Roose

Subject: Filling of Two Project Manager Positions Generation Bidding Division

1.0 Recommendations

I recommend that the two Project Manager positions in the Generating Bidding Division be filled as soon as qualified persons can be hired. Filling these positions will allow us to form our core team for generation bidding and facilitate the critical development of the processes and procedures necessary for us to meet the requirements identified in the Commission's Competitive Bidding Framework, and implement competitive bids to which the Companies have committed to execute.

2.0 Justification for Filling the Project Manager Positions in the Generating Bidding Division

2.1 Why are these positions critical to the operations and maintenance of our power plants?

Response: While these positions are not directly critical to the operation and maintenance of our existing power plants, they are critical to enabling HECO, MECO and HELCO secure any future generation resources to meet our obligation to serve as well as meet our renewable portfolio goals. Implementation of competitive bidding for future generation resources is mission critical and mandated by the Commission.

2.2. Can others in house do this work without impacting other equally critical work?

Response: No. None of the Companies are presently staffed to manage the work demands of this entirely new functional area and process. The need for this new Division and its staff was recognized as fundamental to the recently implemented reorganization plan that created the System Planning Department. Work demands within the responsibility of this new area are very high, with a number of

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competitive procurement processes and many related tasks requiring immediate implementation.

2.3. Is this mission critical? Can it be delayed a month, 2, 3?

Response: Yes, this is mission critical and it cannot be delayed. As previously noted, competitive bidding is now mandated in this jurisdiction by the Commission. There are numerous new processes to be developed and key Commission filings and other activities with specific near term deadlines that must be met. The formation of our team is critically important to meet our deadlines.

2.4. Are there other ways to meet this in the short term without hiring – i.e., consider a contractor/HECO temp and convert to regular in 2008 (delay pension costs further).

Response: No. Dedicated in-house staff and leadership are critical to successful implementation of competitive bidding for generation resources. An effective competitive procurement process that is consistent with the Commission's extensive requirements and properly identifies and secures needed generation resources requires in-house staff with intimate knowledge of and experience with the specific operational issues and system constraints of our unique, isolated island utility grids. The significance of properly scoping and selecting the right generation resources to fulfill our obligation to serve and that will remain as the backbone of our systems for decades to come justifies a much larger degree of internal control and accountability than can be obtained through reliance upon an outside third-party contractors or temporary workers.

2.5. Do these positions require additional, new or modified facilities? If so, what is the amount estimated by Facilities and is this amount budgeted or unbudgeted?

Response: Yes. The Facilities Division has estimated costs for reconfiguring two work stations is $6,300. This amount has been budgeted and work is presently underway to complete the facility modifications. With the extremely tight and limited office space at Ward Avenue, the reconfiguration of work stations was determined by the Facilities Division to be necessary.

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE
Generation Bidding Division
Non-Labor Cost - TY 2007 RATE CASE (Normalized Full Year)

Normalized FY07-FY09 over THREE years.

				TY 2007 RATE CASE		CA-IR-424(j) Update*		
	FY07 Update	FY08 Forecast	FY09 Forecast	Total	Normalized	Jan. - May 2007 Actual	Add'l not yet recorded	Total Actual and Pending
CONSOLIDATED:								
Outside Consultant - code of conduct (start up 1/3 share)	$45,000	$0	$0	$45,000	$15,000	$3,479	$8,826	$12,305
Outside Legal (start up 1/3 share)	$30,000	$0	$0	$30,000	$10,000	$4,401	$17,253	$21,654
Outside Consultant - RFP for HECO	$150,000	$150,000	$150,000	$450,000	$150,000			
Outside Consultant - RFP for HELCO	$0	$0	$0	$0	$0			
Outside Consultant - RFP for MECO	$150,000	$150,000	$150,000	$450,000	$150,000			
Outside Legal - RFP for HECO	$60,000	$150,000	$150,000	$360,000	$120,000			
Outside Legal - RFP for HELCO	$0	$0	$0	$0	$0			
Outside Legal - RFP for MECO	$50,000	$150,000	$150,000	$350,000	$116,667			
Independent Observer - RFP for HECO	$60,000	$180,000	$180,000	$420,000	$140,000			
Independent Observer - RFP for HELCO	$0	$0	$0	$0	$0			
Independent Observer - RFP for MECO	$50,000	$180,000	$180,000	$410,000	$136,667			
Interisland Travel - HELCO & MECO	$900	$1,800	$1,800	$4,500	$1,500			
Meals/Entertainment - HELCO & MECO	$400	$800	$800	$2,000	$667			
	$596,300	$962,600	$962,600	$2,521,500	$840,501			
HECO:								
Outside Consultant - code of conduct (start up 1/3 share)- Framework Requirements	$15,000			$15,000	$5,000	$1,183	$2,942	$4,125
Outside Legal (start up 1/3 share)- Framework Requirements	$10,000			$10,000	$3,333	$1,467	$5,751	$7,218
Outside Consultant - RFP for HECO	$150,000	$150,000	$150,000	$450,000	$150,000			
Outside Legal - RFP for HECO	$60,000	$150,000	$150,000	$360,000	$120,000			
Independent Observer - RFP for HECO	$60,000	$180,000	$180,000	$420,000	$140,000			
	$295,000	$480,000	$480,000	$1,255,000	$418,333			
HELCO:								
Outside Consultant - code of conduct (start up 1/3 share)	$15,000			$15,000	$5,000	$1,148	$2,942	$4,090
Outside Legal (start up 1/3 share)	$10,000			$10,000	$3,333	$1,467	$5,751	$7,218
Outside Consultant - RFP for HELCO	$0			$0	$0			
Outside Legal - RFP for HELCO	$0			$0	$0			
Independent Observer - RFP for HELCO	$0			$0	$0			
Interisland Travel	$0			$0	$0			
Meals/Entertainment	$0			$0	$0			
	$25,000	$0	$0	$25,000	$8,333			
MECO:								
Outside Consultant - code of conduct (start up 1/3 share)	$15,000			$15,000	$5,000	$1,148	$2,942	$4,090
Outside Legal (start up 1/3 share)	$10,000			$10,000	$3,333	$1,467	$5,751	$7,218
Outside Consultant - RFP for MECO	$150,000	$150,000	$150,000	$450,000	$150,000			
Outside Legal - RFP for MECO	$50,000	$150,000	$150,000	$350,000	$116,667			
Independent Observer - RFP for MECO	$50,000	$180,000	$180,000	$410,000	$136,667			
Interisland Travel - $175 airfare + $50 car rental per trip	$900	$1,800	$1,800	$4,500	$1,500			
Meals/Entertainment - $100 lunch & dinner per person	$400	$800	$800	$2,000	$667			
	$276,300	$482,600	$482,600	$1,241,500	$413,834			
				$2,521,500	$840,500			

*Reference HECO response to CA-IR-413 Attachments 1 and 2

CONTRACT NO. PXA-07-001
Under Master Services Agreement No. MSTR-PYA-06-020

I. Request for Quote

Under the terms and conditions of the Consultant Services Master Agreement, dated December 14, 2006, by and between MERRIMACK ENERGY GROUP, INC. ("Consultant") and Hawaiian Electric Company, Inc. ("Company"), Company hereby requests a proposal from Consultant to perform the following Work:

The Hawaii Public Utilities Commission adopted a Framework for Competitive Bidding dated December 8, 2006 ("Framework") by its Decision and Order ("D&O") No. 23121 in Docket No. 03-0372. The Framework establishes competitive bidding as a mechanism for acquiring or building new energy generation in Hawaii. In the above referenced D&O, the Commission ordered the electric utilities to, among other things, submit to the Commission for review and approval their proposed Codes of Conduct ("COC"), and their final list of qualified candidates for the role of Independent Observer ("IO").

Phase I Work: Accordingly, Company requests Consultant's professional services to assist Company in the development of the aforementioned proposed COC and final list of qualified IO candidates, and in the subsequent process to secure Commission approval of same. Consultant may also be tasked to assist Company in development of the IO's duties and obligations, including development of a form contract and associated scope of work that can be used by Company to retain the IO, and secure Commission approval of such contract consistent with requirements set forth in the Framework. Consultant's services are further requested to assist the Company in developing a Procedures Manual consistent with the approved COC and as required by the Framework.

Additional Consultant services to assist Company in meeting its obligations under the Framework and in implementing an effective and efficient competitive bid or bids may be required and will the subject of the scope of work for future Work Authorization(s) as needed.

The minimum insurance limits specified in the Consultant Services Master Agreement shall be modified for this Work Authorization only (blanks indicate that no change is intended for this Work):

Commercial General Liability
Section 8.2 - $_____ per occurrence
$_____ general aggregate

Automobile Liability
Section 8.3 - $_____ per accident

Professional Errors and Omissions
Section 8.4 - $_____ per each claim
$_____ per aggregate

Pollution Liability and/or Asbestos Abatement Liability and/or Lead Abatement Liability
Section 8.5 - $_____ per occurrence

Marine
Section 8.6 - $_____ per occurrence

Dated: 4/9/07 _____
Company
Leon Boose
Manager, System Planning Dept.

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: Time and expense for professional services at the rate of $175/hour.

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

Work will begin no later than March 1, 2007 and be completed on or before deadlines to be set by Company with the concurrence of Consultant for specific tasks and deliverables to be identified by Company as the Work progresses.

Wayne Oliver will act as Consultant's Designated Representative during the performance of this Work.

Dated: _____ _____
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 Leon Roose, Manager, System Planning Department.

Dated: 4/9/07

Company
Leon Roose
Manager, System Planning Dept.

Dated: _____

Company

Nakamoto, Barry

From: Nakamoto, Barry
Sent: Friday, July 06, 2007 3:32 PM
To: Nakamoto, Barry
Cc: Roose, Leon
Subject: Discussion with New Energy Opportunities on IO Budgetary Information

July 6, 2007

Discussion with Barry Sheingold of New Energy Opportunities. Purpose of the discussion was to get a budgetary estimate for typical IO services. I shared with Mr. Sheingold a copy of the PUC's Competitive Bidding Framework and in particular the section that identifies the responsibilities for the IO. Mr. Sheingold advised that there are three general areas that IOs are typically asked to observe. These are 1) Design of the RFP and Contract Forms, 2) Evaluation of the Bids, and 3) Oversight of contract negotiations and resolution of issues. Our mutual review of the Framework indicated that all three of these areas are expected to apply to us here in Hawaii.

Mr. Sheingold advised that in his experience as an IO, he estimates that the range for similar IO services has been between $150,000 to $400,000. The amount can be influenced by many factors such as experience of the Company with competitive bidding, number of bidders that participate, how definitive the RFP is, is it an open to all type bid, how contentious the issues are, cooperation and receptiveness of the Company as well as the parties involved, and other factors. Mr. Sheingold agreed that if there is no Company bid, IO costs should be on lower end of range. Some add'l costs can be expected by us due to inexperience and initial creation of RFP documents, development of eval criteria, and contract forms.

Contact info provided below:

Barry J. Sheingold
President
New Energy Opportunities, Inc.
125 Powers Road
Sudbury, MA 01776
(T) 978-440-7575 / (F) 978-440-7654
Email: bjs@newenergyopps.com

Nakamoto, Barry

From: Nakamoto, Barry
Sent: Thursday, July 12, 2007 10:12 AM
To: Nakamoto, Barry
Cc: Roose, Leon
Subject: Discussion with Accion Group on IO Budgetary Information

July 12, 2007

I spoke with Alan Kessler, Managing Director of Accion Group and one of the approved IOs. We discussed the PUC's framework with respect to the roles and responsibilities of the IO. Mr. Kessler advised that based on his experience on other projects, budgetary cost estimates may be in the range of $200,000 to $300,000 for IOs with primarily monitoring responsibility which would be in line with the PUC's framework. Mr. Kessler did advise that the costs could vary significantly, including going above the high end of the range depending on number of bidders (ie 5 versus 25), how contentious the bidding issues are, and many other factors. Also, if HECO elects to use the IO for ALL contacts with the bidders, that could raise costs as well. Mr. Kessler advised that his costs would normally include the cost of setting up a website for communication with the bidders.

Contact Information:

Alan Kessler

Managing Director

Accion Group, Inc.

301-942-0940 Direct Dial

301-346-2992 Mobile

CA-IR-425

Ref: June 2007 Update, HECO T-6, pages 14 to 16; Attachment 7 (PSOM Administration – Additional Labor Expenses).

With regard to the new PSOM Administrator position now being proposed, please provide the following:

a. Provide a copy of the approved Job Vacancy Requisition forms for the new position or explain why each of such form does not exist.

b. Provide a copy of the Position Description forms for the new position or explain why each of such forms does not exist.

c. Provide the anticipated date of hire and starting work date for the new employee.

d. State the reasons why "Financial administration of O&M expenses is being consolidated in one group" and explain whether more attention is to be focused upon financial administration of PSOM activities and expenses in the future as a result of such changes.

e. Provide complete copies of all studies, reports, analyses, workpapers, projections and other documents prepared by or for HECO to evaluate work requirements and the adequacy of existing staffing associated in support of the decision to add the new position.

HECO Response:

a. The approved Job Vacancy Requisition form[1] for the new position of Administrator PSO&M is included in Attachment 1 to this response.

b. A copy of the Position Description for the new position of Administrator PSO&M is included in Attachment 2 to this response.

c. The position of Administrator PSO&M was filled on July 9, 2007.

d. The rationale for the consolidation of financial administration of the Power Supply Process

[1] Note that the Staffing Information section was historically included in the JVR form to allow for austerity periods when staffing activity would be significantly constrained (e.g., 2004). Currently, departments may complete the fields using either 2005 or 2007 test year counts; however, these counts serve as reference points for budget comparison. Departments may proceed to fill their positions, irrespective of whether they may be over or under that "staffing cap" number provided they have received the necessary approvals.

Area into one group is provided in Attachment 3 to this response, a copy of an email requesting executive approval for the reorganization to this effect. Attachment 3 is confidential and is being provided pursuant to Amended Protective Order No. 23378, issued on June 4, 2007. As stated in Item 7 of the email (Attachment 3), PSO&M has a need for increased financial analysis (i.e., real-time budget and expenditure analysis for overhauls and station maintenance), but with the Budget/Statistical Analyst's work load it was not possible. The combination of the PSO&M Administrator and Budget/Statistical Analyst allows more attention to be focused upon the financial administration of PSOM activities and expenses.

e. On or about February 1, 2007, following the announcement of the reorganization (see Attachment 3 to the response to CA-IR-424) of the Power Supply Process Area that was effective January 22, 2007, and the accompanying decision by HECO Finance to separately administer the finances of each department in the Power Supply Process Area, the Vice President of Power Supply assigned the PSO&M Manager to facilitate a review the financial administration issues, needs, and organization of the Power Supply Process Area in cooperation with the other four department managers. This was not a formal process for which there are documents or reports summarizing the analysis. The PSO&M Manager conferred with the other four department managers, the Power Supply Administrator, the Power Supply Engineering Administrator, and the PSO&M Budget/Statistical Analyst to determine the financial administration requirements of each of the departments and the Vice President's Office in the Power Supply Process Area. Based primarily on this determination, the PSO&M Manager developed an informal proposal for reorganization and redistribution of duties of the financial personnel in the Power Supply Process Area,

including the addition of one new position. The informal proposal was presented and discussed at the senior staff meeting (i.e., "managers only") of the Vice President Power Supply on or about March 6, 2007. Following that meeting the proposal was revised and submitted on March 21, 2007, in an email to the Vice President Power Supply (Attachment 3 to this response). The rationale for the reorganization and addition of the new position is included in the subject email, and included the following:

1. PSO&M has a need for increased financial analysis (i.e., real-time budget and expenditure analysis for overhauls and station maintenance), but with Budget/Statistical Analyst's current work load it is not possible.
2. HECO Finance (i.e., "Management Accounting") has determined that financial data will no longer be consolidated for PSO&M and PSSD, and that each department (including the new System Planning Dept.) must be accounted for and report separately.
3. There is no Administrator on the System Planning Department staff; the Administrator work is being performed by Power Supply Administrator (Power Supply Services Dept.). This work load will increase significantly as the Generation Bidding activities increase. Similarly, the work load for the PS Services Department will increase when the biofuels activities increase.

Executive approval was received on March 21, 2007. On March 27, 2007, the PSO&M Manager contacted the Manager of Workforce Staffing and Development (WSD) to solicit assistance for implementation of the reorganization. On July 16, 2007, the reorganization was completed with the management transfer of the PS Administrator (Power Supply Services Dept.) to the Lead Financial Administrator (PSO&M Dept.) position.

Job Vacancy Requisition (JVR)

HAWAIIAN ELECTRIC COMPANY

JVR # **STATUS** **VP Approval Necessary?** VP Approved

For Human Resources Use:

☐ Org Structure Change ☐ Reorganization ☐ Grandfather Rights

Job Information

Position ID: 5148 **Position Title:** ADMINISTRATOR
Department: POWER SUPPLY OPER & MAINT
Division: O&M ADMINISTRATION **No Needed:** 1
Mail Stop/Work Loc: WP2 **RA:** PIB **Home Cost Center:** PIB098PHENDNPZZZZZZ
Labor Class: TCS-I **Award Code:** MERR
Primary Resource: N/A **Workorder Prefix:** PR
Position Reports To: May Paco **Phone No:** 543-4274

Work Schedule From: 7:30 am **To:** 4:00 pm **Lunch (Minutes):** 30
Roster Pattern: DK5D **Roster Position:**

Category: Regular Full-Time **Start Date:** 6/11/07 **End Date:** N/A
Position Type: Addition **Replaces:** n/a
Reason: New approved addl position for 2007.

Compensation Information

Merit
Reference Job Code: S2604 **EEO:** PROFESSIONALS **Role:** MT
Market Rate: 65,000

Note: N/A

Staffing Information

Present Dept Total (include JVR): 314 **Staffing Cap:** 352

Recruitment Information

Internal Posting Type:

- ☐ N/A
- ☐ Agency Temporary
- ☒ Department
- ☐ Company
- ☐ Affiliate

External:
Posting Type:

- ☐ Local Ad
- ☐ Internet
- ☐ Professional Publication
- ☐ Employment Hotline
- ☐ Other

Advertisement Start Date: N/A
Postmarked Deadline: N/A
Charge #: PR000640

Note: N/A

HAWAIIAN ELECTRIC COMPANY
MERIT
POSITION DESCRIPTION

Position Title:	**Administrator**
Department:	**Power Supply O & M**
Reports to:	**Lead Financial Administrator, Power Supply**

Jobe Code:	**S2604**	***FLSA:***	**A**
Role:	**TC**	***Date:***	**5/18/07**

Primary Role/Function

Performs the functions of a principal financial/budget administrator for Power Supply Operations & Maintenance (PSO&M) and Power Supply Environmental (Environmental) Departments. Provides clerical, administrative and accounting support to the PSOM & Environmental Department including forecasting, budgeting, contract administration, drawing and records management, procurement, project cost tracking, project scheduling, project cost accounting, and general clerical services.

Job Responsibilities

* 55% Develops and administrates forecasts and reports and ensures that accounting procedures are aligned with overall process area and corporate goals. Applies accounting standards to procedures and systems to ensure compliance with Company and regulatory requirements. Develops and administrates reports relating to, but not limited to staffing and department goals. Prepares and updates the PSO&M and Environmental Department's operating forecast based on input from Division heads. Monitors expenditures, analyzes data and prepares reports on cost variances. Serves as the department liaison with Accounting Department for all accounting concerns related to management of all expenditures that are under the PSO&M and Environmental Department's jurisdiction. Prepares and delivers presentations of the financial analyses performed.

* 20% Prepares financial work papers and exhibits in support of regulatory proceedings, including rate cases. Researches, tracks and develops reports for submittal to PUC regarding PSO&M and Environmental Department's operating forecasts. Assists in development of expert testimony relating to the budget before the Public Utilities Commission (PUC).

* 15% Leads and works with the PSO&M Budget Analyst in the area of budget preparation, compiling, monitoring and analyzing O&M expenses in PSO&M Department. Assists in directing the work of the Budget Analyst.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

*	5%	Participates in the development and implementation of corporate-wide cost recovery, accounting, budgeting and administration procedures.
*	5%	Researches and makes recommendations for improving Department operations in administrative, accounting and clerical areas. Develops and disseminates relevant Department policies, procedures, tools and systems. Compiles and analyzes data and prepares special reports for management.

*** Denotes a "Fundamental Responsibility"**

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Administrator

Minimum Qualifications

Knowledge Requirements:

- Thorough knowledge of the principles of accounting including general ledger, cost accounting, and payroll normally acquired through advanced college level accounting courses and several years of professional accounting experience.
- Thorough knowledge of HECO budgeting, forecasting and accounting systems and procedures.
- Thorough knowledge of Company procurement policies and procedures, filing systems and drawing management systems.
- Knowledge of preparing PUC work papers.
- Working knowledge of personal computers and/or mainframe systems and related software applications such as spreadsheets, word processing, etc.
- Working knowledge of PUC regulations and requirements.

Skills Requirements

- Demonstrated leadership skills including effective written, oral and listening communication skills and interpersonal skills in order to work effectively with a variety of individuals.
- Demonstrated analytical and administrative skills for such tasks as preparing, monitoring, analyzing forecasts, preparing performance appraisals, conducting interviews; and carrying out company/department policies and procedures.
- Ability to handle difficult and/or sensitive issues while using tact, courtesy and discretion.
- Strong interpersonal skills to influence persuade various groups or individuals and the willingness and ability to train.
- Ability to remain flexible in a demanding work environment and to adapt to rapidly changing priorities.

Experience Requirements

- Multiple years (5-7) experience in accounting and/or engineering projects.

Requirements are representative of minimum levels of knowledge, skills, and abilities. To perform the position successfully, the incumbent will need to demonstrate the use of these knowledge, skills, and abilities at an "Effective" level.

Positions Supervised

Title	Number Supervised
None	

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Administrator

Physical Requirements

Only items that are necessary to perform the "fundamental" responsibilities of the position are indicated.

"F" for Frequently: Daily, several times a week, weekly
"O" for Occasionally: Monthly, Couple times a year

	Standing
	Walking
F	Sitting
	Climbing Ascending or descending ladders, stairs, or other objects.
	Balancing on narrow, slippery, or erratically moving surfaces.
	Stooping, kneeling, crouching, crawling, and/or squatting
F	Handling Working with hands, arms or fingers.
	Feeling Perceiving attributes such as size, share, temperature or texture.
F	Ability to follow written/oral instructions

	Lifting/Carrying below 25 lbs.
	26 to 50 lbs.
	above 50 lbs.
	Vision acuity the ability to see clearly 20 feet or more
F	Color vision the ability to identify and distinguish different colors.
	Night vision the ability to perform work at night with the use of portable lighting.
F	Talking
F	Hearing
F	Ability to perform simple, repetitive tasks for an extended period of time
F	Ability to perform complex and varied tasks for an extended period

Environmental Conditions

The employee will be exposed to the following environmental conditions in performing the "fundamental" responsibilities of the position.

	Extreme Cold cold temperatures for an hour or more
	Extreme Heat warm/hot temperatures for an hour or more
	Wetness
	Use of personal protective equipment (hard hats, respirator, leather gloves, rubber glove, safety shoes, nomex clothing)
	Work in emergency/potentially "high stress" situations
	Noise At least 80 decibels

	Working Outdoors may be during prevailing weather/climate conditions
	Hazardous Conditions potentially life-threatening situations
	Work above 5 feet
	Work above 70 feet
	Work on mountain trails/cliff sides

Job responsibilities are subject to possible modification to reasonably accommodate individuals with disabilities. Some job requirements may exclude individuals who pose a direct threat or significant risk to the health and safety of themselves or other individuals.

This position description in no way states or implies that these are the only duties/functions to be performed by the incumbent. Employee will be required to follow any other job-related duties/functions assigned by the supervisor

Confidential Information
Deleted Pursuant To
Amended Protective Order No. 23378

Attachment 3 contains confidential information and is being provided subject to

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

CA-IR-426

Ref: June 2007 Update, HECO T-6, pages 14 to 16; Attachment 7 (Fuel Infrastructure – Additional Labor Expenses).

With regard to the new Fuel Infrastructure Director position now being proposed, please provide the following:

a. Provide a copy of the approved Job Vacancy Requisition forms for the new position or explain why each of such form does not exist.

b. Provide a copy of the Position Description forms for the new position or explain why each of such forms does not exist.

c. Provide the anticipated date of hire and starting work date for any new employee that is planned.

d. Explain which position was "filled, effective May 28, 2007" and why a "hiring process has begun" for a "staff engineering position" given that Attachment 7 indicates that the "director" is being added.

e. Provide complete copies of all studies, reports, analyses, workpapers, projections and other documents prepared by or for HECO to evaluate work requirements and the adequacy of existing staffing associated in support of the decision to create and fill the new Fuel Infrastructure Division position.

f. Provide a detailed itemization of test year non-labor O&M expenses for the fuels department and explain the reasons why "2007 test year estimate…is not expected to change as a result of this reorganization."

HECO Response:

a. Please refer to CA-IR-424, Attachment 1, page 3, for the Job Vacancy Requisition form for the Fuels Infrastructure Director.

b. Please refer to CA-IR-424, Attachment 2, pages 9 to 12 for the Position Description form for the Fuels Infrastructure Director.

c. The effective start date for the Fuels Infrastructure Director was May 28, 2007. The anticipated start date for the two Fuels Infrastructure Staff Engineers is in the August-September 2007 timeframe.

d. The position of the Fuels Infrastructure Director was filled by the promotion of the then Fuels Contract Administrator from the Fuels Resources Division, Power Supply Services Department. As noted in response c. above, the effective start date for the Fuels Infrastructure Director is May 28, 2007. The two Staff Engineer positions have not been filled as the first step in the creation of the Fuels Infrastructure Division was to hire the division Director. The two Staff Engineer positions were made possible by the transfer of one recently vacated Staff Engineer position in PYE (Power Supply Engineering Department) and one recently vacated Fuels Contract Administrator position in PIF (Fuels Resources Division).

e. In support of the proposed re-organization, the Power Supply Engineering Department developed a HECO Fuels Infrastructure Responsibility and Interface Matrix, which is shown as Attachment 1 to this response. Numerous internal discussions were held to determine the appropriate division of duties, and the type of business and technical expertise required to successfully execute the new biofuels and fuels infrastructure regulatory compliance program. Out of the 155 identified functions shown on Attachment 1, 77% of the functions pertain to the area of fuels infrastructure and regulatory compliance. As a result, the need for a dedicated team with specialized expertise was clearly justified. As shown in Attachment 2 to this response, new functions, roles, and responsibilities were defined for the Fuels Infrastructure Division, and presented to HECO management for approval. Initially, the Fuels Infrastructure resources allocated to HELCO and MECO will be on a project basis. Initial efforts at MECO will be related to assisting MECO with biofuels implementation. For HELCO, initial efforts will be focused on the planning and development for fuel transportation and logistics for the Keahole power plant as it moves into combined cycle

service. Labor hours and direct costs for the Fuels Infrastructure Director have been allocated 80% to HECO, 10% to HELCO, and 10% to MECO, and totals $97,698 as shown in Attachment 3 to this response.

f. Non-labor O&M expenses, such as the operations and maintenance of the Barbers Point Tankfarm, and the Kahe and Waiau pipelines, which are under contract to Chevron, was previously approved by the Public Utilities Commission, and have been transferred from the Fuels Division to the Fuel Infrastructure Division. As a result, there are no material changes to the non-labor O&M expenses as a result of the re-organization.

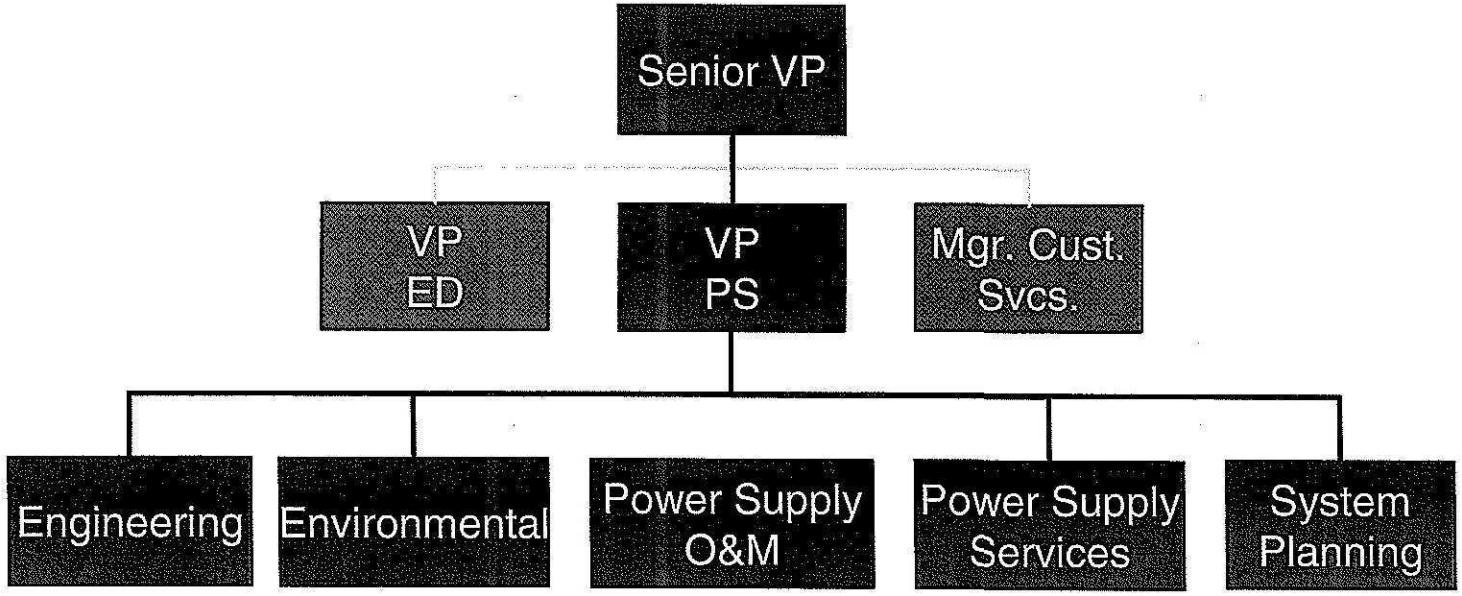
Fuel Infrastructure Responsibility and Interface Matrix

	Tasks	Kahe FO Tanks	Waiau FO & DO Tanks	Kahe FO Infrastructure	Waiau FO Infrastructure	Honolulu Tanks	Iwilei Tanks	Iwilei FO Infrastructure	Iwilei Pipeline	Waiau Pipeline	Kahe Pipeline	BPTF FO Infrastructure
Engineer	Project Management	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
	Project Engineering	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
	Construction Management - Capital	PPED	PPED	PPED	PPED	PPED	PPED	PPED	PPED	FRD/PPED	FRD/PPED	FRD/PPED
	Field Follow	O&M	O&M	O&M	O&M	O&M	O&M	O&M	O&MD	FRD/O&MD	FRD/O&MD	FRD/O&MD
SYSTEM OWNER	MBO	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
	Plant View	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
	Condition Assesment	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
	State of the System	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
	Capital Project Identification	FE	FE	FE	FE	FE	FE	FE	FE	FRD/FE	FRD/FE	FRD/FE
SUBJECT MATTER EXPERT												
API 653	Tank Inspection SME	FE	FE	FE	FE	FE	FE	-	-	-	-	FE
	Audit Compliance	FE	FE	FE	FE	FE	FE	-	-	-	-	FE
	Regulatory Compliance	FE	FE	FE	FE	FE	FE	-	-	-	-	FE
SPCC/ FRP	Spills & Facility Response Plan	ENV	ENV	ENV	ENV	ENV	ENV	ENV	ENV	FRD/ENV	FRD/ENV	FRD/ENV
49 CFR 195	Pipeline SME	-	-	-	-	FE	FE	FE	FE	FRD/FE	FRD/FE	-
	Inspection	-	-	-	-	FE	FE	FE	Contract	FRD/Contract	FRD/Contract	-
	Audit Compliance	-	-	-	-	FE	FE	FE	FE	FRD/FE	FRD/FE	-
	Regulatory Compliance	-	-	-	-	FE	FE	FE	FE	FRD/FE	FRD/FE	-

Legend:
FE: Fuels Infrastructure
PPED: PSE Power Plant Engineering Division
O&M: Operations and Maintenance Department
ENV: Water & Hazardous Materials Division
Contract: Vendor Support
FRD: Fuels Resources Division

API: American Petroleum Institute
SPCC: Spill Prevention, Control, and Counter-Measure
FRP: Facility Response Plan
CFR: Code of Federal Regulations
SME: Subject Matter Expert
FO: Fuel Oil
DO: Diesel Oil

Proposed Operations Organization
Power Supply Process Area



Proposed Power Supply Organization

Power Supply Services Department

Mgr. Power Supply Svcs.

Admin

- Provides Financial information, analysis, recs, and admin services to VP of Power Supply and Managers.
- Coordinates PS Process area budget reporting with Energy Delivery for Operations.

Fuels Operations

- HECO/HELCO/MECO
- Numerous fuel types (e.g. LSFO, MSFO, diesel, naphtha, biodiesel, ethanol, LNG, hydrogen, etc.)
- Fuel supply contract negotiations (via sole source and RFP)
- Fuel shipping, trucking, pipeline and terminal use contract negotiations and operational oversight
- Fuel supply forecasts, procurement, testing, shipping, delivery, transfer, storage and use (central station, DG, CHP)
- Regulatory approval process
- S-Ox Compliance

Fuels Infrastructure

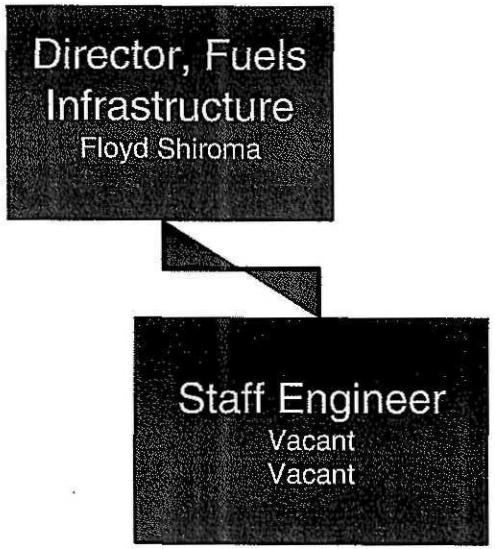
- **HECO/HELCO/MECO**
- **Biofuels implementation infrastructure (dual fuel assessment, new pipelines, tanks, etc.)**
- **Pipeline inspections, reporting, regulatory compliance (Fed DOT, EPA)**
- **Pipeline, tank and related infrastructure maintenance**
- **Fuel shipping, trucking, pipeline and terminal use**
- **Contractual compliance oversight**

Power Purchase

- HECO/HELCO/MECO
- Existing PPA admin (invoice payment, emergency response, outage scheduling, operational issues – e.g. Kalaeloa HRSG, AES turbine condition, PGV reliability, wind penetration)
- Existing PPA term extension, renegotiation, expansions (e.g. Kalaeloa, H-Power, AES, HC&S, PGV)
- New PPA negotiations
- S-Ox Compliance

Proposed Power Supply Organization
Fuels Infrastructure

- Responsible for HECO/HELCO/MECO fuel infrastructure planning, budgeting, development, implementation, regulatory and statutory compliance with state and federal regulations.
- Manages fuel infrastructure capital projects from inception through operation.
- Responsible for oil spill response standards and procedural compliance
- Develops strategies. Identifies potential problem areas and initiates corrective action. Conducts inspection of sites



- Provides technical support and guidance for the fuel infrastructure management program for operations and maintenance issues
- Researches, updates, develops and trains O&M, PSED and Fuels Division personnel on DOT and Coast Guard regulations pertaining to fuel infrastructure
- Ensures all applicable fuels infrastructure regulatory requirements are met

Proposed Power Supply Organization

Fuels Operations

Director, Fuels Operations
Jeff Aicken

Fuels Contract Administrator
Vacant
Vacant

- Plans, evaluates, negotiates and administers fuel supply, facilities operations and maintenance, transportation to ensure reliable, safe and cost effective fuel
- Responsible for HECO/HELCO/MECO fuel, RFP, contract negotiations and administration

Fuels Records Clerk
Wendy Watanabe

- Responsible for the collection, preparation, and processing of fuel purchase, inventory, shipment, pricing, and related data. Resolves discrepancies and maintain fuel and generation data files.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Fuels Infrastructure Division

Labor Hours / Cost - *DETAILS*

	[A] Std Labor Rate	Alloc by Entity	Labor Hrs	Direct Cost	Act #	Activity	Loc #	Ind #	Acct Grp Descr	EE #	Exp Element	Acct Blk	Acct Blk Descr	NARUC	NARUC Descr
SUPPLY:															
1 Director (FS-1 Facilitator Supv)	$46.79														
Labor Hours Available:			2,088												
DEMAND:															
HECO:															
1 Director		80%	1,670	$78,158	269	Maint Fuel System	WST	NE	O&M	150	Labor Cost	B31	Prod Maintenance	512	BLR PLT MAINT
HELCO:															
1 Director		10%	209	$9,770	269	Maint Fuel System	HEL	BE	Billable O&M	150	Labor Cost	B60	Intercompany	1861	CHGS BILL ASSOC COS
MECO:															
1 Director		10%	209	$9,770	269	Maint Fuel System	MAU	BE	Billable O&M	150	Labor Cost	B60	Intercompany	1861	CHGS BILL ASSOC COS
CONSOLIDATED DEMAND			**2,088**												
TOTAL COST				**$97,698**											

[A] - Standard labor rates obtained from department Pillar "UPD" files distributed on 5/11/07 (with April 2007 actuals).
Used Generation Planning labor class for Staff; currently there's none for Generation Bidding.

CA-IR-427

Ref: HECO Response to CA-IR-105 (EMS Project).

CA-IR-105(e) sought a copy of all documentation and spreadsheet files supporting the $557,000 estimated annual maintenance cost for the new Siemens EMS. In response, the Company merely provided a listing of the items comprising this amount. This listing also appears in HECO T-7's response to CA-IR-2, Attachment L-1, page15. Please provide the following:

a. Does the response to HECO T-7 (or any other HECO witness) to CA-IR-2 (or any other information request) contain detailed documentation showing how the individual items set forth in this list were quantified for purposes of inclusion in the 2007 test year forecast?

   1. If So, Please provide a pinpoint reference to such information.

   2. If not, please provide a copy of all documentation and spreadsheet files supporting the items comprising the $557,000 estimated annual maintenance cost for the new Siemens EMS, as originally requested by CA-IR-105(e).

b. Several of the items listed in the response to CA-IR-105(e) refer to the "warranty" – that is, in the context of "during" or "after" the warranty. Please provide the following.

   1. Please identify the start and end of the warranty period.

   2. What support service is included in the 2007 test year forecast "after" the warranty period? Please explain.

HECO Response:

a. HECO's response to CA-IR-105, part e., provided a detailed breakdown of the cost components for the 2007 test year estimate of $557,000 for annual maintenance costs for the new Siemens EMS. To the extent HECO has documentation supporting these expense estimates, it is provided in Attachments 1 through 7 of this response. The table below identifies the estimated cost component to which each Attachment relates.

Line	*Act #	*EE #	Line item	FY07	Attachment
1	376	501	EMS OS SW Support/Maintenance - HPTru64	6,000	
2	376	501	EMS HW Maintenance (est 20% of HW cost $299k)	60,000	
3	376	501	UPS/Battery Maintenance (old building)	12,420	Attachment 1

4	376	501	EMS SW Support Service (Siemens) - after warranty	212,100	Attachment 2
5	376	501	EMS/OMS Oracle SW License and Support	145,020	
6	376	501	EMS Paging System License/Support (estimate)	6,000	
7	376	501	EMS PI System License/Support	18,000	Attachment 3
8	376	501	EMS/OMS Display Board Maintenance	10,680	
9	376	501	EMS HW Maint (old EMS)	0	
10	376	501	EMS SW Support Service (Siemens) - uplift to warranty 24x7	16,550	Attachment 4
11	376	501	UPS/Battery Maintenance (New Building)	15,300	Attachment 5
12	376	501	EMS/OMS Wall Board support (during warranty 24x7)	4,680	Attachment 4
13	376	501	EMS SW Subscription Fee (Siemens after warranty 07/07-12/11	41,520	Attachment 6
14	376	501	I/SCADA Interface Maint	6,000	Attachment 7
15	376	501	I/SCADA ICCP (AX-S4 Development Kit)	1,356	Attachment 7
16	376	501	I/SCADA ICCP (AX-S4 Runtime)	900	Attachment 7
				556,526	

For the line items in the table above without a referenced Attachment, the maintenance expenses were estimated at the time the 2007 budget was prepared based on the maintenance costs for similar software or based on a percentage of the purchase price of the software. A general range of 15% to 25% of the software purchase price was used to approximate the annual maintenance fee. The percentage range to estimate the maintenance cost was based on what HECO has paid in the past for similar types of software.

For the hardware maintenance expense, HECO used an estimate of 20% of the purchase price of EMS hardware because there are over 300 pieces of equipment installed for the EMS and it would have been a difficult task to develop an estimate for each piece of equipment. From past experience HECO has found that an estimate of 20% provided a reasonable approximation of what the hardware maintenance cost would be.

1. See response to a.

2. See response to a.

b. The warranty periods for the items listed in the table above had varying end dates because

the implementation of the EMS occurred over several months. In particular, the EMS hardware has different warranty periods based on when the equipment was purchased and different pieces of equipment have different warranty periods. As an example, the dispatcher workstations have a three year warranty that will expire in 2008 and other pieces of equipment had warranties that expired in 2006.

For the software listed, the warranty periods have ended with the exception of the EMS SW Support Service (Siemens). The start of the warranty period for the new Siemens EMS began on January 1, 2007 and will end on December 31, 2007. As noted in HECO's response to CA-IR-105, the new Siemens EMS was placed into service in March 2006 after almost two years of work to prepare the EMS for commercial operation. During the preparation period, Siemens was required to complete several milestones listed in the statement of work to demonstrate that the software and equipment for the EMS was stable and relatively problem free, including a 1000-hour performance test. This performance test had to be successfully completed before the final payment could be released to Siemens and the warranty period started. Shortly after the EMS was placed into service, HECO conducted the 1000-hour performance test and encountered several instances where the Siemens system failed to complete the test[1]. Siemens and HECO worked diligently and expeditiously to complete this portion of the project acceptance. However, in each instance, where a problem with a component of the Siemens EMS caused the test to fail, troubleshooting the problem and a software modification were required to resolve the issue.

When the 2007 budget was being prepared, the schedule at that time indicated that the project would be completed earlier than actually occurred, that is by early March 2006,

and the warranty period would expire at the end of February 2007. As noted above, because of delays caused by difficulties that arose during software performance testing, the warranty will not expire until December 31, 2007, and the maintenance contract will not begin until January 1, 2008.

2.

Siemens EMS Maintenance Expense After Warranty

The amounts listed in the table above are included in the 2007 test year estimate in the non-labor O&M expenses for NARUC 561 and Activity 376. The maintenance contract costs for the new Siemens EMS to start after warranty that were included in the 2007 test year estimate appear at lines 4 and 13 of the table, above. As noted above, because of the delays resulting from Siemens' difficulty in meeting the performance test milestone, the warranty will continue until the end of 2007, after which the maintenance contract will begin and will continue for four years at a total cost of $969,320. See Attachment 2. In other words, for the next four years, HECO will spend $242,330, plus tax, per year for maintenance of the new Siemens EMS.

As noted above, at the time the budget was prepared, it was assumed that services under the EMS software maintenance contract would begin in March 2007, following the expiration of the Siemens EMS warranty period. Therefore, HECO budgeted for ten months of services under the maintenance contract in 2007 at a cost of $20,194 per month, not including general excise tax, and included an estimate of $212,100 in the budget. HECO also included an additional $41,520 in the budget for maintenance contract costs. This

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[1] HECO's electrical system was never put at risk because only the single component that was being tested by

estimate relates to the Siemens software subscription agreement as shown in Attachment 6. However, the budget preparers overlooked the fact that the cost of the software subscription agreement was included in the maintenance contract and, based on the knowledge at that time, assumed that the warranty period would end in June so the payment would begin in July 2007. As a result, using the rounded payment of $6,920 for 6 months resulted in a total of $41,520 that was estimated for this software subscription service. See Attachment 6. In spite of this error, HECO is proposing to leave the sum of $41,520 as well as the $212,100 in the test year expense estimate because HECO will be spending $242,330, plus tax, per year for four years for maintenance of the new Siemens EMS.

As a result of the change in the start date of the warranty period other expenses were underestimated. While the Siemens EMS is under warranty, it is Siemens' policy to provide 8 hour software support services, Monday through Friday. As a result HECO elected to procure the 24/7 software support from Siemens during the warranty because the EMS is a critical tool for operations. The 24/7 support agreement was to expire at the end of the warranty period and subsequently the after-warranty support agreement would be in force with the 24/7 software support HECO desired. Because the warranty period was extended to December 2007, HECO underestimated the payment for the EMS 24/7 software support by $23,170 (that is based on a monthly payment of $3,310 for the period from June 2007 to December 2007). See Attachment 4. The EMS 24/7 support is based on the sum of $31,850 and $14,450 or $46,300 divided over 14 months or $3,307 per month. This amount was rounded to $3,310 per month.

---

running continuously for 1000 hours would fail. The remainder of the EMS was unaffected.

Similarly, HECO procured 24/7 video wallboard support from Siemens that was originally expected to end in June 2007 because this support was also to begin after the warranty period for the wallboard. The video wall board warranty was anticipated to end in June 2007 but was extended to December 2007. As a result of this extension, HECO will be paying an additional $4,680 to Siemens for 24/7 video wallboard support. See Attachment 4. The video wall board estimate, shown in Attachment 4, of $10,658 divided by 14 months is about $761. Rounding this figure to $780 and multiplied by 6 months results in a cost of $4,680.

HECO intends to negotiate another agreement with Siemens before the end of the fourth year of the present contract to continue the maintenance agreement going forward. As HECO stated in its Application For Approval to Commit Funds in Excess of $500,000 for Item Y00030, New Dispatch Center (Which Includes A New Energy Management System), Docket No. 03-0360, the old EMS (formerly a Rockwell system) was not vendor supported and over time this resulted in the following operational concerns:

- Obsolete hardware was a continuing problem,
- The EMS scan rates were slower than the industry norms,
- Real time analysis capabilities were limited, and
- Occasional unexplained lock ups would occur.

With the continuation of the maintenance agreement with Siemens, HECO will be able to avoid these types of operational issues and will be able to work with the vendor to maintain and improve the Siemens EMS in the coming years.

There was one other instance where HECO underestimated the cost of maintenance and this was for the new EMS Uninterruptible Power Supply (UPS). The 2007 budget amount in

the test year (line item 11) was estimated using the cost of the UPS equipment for the old Rockwell EMS. The budget preparer made assumptions to derive an estimate for the new EMS UPS equipment. The assumptions that were made were to increase the amount of the new UPS equipment by a factor that was based on the additional equipment that was needed and a scaling factor to account for the improved technology. Based on these assumptions the budget preparer arrived at an annual cost of $15,300. This maintenance fee was paid in February 2007 and the amount paid was $36,707. See Attachment 5. HECO underestimated this maintenance expense by $21,407 before taxes. The cost for UPS maintenance will be a recurring expense because the EMS must be protected by the UPS for as long as the EMS is in service. The cost for the UPS maintenance is not a set annual fee and it may increase if more hardware is added to the EMS. It is also possible that the vendor may increase its pricing in future years.

EMS and OMS Oracle Software License and Support

At the time the 2007 budget was prepared, HECO did not know the cost of the software maintenance fees for the Oracle software for the OMS and the EMS, and included $145,020 in the budget as the estimated expense. This estimate was based on preliminary research by HECO on the potential cost of the database maintenance for the version of the Oracle database that was being used and in addition, the number of database licenses that were required by the OMS and EMS. At that time, it was assumed that this expense would be borne by the System Operation Department. However, during the implementation of the OMS, HECO determined that the Oracle database maintenance costs for the OMS would be paid by its Information Technology Services department (ITS) because of the broad corporate base of employees that will be using the OMS. System Operation will still pay for the Oracle database maintenance costs for the EMS. Therefore, the cost to System Operation for Oracle maintenance will be $13,000 rather

than $145,020 as budgeted. The separation of these expenses between the ITS and System Operation departments is, in general, based on the user base of the software. For the EMS, the predominant users are in the System Operation department, therefore, the EMS is considered to be primarily for use by System Operation. As a result the costs for the EMS are borne by the System Operation department. The OMS software will be used by several departments, C&M, System Operation, Customer Service, etc. and therefore it will have a much larger distribution in the corporation. As a result the Oracle costs for the OMS are being managed through ITS.

These maintenance costs will be an on-going expense for the EMS and the OMS as a means to keeping these systems up to date with the current software patches and releases. With vendor support, reported software bugs or software enhancements will be addressed by the vendor. Additionally, users groups for the EMS and the OMS provides an opportunity for HECO to provide input on the software as the vendors continue to develop and improve their respective products.

HECO will continue to pay for the Oracle maintenance expense going forward as both the OMS and the EMS utilize Oracle databases for their programs. Like the OMS and EMS, the on-going maintenance of the Oracle database is essential for keeping the software current and up to date to prevent obsolescence of the database software.

HECO will pursue a similar arrangement with Oracle (formerly known as SPL) for the OMS to prevent the accumulation of the same sort of performance problems that eventually required the replacement of the old EMS. Similar to the new EMS, as software bugs are reported or as enhancements are developed, HECO will want to update the OMS software with patches and new releases. When opportunities arise where HECO can provide input on future software development, HECO will take advantage of these occasions to try to influence the future

development of the software. By maintaining this relationship with Oracle and by continuing the software maintenance agreement, HECO will be able to benefit from the modifications that are made to the OMS software in the form of patches and new software releases and by providing input to the software development HECO may see the implementation of its ideas in future releases. This affords HECO an opportunity to realize software enhancements without having to pay for those enhancements if they are considered a modification that is specific to HECO's application of the software. This would similarly apply to HECO's relationship with Siemens the EMS vendor as well.

As noted above, the System Operation Department originally budgeted $145,020 for the maintenance expense for the OMS and EMS Oracle database when the budget was being prepared based on the preliminary research that was done at that time, resulting in an overestimate in the System Operation Department test year expense of $132,020 for the OMS and EMS Oracle database maintenance cost.

In addition to overestimating the Oracle database maintenance costs, HECO overestimated the EMS hardware maintenance expense. As stated earlier there are over 300 pieces of hardware installed for the EMS and though similar hardware pieces may have the same warranty periods there are several different types of equipment with different warranty periods. To develop an estimate for the EMS hardware maintenance agreement, HECO used 20% of the hardware cost as a guideline. Using this guideline, $60,000 was budgeted for the annual hardware expense. The actual annual expense for the hardware maintenance will be $24,480 based on invoices received in 2007 from the third-party vendor that is providing maintenance services and the vendor's price quote for the remainder of 2007, before taxes which results in an overestimate of $35,520. As the warranties for the installed equipment ends, HECO will

continue to add critical pieces of equipment to its hardware maintenance agreement that may result in potentially higher costs. The benefit of having a vendor supported EMS alleviates HECO of the problem where the equipment becomes obsolete because as vendors retire equipment Siemens will have planned for the retirement of the equipment and will have modified the software to work with the new equipment. In the future, equipment that is near obsolescence will be replaced and the new equipment will be placed on the hardware maintenance agreement. Like the software the hardware maintenance agreement will be an important part of providing for a reliable EMS.

In summary, HECO overestimated the maintenance cost for the Oracle database and the EMS hardware maintenance in the amount of $132,020 and $35,520 respectively or a total of $167,540. However, as noted above, the test year estimate also included several items that were underestimated when the 2007 budget was prepared, namely EMS 24/7 software support, 24/7 video wallboard support and the cost of maintenance for the new EMS Uninterruptible Power Supply (UPS). The total underestimated expense for these items is $49,257. Therefore, the net overestimate for these System Operation expenses is $118,283.

EMERSON.
Network Power

Liebert
Global Services

May 22, 2006

ATTACHMENT 1:
WORK AUTHORIZATION NO. RE-05-10A-001

GARY OKADA / PETER OKUNAMI
HAWAIIAN ELECTRIC CO
820 WARD AVE
HONOLULU, HI 96714

Phone: 808-543-7817
Fax: 808-543-7725

REVISED

Quote No. Q00739559

We are pleased to submit the following proposal for service of your Liebert equipment for your consideration. Please refer to the Scope of Work for specific coverage information. Below is a summary of the service(s) included in this quote.

Preferred Service:
Guaranteed 4-hour response 24 hours/day, 7 days/week
Emergency service labor and travel coverage
Parts coverage
Preventive Maintenance visits scheduled at customer's convenience

Essential Service:
Guaranteed 4-hour response 24 hours/day, 7 days/week
Emergency service labor and travel coverage
Parts coverage
Preventive Maintenance visits scheduled Monday-Friday, 8 am – 5 pm

Site ID: 85651 HAWAIIAN ELECTRIC, WARD AVE, HONOLULU, HI 96714

Tag #	Description	Part #	Annual PM Qty.	Coverage Type	Coverage Amount
	NPOWER 30-50	37SA050CCC6E763	1	Essential	3,436.00
	NPOWER 30-50	37SA050CCC6E763	1	Essential	3,436.00
	PPC 15-50	PPC030C1156763	1	Essential	756.00
	PPC 15-50	PPC030C1156763	1	Essential	756.00
	STATIC TRNS SWT	STC0100P116763	1	Essential	1,201.60
	STATIC TRNS SWT	STC0100P116763	1	Essential	1,201.60
	MBC/SLIM LN CAB	37MB0500CC62PS3	1	Essential	580.00
	MBC/SLIM LN CAB	37MB0500CC62PS3	1	Essential	580.00
	LBS PER PANEL	SLNP0000IUM	1	Preferred	386.40

Total Price NOT including tax: **$ 11,562.75**

(any tax required must be included in customer purchase order amount)

SIEMENS

Siemens Power Transmission & Distribution, Inc.

APPENDIX A – SCHEDULE OF RATES

SERVICE CONTRACT FEES (YEAR 2007 - 2011)

The following are the total fees for the HECO 4 – Year Maintenance Program:

1. 24x7 annual fee = $ 27,300. four (4) years ---------- = $ 109,200
2. Upgrade at end of Warranty period ---------- = $ 215,000
3. Upgrade during final year of this maintenance contract = $ 315,000
4. Software Subscription Agreement for four (4) years ----- = $ 330,120
   (Annual discounted fee = $82,530)

Total Fee for four (4) years --------- = $969,320

Note: Monthly pricing is based on a 48-month total program to begin at end of the EMS warranty.

Monthly fee (to be invoiced monthly) starting at the end of the EMS System Warranty = $ 20,194

The four (4) year Software Subscription Agreement and the 200 MSA hours per year are included with the payment of this Master Service Agreement Fee.

HOURLY LABOR RATES BY TYPE (SIEMENS/USA LABOR RATES)

CUSTOM SERVICE CONTRACT

RESOURCE TYPE	Price 2007
Senior System Engineer	264
System Engineer	209

The Hourly Labor Rates by Type contained in this Appendix A-Schedule of Rates may be increased annually. Any increase made under this clause must not vary more than plus/minus 2% of any increase or decrease in USA Bureau of Labor Statistics in the year immediately proceeding the date of the proposed increase.

Note: For labor hours used within the MSA annual contract period (beyond the hours included with the annual fee), the following discount will apply (discount is from the applicable MSA labor rates given above):

5% discount for greater than 1000 hours

UPLIFT FOR AFTER-HOURS SERVICE

If Customer requires labor outside of the Siemens' business office (the office providing the service) business hours of 07:00 to 19:00 Pacific Standard Time, hourly rates for that work is subject to a premium of 50% (time-and-a half). The base amount of service labor included with the service agreement is drawn down at a rate of 150% for labor provided "outside of business hours."

This document contains Siemens Power Transmission & Distribution, Inc. Confidential and Proprietary Information and is subject to the restrictions stated on the first page

Okunami, Peter

From: Hignite, Andy
Sent: Thursday, October 06, 2005 2:10 PM
To: Okunami, Peter
Cc: Okada, Gary; Ishikawa, Shari
Subject: PI Meeting

Gary and I met with Adele from OIS Soft today. In summary:

They are still working with Siemens to get our PI working correctly. Their technician was at Siemens today and the problem may be corrected already. She will let us know the status.

The Annual Maintenance Support is 15% of the purchase price which is ~$18,000 for us. This provides 24/7 support to a continuously manned support desk with guaranteed response time not to exceed 4 hours. We already get 1 year support at no extra cost. Assuming that al the problems with PI are resolved, the 1 year included support starts 11/1/05.

PI desires that we synchronize our billing and support structure with the Power Plants. Their support contract starts on 5/1 for 12 months. As such, PI desires that we pay them on 5/1/06 but the fee will be discounted by about %50 ($9,000) since we are already covered to the end of October 06. Adel will clarify this in an e-mail to us. She does not desire to send us a formal quote at this time since it would only be good for 60 days.

Andy L. Hignite
HECO EMS Systems Analyst
(808) 543-7034

5/31/06 - 12/31/06 = $9,000
1/1/07 - 12/31/07 = 18,000 -
1/1/08 - 12/31/08 = 18,000

SIEMENS

APPENDIX A – SCHEDULE OF RATES

Siemens Power Transmission & Distribution, Inc.

SERVICE CONTRACT FEES (14 MONTH COVERAGE BEGINNING APRIL 1, 2006)

The following are the total fees for the HECO 14 month Maintenance Program:

1. EMS 24x7phone support 14 month fee = $ 31,850
2. VPS 24x7 14 month phone support through Siemens = $ 10,658 / 14 mo = 761/mo
3. Base EMS support including 50 labor hours = $ 14,450

Total Fee for 14 month coverage -------- = $56,958 — 10,658 = 46,300 / 14 mo = $3309/mo

14 month fee (to be invoiced at the start of the service period) = $ 56,958

HOURLY LABOR RATES BY TYPE (SIEMENS/USA LABOR RATES)

CUSTOM SERVICE CONTRACT

RESOURCE TYPE	Price 2006	Price 2007
Senior System Engineer	295	305
System Engineer	235	245

The Hourly Labor Rates by Type contained in this Appendix A-Schedule of Rates may be increased annually. Any increase made under this clause must not vary more than plus/minus 2% of any increase or decrease in USA Bureau of Labor Statistics in the year immediately proceeding the date of the proposed increase.

Note: For labor hours used within the MSA annual contract period (beyond the hours included with the annual fee), the following discount will apply (discount is from the applicable MSA labor rates given above):

5% discount for greater than 1000 hours

UPLIFT FOR AFTER-HOURS SERVICE

If Customer requires labor outside of the Siemens' business office (the office providing the service) business hours of 07:00 to 19:00 Pacific Standard Time, hourly rates for that work is subject to a premium of 50% (time-and-a half). The base amount of service labor included with the service agreement is drawn down at a rate of 150% for labor provided "outside of business hours."

7X24 coverage Prices

Service labor is invoiced on a monthly basis. The service provided is invoiced at two levels:

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Liebert Global Services
610 Executive Campus Drive
Westerville, OH 43082

AP RCVD MAR 5 '07 AM 9:19

Customer #:	C169593
Invoice #:	MI2998039
Invoice Date:	03/01/2007
P.O. Number:	V00523
Terms:	NET 30 DAYS
Due Date:	03/31/2007
Page:	1 of 2

DUNS: 02-204-1318 / FED ID TIN: 43-1798453

You can also pay with:

VISA MasterCard AMERICAN EXPRESS

by calling Accounts Receivable at:
1-800-882-6474

Invoice To:
HAWAIIAN ELECTRIC CO INC
ATTN: ACCOUNTS PAYABLE
PO BOX 2750
HONOLULU, HI 96840-0001

928
1004
IOZ/Coverage

Please Remit Payment To:
LIEBERT GLOBAL SERVICES
PO BOX 70474
CHICAGO, IL 60673-0001

1 of 2

INVOICE FOR PREVENTATIVE MAINTENANCE — CURRENCY USD

SITE ID NUMBER
96755 HAWAIIAN ELECTRIC 820 WARD AVE. HONOLULU HI 96814

PART NO	SERIAL NO	INVOICE PERIOD OF COVERAGE	TAG NO		PRICE
U39SA154AAAM803	LI-06787		1332061		6,966.38
UPS		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	324.63
U39SA154AAAM803	LI-06788		1332062		6,966.38
UPS		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	324.63
MBC30A250A27S06	M43011		1338580		1,447.75
UPS		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	67.47
:30A250A27S06	M43012		1338581		1,447.75
UPS		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	67.47
STPA2CRC11N6803	776803-002		1338583		3,547.80
POWER		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	165.33
STPA2CRC11N6803	776803-003		1338584		3,547.80
POWER		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	165.33
STPA2CRC11N6803	776803-004		1338585		3,547.80
POWER		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	165.33
STPA2CRC11N6803	776803-005		1338586		3,547.80
POWER		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	165.33
BDS-256ELM	ELM1001-256A		1341155		287.79
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	13.41
BDS-256DCM	DCM202-05-0189		1341156		193.82
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	9.03
BDS-256DCM	DCM202-05-0190		1341157		193.82
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	9.03
BDS-256ELM	ELM1001-256		1341158		287.79
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	13.41
BDS-256DCM	DCM200-05-0453		1341159		193.82
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	9.03
BDS-256DCM	DCM200-05-0452		1341160		193.82
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	9.03
BDS-256DCM.	BDS275N-05-0059		1341161		193.82
REMOTE MONI		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	9.03
SITELINK-12	SL1205081801004952		1342817		332.57
SITE SCAN		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	15.50
SITEI010	I01005077001001263		1342818		408.19
SITE SCAN		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	19.02
SITEI010	I03205081101001254		1342819		408.19
SITE SCAN		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	19.02
SITETPI-E	1342820		1342820		408.19
SITE SCAN		18-FEB-2007 TO 17-FEB-2008		TAX AMOUNT	19.02
^^TETPI-E	1342821		1342821		408.19

See Reverse Side for Complete Terms

CONTINUED

The seller represents it has fully complied with the provisions of the Fair Labor Standards Act of 1938 as amended, in the manufacture of goods covered by this invoice.

Liebert Global Services
610 Executive Campus Drive
Westerville, OH 43082

DUNS: 02-204-1318 / FED ID TIN: 43-1798453

Customer #:	C169593
Invoice #:	MI2998039
Invoice Date:	03/01/2007
P.O. Number:	V00523
Terms:	NET 30 DAYS
Due Date:	03/31/2007
Page:	2 of 2

You can also pay with:

VISA

by calling Accounts Receivable at:
1-800-882-6474

Invoice To:
HAWAIIAN ELECTRIC CO INC
ATTN: ACCOUNTS PAYABLE
PO BOX 2750
HONOLULU, HI 96840-0001

928
1005
IOZ/Coverage

Please Remit Payment To:
LIEBERT GLOBAL SERVICES
PO BOX 70474
CHICAGO, IL 60673-0001

2 of 2

INVOICE FOR PREVENTATIVE MAINTENANCE — CURRENCY USD

	SITE SCAN	18-FEB-2007 TO	17-FEB-2008		TAX AMOUNT	19.02
SSWEB	SSW20050081			1342822		2,178.19
	SITE SCAN	18-FEB-2007 TO	17-FEB-2008		TAX AMOUNT	101.50

SUBTOTAL:	$36,707.66
TAX AMOUNT:	$1,710.57
TOTAL AMOUNT:	$38,418.23

See Reverse Side for Complete Terms

The seller represents it has fully complied with the provisions of the Fair Labor Standards Act of 1938 as amended, in the manufacture of goods covered by this invoice.

SIEMENS SOFTWARE SUBSCRIPTION AGREEMENT

Attachment B – LIST OF SOFTWARE PRODUCTS

The following software products are to be covered by Siemens' Software Subscription Agreement:

BASIC SYSTEM SOFTWARE	$120,000
USER INTERFACE	$200,000
SCADA TOTAL LICENSING	$162,000
POWER APPLICATIONS TOTAL LICENSING	$80,000
NETWORK ANALYSIS TOTAL LICENSING	$155,000
OPERATOR TRAINING SIMULATOR TOTAL LICENSING	$50,000
HISTORICAL INFORMATIN SYSTEM	$150,000

License Value of Siemens software products:	$917,000
Software Subscription Service Annual Fee (year 2004):	$137,550
Software Subscription Service Annual Fee *(w/40% Discount)	$ 82,530 ≈ $832 / 12 mo

** 40% discount granted for multi year commitment and combined services*

$6917 / mo

Software Subscription Agreement for four (4) years ---------- = $ 330,120
(Based on annual discounted fee of $82,530)

Note: Monthly pricing is based on a 48-month total program to begin at end of warranty.

Monthly fee is included in the Master Service Agreement (MSA) monthly invoice (see MSA Service Contract Fees)

This document contains Siemens Power Transmission & Distribution, Inc. Confidential and Proprietary Information and is subject to the restrictions stated on the proprietary page.

5. PRICING AND TERMS

The price for implementing this Scope of Work excluding travel has been calculated according to the following work tasks. Maintenance pricing is provided in the deliverables description for informational purposes, but it is not included in the price of this Scope of Work.

Deliverables	*Price*
Phase 1:	
Services	$ 34,000
Design and document design GUI for HECo Approval – date to be mutually agreed to.	
Build	
Test / Certify / Document / Install – Dec. 9th, 2004	
Project Management	
Oracle Standard Edition – Application Specific Named user (5) - $ 6 per mo. maintenance per users. $ 360 Annually.	$ 1,100
Sub-total	$ 35,100
Phase 2:	
Implementation Services:	$ 22,140
Link to Wall Board	$ 6,600
I/SCADA (UDS0022)– Maintenance $ 6,000 Annual	$ 40,000
AX-S4 ICCP Development Kit (IPSAXS4dk) – Maintenance $ 1,350 Annual.	$ 9,000
AX-S4 ICCP Runtime (IPSAXS4rt) - Maintenance $ 900 Annual.	$ 6,000

CA-IR-428

Ref: Response to CA-IR-258, parts (b) and (h), (Temp Services).

Please provide the following additional information:

a. Regarding the Part b administrative assistant position, regardless of work being "covered", provide the 2007 monthly actual hours worked and expenses incurred, to-date and explain how such charges compare to test year estimated expenses of $38,400.

b. Regarding the single full time and two half-time positions set forth in part (h), provide the 2007 monthly actual hours worked for each position and expenses incurred for each position, to-date, and explain how such charges compare to test year estimated expenses of $57,000.

c. Provide comparable actual monthly temporary service hours and expenses incurred to date for each of the two additional full-time temporary service positions reflected in Attachment 1 to CA-IR-3 (HECO T-8) and explain the reasons for any variations between the assumed temporary staffing in this adjustment and what was actually incurred.

d. What additional adjustments, if any, to temporary service expenses included in the HECO-proposed test year Customer Accounts Expenses are required based upon updated actual information provided in your responses to parts (a) through (c) of this information request? Provide calculations associated with your response.

HECO Response:

a. For CA-IR-258 (b), the actual hours to date and expenses incurred from January through June 2007 are zero. The Company intends to make an adjustment of ($38,400) relating to the temporary services for this administrative assistant position. See the response to part d.

b. For CA-IR-258 (h), please see Attachment 1 for 2007 monthly actual hours worked for each position and expenses incurred for each position to-date. Expenses incurred from January through June 2007 are $19,386 compared to the test year estimate for the same time period of $28,500 or ($9,114) under. However, the Company does expect to spend the entire $57,000 by year end for 3 temporary staffing through December of this year. A request to fill the positions has been submitted to workforce staffing and it is anticipated that interviews will be held relatively soon.

c. For CA-IR-3 (HECO T-8) the comparable actual monthly temporary service hours and expense incurred for the two additional full-time temporary service positions reflected in Attachment 2 for January through June 2007 are 568 actual hours compared to 2080 test year estimate or (1,512 hours) less than the test year estimate; and $7,707 actual dollars compared to $31,720 test year estimate for the same period or ($24,013) less than the test year estimate for the same period. This variance is primarily due to the difficulty in filling temporary positions given the smaller pool of qualified applicants available in the current low unemployment rate environment. The Company intends to make an adjustment of ($28,500) relating to the temporary services for these two positions. See the response to part d.

d. There are two reduction adjustments for temporary services totaling ($66,900). This is reflective of a revised staffing plan for these positions. One adjustment is for the PCA Administrative Assistant for ($38,400) (related to part a above) and the other adjustment is for the Field Administrative Assistant under PCF and the Payment Processing Clerk for ($28,500) under PCP (related to part c above). Please see Attachment 2 for calculations supporting these adjustments. The Company intends to make appropriate adjustments at the time of settlement.

	ACTUAL													
	January-07		February-07		March-07		April-07		May-07		June-07		Total	
Description	Hrs	$ w/tax	Hrs	$ w/tax	Hrs	$ w/tax	Hrs	$ w/tax	Hrs	$ w/tax	Hrs	$ w/tax	Hrs	$ w/tax
FT position	**166**	**$2,844**	**147.25**	**$2,523**	**160.00**	**$2,741**	**152**	**$2,604**	**178**	**$3,066**	**144.75**	**$2,480**	**948.00**	**$16,257**
PT position #1	66	$528	63.50	$508	18.00	$144								
	0.00	$0	16.00	$128	71.50	$644								
Total PT #1	**66.00**	**$528**	**79.50**	**$636**	**89.50**	**$788**							**235.00**	**$1,952**
PT position #2	**66.75**	**$567**	**71.75**	**$610**									**138.50**	**$1,177**
Total (FT, PT#1, PT#2)	**298.75**	**$3,939**	**298.50**	**$3,768**	**249.50**	**$3,528**	**152.00**	**$2,604**	**178.00**	**$3,066**	**144.75**	**$2,480**	**1321.50**	**$ 19,386**

2007 TEST YEAR TEMP SVCS COMPARISON

RA	Position			HOURS & DOLLARS TEMP SVCS JAN - JUN ACTUALS Jan	Feb	Mar	Apr	May	Jun	6 mo Total	TEMP SERVICES JUL -DEC ESTIMATED Jul	Aug	Sep	Oct	Nov	Dec	6 mo Act 6 mo Est 12 mo tot
PCF	**Admin. Asst**		$	**$1,440**	**$0**	**$0**	**$0**	**$1,620**	**$2,052**	**$5,112**	**$2,160**	**$2,700**	**$2,160**	**$2,160**	**$2,160**	**$2,160**	**$18,612**
	(CA-IR-3)		Hrs	96	0	0	0	120	152	**368**	160	200	160	160	160	160	**1,368**
PCP	**Pay Proc. Clk**		$	**$0**	**$0**	**$1,557**	**$1,038**	**$0**	**$0**	**$2,595**	**$0**	**$3,272**	**$2,618**	**$2,618**	**$2,618**	**$2,618**	**$16,339**
	(CA-IR-3)		Hrs	0	0	120	80	0	0	**200**	0	200	160	160	160	160	**1,040**
	CA-IR-3	Actual	$	$1,440	$0	$1,557	$1,038	$1,620	$2,052	**$7,707**	$2,160	$5,972	$4,778	$4,778	$4,778	$4,778	**$34,951**
		TEMP Svcs	Hrs	96	0	120	80	120	152	**568**	160	400	320	320	320	320	**2,408**
				----------BUDGET----------						BUDGET	----------BUDGET----------						BUDGET
	CA-IR-3	Budget	**$**	$5,287	$5,287	$5,286	$5,287	$5,287	$5,286	**$31,720**	$5,287	$5,287	$5,286	$5,287	$5,287	$5,286	$63,440
		TEMP Svcs	**Hrs**	347	347	347	347	347	347	**2,080**	347	347	347	347	347	347	4,160
				----------VARIANCE----------						VARIANCE	----------VARIANCE----------						VARIANCE
	CA-IR-3	**Variance TEMP Svcs**	**$**	**-3847**	**-$5,287**	**-$3,729**	**-$4,249**	**-$3,667**	**-$3,234**	**-$24,013**	**-$3,127**	**$685**	**-$508**	**-$509**	**-$509**	**-$508**	**-$28,489**
			Hrs	**-251**	**-347**	**-227**	**-267**	**-227**	**-195**	**-1512**	**-187**	**53**	**-27**	**-27**	**-27**	**-27**	**-1,752**

	CA-IR-2			----------VARIANCE----------						VARIANCE	----------VARIANCE----------						VARIANCE
PCA	**Admin. Asst**	**Variance TEMP Svcs**	$	**-$3,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$19,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$3,200**	**-$38,400**
	Bud. not used		Hrs	**-174**	**-174**	**-174**	**-174**	**-174**	**-174**	**-1,044**	**-174**	**-174**	**-174**	**-174**	**-174**	**-174**	**-3,132**

CA-IR-3 &	**Total Vari.**										
CA-IR-2	**Adjustment**			-$43,213	-6,327	-2,515	-3,708	-3,709	-3,709	-3,708	**-66,889**

CA-IR-428
DOCKET NO. 2006-0386
ATTACHMENT 2
PAGE 1 OF 1

CA-IR-429

Ref: Response to CA-IR-258, parts (e) and (f), (BOH Fees).

Please provide the following information:

a. Explain all reasons why earnings credits applied in BOH "account analyses" should not be considered for ratemaking purposes, if such credits exist and serve to offset actual payments to BOH for processing services.

b. Provide copies of the BOH account analysis calculations performed on each individually significant transaction account, showing gross fees chargeable and all earnings credits applied for the most recently available 3 months of 2007.

c. State the monthly net amounts of ABP fees or Returned Check fees actually paid by HECO, if any, for all available months in 2007, to-date.

d. Provide copies of all available documentation and other information relied upon in support of the statement, "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."

HECO Response:

a. Although earnings credits exist and serve to offset actual payments to BOH for processing services, earnings credits applied in BOH "account analyses" could be considered for ratemaking purposes. However, because 1) the earnings credits are calculated monthly, are applied on a quarterly basis, have no cash value and as such, any (excess) credits not applied at the end of the quarter, are forfeited; 2) the earnings credit rate, which is driven by the financial markets, applied to the investable balances fluctuates monthly so the amount of credits is unpredictable; 3) the investable balances on which the earnings credits are based are also unpredictable due to fluctuations in deposits and the timing of check clearances; and 4) based on quarterly account analysis information from 1999 through the second quarter of 2007 (see Attachment A), HECO has paid fees to Bank of Hawaii for 22 out of 34 quarters; "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." As such, the level of fees for returned checks and ABP included in the test year estimates are reasonable.

b. HECO objects to providing copies of the "BOH account analysis calculations [statements] performed on each individually significant transaction account, showing gross fees chargeable and all earnings credits applied for the most recently available 3 months of 2007" on the grounds that this type of detailed information is confidential commercial and financial information which is maintained as non-public, confidential information for HECO. Without waiving its objection, the Company provides selected confidential portions related to HECO of the BOH account analysis calculations (statements) for the months of April, May and June 2007 (Attachment B) pursuant to Amended Protective Order No. 23378. HECO objects to making available, even under protective order, the account number information due to privacy and security concerns, as well as the volume and unit price information of services/transactions other than returned check and ABP/ACH fees, as full disclosure of this information, which was intended to be shared between the bank and the Company only (e.g., the pricing of specific banking services is customized for HECO), if released to outside parties may result in placing the bank at a competitive disadvantage with respect to other providers of these services. However, the volume and unit price information for the items in question (i.e. Checks Returned and ABP (ACH transactions) fees) are being provided. The "Service Detail" section itemizes the gross bank service fees for HECO. The "Balance Summary" and "Results Summary" sections show the account analysis calculation and the "Relationship Summary" sections show the various accounts, their "Investable Balances" and corresponding "Excess/(Deficit) Balances" used for the account analysis calculation.

The table below identifies the pages in Attachment B where these items can be found.

	April '07	May '07	June '07
	Attachment B, Page(s)	Attachment B, Page(s)	Attachment B, Page(s)
Service Detail	2-5	7-10	12-15
Balance Summary	1	6	11
Results Summary	2	7	12
Relationship Summary	1	6	11

c. The monthly net amounts of ABP fees or Returned Check fees actually paid by HECO through June 2007 is zero due to the "account analysis" performed by the bank as described in CA-IR-258, item e. However, if not for the offsetting earnings credits, HECO would have paid $24,718.53 in ABP fees and $12,782.70 in Returned Check fees through June 2007.

d. See response to part a.

Bank of Hawaii

Svc	Total HECO Fees Paid	Offset by Earnings Credits
1999		
1Q	18,024.05	
2Q	N/A	18,173.17
3Q	N/A	26,506.03
4Q	N/A	22,300.32
2000		
1Q	30,249.16	
2Q	N/A	21,314.54
3Q	N/A	25,062.69
4Q	21,454.75	
2001		
1Q	34,591.19	
2Q	26,742.00	
3Q	30,334.17	
4Q	32,161.20	
2002		
1Q	32,938.19	
2Q	45,603.13	
3Q	48,144.48	
4Q	48,553.25	
2003		
1Q	39,847.54	
2Q	45,063.53	
3Q	37,928.18	
4Q	35,456.84	
2004		
1Q	39,192.07	
2Q	38,250.97	
3Q	34,241.36	
4Q	31,108.81	
2005		
1Q	N/A	13,755.58
2Q	29,087.73	
3Q	26,861.81	
4Q	N/A	18,219.00
2006		
1Q	N/A	14,643.63
2Q	N/A	15,679.74
3Q	21,630.40	
4Q	N/A	20,137.53
2007		
1Q	N/A	12,006.86
2Q	N/A	6,120.36

Note: N/A = no invoice received; fees ofsset by earnings credits.

Attachment B contains confidential information and is being provided subject to

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

CA-IR-430

Ref: Responses to CA-IR-354, part b and CA-IR-355, part c, (Commercial Bankruptcy Event).

Please provide the following additional information:

a. Regarding the Kahuku Hospital bankruptcy, explain the steps taken to date to file and perfect HECO's claim and the anticipate timeline to resolve the matter and achieve any possible recoveries.

b. Identify each individual commercial bankruptcy event experienced by HECO since September 1996 that caused a charge to the Allowance for Uncollectible Accounts in excess of $100,000.

c. What amounts, if any, were later recovered in relation to each commercial bankruptcy event identified in your response to part (b) of this information request?

HECO Response:

a. Regarding the Kahuku Hospital Chapter 11 bankruptcy (filed February 23, 2007), HECO filed a Proof of Claim for $424,663.85 on March 30, 2007. No further action is needed to perfect the claim. According to Section 502 of the Bankruptcy Code, HECO's claim is considered to be allowed unless the Debtor or some other party objects to the claim. To date, no one has filed an objection to HECO's claim.

In regards to an anticipated timeline to resolve this matter or any possible recoveries, the Company is currently awaiting the Debtor to file their plan of reorganization. According to Section 1121, the Debtor has 120 days after the filing of its petition to file a plan of reorganization. At this time, we cannot predict when the Chapter 11 plan of reorganization will be filed and as a result do not know what type of payment HECO can expect.

b. Please see the table below for each commercial bankruptcy event experienced by HECO since September 1996 that caused a change to the Allowance for Uncollectible Accounts (APUA) in excess of $100,000.

Commercial Bankruptcy Events over $100,000
1996 – June 2007

APUA Date*	Name	Amount
3/16/07	Kahuku Hospital, Chapter 11	$424,664
6/27/03	Fleming Companies, Chapter 11	$112,728
5/10/02	Kmart Corp., Chapter 11	$255,955
9/24/01	Hawaii Cimms dba Burger King, Chapter 11	$125,856
6/26/98	Liberty House, Chapter 11	$240,998

* Date charged to Allowance Provision for Uncollectible Accounts (APUA).

c. Please see the table below for a list of recoveries for commercial bankruptcy events identified in part (b) of this response.

Recoveries for Commercial Bankruptcy Events over $100,000
1996 – June 2007

Name	Recoveries
Kahuku Hospital, Chapter 11	$0 **
Fleming Companies, Chapter 11	$2,818
Kmart Corp., Chapter 11	$111,358
Hawaii Cimms dba Burger King, Chapter 11	$6,481
Liberty House, Chapter 11	$197,512

**See the response to part a.

CA-IR-431

Ref: HECO-928; Response to CA-IR-2, HECO-T-9, Attachment B, page 14 (IRP Non-labor Projected Expense).

Please provide the following:

a. Actual spending for each line item (by EE) for the years 2005, 2006 and to-date June 2007, as charged to Activity 712 through September 28, 2005 and as charged to Activity 711 thereafter.

b. Provide any additional information needed to reconcile the 2005 actual costs in your response to part (a) of this information request into the amounts at lines 1-3 of HECO-928.

c. Explain whether HECO-928 should be revised, if the actual spending amounts provided in part (a) of this information request were substituted for the projected amounts relied upon the Company's adjustment.

HECO Response:

a. Refer to page 3 of 6 of this response for Forecasts & Research Division ("F&R") HECO IRP expenditures for the period 2005 through YTD June 2007.

b. Refer to pages 4 – 6 of this response for additional information to reconcile the Forecasts & Research Division/Energy Services Dept. 2005 actual HECO IRP costs ($316,662) to the amounts shown at lines 1-3 of HECO-928 ($479,092) which consolidates HECO IRP charges for all HECO departments and divisions. The difference of $162,430 ($479,092 less $316,662) is due to 2005 actual charges from other HECO departments/divisions that also support the HECO IRP efforts.

c. HECO does not intend to revise HECO-928 because 2005, 2006, and to-date June 2007 actual F&R/ESD HECO IRP expenditures are consistent with the estimates used to derive the test year normalized non-labor budget shown on Line 9 of HECO-928 (see page 3):

- The 2005 F&R/ESD expense used in the HECO-928 computation for F&R is equal to actual 2005 F&R/ESD spending.

- The 2006 O&M amount ($100K) included in the HECO-928 computation for F&R is only slightly lower than the actual 2006 F&R costs shown on page 3 ($114K).
- The YTD June 2007 F&R/ESD Budget amount ($152K) is higher than the YTD June 2007 F&R/ESD spending amounts ($82K) by $70K. This variance is primarily due to a delay in initiating the Commercial End Use Survey. The 2007 F&R/ESD Budget for this survey was $150,000 (Refer to CA-IR-2, HECO T-9, Attachment B, Page 16 of 21) and assumed that work would commence at the beginning of the year. The project has been delayed; therefore, actual YTD June 2007 F&R/ESD costs have been below the YTD June 2007 F&R/ESD Budget. Please refer to HECO's response to CA-IR-270 for the current status of this project. The level of actual expenditures is expected to increase during the third and fourth quarter 2007 as this project moves forward. As a result, any revision to the 2007 F&R/ESD budget amount included in the 2007 HECO (Company-wide) IRP Non Labor budget amount per HECO-928, line 7 would be premature.

HECO

HECO IRP EXPENDITURES
Years 2005 - YTD June 2007

FORECASTS & RESEARCH
NONLABOR CHARGES
(by Cost Type Detail)

The recap below covers the following HECO IRP Costs incurred/budgeted under Forecasts & Research Division.

(1) HECO IRP General Planning Costs--> Budget covers ESD and SM Division. Covered under response to CA-IR-2, HECO T-9, Attachment B, page 14

IRP General Planning nonlabor costs for Energy Services Dept (ESD) and Forecasts & Research (SM) Division forecasted all under SM in 2005 and 2007.

2005 and YTD June 2007 actual HECO IRP costs recapped here include both ESD and SM actual HECO IRP General Planning expenditures.

In 2006, ESD forecasted separately for HECO IRP nonlabor costs related to the Energy Efficiency Docket.

Given this, ESD actual 2006 HECO IRP costs related to the Energy Efficiency Docket are not recapped below.

2006 expenditures recapped below reflect only SM actual expenditures.

(2) HECO IRP Sales Forecasting Activities --> Budget covers SM Division HECO IRP Sales Forecasting Activities.

Covered under response to CA-IR-2, HECO T-10, Attachment 8, Page 2 of 4. ($36,250 -2007 Budget, Rollup to NARUC 921)

These costs are identified as SM - IRP Forecasting and are included in these Exhibits to show all SM HECO IRP costs.

Cost Type		2005 Actuals -- Jan 1, 2005 thru Sept. 27, 2005 (A)	2005 Actuals -- Sept. 28, 2005 thru Dec. 31, 2005	Total 2005 Actuals -- SM/ESD	2006 Actuals --SM	YTD June2007 Actuals --SM/ESD
Non-Labor						
MATERIALS						
(205)	Materials-Purchases					
	Furniture					
(640)	Postage and Bulk Mail				5,816	
TRANSPORTATION						
(301)	Pool Vehicle					
(302)	Assigned Vehicle					
INFORMATION SYSTEM SERVICES						
(451)	IS Expenses-Production (SM)	1,598		1,598		
	Computer Charges					
	Lease/Purchase PC					
(452)	IS Expenses-Development					
	Program Modifications					
(461)	IS Expenses - Consultant					
(462)	IS Expenses-Software					
CONTRACTS/SERVICES						
(501)	Outside Services-General (SM-IRP Forecasting)	32,640		32,640	43,744	29,064
(501)	Outside Services-General (SM)	179,624	71,260	250,884	64,506	52,948
(501)	Outside Services-General (ESD)	10,293	19,793	30,086		
(502)	Outside Services- Legal (ESD)	544	910	1,454		
(520)	Mainland Travel					
(521)	Meals & Entertainment					
	Total-Actual Expenses	224,699	91,963	316,662	114,066	82,012
	F&R O&M Amount included in HECO-928 Computation --->			316,662	99,953	152,075
						(YTD June 2007 Budget)

(A) SOURCE: DOCKET NO. 04-0295, Attachment A, Page 9 of 21 (F&R) and Page 12 of 21 (ESD).

HECO
ANNUAL HECO IRP ACTUALS [1] [2]
2005 COST SUMMARY BY DEPARTMENT/DIVISION

Department/Division		*(From Page 5 of 6)* (Nonlabor Only - Jan. 1, 2005 thru Sept. 27, 2005) (SOURCE: DOC. NO. 04-0295) Incremental		*(From Page 6 of 6)* (Nonlabor Only - Sept 28, 2005 thru Dec. 31, 2005) Base	TOTAL - 2005 IRP Costs	
IRP Division		$81,862		$14,537	$96,399	
Power Supply Services Department				$8,072	$8,072	
Power Supply Engineering Department		$8,020		$234	$8,254	
F&R Division	$224,699	$213,862		$91,963 $71,260	$285,122	$316,662
Energy Services Department		$10,837		$20,703	$31,540	
Technology Division		$451		$6,502	$6,953	
Regulatory Affairs Division		$22,357		$16,607	$38,964	
Energy Projects Department				$34	$34	
Corporate Communication Division		$703		$3,051	$3,754	
Total		$562,791 HECO-928 line 1		$232,963 HECO-928 line 2	$479,092 HECO-928 line 3	

(1) Non-labor includes: materials, transportation, ISD services, and contract services.

(2) For HECO, in its 2005 test year rate case, Docket No. 04-0113, IRP planning costs that in previous years were incremental were included in its revenue requirements. In Interim Decision & Order No. 22050, filed September 27, 2005, IRP planning costs that were previously incremental were included in the interim rate increase, effective September 28, 2005. As such, HECO's recovery of 2005 IRP planning costs included in this exhibit reflect HECO's IRP planning costs incurred from January 1, 2005 through September 27, 2005 that were recorded to Act. 712. From Sept. 28, 2005, HECO IRP planning costs were recorded to Act. 711.

CA-IR-431-2005Act.xls
HECO SUM by EE#

HECO

HECO IRP ACTUALS
2005 COST TYPE DETAIL
(Nonlabor Only - Jan. 1, 2005 thru Sept. 27, 2005)[1][2]
(SOURCE: DOCKET NO. 04-0295 [HECO 2005 IRP COST RECOVERY], Attachment A)

Cost Type		IRP Division	PSS Dept.	F&R Division	ESD	Tech Division	Reg. Affairs	Corp Comm	TOTAL
		Incremental	Incremental	Incremental	Incremental	Incremental	Incremental	Incremental	Incremental
Non-Labor									
MATERIALS									
(201)	Materials-Issues/Purchases	927							927
TRANSPORTATION									
(301)	Vehicles								
INFORMATION SYSTEM SERVICES									
(451)	IS Expenses-Prod & Dev	8,662		1,598					10,260
(462)	IS Expenses-Software	156							156
CONTRACTS/SERVICES									
(501)	Outside Services-General		2,688	212,264	10,293	75	174	703	226,197
(502)	Outside Services - Legal				544		22,183		22,727
(506)	Outside Services-Engineering	71,986	5,332						77,318
(520)	Mainland Travel					346			346
(521)	Meals & Entertainment	131				30			161
Total	Incremental	81,862	8,020	213,862	10,837	451	22,357	703	338,092
				224,699					HECO 928 line 1

(1) Non-labor includes: materials, ISD services, and contract services.

(2) For HECO, in its 2005 test year rate case, Docket No. 04-0113, IRP planning costs that in previous years were incremental were included in its revenue requirements. In Interim Decision & Order No. 22050, filed September 27, 2005, IRP planning costs that were previously incremental were included in the interim rate increase, effective September 28, 2005. As such, HECO's recovery of 2005 IRP planning costs included in this exhibit reflect HECO's IRP planning costs incurred from January 1, 2005 through September 27, 2005 that were recorded to Act. 712.

CA-IR-431-2005Act.xls
HECO SUM by EE#-9_28_12_31_05

HECO

HECO IRP ACTUALS
2005 COST TYPE DETAIL
(Nonlabor Only - Sept 28. 2005 thru Dec. 31, 2005)[1][2]
(Act. 711)

Cost Type		IRP Division	PSE	PSS Dept.	F&R Division	ESD	Tech Division	Reg. Affairs	Energy Projects	Corp Comm	TOTAL
		Base	Base	Base	Base	Base	Base	Base	Base	Base	Base
Non-Labor											
MATERIALS											
(201)	Materials-Issues/Purchases	394		228			(83)	891			1,430
TRANSPORTATION											
(301)	Vehicles			6							6
INFORMATION SYSTEM SERVICES											
(451)	IS Expenses-Prod & Dev	13,771									13,771
(462)	IS Expenses-Software		8,062								8,062
CONTRACTS/SERVICES											
(501)	Outside Services-General				71,260	19,793	5,916			3,051	100,020
(502)	Outside Services - Legal					910		15,651			16,561
(506)	Outside Services-Engineering										
(520)	Mainland Travel						669				669
(521)	Meals & Entertainment							65	34		99
(522)	Interisland Travel	372	10								382
Total		14,537	8,072	234	71,260	20,703	6,502	16,607	34	3,051	141,000
					91,963						HECO -928 line 2

(1) Non-labor includes: materials, transportation, ISD services, and contract services.

(2) Commencing Sept. 28, 2005, HECO IRP planning costs were recorded to Act. 711.

CA-IR-432

Ref: Response to CA-IR-263, parts (e), (f), (g) and (h), (DSM Incremental Positions).

Please provide the following:

a. Confirm that the "other nine incremental positions filled in 1996 as temporary hires" are contractors and not HECO employees and would continue to be charged to and recovered through the surcharge tariff (or explain the basis for any inability to confirm this statement).

b. Explain why the "CEP Analyst" and the "C&I Engineer" positions were filled with Company employees (ultimately), rather than continuing to be contractors like the other nine positions.

c. Explain the reasons for changes in HECO advocacy regarding base rate versus surcharge recovery of DSM labor costs in the 2005 test year, versus the Energy Efficiency Docket, and why the Company's now believes that base rate recovery is appropriate (beyond citation to Order No. 23448).

d. What plans have been made by HECO with regard to anticipating "efforts to assist with transition" or to "adjust its DSM-related staffing" in 2008 or 2009?

e. Explain the basis for the statement, "HECO anticipates that efforts to assist with the transition will extend beyond the January 2009 date…"

f. Explain the basis for the statement, "HECO may become an implementer of a portion of the energy efficiency programs and, thus, may need DSM-related staff for that purpose."

g. Regarding the statement, "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," please explain whether new positions will be created for such employees that exceed the presently proposed rate case staffing levels said to be needed by the Company.

h. How specifically does HECO intend to "…avoid over-recovery of labor costs for DSM positions no longer required by placing those affected employees in comparable positions within the Company" if the labor costs for all needed positions has already been included in determining the revenue requirement?

i. Please provide complete copies of all reports, studies, correspondence and other information associated with your responses to parts (b) through (h) of this information request.

HECO Response:

a. HECO confirms that the "other nine incremental positions filled in 1996 as temporary hires" are currently contractors and not HECO employees and will continue to be charged to and recovered through the DSM component of the IRP Cost Recovery provision.

b. The CEP Analyst hired in 1996 and assigned to the REWH and RNC programs needed to have solar water heating expertise in order to build and maintain the technical requirements and standards of the program. At the time that the REWH and RNC Programs were initially implemented, the solar water heating market was fractured (i.e., did not have consistent standards) and as a result, customers were justifiably skeptical of the program. Increasing customer acceptance takes time; therefore, it was important to have a long-term strategy to improve the quality and consistency of equipment and installation standards. In order to maintain this consistency and avoid turnover in the position responsible for this task, HECO hired a regular employee to guide these long-term efforts.

The C&I Engineer position was originally intended to be assigned to HECO's load management programs (the CIDLC and RDLC Programs) to perform the work related to site assessments, facility evaluations, software operation, and load control switch operation, as described in the response to CA-IR-265, part a. HECO recognized the critical nature of the load management programs (i.e., the reduction of demand when situations arise where there is insufficient generation to meet a projected peak demand period). Therefore, in order to attract the most qualified applicants and retain the person hired, HECO decided that the position should be a regular HECO employee. However, CIDLC Program participation by business customers was slow in 2005 and 2006, and the RDLC Program ran more smoothly than anticipated; therefore, the C&I Engineer was assigned instead to the CICR Program where estimation and verification of energy savings was, and still is, needed. Because of the experience gained by the C&I Engineer with the CICR Program, when the need for a position to support the load management programs eventually arose in late 2006, a different

individual other than the C&I Engineer hired in 1996 was selected to fill that position in early 2007.

c. In HECO's test year 2005 rate case (Docket No. 04-0113) HECO proposed to recover DSM program costs entirely through base rates because:

1. It was HECO's understanding that the intent of the DSM stipulations was to require discontinuation of the use of a surcharge mechanism.
2. Placing the DSM program costs into base rates provides the Company with the flexibility to adjust DSM program budgets to take advantage of market opportunities.
3. Placing the DSM program costs into base rates also provides the Company the ability to focus efforts into the most effective programs.
4. Embedding DSM program costs simply reflects the fact that DSM has become part of the Company's normal business activities.
5. Embedding DSM program costs into base rates reduces the amount of revenue recovered through a surcharge mechanism and reduces the effort required by the Company, the Consumer Advocate, and the Commission to monitor and review the program cost filings. (Energy Efficiency Docket, Docket No. 05-0069, HECO's opening brief, pp. 174-175, and HECO T-10, Docket No. 04-0113, pp. 48-50.)

In the informal submittal of preliminary statements of position in the Energy Efficiency Docket, in subsequent settlement discussion meetings with the parties/participants in the docket, and at the panel hearings, many of the parties/participants preferred recovery of program costs through a DSM surcharge, similar to the mechanism currently in effect, rather than recovery through base rates. At the panel hearings in the Energy Efficiency Docket, HECO proposed that, if released from the constraint imposed by the DSM stipulations,

HECO is willing, and even prefers, to recover program costs (and utility compensation) through a surcharge, as long as HECO is granted sufficient flexibility with respect to its annual DSM program budgets. To a certain extent, this would facilitate, 1) reconciliation of revenues received to recover estimated costs that are initially included in the surcharge to actual revenues, and 2) tracing of costs expended on the programs. (Energy Efficiency Docket, Docket No. 05-0069, HECO's opening brief, pp. 175-176.)

As indicated in HECO's response to CA-IR-263, part f.1., in this 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, which clarifies that base labor costs shall be recovered through base rates.

d. HECO has made no plans with regard to anticipating efforts to assist with transition or to adjust its DSM-related staffing in 2008 or 2009 because the docket to select a Public Benefits Fund administrator and to refine the details of the new market structure has not been initiated or progressed to a point where those plans can be made.

e. HECO's expectation that efforts to assist with the transition will extend beyond the January 2009 date is based on the Commission's D&O in the Energy Efficiency Docket which states: "Clearly, transitioning Energy Efficiency program administration to a non-utility third-party administrator will require a transition period and a significant amount of work and coordination. As stated above, it is currently intended that the third-party administrator will begin operations in January 2009. Until then, HECO will continue to be responsible for overseeing its Energy Efficiency programs, consistent with this Decision and Order." (Pages 142-143.) Therefore, the Commission recognizes that the transition period will require considerable effort. HECO maintains that in any effort that is considerable, the

effort may or may not be as complete as expected by the anticipated deadline. Therefore, the third party administrator may initially call upon the utility to provide assistance in its DSM program provisioning. For this reason the transitional effort may have to continue beyond the January 2009 date.

f. Please see HECO's response to CA-IR-361.

g. HECO expects to create new positions for the DSM staff. However, since those positions will take the place of DSM positions already included in base rates, but eliminated because of the transition to a third-party energy efficiency programs administrator, the rate case staffing level is not expected to change.

h. All needed positions have been included in the current rate case. However, HECO anticipates that by the time the transition to the third party administrator is complete in 2009, the needed positions at that point in time may have evolved and the skills and expertise of the DSM staff will generally correspond with new positions created.

i. The only additional available correspondence beyond what has been cited in the responses above is the Energy Services Department request (attached as page 6) to fill a load management engineer position with a regular employee as described in part b. above.

INTEROFFICE CORRESPONDENCE

Hawaiian Electric Co., Inc.

November 17, 2004

To: Karl Stahlkopf

From: David Waller

Subject: Executive Staffing Committee Approval

Executive Staffing Committee Approval is requested for the following additions:

- Addition of one (1) Residential Direct Load Control Program Manager and conversion of one (1) contracted Program Engineer (hiring already approved) to a HECO regular position.

  The Residential Direct Load Control (RDLC) and Commercial and Industrial Direct Load Control (CIDLC) Programs were approved for 5 years by the PUC on October 14 and 19, 2004, respectively. Staffing plan originally included three new positions associated with these two DSM programs (a program manager for the RDLC program, a program manager for the CIDLC, and a Program Engineer shared between programs).

  In an effort to manage resources, the Energy Services Department requests approval to fill two positions – one Program manager and the Program Engineer. Program management of the CIDLC will be conducted with existing staff. Due to the load management programs' critical nature, regular HECO positions (vs. a contract position) are required to attract the best qualified applicants. Also, by settlement agreement with the Consumer Advocate in this matter, the cost associated with the staffing of the load management programs will be O&M cost, not DSM incremental cost recovered via the surcharge.

Given the importance of the new activities, we are requesting approval to fill this Program Manager and a Program Engineer.

Approved: Karl Stahlkopf — Karl Stahlkopf

11/18/04 — Date

CA-IR-433

Ref: Response to CA-IR-267 (Informational Advertising Expenses).

Please provide the following:

a. Explain the basis for characterizing the amounts shown on page 3 of the response as "using shareholder funds" when such amounts are said to have been "Charged to HECO NARUC Account 911."

b. If the reference to "expense element NN" is used to drive certain expenses to below the line accounts (in spite of NARUC 911 coding), please provide a summary of all "NN" actual labor and non-labor revenue and expense amounts recorded for all NARUC Accounts recorded during 2006.

c. Provide a detailed itemization of HECO Informational Advertising monthly actual expenses by expense element for all available months of 2007, to-date, isolating any amounts believed to be "using shareholder funds" versus utility regulated funds.

d. Provide copies of advertising copy (comparable to pages 4-13 of this response) for all HECO Informational Advertising done to date in 2007, indicating any ads believed to be "using shareholder funds" versus utility regulated funds.

HECO Response:

a. The table on page 3 of HECO's response to CA-IR-267 was incorrectly labeled. The subtitle should have been: "Charged to HECO NARUC Account 426 (expense element NN). Activity 751 (Administer Informational Advertising) when charged above the line closes to NARUC Account 911. However, Activity 751 when charged below the line closes to NARUC Account 426. As indicated in part b. below, the $1,110,100 of shareholder funded advertising in 2006 that is identified on page 3 of HECO's response to CA-IR-267 was closed to NARUC Account 426.

b. See page 2. There are no "NN expense element" revenues. The $1,110,100 of shareholder funded advertising in 2006 is included in Account 426, Outside Services.

c. See page 3.

d. See pages 4-43. YTD June 2007, shareholder funds were used to develop, produce, and air the "In the Dark" TV spot. The storyboard is attached on page 4.

CA-IR-433 (b)

2006 actual costs charged to indicator "NN"

NARUC	NARUC Descr	*Ind #	Expense Category	2006 Actual	Explanation
417	INC-NONUTIL OPS	NN	Labor	$9,047	Labor and property insurance for HECO Interisland Communication System (ICS) and microwave system (nonutility assets), as well as labor and consulting sevices related to evaluation of the possibly setting up an unregulated affiliate to pursue the Ward Ave photovoltaic project (*HECO now plans to have an outside nonutility* entity, not an affiliate, develop the project)
417	INC-NONUTIL OPS	NN	On-Costs	$5,057	
417	INC-NONUTIL OPS	NN	Outside Svcs	$14,228	
				$28,332	
426	MISC INC DEDUCT	NN	Labor	$96,614	Labor and nonlabor for below-the-line renewable energy campaign advertising (see HECO response to CA-IR-267); allocation of costs related to broadband over powerlines evaluation; operations, maintenance, real property taxes and insurance for Mahakea property; corporate sponsorships and donations; donation and community "report card" to Leeward community charged BTL per community givebacks application related to planned CIP new generating unit; nondeductible fines; Hoa Hana publication; costs to support "All Electric" subdivision promotion program; BTL heat pump incentive program (see HECO response to CA-IR-362); review of possible opportunities for non-regulated revenues; and licenses and maintenace fee for Oracle-based software to be used for projects not yet approved by the PUC at that time (CIS, OMS, HRMS, Ellipse).
426	MISC INC DEDUCT	NN	On-Costs	$57,078	
426	MISC INC DEDUCT	NN	Materials	$9,790	
426	MISC INC DEDUCT	NN	Outside Svcs	$1,760,367	
426	MISC INC DEDUCT	NN	Transportation	$167	
426	MISC INC DEDUCT	NN	Other	$13,905	
				$1,937,921	
				$1,966,253	

HECO Response: CA-IR-433 (c)

Category	Description	Expense Element	Jan-07	Feb-07	Mar-07	Apr-07	May-07	Jun-07	YTD Jun-07
Above-the-line (ATL)	Misc conservation and efficiency / Safety	150 - Labor	129.28	243.6	454.08	584.32	1900.02	1180.4	$4,491.70
		155 - Labor True Up	2.46	-10.78	-9.06	-3.37	-17.61	42.56	$4.20
		406 - Corp Admin	18.7	28.05	52.95	61.42	207.5	147.74	$516.36
		421 - NPW	21.3	32.4	64.8	79.92	270	192.24	$660.66
		422 - EE Ben	61.86	92.79	182.88	222.22	750.66	534.48	$1,844.89
		423 - PR Tax	10.78	19.05	34.67	42.54	137.84	89.55	$334.43
ATL	Misc conservation and efficiency ads	501 - Outside Services		$9,594.91	$14,771.39		$25,272.78	$38,841.98	$88,481.06
ATL	Metallic balloon safety	501 - Outside Services				$1,151.83	$1,349.74	$3,940.22	$6,441.79
ATL	Sun Power for Schools	150 - Labor	$341.04	$32.48	$0.00		$113.04		$486.56
		155 - Labor True Up	$10.14	($2.38)	$0.15		$6.07	$0.27	$14.25
		406 - Corp Admin	$39.27	$3.74	$0.00		$14.94		$57.95
		421 - NPW	$44.73	$4.32	$0.00		$19.44		$68.49
		422 - EE Ben	$129.91	$12.37	$0.00		$54.05		$196.33
		423 PR Tax	$28.75	$2.47	$0.01		$8.71	$0.02	$39.96
ATL	Sun Power for Schools	205 - Materials	$314.13	($314.13)					$0.00
ATL	Sun Power for Schools	501 - Outside Services		$3,719.57					$3,719.57
		ATL Monthly Total	$1,152.35	$13,458.46	$15,551.87	$2,138.88	$30,087.18	$44,969.46	$99,505.96
Below-the-line	Renewable energy advocacy media	150 - Labor	$1,135.84	$3,328.10	$2,656.68	$1,083.26	$1,952.81	$915.26	$11,071.95
		155 - Labor True Up	$54.67	$314.35	$248.09	($97.95)	$151.59	($100.82)	$569.93
		301 - Transportation			$17.10	$45.45	$4.57		$67.12
		406 - Corp Admin	$108.46	$293.59	$232.07	$89.64	$127.82	$62.25	$913.83
		421 - NPW	$123.54	$339.12	$270.00	$116.64	$166.32	$81.00	$1,096.62
		422 - EE Ben	$358.75	$971.09	$771.73	$324.30	$462.40	$225.24	$3,113.51
		423 PR Tax	$97.42	$300.23	$233.77	$72.17	$154.06	$59.64	$917.29
		501 - Outside Services			$7.00		$89,658.16	$98,691.84	$188,357.00
		BTL Monthly Total	$1,878.68	$5,546.48	$4,436.44	$1,633.51	$92,677.73	$99,934.41	$206,107.25

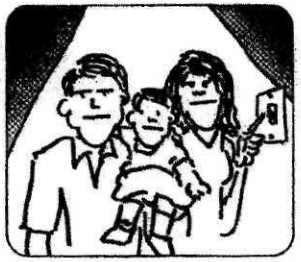
"In the Dark" TV Spot

"IN THE DARK"
:30

OPEN ON LARGE ROOM (STUDIO SET-UP) WITH LOCAL PEOPLE FROM ALL WALKS OF LIFE: FARMER, PARENTS WITH KIDS, BUSINESS PERSON, GOVERNMENT LEADER, CONSTRUCTION WORKER, SENIOR COUPLE.

CUT TO JADE ON CAMERA IN LARGE ROOM, NEXT TO HER IS SWITCH/CHAIN.

JADE: Without renewable energy ...
...Hawaii's future is dim.



CUT TO FAMILY TURNING OFF THEIR SWITCH.

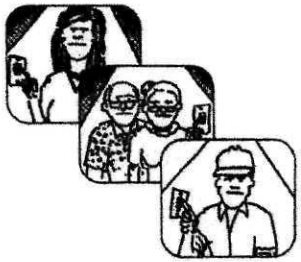
JADE VO: We must explore every possibility...
wind, solar, ocean and even ~~agricultural energy~~ growing crops.

CUT TO GOVERNMENT LEADER TURNING OFF HIS SWITCH.

JADE VO: ~~Growing energy crops and~~ making biofuels for our power plants ~~have~~ has great potential.

CUT TO FARMER NEXT TO HIS SWITCH. HE TURNS IT OFF.

JADE VO: But if we don't support the agricultural zoning...



CUT TO A BUSINESS WOMAN, SHE TURNS OFF HER SWITCH. A SENIOR COUPLE TURNS THEIR SWITCH OFF. A CONSTRUCTION WORKER DOES THE SAME.

JADE VO: The tax incentives...

The just allocation of water...

The infrastructure...

CUT TO CLOSE-UP OF JADE WITH SWITCH/CHAIN NEXT TO HER. AS SHE FINISHES HER LINE, SHE PULLS HER SWITCH. THE ROOM GOES TOTALLY DARK.

JADE: We'll be left in the...

SCREEN IS BLACK. SUPER LOGO AND HAWAIISENERGYFUTURE.COM

JADE VO: To support a sustainable future, visit hawaiisenergyfuture.com.

School Video
Recruitment for the Home Energy Challenge

coregroupone

TV SCRIPT

CLIENT	**Hawaiian Electric Company**	JOB NUMBER	**364-109**
JOB /CAMPAIGN TITLE	**Recruitment/Home Energy Challenge Video**		**3-21-07 FINAL**
LENGTH	**4 – 5 minutes**	STATION PRODUCED?	

	VIDEO	***AUDIO***	
101	Classroom setting. Piece starts off with individual shots of four students speaking to camera:	**MUSIC:**	STOCK MUSIC WITH LOCAL FLAIR, UNDER THROUGHOUT.
		STUDENT #1:	For our neighborhoods…
		STUDENT #2:	..for our islands….
		STUDENT #3:	…for our future…
		STUDENT #4:	…it's time to make a difference.
102	B-roll of Honolulu scenes (from HECO Ocean spot, boat shots toward Downtown).	**JADE VO:**	Because we live on an island, we depend on each other for support. We pull together for the good of our communities.
103	B-roll of wind tower scenes (from HECO Commitment spot).		Now is the time to set a new course. With malama for our fragile islands, we must conserve our precious resources to preserve a brighter future…
		STUDENT #5: (YOUNGEST)	.for generations to come.
104	Jade on camera in classroom.	**JADE ON CAMERA:**	Every bit of electricity that we save really adds up. And we can do it without giving up the comfort and convenience we are

			used to. If each of us does a little bit to conserve, we can make a big difference. Yes, we're only a tiny island in the Pacific Ocean...but the solution has to start somewhere. ...and it really can start with us...
105	Different adults on camera.	**PARENT #1:**	...in our homes
		PARENT #2:	...at work
		JEFF PIONTEK:	...in our schools
		STUDENT #6:	...in our everyday lives.
106	Jade on camera in classroom. Fade to black.	**JADE ON CAMERA:**	We need to start now.
107	Jade on camera in classroom with students around her.	**JADE ON CAMERA:**	Aloha, I'm Jade Moon. I'm here with some friends to ask for your help.
108	Title Card: HOME ENERGY CHALLENGE (Design a logo for this that we could also use in printed materials and the Fall video.)	**JADE VO:**	Hawaiian Electric Company and the Department of Education have developed a program called the Home Energy Challenge, a program to enlist our school children -- and their families -- in a way to preserve our island's environment through energy conservation.
109	Back to Jade on camera.	**JADE ON CAMERA:**	The goals behind the Home Energy Challenge are... First, to get families to start thinking about ways to save electricity in our homes.

			By doing all the little things that can make a big difference…
110	B-roll CFL (from 2005 Conservations spots).	**STUDENT #6**	…like changing from regular old fashioned light bulbs to compact fluorescent lights or CFLs…
	Student #7 on camera.	**STUDENT #7**	…taking shorter showers – even just two minutes shorter…
	B-roll tight shot of water temperature buttons on washing machine (from 2005 Conservations spots).	**STUDENT #8:**	…using cold water to do the laundry…
	B-roll light switches being turned off (from 2005 Conservations spots).	**STUDENT #9:**	…and turning off the lights when you're not in the room.
111	Back to Jade on camera.	**JADE ON CAMERA:**	The second goal of the Home Energy Challenge is to create the awareness that our planet and our islands are fragile…and that our energy resources are not endless. We hope that this awareness will develop conservation habits in our children that will last a lifetime, habits that will be passed on to future generations.
112	Jade on camera.	**JADE ON CAMERA:**	So how does the Home Energy Challenge work?
113	Jeff Piontek on camera. Graphic Super: Jeff Piontek Technology Resource Director Hawaii Department of Education Graphic Timeline: HOME ENERGY CHALLENGE • Information packet to Principals: May	**JEFF PIONTEK:**	Principals at all public elementary schools on Oahu will receive an informational packet about the program and Letter of Intent through the Superintendent's Office.

	• Letter of Intent due: August		To take part in the program, Principals must return the Letter of Intent to Hawaiian Electric Company by the due date noted in the Superintendent's letter.
	• Deadline to turn in information for participating students/homes: September		Participating elementary schools will compare the cumulative average daily home electrical uses of their students' families between two six-month periods. They will compare 6 months during the LAST school year to the same 6 months during the CURRENT school year. Between the two test periods, students and their families will have a chance to learn about how to save energy.
114	Student on camera:	**STUDENT #10:**	Six months then…compared to six months in the future.
115	Jade walks into shot.	**JADE AND STUDENT ON CAMERA:**	Each participating school will ask students and their families to conserve as much as possible during the second six month period. The schools with the greatest amount of energy conserved by the students' families will win. The savings will be averaged, so big schools and small schools have an equal chance.
116	Parent and student in classroom.	**PARENT:**	By conserving energy as a family at home…
		STUDENT:	We'll help protect our environment, these islands, our

			homes…
		PARENT:	And with reduced electricity usage, we can save some money on our electric bills, a bonus for any family.
117	Materials, tools and props such as CFLs that we shoot in the classroom.	**JADE VO:**	Hawaiian Electric Company will support the schools with many different tools focusing on energy conservation and home energy saving tips. We want the Home Energy Challenge to be an engaging and educational process for the students, their families, and the faculty and staff of the schools, – and fun too.
118	Jeff Piontek on camera:	**JEFF PIONTEK:**	For a school to be eligible, at least 50 students, or 25 percent of the student body (which ever is greater), living in residences with individual Hawaiian Electric accounts, must agree to participate. The first 25 schools to submit a Letter of Intent from the informational packet will be able to participate. A school will need the support of the principal, teachers and a school coordinator. So talk it over, get organized, pick a coordinator and a support team. Get your students signed up and the parents on board.
119	Back to Jade on camera. Graphic super: HOME ENERGY CHALLENGE "First prize: $10,000 Second prize: $8,000	**JADE ON CAMERA:**	Oh…one more thing. The three schools that have the highest energy conservation numbers – on average per person -- will receive awards of $10,000, $8,000, and $5,000. Money that

	Third prize: $5,000" Winning schools announced in April Fade to black.		the schools can use for whatever they wish. How's that for another good reason to take the Home Energy Challenge?
120	Jade with Pat Hamamoto in classroom. (By themselves or with students, if they are still available.) Graphic Super: "Patricia Hamamoto Superintendent Hawaii Department of Education" Fade to black.	**JADE ON CAMERA:**	Joining us now is Patricia Hamamoto, Superintendent of the Hawaii Department of Education.
		PAT HAMAMOTO ON CAMERA:	Thank you, Jade. The Department of Education is proud to co-sponsor the Home Energy Challenge. We believe that when it comes to shaping new habits and changing the way we think, the best place to start is with our children and their families. Our goal is that everyone in Hawaii…not just the participating schools, but all of us…can start adopting a new way of thinking when it comes to energy conservation. Like our children, these precious islands make up our future. And we should care for them…just as we care for the children of Hawaii. Aloha, and thank you for participating.
121	Back to Jade.	**JADE ON CAMERA:**	On behalf of Hawaiian Electric and the Department of Education, we'd like to thank you for your time.

122	Camera zooms out to reveal students in classroom around Jade.		We hope that your school will be one of the public elementary schools that will participate in the Home Energy Challenge. The lessons that your students and their families learn will last a lifetime…and these children will help shape Hawaii's energy future.
123	Full screen Graphic: "Home Energy Challenge 543-7511" HECO.com Logo: Hawaiian Electric Company	**JADE VO:**	To find out more about the Home Energy Challenge, call Hawaiian Electric Company at 543-7511 or go to heco dot com. Aloha.

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CLIENT	Hawaiian Electric Company	JOB NUMBER	365271/WA
JOB /CAMPAIGN TITLE	"CFL – Watt vs Watt" Radio		
LENGTH	:05 Radio	STATION PRODUCED?	

FINAL

:05 Version #1

MUSIC: (Open with electric guitar riff)

JENNIFER: 15-watt Compact Fluorescent Lights are as bright as 60-watt regular bulbs.

:05 Version #2

MUSIC: (Open with electric guitar riff)

JENNIFER: Because they use less watts, Compact Fluorescent Lights save energy as well as money.

coregroupone

CLIENT	Hawaiian Electric Company	JOB NUMBER	365-281
JOB /CAMPAIGN TITLE	"Reflector CFL" Radio spot		
LENGTH	:10 and :50Radio	STATION PRODUCED?	

"Reflector CFL"

:10 Version

JENN: Use Spiral CFLs in fixtures that provide ample air flow.

GLENN: Reflector CFLs, shaped like flood lights, are better for recessed lighting.

JENN: That's "Watts Happening" with Hawaiian Electric.

:05 Version

JENN: Use Reflector CFLs, shaped like flood lights, for recessed or track lighting.

MUSIC: (Electric guitar riff)

coregroupone

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CLIENT	Hawaiian Electric Company	JOB NUMBER	365-281
JOB / CAMPAIGN TITLE	"Reflector CFL" Radio spot		FINAL March 28, 2007
LENGTH	:60 Radio	STATION PRODUCED?	

"Reflector CFL"

MUSIC: (Open with electric guitar riff)

JENN: Howzit. Welcome to "Watts Happening" with Hawaiian Electric. The show about energy efficiency.

GLENN: That's "watts" as in electricity.

JENN: I'm Jennifer, with my co-host Glenn. You know, it's important to match the right ENERGY STAR Compact Fluorescent Light to your light fixture.

GLENN: That's right. There are different types of CFL bulbs meant for different fixtures.

JENN: The Bare Spiral is the most common CFL and is recognizable because of its spiral shape.

GLENN: It's best for use in desk, table and floor lamps, swing-arm lamps, wall lights and sconces.

JENN: Or in any type of lamp or fixture that provides ample air flow.

GLENN: What about recessed lighting fixtures and track lights?

JENN: Reflector CFLs, shaped like flood lights, are designed to work better for recessed or canned lighting. They reflect heat away.

GLENN: So less heat builds around the CFL, so it can last the rated lifetime.

JENN: And Glenn is certainly the expert on what rates. Please join us next time on "Watts Happening" with Hawaiian Electric.

JENN & GLENN: Aloha.

MUSIC: (Electric guitar riff)

coregroupone

CLIENT	Hawaiian Electric Company	JOB NUMBER	365275
JOB /CAMPAIGN TITLE	CFL "Lifespan" Radio		
LENGTH	:60 Radio	STATION PRODUCED?	

VERSION #2: "ENLIGHTENING"

MUSIC: (Open with electric guitar riff)

JENN: Howzit. Welcome to "Watts Happening" with Hawaiian Electric. The show about energy efficient lighting.

GLENN: That's "Watts" as in electricity!

JENN: I'm Jennifer, with my co-host Glenn. Today we'll be talking about the lifespan of Compact Fluorescent Lights with Derrick Sonoda from Hawaiian Electric.

GLENN: Hey Derrick, I'm kind of "dim" on how long CFLs last. Can you "shed some light" on the subject?

DERRICK: Well, a CFL has a much longer lifespan than a regular bulb. Based on an average use of three hours per day, a CFL with an Energy Star label that's rated at 8,000 hours can last up to 7 years.

JENN: That's 8 to 10 times longer than a regular bulb.

DERRICK: Right. And CFLs can last anywhere from 5 to 13 years, depending on the rating.

JENN: That's a long time.

GLENN: Hey, thanks Derrick for "enlightening us."

JENN: That's enough, Glenn. Please join us again next time on "Watts Happening" with Hawaiian Electric. Aloha.

MUSIC: (Electric guitar riff)

coregroupone

CLIENT	Hawaiian Electric Company	JOB NUMBER	365271/WA
JOB /CAMPAIGN TITLE	"CFL – Watt vs Watt" Radio		
LENGTH	:60 Radio	STATION PRODUCED?	

MUSIC: (Open with electric guitar riff)

JENNIFER: Howzit. Welcome to "Watts Happening" with Hawaiian Electric. The show about energy efficient lighting.

GLENN: That's "Watts" as in electricity, get it?

JENNIFER: I'm Jennifer, with my co-host Glenn. Today we'll be comparing the wattage or watts of a Compact Fluorescent Light with a regular light bulb.

GLENN: So Jen, **what** is the difference?

JENNIFER: That's right.

GLENN: **What** is?

JENNIFER: Exactly.

GLENN: Huh?

JENNIFER: The **watts** are the difference, but not the amount of light. You see, a CFL bulb that's 15 to 18 watts delivers the same brightness as a 60-watt regular bulb.

GLENN: So it's like I'm 18, but I'm really 60 in dog years.

JENNIFER: Yeah, kind of. But it's better because your energy savings with a CFL can be about 70 to 75 percent or up to $16 per bulb, per year.

GLENN: Eh, you heard her, go buy your CFLs now and start saving!

JENNIFER: Right! And join us again next time on "Watts Happening" with Hawaiian Electric.

MUSIC: (Electric guitar riff)

BOTH: Aloha.

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DOMESTIC WATER BOOSTER PUMPS

VARIABLE FREQUENCY DRIVE CONTROLLER

WINDOW FILM

Hawaiian Electric Company, Inc.
Giving you the power

www.heco.com

* Actual cost and savings may differ from project to project.

Honolulu Advertiser

HERE'S $1,000 TOWARD YOUR NEW SOLAR WATER HEATING SYSTEM.

You reap the benefits of a Solar System installed by a HECO-approved Solar Contractor.

- ***$1,000 Instant Rebate***
- ***100-point Inspection***
- ***30% Federal Tax Credit***
- ***35% State Tax Credit***
- ***Energy Savings Up to $480 a Year (Family of 4)***

Call a HECO-approved Solar Contractor for a free estimate. For the list of approved contractors call **94-POWER** or visit HECO.com. You can also see the list in next Friday's Honolulu Advertiser.

SEAL OF APPROVAL
ENERGY SOLUTIONS
SOLAR WATER HEATING

Please consult with your tax advisor, IRS, or state tax office to determine if you qualify for these tax credits for your individual situation.

Honolulu Advertiser

Hawaiian Arts Festival Guide

EXPLORE THE **SAVINGS** IN OUR **SOLAR SYSTEM.**

With your own solar water heating system, you can put the sun to work for you. The savings start with the installation of the system, then continue to add up month after month, year after year.

- **$1,000 Instant Rebate now available for solar water heating systems sold on or after February 13, 2007. Use a HECO-approved solar contractor to be eligible. Call 94-POWER or visit HECO.com for approved contractor list.**
- **35% Hawaii State Energy Tax Credit (up to $2,250).**
- **30% Federal Tax Credit (up to $2,000).**
- **Savings of up to $480 a year for a family of four on their electric bill.**
- **Free HECO 100-point quality control inspection after installation.**

When the sun's energy heats your water, you can take showers and wash clothes in hot water without worrying about your electric bill.

EASY, EVERYDAY TIPS FOR **SAVING ENERGY.**

The simple things you can do at home to save energy also save you money. Start today and you'll see the difference.

- **Switch to Compact Fluorescent Lights (CFL).** Based on three hours of use per day, changing just one 100-watt bulb to a CFL equivalent can save you $14 per year. Switch more than one bulb in your home, and your savings will increase. CFL coupons available at HECO.com.

- **Use fans instead of air conditioners.** Two fans running for four hours per day in place of an 8,000 BTU room air conditioner can save you $181 per year.

- **Wash clothes in cold water.** Switch to Cold Wash/Cold Rinse from the Hot/Warm cycle for just two loads a week, and you can save $32 per year when you use a standard top-loading washing machine.

BE ENERGY **WISE**

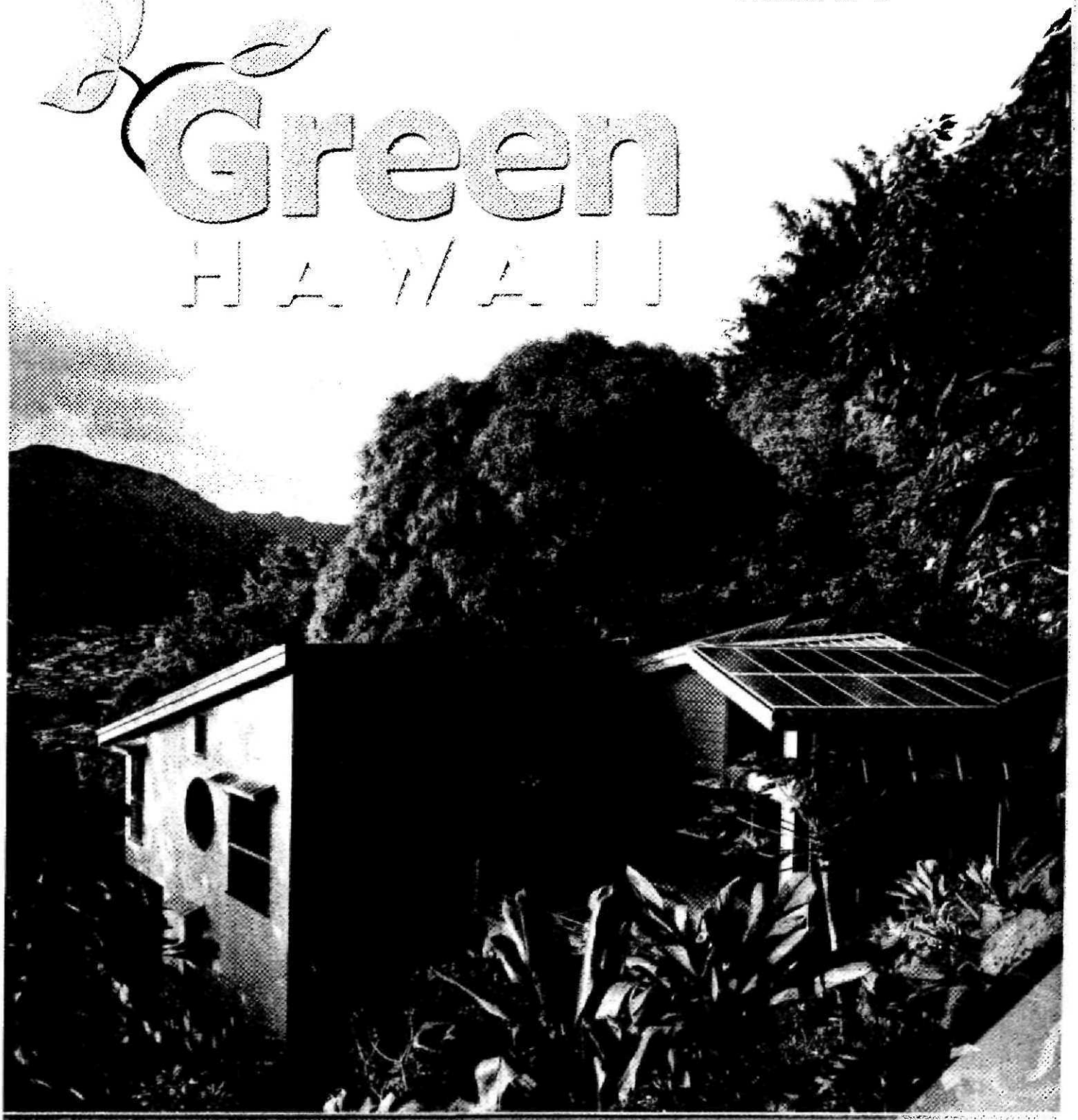
SAVE ENERGY. SAVE RESOURCES.

In Hawaii, we live in a delicate balance with nature. Using electricity wisely helps to save resources. And that has a positive impact on our environment. Let's all do our part to create a brighter energy future for Hawaii.

For more information on solar, call **94-POWER** and log on to HECO.com for more energy conservation tips.

ENERGY**$OLUTIONS**
FOR THE HOME
Hawaiian Electric • *Giving you the power*

Green HAWAII



HOW GREEN CAN WE BE?

TIPS TO HELP THE EARTH AND SAVE MONEY

Hawaii Home

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P: (808) 537-3500
F: (808) 537-0105
www.hawaiihomeandremodeling.com

D.R. Horton Schuler Division Design Ctr
Solar Display Panel

SOLAR SOLUTION

SOLAR BENEFITS

Did you realize that every family using solar saves money, saves energy and helps the environment.

SAVINGS ON YOUR ELECTRIC BILL

- Save $5 - $10 per person, per month
- A family of four can save up to $480 a year

TAX CREDITS*

- 35% Hawaii State Tax Credit (up to $2,250)
- 30% Federal Tax Credit (up to $2,000)

FREE HECO INSPECTION

- Get a 100-point quality control inspection

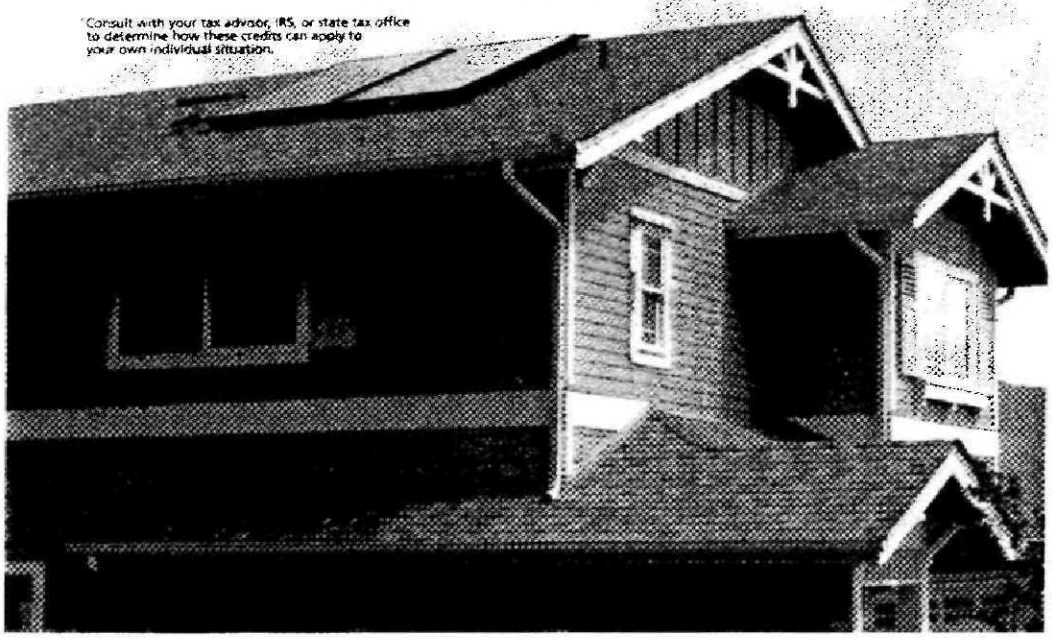
R&R Solar Supply

WHY INSTALL SOLAR DURING CONSTRUCTION?

- When you install solar during construction your solar plumbing lines are concealed in the walls with all the other plumbing lines.
- You can include the cost of your solar water heating system into your mortgage loan.

ENERGY $OLUTIONS FOR THE HOME
Hawaiian Electric - Giving you the power

*Consult with your tax advisor, IRS, or state tax office to determine how these credits can apply to your own individual situation.



Energy Scout Mailers

YOUR RETURN REQUESTED

REPLY INSTRUCTIONS TO RECIPIENT:

Complete Item 3

1. ☐ Deliver to Addressee Only ☒ Deliver to any Resident at Address

2. Addressed to: *(please make necessary corrections below.)*

Name xxxxxxxxxxxx
124 Oahu St xxxxxxxxx
Target Town, Hi 91234

3. Please initial one:

_____ (Initial) YES! I'd like to get a $3 credit on my electric bill each month and help my community meet its energy needs.

My daytime phone _____

My evening phone _____

☐ I own the property

☐ I do not own the property

_____
Landlord name and telephone

_____ (Initial) No thank you

☐ I already have a solar water heater, gas heater or heat pump and do not qualify.

☐ I am eligible, but not interested right now.

PLEASE INITIAL AND RETURN THIS CARD TO HECO TODAY

---------- ✂ DETACH HERE ---------- ✂ DETACH HERE ----------

NO OBLIGATION ENERGYSCOUT ENROLLMENT

HECO'S ENERGYSCOUT™ program is now available for homes with 30 gallon electric water heaters and larger. If your home qualifies, you can join over 14,000 Oahu families who have already signed up to help their community and save $3 a month on their bill!

HECO will install a **FREE ENERGYSCOUT** sensing device near your water heater. During a period of energy shortage, the device will turn off your water heater temporarily. Of course, even after the water heater is off, you can still use the hot water remaining. It is estimated that your water heater won't be off more than an hour.

For your cooperation, you will receive a $3 credit on your bill every month whether the device is activated or not. And you can cancel at any time for any reason simply by calling the same number you call to sign up.

To enroll, call 94-POWER (947-6937) today, or detach and return the card above.

Paul Brencick
EnergyScout Program Manager

Some homes are not eligible. Call 94-POWER to find out if your home qualifies. HECO reserves the right to cancel, terminate, modify or suspend the program at its sole discretion.

ENERGYSOLUTIONS
Resource Specialists - Giving you the power

CA-IR-433
DOCKET NO. 2006-0386
PAGE 24 OF 43

Energy Scout Mailers

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Paul Brencick
EnergyScout Program Manager

Some homes are not eligible. Homes with a solar water heater, gas heater, heat pump, or electric water heater under 30 gallons capacity do not qualify. Call 94-POWER to find out if your home qualifies. HECO reserves the right to cancel, terminate, modify or suspend the program at its sole discretion.

ENERGYSOLUTIONS

Energy Scout Mailers

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☐ I do not own the property

_____

Landlord name and telephone

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☐ I am eligible, but not interested right now.

2/07 Bill Insert

ENERGY SOLUTIONS
FOR THE HOME
Hawaiian Electric
Giving you the power

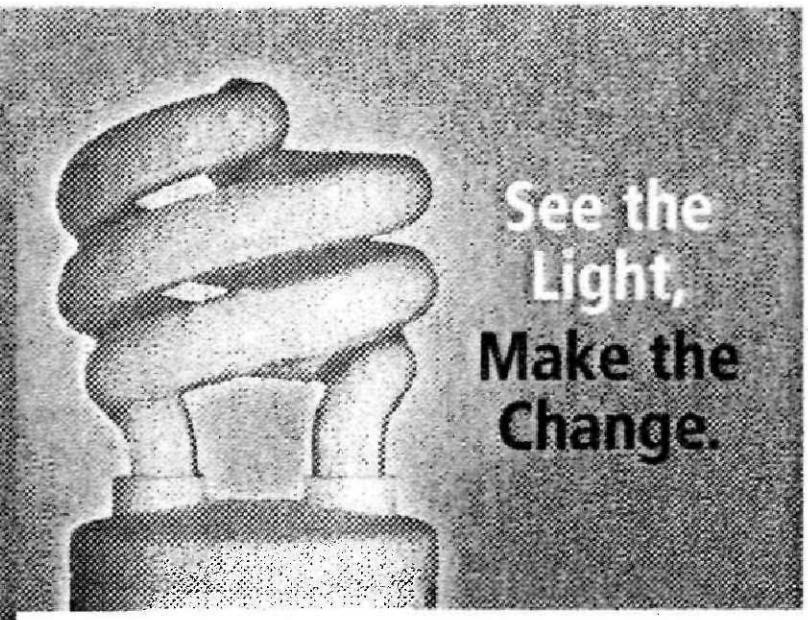
SAVE UP TO $3.00 ON YOUR NEXT PURCHASE

MAKE THE CHANGE TODAY!

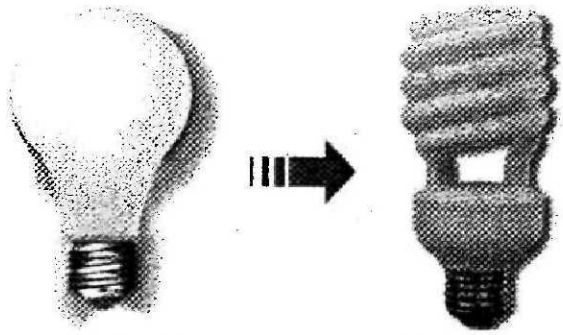
Coupons available at heco.com and at these Oahu Stores:
Longs Drugs
Times Supermarket
Foodland
City Mill
Don Quijote
7-Eleven
Marukai
Marine Corp. Exchange Hawaii

If every American home replaced just one light bulb with an Energy Star®, we would save enough energy to light more than 2.5 million homes for a year and prevent greenhouse gases equivalent to the emissions of nearly 800,000 cars.

www.energystar.gov



See the Light, **Make the Change.**



Old Regular Bulb — New CFL Bulb

249M-2/2007

What is a CFL?

A compact fluorescent light (CFL) is a light bulb that uses less energy to produce the same amount of light as a regular bulb. CFLs also produce less heat, last much longer, and save you money by using less electricity.

MAKE THE CHANGE TODAY!

Coupons available at participating retail stores and at www.heco.com

For more information on these and other Energy Solutions for the Home programs, call 54-POWER (947-6937) or visit www.heco.com

ENERGY SOLUTIONS
FOR THE HOME
Hawaiian Electric
Giving you the power

BENEFITS OF COMPACT FLUORESCENTS (CFLs)

SAVINGS ON YOUR ELECTRIC BILL
With an average use of 3 hours per day, you can save up to $13.78 per year on each CFL that replaces a regular light bulb.

LONGER LIFE
CFLs can last up to 10 times longer than a regular light bulb.

COOL CHANGE
CFLs produce about 70% less heat than a regular light bulb.

Old Bulb	CFL
100 watts	26 watts
750 hours	8000 hours
$1.00 price	$5.00 price

Annual energy cost based on 3 hours per day at 17¢ per kWh

$18.62	$4.84

$13.78 savings per year

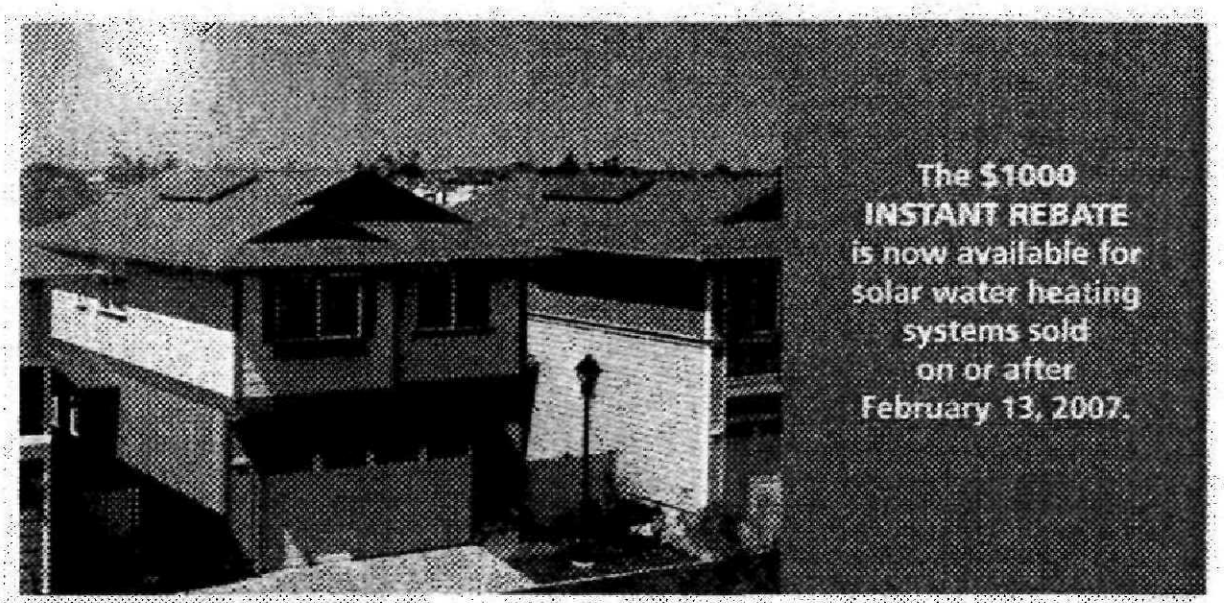
How to Choose Watt Bulb to Buy

Since packaging for CFL bulbs differ among manufacturers, be sure to:

Look for the words "Energy Saving" or "Energy Saver" bulbs.

Check for the ENERGY STAR® logo. This means the product has met strict energy efficiency guidelines set by the U.S. Environmental Protection Agency and the Department of Energy.

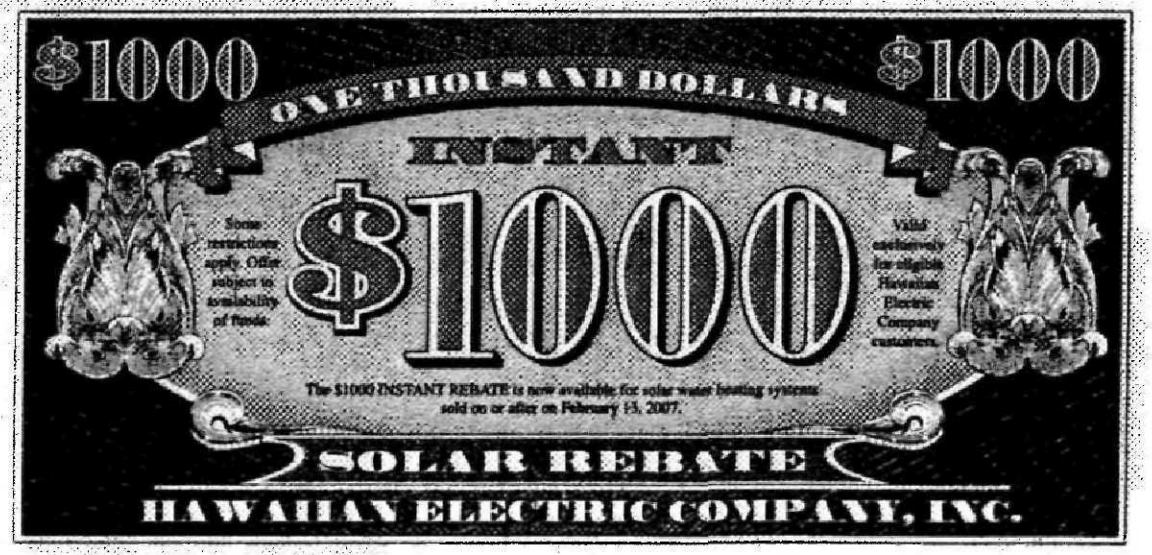
4/07 Bill Insert



TAKE ADVANTAGE OF THIS HOT DEAL
CALL A HECO PARTICIPATING CONTRACTOR TODAY!

C&J Solar Solutions[1] 247-8064	**Dalani Solar** 237-8568	**Alternate Energy**[1] 396-6127	**Allen's Plumbing, Inc.**[1] 599-5511
Creative Plumbing 841-2837	**Hawaiian Island Solar, Inc.**[1] 261-9740	**Affordable Solar Contracting**[1] 623-1115	**Pancho's Solar**[1] 422-4266
Apollo Solar[1] 538-6703	**Hansen Solar** 372-3381	**Pacific Energy Strategies, LLC** 671-5566	**Regent Plumbing, Inc** 845-0036
Island Solar Service 833-1090	**Grand Solar**[1] 737-3336	**Dorvin D. Leis Company, Inc.** 841-2112	**Solar Repair** 486-2070
Saving Oahu's Solar, LLC[1] 372-6691	**Solar Engineering & Contracting**[1] 842-7110	**M. Torigoe Plumbing, Inc.** 841-4417	**Pacific Water Conservation Co.** 841-8081
Sun King[1] 599-1793	**Hi-Tech Plumbing Corporation** 676-2557	**Energy Unlimited, Inc.**[1] 263-0245/533-0356	[1] Member of the Hawaii Solar Energy Association
Sunech Hawaii[1] 263-7652		**Giant Solar** 721-3722	

2/20/07



THE DEAL JUST GOT HOTTER!

Here's an example of how the credits may be calculated.

SOLAR CREDIT CALCULATION*

Gross System Cost*	$5,250*
Utility Rebate	- **$1,000**
Adjusted System Cost	$4,250
State Tax Credit (35%)	- **$1,488**
Federal Tax Credit (30%)	-**$1,275**
Net System Cost	$1,488 **

*Average system cost is based on 2006 weighted average system cost for retrofitted solar water heating systems.

**Disclaimer: This example is for illustrative purposes only and should NOT be considered tax advice. Consult with your tax advisor, IRS, or state tax office to determine how these credits should be calculated for your own individual situation.

CALL A HECO-APPROVED SOLAR CONTRACTOR FOR A FREE ESTIMATE!

HECO approved systems installed by our Participating Contractors meet the equipment requirements to claim the federal tax credit. Call a contractor on the back of this brochure for a quote. Your professional quality system can be installed in 1 day.

For additional information contact HECO at 94-POWER (947-6937) or visit heco.com and click on "Residential."

BENEFITS OF SOLAR

INSTANT REBATE

- Get a HECO $1000 instant rebate at time of purchase
- Use a HECO-approved, participating solar contractor to be eligible

TAX CREDITS

- Up to 35% Hawaii State Tax Credit (up to $2,250)
- Up to 30% Federal Tax Credit (up to $2,000)

SAVINGS ON YOUR BILL!

- Save $5 - $10 per person, per month, year after year
- A family of four can save up to $480 a year!

FREE HECO INSPECTION

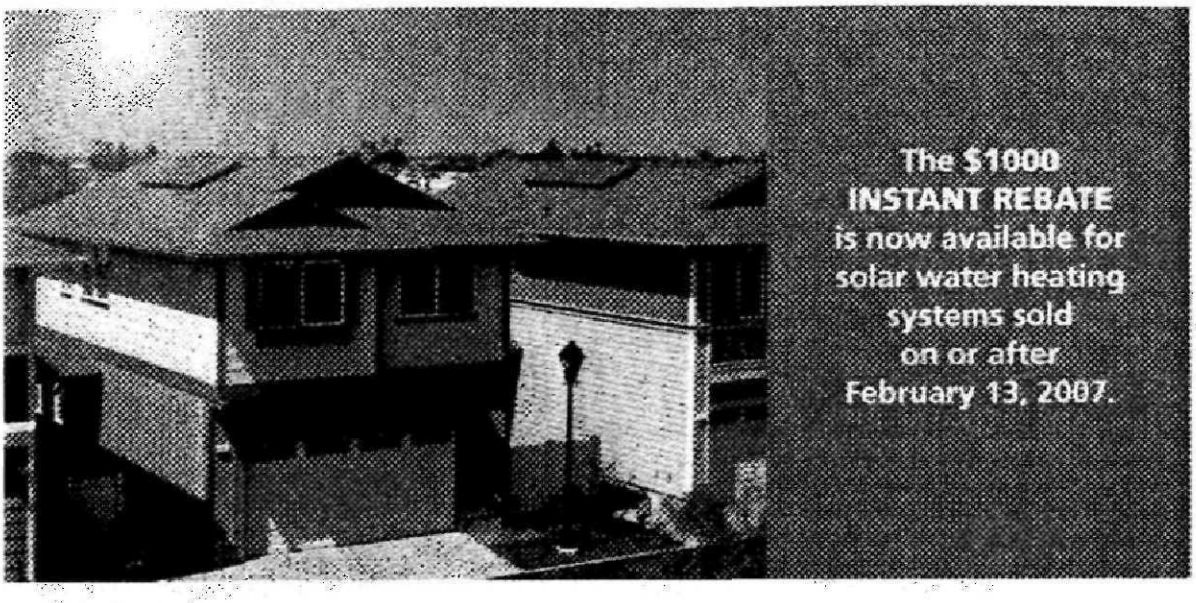
- 100-point quality control inspection

ENERGY SOLUTIONS FOR THE HOME

DON'T FORGET EARTH DAY, APRIL 22!
A typical solar system for a family of four can reduce CO_2 emissions by 2.2 tons annually and reduces our need for oil by 4 barrels a year.

www.heco.com

6/07 Bill Insert



24M 06/07

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Poncho's Solar[1]
422-4266

Solar Repair
486-2070

Pacific Water Conservation Co.
841-8081

Hansen Solar
372-3381

Suntech Hawaii[1]
263-7652

Apollo Solar[1]
538-6703

Island Solar Service
833-1000

Solar Engineering & Contracting[1]
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21st Century Technologies Hawaii, Inc.[1]
373-4559

Saving Oahu's Solar, LLC[1]
372-6691

Grand Solar[1]
737-3536

Sun King[1]
599-7793

C&J Solar Solutions[1]
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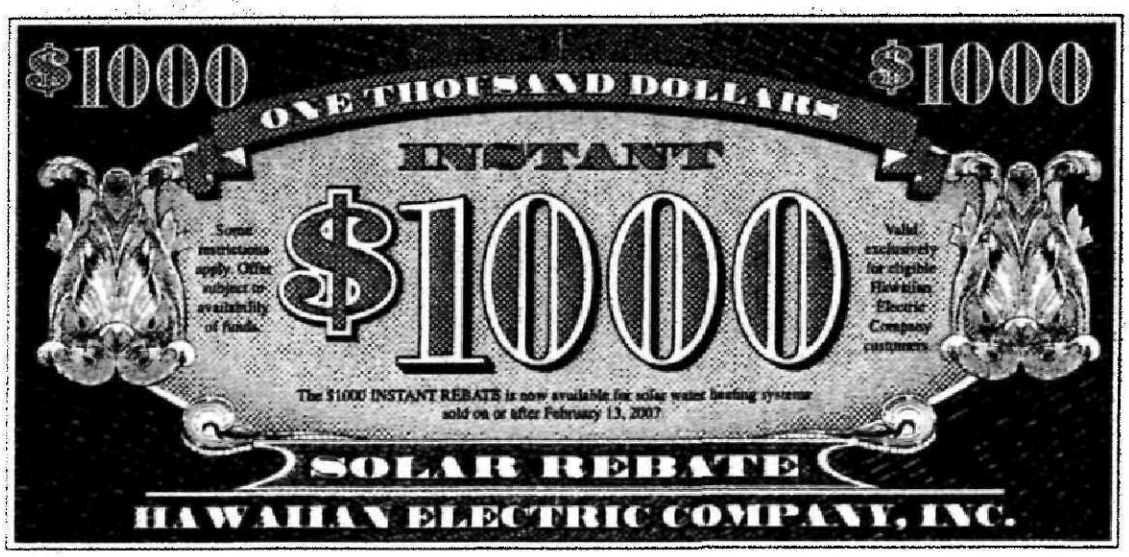

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www.heco.com

Green Home Brochure

Next Steps

1
Design your homes to qualify for one of Hawaiian Electric's Green Homes Incentive Packages

2
Call 94-POWER for a Rebate Application form

3
Submit completed application with supporting documentation for selected Package

4
Install specified efficiency measures

5
BEFORE TURNOVER call 94-POWER to schedule HECO inspection

6
Incentives paid automatically after verification

For more information call
94-POWER (947-6937)

RESIDENTIAL NEW CONSTRUCTION
GREEN HOMES
INCENTIVE PACKAGE

ENERGY$OLUTIONS
FOR THE HOME
Hawaiian Electric · Giving you the power

RESIDENTIAL NEW CONSTRUCTION
GREEN HOMES
INCENTIVE PACKAGE

ENERGY$OLUTIONS
FOR THE HOME
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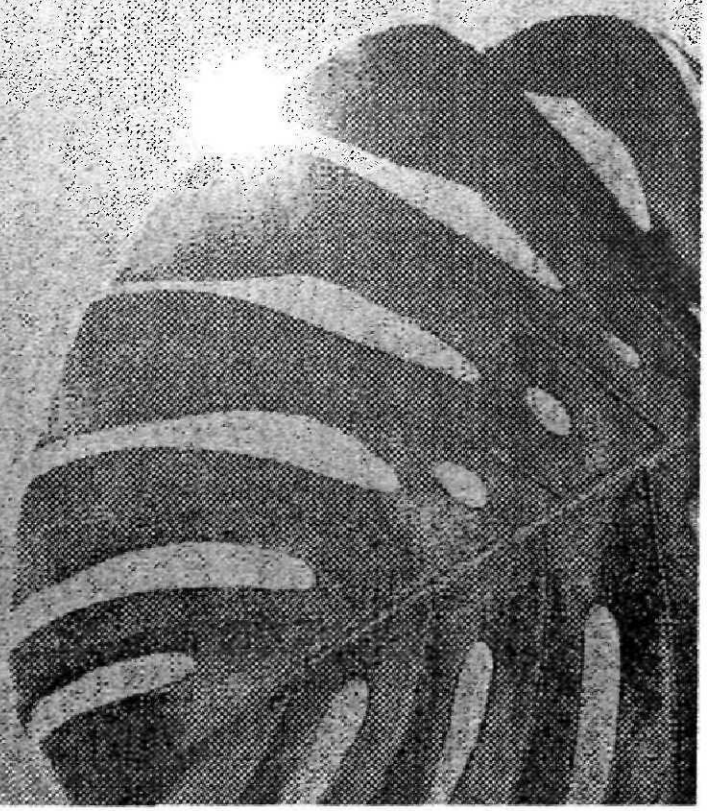


RESIDENTIAL NEW CONSTRUCTION
GREEN HOMES
INCENTIVE PACKAGE

Hawaiian Electric Company is pleased to introduce our Green Homes Incentive Package for Oahu residential homebuilders. The efficiency measures were designed in partnership with the BIA - Hawaii BuiltGreen™ initiative. Different levels of incentives are available for bundled efficiency measures in addition to our current Residential New Construction rebates. Incentive amounts vary according to the levels shown in the table below.

Gold-Plus Level

Rebate amount of $1,340 is available for the Green Homes Gold-PLUS Level participants. Please refer to the required energy efficiency measures identified in the table below.

Gold Level

Rebate amount of $785 is available at the Green Homes Gold Level. Please refer to the required energy efficiency measures identified in the table below.

Silver Level

Rebate amount of $585 is available at the Green Homes Silver Level. Please refer to the required energy efficiency measures identified in the table below.

Bronze Level

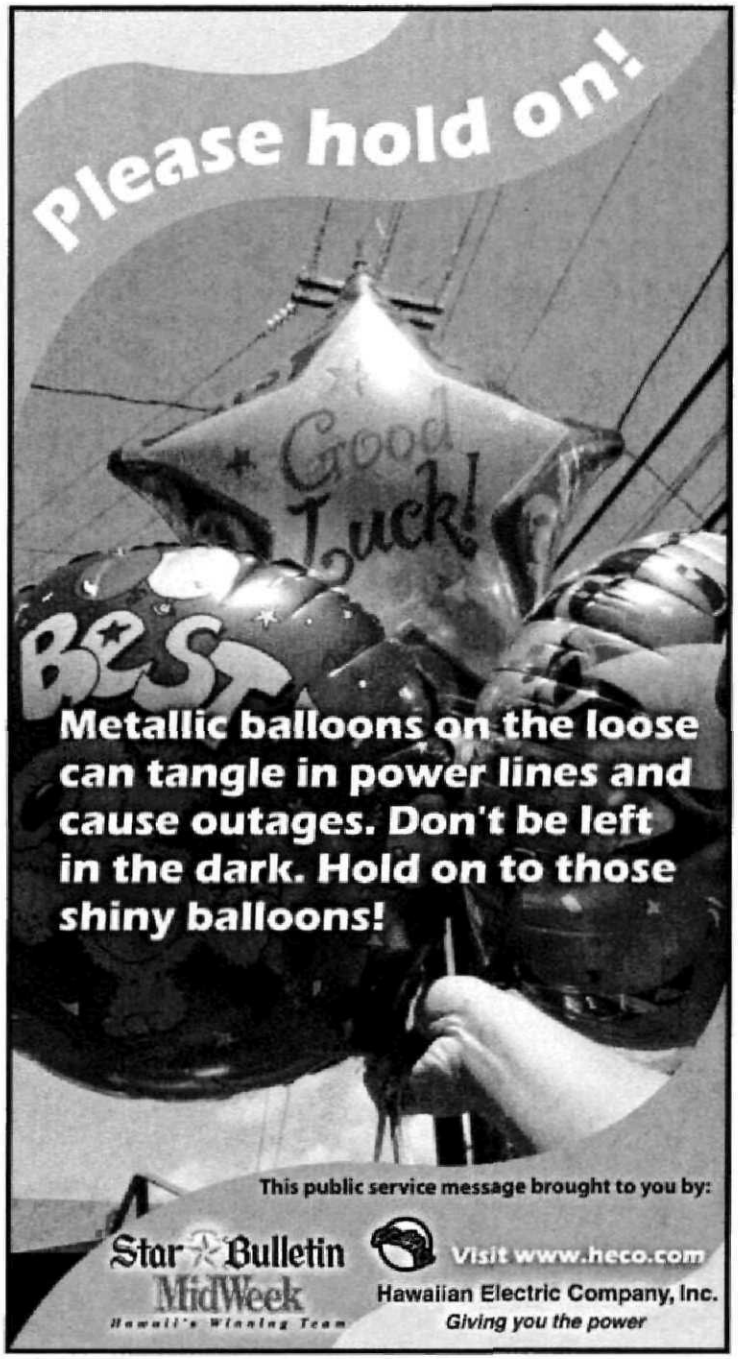
Rebate amount of $270 is available at the Green Homes Bronze Level. Please refer to the required energy efficiency measures identified in the table below.

HECO'S GREEN HOMES INCENTIVE PACKAGE REBATE SCHEDULE
(Effective February 13, 2007)

All appliances and measures below must be installed by the homebuilder as a standard offering

Efficiency Measure per Dwelling	Gold-Plus	Gold	Silver	Bronze
Central Air Conditioning	None. Natural Ventilation	SEER 14	SEER 14	SEER 14
ENERGY STAR® Ceiling Fans	4	4	4	4
ENERGY STAR(CFLs)*	3	3	3	3
ENERGY STAR Clothes Washer	yes	yes	yes	-
ENERGY STAR Refrigerator	yes	yes	yes	-
Wall Insulation	R-15	R-15	R-15	-
Ceiling Insulation	R-25	R-25	R-25	-
Skylights (1 or more)	SHGC<0.5	SHGC<0.5	SHGC<0.5	-
ENERGY STAR Windows	Double-Pane (SHGC≤0.29)	Double-Pane (SHGC≤0.29)	-	-
Rebate Amount/Dwelling**	$1,340	$785	$585	$270

* CFL is abbreviated for Compact Florescent Lights.
** Rebates shown are only available to Oahu homebuilders. Hawaiian Electric Company reserves the right to modify, cancel, or terminate the rebates at its sole discretion.



Metallic Balloon Outage Prevention campaign
"Generic" ad concept
Ad size: 2 col. x 7"h (3.75"w x 7"h)

Placement date in **Midweek for "Generic Ad" concept**:
06.13 full color
07.04 full color
07.25 full color
08.08 full color
08.22 full color

DID YOU KNOW?

Shiny, metallic balloons are a safety hazard when they become tangled in electric lines and may cause a power outage. Please hold on to your balloons. Thank you!

See a balloon caught in a power line? Call Hawaiian Electric at 548-7961.

Hold on to your balloons...
And keep everyone's day bright!

Keep the lights on by remembering a few tips:

- Always attach a weight to the ribbon to keep balloons from escaping.
- Never release metallic balloons into the sky.
- Puncture balloons before disposal.
- Consider giving lei, cards, and gift certificates to your graduate.

A public service message brought to you by **Hawaiian Electric Company, Inc.**
Giving you the power

Campaign: Metallic Balloon Outage Prevention
Flight: Second round
Stations:
Spot: :60 "Jan"

Aloha – my name is Jan and I work in the Communications department at Hawaiian Electric Company. When a power outage occurs, we work with the media to get information to the public.

Some outages are unavoidable due to weather or traffic accidents. But others are easily preventable. You know those metallic balloons, the ones we give for graduation, baby luaus, or special occasions? Those metallic balloons can cause an outage if they get loose and tangle in power lines. Just one loose balloon can leave a whole neighborhood in the dark… sometimes for hours.

So do your part to stop unnecessary power outages - please hold on to those shiny balloons. If someone gives you a metallic balloon, never release it into the air, and be sure to deflate it properly before you toss it in the rubbish. If you give a metallic balloon, make sure to attach a weight to the string.

If you see a metallic balloon in a power line, do NOT try to remove it yourself. Please call 548-7961 to report it. From all of us at Hawaiian Electric, mahalo for your kokua.

(Close announcer voice: "This message brought to you by MidWeek and Hawaiian Electric Company. For more information, visit heco.com."

Aloha gang - my name is Kaanoi and I'm an Operations supervisor at Hawaiian Electric Company. I'm one of the guys who helps maintain and repair electric lines in communities across the island. We know people depend on us, so our crews work hard to "keep the lights on", 24/7.

But during graduation season we have an extra challenge. You know those metallic balloons we like to give graduates? When those shiny balloons get tangled in electric lines, they can cause a power outage. Plenty of people are left in the dark; no can cook, watch tv or play video games. It's also dangerous for crews to remove the balloons from power lines.

So, please hold on to those shiny balloons. Never release balloons into the air and be sure to deflate them before you toss them in the rubbish. If you give a metallic balloon, make sure to attach a weight to the string.

Let's not be left in the dark, friends . . . . . Mahalo for your kokua from everyone at Hawaiian Electric.

Campaign: Metallic Balloon Outage Prevention
Flight: May 10-15
Stations: KCCN FM 100 / Island Rhythm 98.5FM
Spot: :60 "Resti"

Aloha – my name is Resti and I am the Public Safety Specialist at Hawaiian Electric Company. My job is to make sure all of our crews have the right training and equipment to keep our employees and communities safe. No matter what the conditions -- bad weather, heavy traffic -- I try to make sure everyone goes home safely to their families.

During graduation season, we have an extra challenge. You know those shiny, metallic balloons folks like to give their graduates? Well, they can become safety hazards when the colorful metallic balloons get loose and tangle in power lines. Crews have to carefully remove the balloons from high-voltage lines. Just one loose balloon can cause an outage that will leave a whole neighborhood in the dark … sometimes for hours.

So, please hold on to those shiny balloons. If someone gives you a metallic balloon, never, ever, release it into the air, and be sure to deflate it properly before you toss it in the rubbish. If you give a metallic balloon, make sure to attach a weight to the string.

If you see a metallic balloon in a power line, do NOT try to remove it yourself. Please call 548-7961 to report it. From all of us at Hawaiian Electric, mahalo for your kokua.

(Close announcer voice: "This message brought to you by MidWeek and Hawaiian Electric Company. For more information, visit heco.com."

Campaign: Metallic Balloon Outage Prevention
Flight: May 10-15
Stations: KCCN FM 100 / Island Rhythm 98.5FM
Spot: :60 "Sylvia Chock"

Aloha – my name is Sylvia Chock and I am the supervisor for the Customer Call Center at Hawaiian Electric Company. We answer the phone when you want to connect electrical service, have questions about your bill, or need to report a problem with your service. Everyone at the Call Center strives to provide fast and accurate information to our customers, especially during power outages.

But during graduation season, we have an extra challenge. We often receive calls about outages that easily could have been prevented. You know those shiny, metallic balloons folks like to give their graduates? When those colorful metallic balloons get loose and tangle in electric lines, they can cause power outages. Really. Just one loose balloon can cause an outage that will leave a whole neighborhood in the dark … sometimes for hours.

So, please hold on to those shiny balloons. If someone gives you a metallic balloon, never, ever, release it into the air, and be sure to deflate it properly before you toss it in the rubbish. If you give a metallic balloon, make sure to attach a weight to the string. Or how about giving lei or a gift card instead?

To report a metallic balloon in a power line, please call 548-7961. Mahalo for your kokua from everyone at Hawaiian Electric.

(Close announcer voice: "This message brought to you by MidWeek and Hawaiian Electric Company. For more information, visit heco.com."

CA-IR-434

Ref: Response to CA-IR-362, (Heat Pump Incentives).

Please explain all reasons why HECO continues its BTL Heat Pump incentive program that is designed to promote the efficient usage of electricity (by encouraging customers to install highly efficient electric heat pump systems) at the same time numerous DSM programs are active to constrain electricity demand. As part of your explanation, please identify the most likely customer energy choices if the Heat Pump Incentive program were not offered.

HECO Response:

HECO continues its Below the Line (BTL) Heat Pump incentive program as part of the company's commitment to support energy efficiency choices and to provide cost effective technical solutions to customers who are considering the upgrade or replacement of water heating equipment.

Heat Pump water heating systems designed with hot water storage aid in reducing the customer's electricity demand when integrated with existing electric powered equipment; such as, air-conditioning units, chillers, and other electric resistance water heaters. As an example, in air-conditioned spaces, Heat Pump systems are capable of reducing air-conditioned loads by either providing cold air or capturing and re-using waste heat from the air-conditioned system.

The Heat Pump incentive program also provides financial assistance to help offset the relative long payback period associated with this type of system.

If the Heat Pump Incentive program were not offered, customer energy choices to meet their water heating requirements would include staying with, or switching to, less efficient water heating technologies such as: electric resistance and fossil fuel based.

CA-IR-435

Ref: HECO T-10 Response to CA-IR-274 (ITS Costs).

In response to part (a) of CA-IR-274, HECO indicated that $215,000 was included in the test year forecast to maintain HECO's current mainframe applications until all mainframe applications are established on the new Unix Server Hardware platform, with the mainframe expected to be decommissioned in August/September 2008. These costs were included in the test year, as they will be paid in 2007. While these specific mainframe services will not continue, other managed services may occur. Please provide the following:

a. Please confirm that the above summary accurately reflects HECO's response to CA-IR-274(a). If this cannot be confirmed, please explain.

b. Does HECO believe that the key determining factor as to whether costs are reasonably includable in O&M expense for ratemaking purposes is whether the amounts "will be paid" in the test year? Please explain

c. Does HECO believe that, regardless whether costs are paid or expected to be paid in the test year, regulators should also consider the extent to which such amounts are reasonably representative of ongoing and recurring cost levels? Please explain.

d. Referring to the response to part (a)(3) of CA-IR-274, please provide a detailed description and quantification of the managed services not currently incurred, nor expected to be incurred in 2007, that HECO believes it will incur subsequent to August/September 2008.

HECO Response:

a. Yes, the summary is accurate. HECO's position is that the costs to maintain HECO's current mainframe applications will be incurred at least through August/September 2008. Thereafter, while HECO will not be incurring costs to maintain the mainframe applications, HECO will incur costs to maintain the UNIX server hardware and the related storage area network.

b. No. Costs which "will be paid in the test year" should not be the only determining factor as to whether costs are reasonably includable in O&M expense in determining the Company's revenue requirements in a rate making proceeding. In determining the Company's revenue requirements, HECO considered expenses that were indicative of the on-going cost level

that would be incurred during the period when rates, determined in this proceeding will be in effect. In this case, while the costs to maintain the mainframe applications may not continue for the entire period when rates determined in this proceeding will be in effect, the costs to maintain the replacement applications will be incurred. The costs to maintain the replacement applications were not included in the test year estimates.

c. See the responses to parts a and b above. If there is a suggestion to normalize a particular cost to be incurred in the test period, regulators should also consider the inclusion of other costs that may not be incurred during the test period but may be incurred during the normalization period to determine a reasonable level of on-going costs during the test period. In such a case, it may be reasonable (e.g., for simplification purposes) to include the entire particular cost in the test period rather than normalize all costs expected to be incurred in the normalization period.

d. HECO expects to incur Data Center outside services subsequent to August/September 2008 to support the applications in the UNIX environment after the migration to UNIX is completed. The following are the expected annual costs of these services:

$50,000 – UNIX Multisource outside services – These are anticipated annual costs of outsourced services to assist with UNIX operational issues. The work of the outsourcers will supplement HECO's IT staff. HECO's expertise with UNIX has been developed within our existing staff. Additional multisource services will provide more seasoned experts to supplement our existing staff's new skills.

$10,000 – SAN Consulting/Multisource outside services – These are anticipated annual costs of outsourced services to assist with SAN (Storage Area Network) management. HECO will require outside expertise to assist in managing the new enterprise class storage system. The SAN holds our most important asset—data, and we plan to call in external experts to help troubleshoot or consult major changes to the systems in advance.

$25,000 - OV Consulting/Multisource - These are anticipated annual costs of outsourced services to assist with OV (OpenView) management. OpenView has grown into an enterprise alerting and management tool that now covers the network,

Windows servers, UNIX servers, enterprise SAN and various services, such as Internet access. The complexity and criticality of this tool will require higher level consulting that goes beyond our staff's working knowledge of the OpenView.

$100,000 – Windows Support Services – These are annual outsourced outside services fees for Windows Support Services. The Windows server network continues to grow to support ever increasing IT systems. Over the last several years the number of servers has doubled without an increase in staff to support the Windows server network. Note that some of the work that was performed on the enterprise mainframe system has migrated onto the Windows network.

CA-IR-436

Ref: HECO T-10 Response to CA-IR-274 (ITS Costs).

In response to part (b) of CA-IR-274, HECO indicated that $163,500, or approximately 80% of the $200,000 for Oracle database maintenance fees, included in the 2007 test year relate to one-time license fees associated with the number of services anticipated to be placed in service in late 2007. While Oracle license fees are incurred as new database servers are placed in service, HECO does not presently anticipate installing new servers in future years. Please provide the following:

a. Please confirm that the above summary accurately reflects HECO's response to CA-IR-274(b). If this cannot be confirmed, please explain.

b. Has HECO already paid the $163,500 of one-time license fees in 2007? Please explain

c. Does HECO anticipate that it will pay the $163,500 of one-time license fees in 2007?

   1. If so, when does HECO anticipate paying such amounts?

   2. If not, why not? Please explain.

d. What is the term of the database service licenses? Please explain.

   1. Please explain why these one-time fees were not amortized over the expected term of the data base licenses.

   2. Please explain why these one-time fees were not capitalized as part of the cost of the new UNIX servers.

HECO Response:

a. Yes. For clarification on the last sentence, HECO does not anticipate installing additional Oracle database software on servers in the near future.

b. No. HECO has not yet paid the $163,500 license fees in 2007. HECO purchased 22 licenses in 2006 which have been sufficient to meet the current Oracle licensing requirements for all new applications.

c. HECO will not pay the $163,500 in 2007. When the budget was prepared in early 2006, $200,000 for Oracle license/maintenance was included in the budget because it was unclear

whether the initial allotment of 22 licenses would be sufficient to meet all Oracle Database licensing requirements. This $200,000 was to cover additional requirements which at the time were unidentified. While there is possibility that some new applications may require a new Oracle database platform, HECO has encouraged software suppliers to develop versions that run on an existing SQL Server (data base) platform. At this time, it appears that the 22 licenses will be sufficient to meet current needs and no additional Oracle license purchases are planned for 2007.

d. The Oracle license has no term. Continued use of the license requires an annual fee equal to 22% of the license fee. Initial Oracle database software license fees are not capitalized based on accounting guidance and a prior commission decision that requires Commission approval for deferral of any software costs.

CA-IR-437

Ref: HECO Responses to CA-IR-133 & CA-IR-274 (Ellipse Migration & ITS Costs).

In response to CA-IR-274, HECO discussed in detailed the $509,000 for mainframe managed services ($215k), Oracle maintenance ($200k) and 2nd year Oracle maintenance ($94k) set forth in Note B of HECO T-10's response to CA-IR-2, Attachment 13, page 10. According to the response to CA-IR-133, HECO revised the $509,000 to $990,000 and plans to seek recovery of the additional $481,000. Please provide the following:

a. Please provide a breakdown of the $990,000 between the categories of mainframe managed services (was $215k), Oracle maintenance (was $200k) and 2nd year Oracle maintenance (was $94k).

b. Does the discussion of each of these three categories as provided in response to CA-IR-274 similarly apply to the revised amounts supplied in response to part (a) above? Please explain.

c. If the response to part (b) above indicates that the response to CA-IR-274 no longer applies to the revised amounts supplied in response to part (a) above, please revise and update the response to CA-IR-274 – specifically highlighting and explaining areas of major revision.

HECO Response:

To clarify, the $509,000 indicated in Note B of HECO T-10's response to CA-IR-2, Attachment 13, page 10 is not the same as the Ellipse migration to UNIX cost included in the budget in Account No. 921 before the revision in costs discussed in the response to CA-IR-133. The amount just happens to be the same amount.

a. The breakdown of the $990,000 for the Ellipse migration to UNIX is provided in the response to CA-IR-133 and is further discussed and explained in the response to CA-IR-438. The Oracle costs included in Account No. 921 relates to the Oracle license required for Ellipse to run on the UNIX platform and the first year maintenance fee required at the time of acquiring the license. The Oracle maintenance costs of $200,000 included in Note B of HECO T-10's response to CA-IR-2, Attachment 13, page 10 is discussed in the response to CA-IR- 436 (and does not relate to the Ellipse migration to UNIX). The Oracle 2nd year

maintenance costs of $94,000 included in Note B of HECO T-10's response to CA-IR-2, Attachment 13, page 10 relates to the Oracle 2nd year maintenance costs for the CIS, OMS and HRMS systems. The first year maintenance fees are paid when the licenses are obtained, and thus are included as part of the project costs. The 2nd year maintenance costs are included as part of the IT data center costs. The $215,000 for the mainframe managed services included in Note B of HECO T-10's response to CA-IR-2, Attachment 13, page 10 are discussed in the response to CA-IR-274 and further discussed in the response to CA-IR-435. These costs are not associated with the Ellipse migration to UNIX.

b. See the response to part a above.

c. The response to CA-IR-274 continues to apply. The costs described to support the Oracle related items in Note B of HECO T-10's response to CA-IR-2, Attachment 13, page 10 are different from the Ellipse migration to UNIX costs identified and described in the response to CA-IR-133.

CA-IR-438

Ref: HECO Response to CA-IR-133 (Ellipse Migration).

Exhibit 1 (attached to the referenced response) was supplied to support the updated cost estimate, which was increased from $509,000 to $990,000. Confidential pages 3 through 6 represent vendor quote information as further support for the increased cost estimate. Please provide the following:

a. It is unclear how the data set forth on Confidential pages 3 through 6 supports the updated cost listing presented on page 1 of Exhibit 1. Please explain and reconcile the linkage between the confidential and non-confidential portions of Exhibit 1.

b. Referring to pages 1 and 2 of Exhibit 1, please identify, describe and explain each material line item that reconciles the upward revision to the cost estimate from $509,000 to $990,000.

HECO Response:

a. The response to CA-IR-133, Exhibit 1 page 3 supports the updated cost estimate for the Oracle database line item of $181,000 and the Oracle Partitioning line item of $17,000.

The information on Exhibit 1, page 3, relates to Oracle licenses acquired for the Ellipse Unix Migration and other applications. See Attachment 1 of this response for the total amounts budgeted for the Ellipse Unix Migration. Attachment 1 contains confidential vendor information and is being provided under Amended Protective Order No. 23378, dated June 4, 2007.

The response to CA-IR-133, Exhibit 1, pages 4 and 5, supports the updated cost estimate of $58,000 for the Cobol compiler. See Attachment 2 of this response for the calculation of the $58,000 based on the information provided on pages 4 and 5 of Exhibit 1. Attachment 2 contains confidential vendor information and is being provided under Amended Protective Order No. 23378 dated June 4, 2007.

The response to CA-IR-133, Exhibit 1, page 6, supports the updated cost estimate of $13,000 for Unix training and $13,000 for Scripting training. See Attachment 3 of this

response for the calculation of both the Unix and Scripting training based on the information provided in the response to CA-IR-133, Exhibit 1, page 6. Attachment 3 to this response contains confidential vendor information and is being provided under Amended Protective Order No. 23378 dated June 4, 2007.

b. Subsequent to finalizing HECO's operating budget in October 2006, which reflected an O&M non-labor expense estimate of $990,000 for the Ellipse Unix migration, the Company contracted with the vendor Mincom to conduct a detailed Ellipse Unix migration scoping study in January 2007. Based on the information learned from the scoping study, the Company updated the project estimate and internally requested authorization to commit and spend Company funds in March 2007. The Project Identification Form ("PIF") for this project was provided in response to CA-IR-392 Attachment 1. HECO will be revising the HECO T-10 June 2007 Update filed on June 27, 2007 to reflect $854,000 as the revised test year estimate for the Ellipse Unix migration non-labor O&M expenses for 2007. Attachment 4 of this response provides a reconciliation of the cost estimate included in the direct testimony of $509,000 and the revised estimate of $854,000.

Confidential Information
Deleted Pursuant To
Amended Protective Order No. 23378

CA-IR-438
DOCKET NO. 2006-0386
ATTACHMENTS 1-3

Attachments 1-3 contain confidential information and are being provided subject to

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

	Rate Case Budget 2007	Authorized Budget 2007	Difference	Notes
Software Costs and 1yr maintenance				
IBM Information Integrator Software		10,000	10,000	see note 1
Oracle database	130,000	181,000	51,000	See Attachment A for details to support updated estimate
Oracle Change Management Pack		6,000	6,000	item identified after budget initally prepared
Oracle Partitioning		17,000	17,000	See Attachment A for details to support updated estimate
Webshpere MQ licenses	7,000		(7,000)	removed from budget
Cobol compiler for Unix	58,000	58,000	-	no change. See Attachment B for details to support updated estimate
Forms Printing software		6,000	6,000	see note 2
SAR report archiving software	112,000	-	(112,000)	removed from budget
Terminal Emulation software	5,000	5,000	-	no change
ANSI C compliler	7,000	5,000	(2,000)	updated estimate
HP Openview software		9,000	9,000	see note 3
	319,000	297,000	(22,000)	
Software OnCosts	35,000	51,000	16,000	
Software Total	354,000	348,000	(6,000)	
Training				
Unix training	3,000	13,000	10,000	See note 4 and Attachment C
Scripting training (PERL, shell etc.)	5,000	13,000	8,000	See note 4 and Attachment C
CICS training for HP-UX		35,000	35,000	See note 5
Oracle Developer Training	18,000	13,000	(5,000)	updated estimate
	26,000	74,000	48,000	
Consulting				
Mincom IT consulting	129,000	257,000	128,000	see note 6
Form Tool consulting		36,000	36,000	see note 2
TYC DARS consulting		102,000	102,000	see note 4
BDI consulting		3,000	3,000	item identified after initial budget prepared
Misc Consulting		34,000	34,000	see note 7
	129,000	432,000	303,000	
Total	509,000	854,000	345,000	

NOTES:

1 IBM information integrator software needed to migrate data from the mainframe DB2 to Oracle was identified after the budget was initially prepared.

2 AFP (Advanced Funtion Printing) softtware used on the mainframe to format and print 1099, paychecks, purchase orders etc. needs to be replaced with similar software on Unix. This item was identified after the budget was initially prepared and it was determined that the CIS project's printing solution cannot be used for Ellipse.

3 HP Openview was added to purchase monitoring agents for the new Unix servers for Ellipse. This item was identified after the budget was initially prepared.

4 TYC Consulting was added to assist with the conversion of Data Access/Reporting Server (DARS) database from DB2 to Oracle.

NOTES: (Continued)

5 CICS training for HP-Unix is required to enhance ITS skills to allow for administering, troubleshooting and performance tuning of the application server. This item was identified after initial budget prepared and was a result of meeting with a another Mincom Customer who recently completed a similar migration from an IBM mainframe to Unix.

6 Mincom consulting were refined after the rate case budget was prepared to reflect an updated Mincom estimate for a technical Unix migration scoping study, assist with updating existing Ellipse custom interfaces, reports, and programs for the Unix/Oracle environment.

7 Misc consulting was added to the Unix Migration Project to update 3rd party interfaces not maintained by HECO or Mincom, implement and deploy new form templates for AFP replacement, and to conduct background checks for consultants in order to do work on HECO systems.

CA-IR-439

Ref: HECO T-10 Response to CA-IR-273 (ITS Costs).

HECO provided a breakdown of the 2005 "prior year actuals" captured in Workorder IT000004, amounting to $1,188,073. In responding to CA-IR-273, the Company determined that the 2005 base amount had been understated by $69,523. Please provide the following:

a. Please provide a similar breakdown of amounts for 2006 for comparison to the 2005 amounts.

b. Does HECO intend on revising its 2007 test year forecast to include the additional $69,523? Please explain.

HECO Response:

a. For 2006, Data Center Charges (Workorders IT000004 and IT900002) contained $1,173,775

as follows:

$ 42,401 - Materials
$1,056,815 - Outside Services
$ 74,559 - Other

$1,173,775 - Total Workorders IT000004/IT900002 – Data Center.

Materials:

$34,197 – Paper
8,204 – Supplies for check printer, copier, and print shop operations
---
$42,401 – Total Materials

Outside Services:

$583,415 – **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), zSeries (Software Excel Basic Ed., Alert, Resolve), 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).

132,867 – **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.

16,516 – **Software – Compuware Corp** for Abend-aid for CICS, Fileaid for MVS, Xpediter CICS for COBOL, Xpediter CICS for Cobol.

200,484 – **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.

57,897 – **IT Recovery Services - IBM** – for Disaster Recovery services.

21,199 – **Group 1 Software** for Code 1 Plus Maintenance and Code 1 Plus subscription (monthly updates to Postal Database). *This item was included as part of Other Software and Hardware maintenance in HECO's response to CA-IR-273.*

44,437 – **Other Software and Hardware maintenance** – Other vendors including Allen Systems Group for ESM (Enhancement Support and Maintenance), BMC Software for 24x7 support on Pointer Checker Plus maintenance, Comp USA for database and host access client software maintenance, and MacKinney Systems for JES Queue Client for printers/VTAM virtual printer annual license.

$1,056,815 – Total Outside Services

Other:

$48,075 – Enterprise Storage (disk drives) – California First Leasing
26,484 – Printer Equipment Lease – CIT Systems Leasing

$74,559 – Total Other

Note that at the end of 2005, the 3-year Mainframe lease with CIT Systems Leasing ended and HECO elected to purchase the leased equipment instead of renewing the lease. Therefore in 2006 there were no payments to CIT leasing for the Enterprise Server Equipment Lease, Server Component Lease, or software maintenance. However, in 2006 IBM Software and Hardware maintenance payments increased to cover the software and hardware maintenance which was included in the lease payments to CIT.

b. No HECO does not intend to revise its 2007 test year forecast to include the additional

$69,523.

CA-IR-440

Ref: HECO T-10 Response to CA-IR-277 (Ellipse Migration & ITS Costs).

In response to CA-IR-277, HECO confirmed 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. HECO also indicated that the $509,000 was not normalized for ratemaking purposes because the Company will implement periodic software upgrades every 4 to 5 years, based on vendor software lifecycle. Please provide the following:

a. Please confirm that the above summary accurately reflects HECO's response to CA-IR-277(b) and (f). If this cannot be confirmed, please explain.

b. Please identify, describe and provide the amount of periodic software upgrades whose cost HECO has included in the 2007 test year forecast.

c. Please identify, describe and provide the amount of periodic software upgrades whose cost HECO incurred in the following historical years:

   1. 2005; and

   2. 2006.

d. Please identify, describe and provide the amount of periodic software upgrades whose cost HECO expects to incur in the following future years:

   1. 2008; and

   2. 2009.

HECO Response:

a. The Ellipse migration process will require HECO to maintain both the Unix/Oracle and mainframe platforms until the mainframe is decommissioned in approximately August/September 2008. (Note that the Ellipse Unix migration nonlabor O&M expenses were estimated at $509,000 in direct testimony. In response to CA-IR-133, HECO provided a revised estimate of $990,000, based on the costs reflected in the HECO's operating budget. Subsequent to finalizing HECO's operating budget, HECO contracted with the vendor, Mincom, to conduct a detailed Ellipse Unix Migration scoping study in

January 2007. Based on the information learned from the study, HECO updated the project estimate and internally requested for authorization to commit and spend funds in March 2007. The Project Identification Form ("PIF") for this project was provided in the response to CA-IR-392, Attachment 1. Referencing page 6 of CA-IR-392, Attachment 1, the estimated non-labor O&M expense for the Ellipse Unix migration for 2007 is $854,000. (The estimate of $854,000 is the sum of the $51,171 + $505,785 + $297,260). As noted in the response to CA-IR-438, HECO will be revising HECO T-10's June 2007 Update filed June 27, 2006, to reflect $854,000 for Ellipse Unix migration non-labor O&M expense for the test year.) HECO did not normalize the revised estimated cost for the Ellipse migration, of which the current is $854,000 would be incurred in 2007, because the Company will be incurring such costs in 2007, and while this particular cost would not be incurred in future years, there will be other costs that are not included in the test year that will be incurred in future years. The cost of periodic software upgrades, such as the one planned for Ellipse in the 2008 to 2009 time period, is not included in the test year, however the Company is required to implement periodic software upgrades based on the vendor software lifecycle. If the Ellipse migration to Unix costs were to be normalized, the full cost of the migration costs (including the costs that would be incurred in 2008) should be considered in determining the normalization amount. HECO estimates the costs in 2008 for the Unix migration to amount to $320,000 as shown on page 4 of this response. Further, to determine the normalization, the costs for periodic upgrades for Ellipse should be included, to capture the costs that are not in the test year estimates, but will be incurred during the period when the rates established in this proceeding would be in effect.

b. There are no Ellipse upgrade costs in 2007. However, the Ellipse Unix migration costs for 2007 were provided in response to CA-IR-392. Further, as stated in part a. above, Ellipse Unix migration non-labor O&M costs for 2008 are estimated at $320,000.

c. As noted in response to CA-IR-133, the last Ellipse upgrade occurred in the 2002 and 2003 time period. No Ellipse upgrade costs were incurred in 2005 and 2006.

d. For 2008 and 2009, HECO plans to incur costs for the Ellipse Unix migration and Ellipse 6 upgrade projects, as shown on page 4.

*Project #	*Ind #	Cost Category	FY08	Estimate FY09
Ellipse 6 upgrade				
O&M Expense				
P0001147	_	OVERHEADS	323,103	1,037,788
P0001147	NE	LABOR	414,436	1,128,494
		Labor Total	**737,539**	**2,166,282**
P0001147	_	OTHER	40,062	-
P0001147	NE	O/S SVCS	810,874	368,384
P0001147	NE	OTHER	276,020	-
		Non-labor Total	**1,126,956**	**368,384**
		O&M Expense Total	**1,864,495**	**2,534,666**
Capital Costs				
P0001147	_	MATERIAL OVERHEADS	31,082	4,485
P0001147	NI	MATERIAL	305,924	44,144
		Capital Total	**337,006**	**48,630**
		Project Total	**2,201,501**	**2,583,296**
Ellipse Unix Migration				
O&M Expense				
P0001341	_	OVERHEADS	477,382	-
P0001341	NE	LABOR	485,068	-
		Labor Total	**962,450**	**-**
P0001341	_	OTHER OVERHEADS	4,931	-
P0001341	NE	O/S SVCS	280,915	-
P0001341	NE	OTHER	33,972	-
		Non-labor total	**319,818**	**-**
		O&M Expense total	**1,282,268**	**-**
Capital Costs				
P0001341	_	MATERIAL OVERHEADS	13,229	-
P0001341	NI	MATERIAL	130,208	-
		Capital Total	**143,437**	**-**
		Project Total	**1,425,705**	**-**

CA-IR-441

Ref: HECO Response to CA-IR-136 & T-15 June 2007 Update (Pension Asset).

In response to CA-IR-136, the Company provided the accumulated deferred income tax reserve balance associated with the prepaid pension asset, included in the beginning and ending test year rate base. Based on a review of the T-15 June 2007 Update, it appears that the comparable Federal and State ADIT reserve balances at test year-end have been revised to $16,628,291 and $3,040,588, respectively. Please provide the following:

a. Please confirm that the above amounts represent the Company's revised forecast of the ADIT reserve balances associated with the prepaid pension asset at test year-end. If this cannot be confirmed, please explain and provide the correct amounts.

b. In the T-15 June 2007 Update, new ADIT line items and adjustments are identified as being associated with AOCI. Should these entries and ratemaking adjustments offset so that the net effect has a "zero" impact on the ADIT reserve balance? Please explain.

c. If the response to part (b) above indicates that the AOCI ADIT amounts do not net to "zero," please provide the following:

   1. Explain the basis for the resulting net positive (or net negative) 2007 year-end ADIT reserve balance.

   2. Please summarize the components of the net balance.

HECO Response:

a. Yes, the above amounts represent the Company's revised forecast of ADIT reserve balances associated with the prepaid pension asset at test year-end.

b. Yes, the deferred tax entries and ratemaking adjustments related to AOCI offset each other, and the net effect is a "zero" impact on the ADIT reserve balance.

c. Not applicable.

CA-IR-442

Ref: HECO Response to CA-IR-142 & T-10 June 2007 Update (Pension Asset).

In response to CA-IR-142(b), HECO states, in part: "The pension tracking mechanism proposed for HELCO also indicated that in future rate proceedings, the Consumer Advocate will propose that a substantially similar pension tracking mechanism be implemented by HELCO's affiliates." The HECO T-10 June 2007 Update (see pages 6-7 and Attachment 10, page 2) recognizes a 10-year amortization of the estimated prepaid pension asset balance at December 2007. Please provide the following:

a. Is HECO (and witness T-10) of the opinion and belief that the Consumer Advocate's support for HELCO's pension tracking mechanism requires the Consumer Advocate to support the rate base inclusion and amortization of HECO's prepaid pension asset balance, regardless of the unique facts and circumstances that may be alleged to differentiate HECO and HELCO? Please explain.

b. Please confirm that HECO (and witness T-10) is aware of the fact that HELCO and the Consumer Advocate explicitly disagreed on the criteria that should be used to determine when and whether a prepaid pension asset should be included in rate base. [See Exhibit I, paragraph 21, attached to the April 5, 2007, Stipulated Settlement Letter filed with the Commission in Docket No. 05-0315.] If this cannot be confirmed, please explain.

c. Please explain the basis for HECO's selection of a 10 year period over which to propose the amortization of the prepaid pension asset.

HECO Response:

a. HECO is aware that HELCO and the Consumer Advocate disagreed on the criteria to determine when a pension asset should be included in rate base, however HELCO and the Consumer Advocate agreed that the pension asset should be included in determining HELCO's revenue requirements in HELCO's 2006 test year rate case, Docket No. 05-0315. HECO (and witness HECO T-10) do not take the position that the Consumer Advocate's support of HELCO's pension tracking mechanism for HECO requires the Consumer Advocate to support the rate base inclusion and amortization of HECO's prepaid pension asset balance.

As described in HECO T-10 and in the response to CA-IR142, the pension asset represents the accumulated contributions to the pension fund in excess of accumulated net period pension costs. HECO's position is that such amounts should be accounted for in rate base to properly reflect investor supplied funds. See also testimony at HECO T-10, pages 78-83.

b. See response to part a.

c. As stated in Attachment 7, page 2, to HECO's June 2007 Update for HECO T-10 (filed June 27, 2007): "In order to reduce the rate impact associated with the amortization of HECO's pension asset, HECO proposes, for the purposes of this rate case specifically, to amortize its pension asset over 10 years in this specific rate case (with no adjustment to the amount being amortized in any rate cases in the 10 year period) instead of the 5 year period used at HELCO. All other aspects of the tracking mechanism are the same as implemented at HELCO pursuant to HELCO's Interim Decision and Order No. 23342 dated April 4, 2007." Further details were provided in Attachment 8 to HECO's June 2007 Update for HECO T-10. The smoothing effect on revenue requirements can be seen by comparing the results under the baseline economic scenarios (and a 5-year assumed rate case periodicity) using a 5-year amortization period, found on pages 26 and 27 of 68 in Attachment 2 (Tables A-10 and A-11) of the May 25, 2007 Watson Wyatt Pension Funding Policy Study filed May 30, 2007, with the results under the baseline economic scenarios (and same assumed rate case periodicity) using a 10-year amortization period, found in the Supplemental Supporting Documentation filed with the study on pages 26 and 27 of 31 in Attachment 3.

CA-IR-443

Ref: HECO Response to CA-IR-367 (Other Awards).

Please provide the following for "Merit Key Contributor Awards:"

a. Please provide a copy of the summary documentation distributed to employees relative to this award plan.

b. Please explain when the cash awards granted under this award plan are actually given to qualifying employees (e.g., quarterly, annually, upon identification of qualifying work, etc.).

c. Who, within the corporate organization, determines when and whether plan awards should be granted? Please explain.

d. Please provide a copy of any detailed plan documentation that sets forth the terms, conditions and employee eligibility criteria under which awards may or may not be granted under this award plan, including any preconditions such as achievement of financial targets.

HECO Response:

a. There is no documentation provided to employees regarding this award plan.

b. These annual awards are given to qualifying employees following the end of the calendar year for which their contribution is being recognized. Awards for all nominees are approved and granted at the same time.

c. Employees are nominated for these awards by their management team. Nominations are reviewed and approved by the process area vice president, followed by the Vice President, Corporate Excellence. A final review is made by the HECO President, who grants final approvals on all nominations.

d. See page 2 for a written description of the 2007 Merit Key Contributor Award. The information is confidential, and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

Pages 2 contains confidential information and is being provided subject to

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

CA-IR-444

Ref: HECO Response to CA-IR-367 (Other Awards).

Please provide the following for "Merit Team Awards:"

a. Please provide a copy of the summary documentation distributed to employees relative to this award plan.

b. Please explain when the cash awards granted under this award plan are actually given to qualifying employees (e.g., quarterly, annually, upon identification of qualifying work, etc.).

c. Who, within the corporate organization, determines when and whether plan awards should be granted? Please explain.

d. Please provide a copy of any detailed plan documentation that sets forth the terms, conditions and employee eligibility criteria under which awards may or may not be granted under this award plan, including any preconditions such as achievement of financial targets.

HECO Response:

a. There is no documentation provided to employees regarding this award plan.

b. These annual awards are given to qualifying employees following the end of the calendar year for which their contribution is being recognized. Awards for all nominees are approved and granted at the same time.

c. Employees are nominated for these awards by their management team. Nominations are reviewed and approved by the process area vice president, followed by the Vice President, Corporate Excellence. A final review is made by the HECO President, who grants final approvals on all nominations.

d. See page 2 for a written description of the 2007 Merit Team Award. The information is confidential, and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

Pages 2 contains confidential information and is being provided subject to

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

CA-IR-445

Ref: HECO Response to CA-IR-367 (Other Awards).

Note 1 following the table provided in response to part (b) of CA-IR-367 states: "The credits in 2006 reflect the reversal of amounts accrued in 2005, which were not granted." Please provide the following:

a. Please provide additional support showing how the 2007 forecast amounts were determined for each of the following award plans:

   1. Merit Key Contributor Awards

   2. Merit Team Awards

b. Please expand the table supplied in response to CA-IR-367(b) to include actual amounts for calendar years 2001-2004.

HECO Response:

a. The forecast amounts for the Merit Key Contributor and Merit Team awards are calculated based on a percentage of eligible merit payroll.

   1. The 2007 forecast amount for the Merit Key Contributor award was based on 1.5% of the eligible merit payroll.

   2. The 2007 forecast amount for the Merit Team award was based on 1.0% of the eligible merit payroll.

   It should be noted that the forecast amounts for the Merit key Contributor and Merit Team awards were adjusted out of the budget to determine the test year estimates.

b. See page 2 for the requested information. Note that the amounts shown agree to Other awards amounts shown on HECO-1004, except as described in note a. on page 2.

HECO
Performance Incentive Compensation-Other Awards

	Actuals						
	2001	2002	2003	2004	2005	2006	TY 2007
NARUC 920:							
Service Awards	3,802	2,911	4,569	5,888	8,774	5,698	0
Merit Key Contributor Awards	169,200	197,257	210,812	146,312	284,460	(210,600)	239,000
Merit Team Awards	84,744	122,571	109,880	275,767	148,915	(105,300)	119,000
	257,746	322,739	325,261	427,967	442,149	(310,202)	358,000
				note a			
NARUC 921:							
Service Awards	32,444	37,928	39,867	39,939	42,478	43,027	38,000
Other Recognition Awards	4,656	1,753	2,260	1,754	1,206	1,282	0
	37,100	39,681	42,127	41,693	43,684	44,309	38,000

Note:
a. Note that on HECO-1004, the amount shown is $425,000. The amount should be $428,000 as noted here.

CA-IR-446

Ref: HECO T-12, pages 33 to 34, HECO-1218, HECO-1219 and CA-IR-295 (HR Suite Project).

In response to CA-IR-295, HECO confirmed that the implementation timeline for Phase 1 of HRS project is now projected to be completed in 2008. At page 34 of HECO T-12, the Company indicated that the 2007 test year forecast included $739,000 in Account 926010 for labor and non-labor costs for consulting, software acquisition and maintenance and training. According to HECO T-12, the June 2007 Update eliminates the amortization expense associated with the HRS project based on the response to CA-IR-295, but is silent regarding the $739,000. A further breakdown of the $739,000 appears at HECO-1218 and HECO-1219. Please provide the following:

a. Please explain why the June 2007 update did not also eliminate the $739,000.

b. If the response to part (a) above indicates that HECO will continue to incur these costs in 2007, even though HRS Phase 1 implementation has slipped into 2008, please provide the following with regard to the $339,000 of labor and on-costs charged to Accounts 920, 921 and 926:

    1. A detailed breakdown of the labor and on-costs between consulting, software acquisition, maintenance and training.

    2. A 2007 timeline showing the current expected distribution of labor hours and labor related costs by month.

    3. Referring to part (b)(1) above, a detailed explanation as to why the Company believes that such costs are properly includable in the 2007 test year forecast.

    4. Referring to part (b)(3) above, please explain why these items are appropriately charged to O&M expense rather deferred or capitalized.

c. If the response to part (a) above indicates that HECO will continue to incur these costs in 2007, even though HRS Phase 1 implementation has slipped into 2008, please provide the following with regard to the $428,000 of non-labor costs charged to Account 926:

    1. A detailed breakdown of the non-labor costs between consulting, software acquisition, maintenance and training.

    2. A 2007 timeline showing the current expected distribution of non-labor costs by month.

    3. Referring to part (c)(1) above, a detailed explanation as to why the Company believes that such costs are properly includable in the 2007 test year forecast.

4. Referring to part (c)(3) above, please explain why these items are appropriately charged to O&M expense rather deferred or capitalized.

d. Referring to parts (b) and (c) above, please segregate the labor and non-labor costs between those charges that are annually recurring from those that will not continue, once the HRS project is completed – explaining the basis of and need for any recurring costs.

HECO Response:

a. The amortization expense associated with the HR Suite project was eliminated from the test year in the June 2007 Update, HECO T-12, since the project is now scheduled to be completed in 2008. The estimated amount for other non-deferred costs of $739,000 for consulting, software acquisition and maintenance and training were not eliminated as these expenses will be incurred in the test year.

b. 1. The requested breakdown of labor and on-costs is included in Attachment 1. The breakdown is by phases and stages of the project. Consulting, software acquisition, maintenance and training costs are non-labor costs.

2. The expected distribution of labor hours and related costs by month for 2007 is included in Attachment 2.

3. The accounting treatment for the HR Suite project costs was approved in Decision and Order No. 23413, Docket No. 2006-0003, dated May 3, 2007. As such, forecasted expenses are includable in the 2007 test year forecast.

4. As approved, the accounting treatment for the HR Suite project costs was described in Exhibit A to the Application in Docket No. 2006-0003, and calls for software costs for Stages 1, 2, 3 and reengineering costs to be expensed.

c. 1. The requested breakdown of non-labor costs is included in Attachment 1.

2. The expected distribution of non-labor costs by month for 2007 is included in Attachment 3.

3 See response to item b.3. above.

4. See response to item b.4. above.

d. The labor and non-labor costs are related to the project for the test year. As such, the annually recurring cost is for software maintenance. However, once the system is implemented there will also be on-going costs related to maintenance and consulting.

2007 COST for HR SUITE PROJECT - HECO
By Cost Type, Phase & Stage

(Thousands [1])

			Phase 1				Phase 2				Project
		Stage	1	2	3	Total	1	2	3	Total	Total
Accts 920, 921, 926	LABOR		30	41	38	109	-	-	9	9	118
	OH		21	52	27	100	-	4	6	10	110
	OTHER		-	71	-	71	-	12	-	12	83
	LABOR	RE-ENG	-	16	-	16	-	-	-	-	16
	OH	RE-ENG	-	11	-	11	-	-	-	-	11
	TOTAL		51	164	65	280	-	16	15	31	338

			Phase 1				Phase 2				Project
		Stage	1	2	3	Total	1	2	3	Total	Total
Accts 920, 921, 926	O/S SVC	Consulting	136	73	-	209	61	8	-	70	278
		Travel	3	11	-	14	-	2	-	2	16
		Training	-	18	-	18	-	-	-	-	18
		SW Maint	12	81	12	104	-	12	-	12	116
		Legal	-	-	-	-	-	-	-	-	-
	TOTAL		139	102	-	241	61	10	-	71	428

1. The detail amounts are rounded which may cause differences in the totals.
OH - Overhead
O/S SVC - Outside Services
SW Maint - Software Maintenance
RE-ENG - Reengineering

2007 Distribution of Labor Hours by Month for HR SUITE PROJECT - HECO

	2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
LABOR	7,323	755	764	381	376	902	882	805	715	365	204	1,174	0
Re-Engineer	634	0	0	0	0	0	252	200	182	0	0	0	0
Total	7,957	755	764	381	376	902	1,134	1,005	897	365	204	1,174	0

2007 Distribution of Labor Cost by Month for HR SUITE PROJECT - HECO

Expense	Cost Category	2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov[1]	Dec
Expense	LABOR	118	1	11	21	22	5	1	0	7	6	27	17	0
	OH	110	1	9	15	18	7	4	4	7	7	21	17	0
	OTHER	83	0	71	0	0	0	0	0	0	0	0	12	0
Re-Engineer	LABOR	16	0	0	0	4	2	5	2	1	1	1	0	0
	OH	11	0	0	0	3	2	3	1	1	1	1	0	0
Total		**338**	**3**	**91**	**36**	**47**	**15**	**13**	**8**	**16**	**15**	**50**	**46**	**0**

[1] Includes December

OH = Overhead

	2007	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Consult	278	0	66	66	15	10	11	11	10	10	10	57	12
SW Maint	116	0	0	12	12	12	12	12	12	12	12	12	12
Training	18	0	0	0	18	0	0	0	0	0	0	0	0
Travel	16	0	0	0	5	2	2	2	2	2	2	0	2
Total	**428**	**0**	**66**	**77**	**49**	**23**	**24**	**24**	**24**	**23**	**23**	**69**	**26**

SW Maint - Software Maintenance

CA-IR-447

Ref: HECO T-12 June 2007 Update (Prepaid Pension Asset Amortization).

At the time this request was prepared, HECO had not yet provided the Consumer Advocate with the HECO T-10 June Update. Please provide the following:

a. Please explain the basis for of the $5,055,000 amortization of the prepaid pension asset.

b. Was this amortization developed by Watson Wyatt Worldwide as part of the annual pension study? Please explain and provide a copy of any related supporting documentation.

HECO Response:

a. The amortization amount of $5,055,000 is based on a ten year amortization of the estimated pension balance as of December 31, 2007 as shown on HECO T-10 June 2007 Update, Attachment 10, page 2 of 2. The estimated balance as of December 31, 2007, considers the updated net periodic pension cost for 2007, as provided by Watson Wyatt Worldwide in HECO T-10's June 2007 Update.

b. See response to part a.

CA-IR-448

Ref: HECO T-12 June 2007 Update (Employee Benefits).

Exhibit 1 presents an update to the as filed HECO-1201 to recognize the revisions resulting from the June 2007 Update, as set forth in Column (e). The spreadsheet file supporting Exhibit 1 contains input values for either the June Update or the Revised test year estimate, Columns (e) and (f) respectively. Please provide the following:

a. Please provide a breakdown of the components of the June Update adjustment amount of ($1,115,000) for other postretirement benefits.

b. Referring to part (a) above, please provide supporting calculations or a pinpoint reference to such documentation already supplied by the Company.

HECO Response:

a. The ($1,115,000) adjustment for other postretirement benefits is broken down as follows:

Net periodic postretirement benefit cost	($1,104,000)
Life insurance for senior management	($ 11,000)
Total adjustment	($1,115,000)

b. The adjustment represents the difference in the estimated net periodic postretirement benefit cost and the "executive life" portion provided in HECO-1205 and the final amounts provided in the June 2007 Update, HECO T-12, Exhibit 2.

CA-IR-449

Ref: HECO response to CA-IR-299 & T-13 June 2007 Update (Rent).

Please provide the following:

a. Referring to CA-IR-299 (Attachment 1, Note 1), HEI plans to terminate its sublease arrangement with and reassign to HECO the leased space on the 17th Floor of Central Pacific Plaza, beginning in May 2007. Please provide the following:

   1. Please confirm the current status and timing of the sublease termination and reassignment of the lease to HECO.

   2. Immediately prior to HEI moving its personnel from the 17th Floor, please provide the total square footage occupied by HEI and HECO, respectively

   3. Subsequent to the sublease termination and reassignment to HECO, please confirm that HECO will then solely occupy the total area identified in response to part (a)(2) above. If this cannot be confirmed, please explain.

b. Referring to CA-IR-299 (Attachment 1, Notes 2 & 2a), please confirm that HECO vacated the 8th Floor of ASB tower in June 2007, by terminating its sublease with HEI. If this cannot be confirmed, please explain.

c. Referring to CA-IR-299 (Attachment 1, Note 3), please confirm that HEI will continue to equally share the 8th Floor ASB Tower training/conference room with HECO and ASB and that the 8th Floor training/conference room is not being vacated or reassigned. If this cannot be confirmed, please explain.

HECO Response:

a. 1. HEI's sublease termination and lease reassignment to HECO were effective May 1, 2007.

   2. HECO subleased 1,667 rentable square feet and HEI used the remaining 2,649 rentable square feet of the lease.

   3. Yes, HECO solely occupies the 4,316 rentable square feet of the 17th Floor lease of Central Pacific Plaza.

b. Yes. HECO vacated the 8th Floor of ASB Tower in June 2007. Cancellation of HEI's sublease with HECO was effective June 1, 2007.

c. Yes. HEI is equally sharing the 8th Floor ASB training/conference rooms with HECO and ASB. HEI currently has no plans to vacate or reassign the 8th Floor ASB training/conference rooms

CA-IR-450

Ref: HECO Response to CA-IR-299 & T-13 June 2007 Update (Rent).

Referring to CA-IR-299 (Attachment 1, Note 1), HEI moved its personnel from the leased space on the 17th Floor of Central Pacific Plaza to another location, beginning in May 2007. In the T-13 June 2007 Update (pages 4, 24 & Attachment 2), HEI personnel will relocate from the 4th Floor of the King Street building to another location. Please provide the following:

a. Please confirm that the HEI personnel formerly on the 17th Floor of Central Pacific Plaza relocated to office space that has not been nor will be leased by HECO. If this cannot be confirmed, please explain.

b. Please confirm that the HEI personnel formerly on the 4th Floor of the King Street building relocated to office space that has not been nor will be leased by HECO. If this cannot be confirmed, please explain.

HECO Response:

a. Yes. HEI has vacated its offices on the 17th Floor of Central Pacific Plaza and relocated to office space that has not been, nor will be, leased by HECO.

b. Some of the HEI personnel on the 4th floor of the King Street Building have relocated to office space on the 8th Floor of ASB Tower, which HECO had previously been subleasing from HEI. Refer to HECO's response to CA-IR-449 part b. for sublease information.

CA-IR-451

Ref: HECO Response to CA-IR-382 (Rent).

Referring to Attachment 2 of the response to CA-IR-382, Note C explains the decrease in miscellaneous lease revenues from High Technology Development Corporation, indicating that HECO intends to terminate the lease in April 2007 in order to use the Keawe property for warehouse and yard space. Please provide the following:

a. When did HECO make the decision to use the Keawe property for warehouse and yard space?

b. Is there an existing structure at the Keawe property that HECO can immediately commence using for warehouse and yard space or will facility construction be required? Please explain.

c. Is the use of the Keawe property intended to result in an expansion of HECO's warehouse and yard space or will this location effectively replace facilities at one or more other locations? Please explain.

d. Referring to part (c) above, please identify any avoided facility leases or other cost changes expected to result from the utilization of the Keawe property, noting the amount of such costs included in the 2007 test year forecast.

HECO Response:

a. The decision to use the Keawe property for warehouse and yard space was discussed while HECO was reviewing its options for increasing warehouse and yard space during the first and second quarters of 2006.

b. Yes, there is an existing warehouse and small office area that can be used. In addition, there is a small amount of yard space.

c. The use of the Keawe property is intended to replace warehouse and yard space which was displaced as a result of the newly built Dispatch Center located at Ward Avenue.

d. Currently, there are no facility lease costs in the 2007 test year which would be avoided with the utilization of the Keawe property. HECO would potentially avoid having to incur additional outside storage fees if the Keawe property were utilized for warehouse and yard space. However, at this time, the Company has not pursued leasing outside warehouse facilities as an effort is being made to utilize HECO-owned property.

CA-IR-452

Ref: HECO T-13, pages 5 to 16 (Research & Development).

Beginning at page 5, HECO T-13 discusses the Company's 2007 test year estimate for research and development. Test year R&D includes expenses related to HECO's membership in EPRI as well as R&D "activities to further HECO's evaluation and implementation of new technologies related to electric utility operations, renewable energy and alternate energy, and the development of emerging technologies." HECO's non-EPRI related R&D test year expense includes $456,000 for long term strategies and $527,000 to develop and demonstrate new technology. Please provide the following:

a. Do the above amounts represent the total R&D costs included in O&M expense, excluding EPRI related costs? Please explain.

b. If the response to part (a) above is negative, please provide a detailed breakdown of the 2007 test year forecast by program or project, including the following:

   1. identify each R&D project;

   2. describe each project or provide a pinpoint reference to the portion of the HECO witness testimony that contains such description; and

   3. list the related test year O&M amount (by NARUC account).

c. Referring to the response to part (b) above, please provide comparable actual data for calendar years 2005 and 2006.

d. Referring to the response to part (b) above, please provide comparable data for the amount included in HECO's 2005 forecast test year.

HECO Response:

a. No. The above amounts represent estimated R&D costs within Miscellaneous O&M Expenses (NARUC Account 9302). Additional estimated R&D costs are in the Production O&M Expenses area, whose accounts are discussed by Mr. D. Giovanni in HECO T-6.

b. Refer to Mr. D. Giovanni's testimony in HECO T-6, HECO-629, and HECO's responses to CA-IR-80, 245, and 407, for detailed R&D projects within the Production O&M Expenses

area. HECO's non-EPRI estimated R&D costs within Miscellaneous O&M Expenses are comprised of the following:

- $496,000 – Electrical System Analysis Study ($443,000 per HECO T-13, page 9 and $53,000 per June 2007 T-13 Update, pages 2 and 8),
- $13,000 – Other miscellaneous R&D long-term strategy projects,
- $516,000 – Advanced Metering Infrastructure R&D projects (per HECO T-13, page 12-15), and
- $11,000 – Other miscellaneous labor for develop and demonstrate new technology projects.

c. Refer to Mr. D. Giovanni's testimony in HECO T-6, HECO-629, and HECO's responses to CA-IR-80, 245, and 407, for detailed R&D projects within the Production O&M Expenses area for 2006 and 2005. HECO's 2005 and 2006 R&D costs recorded to Miscellaneous O&M Expenses are as follows:

2006:		
Advanced Metering Infrastructure	$	146,000
Sales Forecast Study		113,000
BPL		33,000
Miscellaneous		31,000
Total	$	323,000
2005:		
EPRI Dues	$	1,529,000
BPL		412,000
Advanced Meter & Customer Outage		177,000
BPL – McCully Trial		91,000
Residential Use Per Customer		58,000
Miscellaneous		127,000
Total	$	2,394,000

d. The 2005 test year HECO rate case included total R&D (Miscellaneous O&M and Production O&M) expenses of approximately $2,490,000 ($2,247,000 - per the 2005 Test Year HECO-1604, $72,000 – per the 2005 Test Year HECO-1604, $480,000 – per HECO's response to the 2005 Test Year CA-RIR-70, and ($309,000) – per Exhibit II, page 3 of the HECO 2005 Test Year Rate Case – Stipulated Settlement Letter.

CA-IR-453

Ref: HECO T-13, pages 9 to 12 (R&D Long-Term Strategies).

Of the $456,000 for long-term strategy research, about $443,000 relates to the 2007 estimated cost of the Electric System Analysis Study utilizing MECO's electrical system. Please provide the following:

a. Based on the vendor's preliminary cost estimate, this study is expected to commence and finish in 2007. Please provide an update of the status of this study, including actual (or planned) commencement date and completion date.

b. If the scheduling of this project has been delayed, please explain the delayed project time line.

c. Does HECO consider this study to be annually reoccurring? Please explain.

   1. If the response to part (c) is affirmative, please provide detailed documentation supporting this conclusion.

   2. Please explain why HECO did not attempt to normalize such costs for ratemaking purposes.

HECO Response:

a. HECO is still in negotiations with its vendor, General Electric ("GE"), for a final agreement for the Electric System Analysis Study. The study will commence upon finalization and authorization of a final agreement by HECO and GE, which is anticipated to occur this year. The study activities are anticipated to continue into 2008, with the project schedule specifics and projected completion date to be determined as part of the finalized scope of work.

b. The negotiations for a final Electric System Analysis Study with GE have taken longer than expected due to several reasons. The primary reason for the delay is that GE's researchers, whom HECO is negotiating with for the Electric System Analysis Study, are busy completing the Hawaii Energy Roadmap project on the Big Island. Based on current discussions with the GE researchers, they need to meet certain project milestones prior to

finalizing the Electric System Analysis. The Hawaii Energy Roadmap project is funded by the U.S. Department of Energy ("USDOE") and is a collaboration between HECO, HELCO, MECO, the Hawaii Natural Energy Institute ("HNEI"), and GE. The primary objectives of the project are to develop and execute an unbiased energy scenario analysis to address the future energy interests and goals of the Big Island and to initiate further study of a technology-specific project that serves as another step on a path toward meeting the Big Island's energy objectives (electrical sector and transportation sector). In phase 1 of this project, GE will evaluate system and cost impacts of existing wind farms on HELCO's system and evaluate potential mitigating technologies. GE will then estimate the cost impacts of incremental increases in penetration of as-available resources such as wind. In phase 2 of the project GE will analyze potential future energy scenarios using the results developed in phase 1. It is hoped that this study will help to better understand and quantify the effects of integrating intermittent resources onto the relatively small electrical grids in Hawaii and will help to chart a clearer course to achieve the maximum integration of renewable resources on the HECO, MECO, and HELCO systems.

As a result of the above and, as previously mentioned, depending on the timing of the finalization and authorization of a final agreement, commencement of the study may be delayed towards the end of the third quarter or possibly the fourth quarter of 2007, which would result in completion of the study in 2008.

HECO has been communicating and coordinating with HNEI, in parallel with negotiations with GE, to possibly secure federal funds toward the project in order to expedite the study once the agreement is executed by leveraging existing contractual agreements between HNEI and GE.

c. HECO does not consider the Electric System Analysis Study to be annually reoccurring. However, HECO does consider its Research and Development ("R&D") long-term strategy research to be annually reoccurring.

1. The R&D long-term strategy research concentrates on long-term technologies and policy issues. These activities would include, but would not be limited to, the study of hydrogen energy, fuel cells, advanced energy storage systems, wind integration, customer service, and other emerging technologies that could have a place in Hawaii's generation mix in the future and may also serve to address evolving governmental energy policies. Some of the state and federal energy policies currently being developed and reviewed are renewable portfolio standards, net energy metering, system benefit charges, protecting the environment, reducing impact on customer rates, energy security, carbon emissions, energy credit trading, tax credits, and other energy policies.

Although the Electric System Analysis Study is not reoccurring, it is indicative of the kind of research that the Company undertakes and funds in implementing its long-term R&D strategy. The intermittent and variable nature of wind can put a major strain on the existing utility systems in controlling system frequency and power fluctuations, which can impact the reliability of power provided to customers. The smaller the electric grid system, the greater the impact these fluctuations may have on utility and consumer electrical equipment. Some of the challenges of integrating intermittent resources onto a relatively small grid include: system stability; optimizing unit scheduling; frequency control; system management; cost and emissions to provide additional regulating reserve (see the MECO IRP-3 Plan filed in Docket No. 04-0077

on April 30, 2007 and sections 4.7.5, 6.3.1.2 and 12.5 of the HELCO IRP-3 Plan filed in Docket No. 04-0046 on May 31, 2007 for details).

The Electric Systems Analysis Study on Maui will be conducted in a similar manner as the Hawaii Energy Roadmap Study being conducted by GE for HELCO. As part of the electrical system analysis, the impact of current wind turbine energy on the Maui system will be modeled and evaluated. In addition, the study will evaluate the utilization of available mitigating technology (i.e., electronic shock absorber, battery energy storage systems, etc.) to address the effect of wind variability on grid frequency, and the potential impact of additional wind farms being added to the system. This analysis will assist in determining the amount, if any, of additional intermittent generation the system can reasonably accept without unduly impacting the reliability and operability of the island grid. Thus, the results of the study will be applicable to HECO as well as MECO.

2. As mentioned in response to subpart c.1 above, HECO, HELCO and MECO, are faced with the challenges of addressing state and federal energy policies which are constantly evolving. As such, HECO anticipates the cost for its R&D long-term strategy commitment to remain at the estimated 2007 test year levels in the foreseeable future. For example, although the Electric System Analysis Study has not yet commenced in 2007, HECO has undertaken other R&D long-term initiatives such as the Development of an Environmental Strategy for Sourcing Biofuel Feedstock and a Grid Code Review. The study for the Development of an Environmental Strategy for Sourcing Biofuel Feedstock and the Grid Code Review which cost $92,000 and $26, 000, respectively, were not included in the 2007 Test Year estimates for R&D long-term strategies.

Development of Environmental Strategy for Sourcing Biofuel Feedstock – HECO is developing a strategy to convert a significant fraction of its fossil fired generation units to biofuels in response to environmental and energy security concerns. Because HECO is planning to use imported palm oil as an initial biofuels feedstock until locally grown feedstocks are available, HECO intends to adopt an environmental sourcing policy that minimizes the environmental damage from imported palm oil and require sustainable agricultural practices. A consultant has been retained to assist in this effort by analyzing the environmental issues associated with palm oil sourcing, developing a recommended policy option and working with local stakeholders and a national environmental group to secure their endorsement and support. The biofuels sourcing strategy being developed will be applicable to all biofuels purchased by HECO's next generating unit at Campbell Industrial Park (see the HECO IRP-3 2007 Evaluation Report filed in Docket No. 03-0253 on May 31, 2007, for descriptions of this biofuel usage at the HECO utiltities).

Grid Code Review –As detailed in the HECO IRP-3 2007 Evaluation Report filed in Docket No. 03-0253 on May 31, 2007, HECO is targeting issuance of a Solicitation of Interest on or about September, 2007, announcing HECO's intent to proceed with a 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. The grid code review provides grid code or performance standards information that other utilities in the world have employed with varying

levels of success in their effort to integrate and address the impacts of a limited penetration of commercial wind farm operations on their systems.

While there does not appear to be any system with strong similarities to the Hawaii systems in terms of the combination of size, isolation and resource mix for which a detailed set of technical requirements for the integration of wind generation has been developed, some of the technical issues addressed by certain other utilities are still relevant to HECO. Accordingly, the information from this review will provide some guidance for HECO engineers in developing performance standards for the integration of wind and other intermittent resources on the HECO grid. Once developed, these performance standards will be incorporated in the aforementioned RFP for 100 MW of non-firm renewable energy.

CA-IR-454

Ref: HECO T-13, pages 9 to 12 (R&D Long-Term Strategies).

Based on the referenced testimony, it appears that the Electric System Analysis Study will generally focus on the effect of wind and photovoltaic resources on MECO's grid. Please provide the following information:

a. Please confirm that above summary is accurate. If this cannot be confirmed, please explain.

b. For each utility (i.e., HECO, MECO and HELCO), please provide the following comparative information, separately showing utility owned and third-party owned resources:

   1. current megawatts of wind energy;

   2. current megawatts of photovoltaic sources; and

   3. total generating capacity available for system dispatch.

c. Referring to part (b) above, please provide comparative information showing the planned or anticipated megawatt additions of wind energy and photovoltaic sources in 2007 through 2010 for each utility, if available.

HECO Response:

a. As noted on page 10 of Mr. Tamashiro's (T-13) testimony, the primary objective of this study is to address the integration of renewable energy resources on the Company's electrical grid. MECO is the subject of the analysis due to the presence of a large wind farm on Maui and MECO's challenges in integrating it onto its grid. HECO customers will benefit from the Electrical System Analysis since renewable energy projects are proposed on each island, including Oahu. However, the statement of work for this study is still being finalized, as is addressed in the response to CA-IR-453. Given the current and future penetration levels of wind, and the operational challenges associated with integrating wind on small, island grid systems, the primary focus of the study is envisioned to be wind resources. Although the current penetration of photovoltaics is small, the amount of photovoltaics is likely to increase

in the future and will therefore be included in the study. See CA-IR-453 for project status and update.

b. Data as of June 30, 2007, in response to items 1 and 2 are provided in the table below. The amounts provided in the table for photovoltaic (PV) systems are estimates of net-metered PV systems and non-net-metered PV systems known to the utilities. There may be other on- and off-grid PV systems in operation that are not reflected in the table.

	Utility (Current)	Non-Utility (Current)	Total (Current)
HECO Wind	0 MW	0 MW	0 MW
HECO PV	0 MW	0.69 MW	0.69 MW
HELCO Wind	2.3 MW	31.1 MW	33.4 MW
HELCO PV	0.04 MW	1.44 MW	1.48 MW
Maui Wind	0 MW	30 MW	30 MW
Maui PV	0 MW	0.42 MW	0.42 MW
Lanai Wind	0 MW	0 MW	0 MW
Lanai PV	0 MW	0.01 MW	0.01 MW
Molokai Wind	0 MW	0 MW	0 MW
Molokai PV	0 MW	0.03 MW	0.03 MW

3. The firm capacity from utility and non-utility generating units at HECO, HELCO, and MECO, as of June 30, 2007, is provided in the table below. The amount of firm capacity that is available for dispatch will depend on: (1) whether or not a unit is fully dispatchable (i.e., not a fixed dispatch unit); and (2) whether or not a unit is available (i.e., not out of service for maintenance). The generating capacity available for

dispatch will vary from week to week and from minute to minute. For example, one or more utility or non-utility generating units could be unavailable due to a planned maintenance, or forced outages. These generating units would not be available for system dispatch. Further, certain non-utility generating units such as H-POWER (Oahu), PGV (Hawaii), and HC&S (Maui) are typically operated as fixed dispatch resources (i.e., not available for dispatch).

	Firm Capacity	Reference (recent rate-making proceedings)
HECO	1648.6 MW (Net)	Docket 2006-0386, CA-IR-214 pages 58-59
HELCO	271.8 MW (Net)	Docket 05-0315, HELCO-RWP-404 page 95
Maui	248.2 MW (Net)	Docket 2006-0387, MECO-WP-404 page 85
Lanai	10.4 MW (Gross)	Docket 2006-0387, MECO-WP-404 page 86
Molokai	15.2 MW (Gross)	Docket 2006-0387, MECO-WP-404 page 87

c. Anticipated wind and PV resources in the period 2007 through 2010 are shown below.

	Utility (Additions)	Non-Utility (Additions)	Total (Additions)
HECO Wind	0 MW	Not Available at This Time	Not Available at This Time
HECO PV	0.167 MW	Not Available at This Time	Not Available at This Time
HELCO Wind	0 MW	Not Available at This Time	Not Available at This Time
HELCO PV	To Be Determined	Not Available at This Time	Not Available at This Time
Maui Wind	0 MW	Not Available at This Time	Not Available at This Time
Maui PV	To Be Determined	Not Available at This Time	Not Available at This Time
Lanai Wind	0 MW	Not Available at This Time	Not Available at This Time

	Utility (Additions)	Non-Utility (Additions)	Total (Additions)
Lanai PV	To Be Determined	Not Available at This Time	Not Available at This Time
Molokai Wind	0 MW	Not Available at This Time	Not Available at This Time
Molokai PV	To Be Determined	Not Available at This Time	Not Available at This Time

HECO, HELCO and MECO IRP-3 reports and action plans reflect wind and solar projects to be undertaken in the future. HECO is also targeting release of a Request For Proposal (RFP), for up to 100 MW of intermittent renewable resources by year end 2007, but, at this time, cannot determine what project(s) will be selected. HECO also is continuing the negotiations process with developers of proposed wind farms that were grandfathered from the competitive bidding process. Addressing system issues in the performance standards and other provisions incorporated in new power purchase agreements will help HECO maximize the amount of as-available renewable energy that can be integrated into its system without undue system impacts. See section 4.2.5 of HECO's IRP-3 Evaluation Report filed May 31, 2007 in Docket No. 03-0253.

For PV resources in the 2007-2010 timeframe, HECO is planning the installation of a nominal 167 kW PV system[1] at its Ward Avenue complex by a third-party in response to HECO's RFP issued in March 2007. The purchase power agreement and the lease of the space for the PV equipment will be subject to PUC approval. For HELCO and MECO, the specific amount of PV systems to be installed in the 2007-2010 timeframe is undetermined at this time.

[1] The testimony of Mr. Ching in T-5, pages 22 and 23, indicated that the PV system at HECO's Ward Avenue complex would be 155 kW. Based on a proposal by the system developer, the updated estimated DC rating of the PV system is 167 kW.

CA-IR-455

Ref: HECO T-13, page 11 (R&D Long-Term Strategies).

According to the referenced testimony, MECO's share of the cost of the Electric System Analysis Study is "in-kind as the technical lead, coordinating and collaborating with consultants and utility engineers in the various work activities. In addition, MECO personnel will be collecting and disseminating a multitude of data requirements for this study." Please provide the following information:

a. Please explain how MECO's "in-kind" cost sharing arrangement was determined.

b. Referring to part (a) above, did HECO and MECO seek to place a value on MECO's "in-kind" costs in order to conclude that such an approach resulted in an equitable sharing of costs between HECO and MECO? Please explain.

   1. If so, please provide such quantifications, including labor and non-labor costs.

   2. If not, please explain why such a determination was not undertaken.

c. Are any HECO employees or consultants engaged (or expected to be engaged) in coordinating and collaborating with consultants and utility engineers and/or collecting and disseminating data for the study? Please explain.

   1. Please provide HECO's best estimate of such labor and non-labor costs throughout the duration of the Study.

   2. Were the costs identified in response to part (c)(1) above considered in developing the HECO/MECO cost sharing agreement? Please explain.

   3. Please provide the amount of such costs identified in part (c)(1) above that have been included in the 2007 test year O&M forecast.

d. Please explain why HELCO has not been included for participating in the cost of this Study.

HECO Response:

a. As mentioned in CA-IR-453, HECO, MECO and HELCO are working on a U.S Department of Energy ("USDOE") funded project on the Big Island called the "Hawaii Energy Roadmap" project. In this project, HELCO is taking the technical lead, coordinating and collaborating with consultants and utility engineers in the various work activities as well as

collecting and disseminating a multitude of data requirements. It is envisioned that MECO engineers will have a similar role for the Maui study.

b. No. HECO and MECO did not seek to place a value on MECO's "in-kind" costs in order to conclude that such an approach resulted in an equitable sharing of costs between HECO and MECO. HECO and MECO used the Hawaii Energy Roadmap study as a model, in which HECO and MECO serve as participants in the review of various work products, while HELCO takes the technical lead, coordinating and collaborating with consultants and utility engineers in the various work activities as well as collecting and disseminating a multitude of data requirements.

c. No. As with the Hawaii Energy Roadmap study, HECO envisions a similar process for the Electrical System Analysis Study on Maui. MECO engineers would coordinate and collaborate with consultants and utility engineers in collecting and disseminating data for the study.

   1. HECO has not budgeted any specific labor hours to the Electrical System Analysis Study on Maui. HECO engineers, to the extent utilized, would primarily be involved with periodic progress updates and the technical reviews of the information being developed. HECO's labor charges, if any, will be billed back to MECO.

   2. See response to part c.1. above.

   3. See response to part c.1. above.

d. As discussed earlier, HELCO is already participating in a similar project, the Hawaii Energy Roadmap project.

CA-IR-456

Ref: HECO T-13, pages 12 to 15 (R&D New Technology & AMI).

Of the $527,000 estimate to develop and demonstrate new technology, about $416,000 relates to the 2007 estimated cost of the Company's three-year Advanced Metering Infrastructure ("AMI") project. Please provide the following information:

a. Please provide a breakdown of the $1.7 million cost of this three-year project by year.

b. Please provide an update of when the AMI study actually commenced and the planned completion date.

c. Has the scheduling of this project been delayed since it was originally planned? Please explain the reason for and basis of any material delays in the project time line.

d. Have any of the AMI pilot projects been formally presented to or approved by the Commission? Please explain.

HECO Response:

a. The information request erroneously states that $416,000 relates to the 2007 estimated cost of the AMI project. Page 12 of HECO T-13 states that the AMI project "comprises approximately $516,000 of the test year estimate…" Please note, the 2007 Test Year Develop and Demonstrate New Technology estimate was increased by $120,000 in the June 2007 Update for the Critical Peak Pricing and Real Time Rebate pilot project and the development of FlexNet-enabled load control receivers ("LCRs"), which are discussed in responses to CA-IR-459 and CA-IR-460. The timing of the R&D expenditures for the Critical Peak Pricing and Real Time Rebate pilot project and the development of the LCRs are not dependent upon any future timing of, and are separate from, the AMI R&D pilot projects since two additional Sensus Tower Gateway Basestations ("TGBs") to extend coverage of the FlexNet system into Windward and East Oahu appear to be on schedule for installation in and around August 2007.

See Attachment 1 for the breakdown of the AMI pilot project. The AMI R&D study is no longer a three-year limited program. There are other elements of the AMI project that will continue beyond the 2008 time frame.

b. The development and demonstration of new Advanced Meter Infrastructure ("AMI") technology is a continuation of the Company's 2005 research and development project, "New Communications Technology for Advanced Meter and Customer Outage Detection Study" which was completed in 2006. The AMI RD&D study commenced with the execution of the AMI Pilot Program Agreement with Sensus dated August 1, 2006. The AMI RD&D study is intended to address the AMI project objectives identified in HECO T-13, pages 12-15, through multiple phases of pilot utility applications over multiple years extending through 2008 as noted above in response to item a.

c. Yes. The AMI RD&D program is a gated process of development and demonstration, through field pilots, of the Sensus FlexNet two-way communication advanced metering solutions for automated meter reading, dynamic pricing and demand response utility applications. The gated process allows for incremental evaluation of hardware technologies and software systems in the context of pilot scale utility applications to identify the trade-offs and operational savings potential of advanced metering. The near-term objective is to evaluate and demonstrate the Meter Data Management System ("MDMS") software integration efforts required to interface with the existing/future Customer Information System ("CIS") first before considering the more complex integration interfaces for the Outage Management System ("OMS"). HECO originally contemplated conducting a pilot back-end MDMS to enable the evaluation of meter data integration efforts with the CIS and OMS. Given the nearer-term objective to demonstrate the automated meter reading, dynamic

pricing and demand response utility applications, HECO will be pursuing the AMI pre-deployment planning and MDMS requirements and specifications, MDMS assessment and vendor/contractor evaluations beginning in the latter half of 2007. Preliminary discussions are also underway with MDMS vendors/contractors to determine the feasibility of pursuing a small scale MDMS pilot project in the 2007 to 2008 time frame as part of the overall AMI pre-deployment plan.

d. No. None of the past or proposed AMI pilot projects require Commission approval.

Hawaiian Electric Company, Inc.
AMI R&D Pilot Costs
Test Year 2007 Estimate ($ In Thousands)

NARUC	Total	Recorded 2006	Test Year 2007	Estimated 2008	Estimated 2009
9302 - Labor	301	79	133	45	44
9302 - Nonlabor	1,385	66	383	786	150
Total	1,686	146	516	831	194

CA-IR-457

Ref: HECO Response to CA-IR-182 (R&D & BPL).

Referring to part (a) of the response to CA-IR-182, HECO indicated that while the results of the small scale Broadband over Power Lines ("BPL") pilot was successful, the Company continued to evaluate other options that may be more cost-effective in similar applications, such as wireless technology. Please provide the following information:

a. Has HECO abandoned the potential application of BPL technology? Please explain.

b. Are any further trials of the BPL technology currently planned or anticipated by HECO, or any affiliate companies? Please explain.

c. Did HECO retain any rights to the use of the BPL technology (i.e., via the pilot project) that could result in potential value from third-parties? Please explain.

HECO Response:

a. After evaluating the BPL business case and considering alternative wireless technologies, HECO has decided to pursue other more cost-effective wireless technologies that provide many of the same utility application benefits as higher speed BPL.

b. There are no further trials of the BPL technology currently planned or anticipated by HECO, or any affiliate companies.

c. As HECO only had a non-transferable and non-exclusive license to the BPL technology, HECO does not have any intellectual property rights to the BPL technology itself.

CA-IR-458

Ref: HECO Response to CA-IR-182 (R&D & BPL).

In response to part (e) of CA-IR-182, the Company indicated that it would seek recovery of $62,000 of decommissioning costs for the BPL pilot project at the next opportunity. Please provide the following:

a. When did HECO decide to decommission the BPL project? Please explain.

b. Is the amount HECO will seek to recover (i.e., $62,000) expected to be spent solely for decommissioning activities of the BPL project? Please explain.

c. Please describe what decommissioning activities for the BPL project will entail.

d. Why should the cost of decommissioning BPL project activities be included in test year expense? Please explain.

HECO Response:

a. HECO decided to decommission the BPL project in late 2006, after completing its small-scale pilot project that focused on using BPL technology for utility applications such as automatic meter reading.

b. Although HECO will incur approximately $62,000 of decommissioning costs in 2007, HECO does not plan to include these costs in the 2007 test year expenses.

c. BPL decommissioning activities entail the removal of all BPL bridges, BPL backhauls, BPL repeaters, and fiber optic infrastructure that was required for the pilot and installed on HECO's poles throughout the pilot site. Decommissioning activities also include the removal of all BPL equipment and low voltage support infrastructure previously installed at HECO's McCully substation to support BPL communications at the site.

d. Please see the response to part b. above.

CA-IR-459

Ref: HECO Response to CA-IR-182 (R&D – CPP & PTR).

In partial response to part (a) of CA-IR-182, HECO expressed its intent to pursue an additional R&D pilot program in late 2007 to evaluate Critical Peak Pricing ("CPP") and Peak Time Rebates ("PTR"). CPP is described as a tariff based program while PTR is a demand-side measure. HECO T-13 has included $120,000 in the June 2007 Update for these items. Please provide the following:

a. In direct testimony, did HECO submit tariffs that specifically proposed enabling tariffs for the time-of-use pricing envisioned by CPP? Please explain.

b. Has HECO previously sought Commission approval of the CPP pilot? Please explain.

c. In direct testimony, did HECO specifically propose the introduction of PTR as a new demand-side management program? Please explain.

d. Has HECO previously sought Commission approval of the PTR pilot as a new demand-side management program? Please explain.

HECO Response:

a. No. The R&D efforts currently being undertaken by HECO to design, develop, and evaluate a CPP/PTR pilot program have not been completed. HECO could not submit tariffs for the CPP pilot or submit a DSM program application for the PTR pilot program in direct testimony without completing the design and development effort. However, once those efforts are completed later this year, HECO intends to request approval from the Commission to proceed with the pilot, and will include the appropriate tariffs and program application in the filing.

b. No. Please see part a. above.

c. No. Please see part a. above.

d. No. Please see part a. above.

CA-IR-460

Ref: HECO Response to CA-IR-182 (R&D – CPP & PTR).

In partial response to part (a) of CA-IR-182, HECO indicated that it would seek recovery of an additional $120,000 of CPP/PTR pilot R&D costs at the next opportunity. [HECO T-13 has included $120,000 in the June 2007 Update for these items.] The Company also indicated that both CPP and PTR require significant load profile information in order to bill and/or credit the rebate, since the periods of those pilot programs may be initiated are not fixed. Please provide the following:

a. When did HECO decide to pursue the CPP/PTR pilot R&D projects? Please explain.

b. During 2007, does HECO anticipate that it will only collect load profile information that can be used in subsequent stages of the pilot? Please explain.

c. Assuming the CPP/PTR pilot R&D projects are successful, when does HECO anticipate that customers might first be offered tariff based and load control programs. Please explain.

HECO Response:

a. HECO began pursuing the CPP/PTR pilot R&D project in early 2007. The timing of the CPP/PTR pilot effort is related to HECO's AMI research, development, and demonstration gated process through field pilots of the Sensus FlexNet two-way communication advanced metering solutions for automated meter reading, dynamic pricing and demand response utility applications. The first step in the AMI process entailed the successful deployment (pilot) of 500 (minimum) residential wireless meters across the Oahu service area in the latter half of 2006 as described in HECO's response to CA-IR-182. Given the technical success of this first step, HECO expanded its AMI pilot project agreement with Sensus, dated January 9, 2007 (Attachment 1-D, of HECO's response to part b. of CA-IR-182, Revised 6/12/07), to deploy AMI over an expanded coverage area, to include the Ocean Pointe subdivision, with the primary objective of demonstrating the requirements for automated meter reading, as described in HECO's response to part a. of CA-IR-182,

Revised 6/12/07, page 2. With the installation of the approximately 3,000 FlexNet-enabled meters, the Company saw an opportunity to evaluate the use of the meters and the FlexNet data collection system as a basis for exploring demand response in the form of CPP and PTR. The presence of an operational data collection system facilitates CPP and PTR by providing customer profile information necessary to bill under these programs.

In preparation for the CPP/PTR pilot HECO recently signed an agreement with Sensus Metering Systems effective July 1, 2007, to increase the geographic area covered by the FlexNet system to include Windward and East Oahu. This involves the deployment of two additional Sensus Tower Gateway Basestations (TGBs). The wider coverage of the FlexNet system to most of the island of Oahu will enable HECO to gather baseline residential use profile information both within Ocean Pointe and outside the subdivision in advance of the CPP/PTR pilot. Furthermore, should the Commission approve the CPP/PTR pilot, the wider FlexNet coverage will allow geographic participation in the pilot that more closely represents the population on Oahu. This would facilitate a statistically more robust extrapolation of the pilot study results to projections of impacts that would result from the possible island-wide implementation of CPP/PTR.

The CPP/PTR pilot consists of several phases, of which only phase 1 is classified as R&D. Those phases are:

1. Design and develop a plan for the implementation of a CPP/PRT pilot ($60,000 of R&D expense);
2. Complete and file the CPP pilot tariff and PTR DSM program application with the Commission;
3. Implement the pilot (recruit participants, install controllable thermostats,

modify the billing system, initiate CPP/PTR events, collect profile data, bill participants, etc.) following Commission approval; and

4. Analyze and evaluate pilot results to determine the potential for full island wide deployment.

The $60,000 of R&D expense for the development of a prototype load control receiver (LCR) that can communicate with the FlexNet system was included in HECO's R&D budget around the same time as the development of CPP/PTR pilot program, but should be considered separately from the CPP/PTR pilot. HECO's response to CA-IR-182, Attachment 4, Revised 6/12/07, implies that it is part of the CPP/PTR pilot. In fact, the development of the prototype LCR is intended to be conducted independently of the CPP/PTR pilot. The primary purpose of developing the FlexNet prototype LCR is to examine the technical feasibility of such a device for use in HECO's load management programs (e.g., to enable the Company to turn off residential water heaters when the utility anticipates having difficulty meeting the demand). A secondary purpose of the R&D expense is to initiate the introduction into the market of energy saving/demand response-enabling technologies that are capable of two-way communications through the FlexNet system. HECO currently communicates with the LCRs used in the RDLC and CIDLC Programs with one-way paging communications.

At this time, the vendor of the FlexNet system and the vendor of the LCRs that HECO uses in its two load management programs are negotiating the exchange of information that would permit the development of the prototype to proceed.

b. The load profile information collected in 2007 will be used not only for subsequent stages of the pilot, but will also be used to understand how energy use of residential customers with

central air conditioning differs from the energy use of residential customers without central air conditioning. This information may be useful in sales and demand forecasting as well as for the development of potential DSM programs that target the residential customer class.

c. The CPP/PTR pilot is expected to be completed by the end of 2008 after one full year of implementation. Should the pilot program prove to be successful, it is expected that an application to the Commission to proceed with full deployment in the residential sector might be completed by the latter half of 2009, with possible implementation sometime in 2010, contingent on the timing of a wider-scale deployment of AMI meters and the status of the back-end Meter Data Management System ("MDMS") software integration effort.

CA-IR-461

Ref: HECO-1304, page 2 (EPRI Allocation).

The EPRI allocation factors are set forth in Note (3), which also identifies specific dockets for HECO, HELCO and MECO and unidentified values from which the allocation factors are derived. Please provide the following:

a. Please explain the reference to the three rate case dockets.

b. What do the unidentified values represent (e.g., revenues, expenses, etc.)? Please explain.

c. Referring to part (b) above, please explain the theory underlying the methodology used to apportion EPRI costs between the three utility operations.

d. Using calendar year 2006, please provide comparable actual data (e.g., separate revenue data for HECO, HELCO and MECO) related to the allocation methodology identified in response to part (c) above.

HECO Response:

a. The references, specified in Note (3) of HECO-1304, page 2, refer to the decisions in the last rate case dockets for HECO, HELCO and MECO, for which there were final decisions.

b. The values used as the basis for the allocation represent the Commission-approved research and development ("R&D") test year estimates within NARUC Account 9302 of HECO's, HELCO's and MECO's respective rate cases.

c. Since HELCO and MECO also benefit from being members of EPRI, for similar reasons as discussed in HECO T-13, pages 6-9, the total EPRI membership fees are allocated among the three companies. The fee allocation is based on each Company's Commission-approved R&D test year estimates, within NARUC Account 9302, as a percentage of the sum of these estimates.

d. The Company's methodology incorporates annual EPRI allocated dues for each utility. Therefore, the methodology, based on 2006 recorded R&D expenses, would not result in an

equitable distribution of EPRI costs since HECO and MECO were not members of EPRI in 2006. As discussed in HECO T-13, pages 6-7, HECO was not an EPRI member due to budgetary constraints and a loss of flexibility in the use of EPRI unallocated funds, under the previous EPRI agreement. If 2005 total R&D recorded expenses were used as the basis for the allocation, the allocation percentages (with the test year percentages provided for comparison) would be as follows:

	Allocation Based on 2005 Recorded R&D Costs		2007 TY
HECO	$ 3,219,000	83.57%	77.09%
MECO	389,000	10.10%	12.25%
HELCO	244,000	6.33%	10.66%
Total	$ 3,852,000	100.00%	100.00%

CA-IR-462

Ref: HECO T-13 June 2007 Update, page 8 (R&D Long-Term Strategies).

Note (3) of page 8 of the June 2007 Update indicates that the cost of the Electric System Analysis Study has been increased by $53,000 to consider the vendor's actual proposed cost. Please provide the following:

a. Referring to the HECO T-13 response to CA-IR-2, Attachment 1, Revised page 1, please explain how adding $53,000 to the amount included in the original test year forecast results in the vendor proposed amount, as set forth on Confidential Attachment 5-A to the response of HECO T-13 to CA-IR-2.

b. Referring to part (a) above, please show all calculations.

HECO Response:

a. As mentioned in HECO T-13, page 9, HECO's 2007 test year estimate for R&D long-term strategies is $456,000, of which $443,000 represented the estimated costs of the Electrical System Analysis. The $443,000 estimated cost of the Electrical System Analysis study was a preliminary estimate. The vendor's actual proposed confidential bid, filed under protective order Attachment 5-A to HECO's response to HECO T-13 CA-IR-2, to do the study is $495,979, which is approximately $53,000 higher than the original 2007 test year estimate.

b. See response to part a. above.

CA-IR-463

Ref: HECO T-13 Response to CA-IR-2 (RE & Biomass Initiatives).

Referring to Attachment 7, page 1, the referenced response identifies RE Initiative (monitoring, assessment and EIS) and Biomass Initiative (biofuels initiative with UH and others-seek federal monies) with test year amounts of $300,000 and $100,000, respectively. Please provide the following:

a. Are these amounts included in the 2007 test year forecast? Please explain.

b. Please provide a pinpoint reference to the appropriate witness testimony that discusses these initiatives. If none, please so state.

c. If the response to parts (a) and (b) above indicate that these initiatives are included in the test year forecast but are not discussed in direct testimony, please provide the following:

   1. Please describe the purpose and scope of each initiative.

   2. Please indicate the duration of each initiative, including the respective start and end dates.

   3. Please identify and describe any process changes or offerings expected to result from each initiative.

   4. When does the Company expect that ratepayers will realize any tangible benefits from each initiative? Please explain.

HECO Response:

a. Yes. See discussion of the RE and Biomass Initiatives in Dan Giovanni's testimony,

   HECO T-6, pages 71-74, in HECO-629, pages 5-10, and in the responses to CA-IR-80,

   CA-IR-245 and CA-IR-407.

b. See response to subpart a.

c. See response to subpart a.

CA-IR-464

Ref: HECO Response to CA-IR-382, Attachment 2, Note B (High Technology Development Corporation Lease).

a. Please state whether or not the lease has been terminated and the effective date of such termination.

b. Provide updated monthly actual rental income amounts for May and June 2007.

c. Explain why the Keawe space is/was believed to be needed for warehouse and yard utilitization.

HECO Response:

a. The lease has not been terminated. The Company had previously anticipated terminating the lease in April 2007. However, the lessee is currently working on projects with government agencies that would be adversely affected if they were required to vacate the premises at this time. The Company plans to reconsider the termination of the lease at such time that it may be done without significant detriment to all parties involved.

b. The monthly rent for May and June 2007 was $6,623.

c. As noted in HECO's response to item c of CA-IR-451, the Keawe space is needed to replace warehouse and yard space that was displaced due to the newly built Dispatch Center at the Ward Facility.

CA-IR-465

Ref: HECO Response to CA-IR-302 (Vacancies).

Referring to the table set forth on pages 3-6 of HECO's response to CA-IR-302, it appears that of the 101 position vacancies as of May 10, 2007, there were 30 vacant positions for which a JVR had not yet been received. Please provide the following:

a. Please confirm the accuracy of the above interpretation of the referenced table. If this cannot be confirmed, please explain.

b. Please update the referenced table as of June 30, 2007.

HECO Response:

a. HECO confirms that of the 101 position vacancies as of May 10, 2007, JVRs had not yet been received for 30 vacant positions as indicated in its response to CA-IR-302.

b. Please see pages 2 through 5 for the updated information as of June 30, 2007. All employee count information, number of vacant positions, and the vacant positions for which JVRs have not been received are identified by Department, RA and Employee Type (Full time, Part time, and Temporary).

Hawaiian Electric Company, Inc.
Actual Employee Count vs. 2007 EOY Test Year Employee Count
as of June 30, 2007

			ACTUAL EMPLOYEE COUNT										
			A	B	C	D	E	F	G	H	I	J	K
DEPARTMENT	DIVISION	RA	FULL TIME	PART TIME	TEMP†	TOTAL	UPDATED 2007 EOY TEST YEAR	MGMT TSFS	MANAGEMENT TRANSFERS[1]	CURRENT UPD 2007 EOY TEST YEAR (E + F)	DIFF (D - H)	JVR RECEIVED	JVR NOT YET RECEIVED
COMPENSATION AND BENEFITS	EMPL BENEFITS & HLTH SVCS	PFB	8	0	0	8	10			10	(2)	Employee Benefits Administrator (Filled start 7/9/07)	
												Benefits Analyst	
COMPENSATION AND BENEFITS	COMPENSATION	PFC	2	0	0	2	2			2			
COMPENSATION AND BENEFITS	DISABILITY MANAGEMENT	PPW	4	0	0	4	3			3	1	Director, Disability Management retired 7/3/07. Replacement started 5/28/07.	
INDUSTRIAL RELATIONS	ADMINISTRATION	PPA	3	0	0	3	3			3			
INDUSTRIAL RELATIONS	LABOR REL & WAGE ADMIN	PPI	5	0	0	5	6			6	(1)		Consultant (a)
SAFETY, SECURITY & FACILITIES	CORPORATE SAFETY	PFS	11	0	0	11	12			12	(1)	OCC Health & Safety Specialist (Filled start 7/2/07)	
SAFETY, SECURITY & FACILITIES	ADMINISTRATION	PHA	2	0	0	2	2			2			
SAFETY, SECURITY & FACILITIES	FACILITIES OPERATIONS	PHB	14	0	0	14	15			15	(1)		Custodian (b)
SAFETY, SECURITY & FACILITIES	FACILITIES PLANNING	PHF	8	0	0	8	8			8			
SAFETY, SECURITY & FACILITIES	SECURITY	PHS	7	0	0	7	10			10	(3)		Security Coordinator (b)
													Security Coordinator (b)
													Security Officer (b)
VP CORPORATE EXCELLENCE	VP CORPORATE EXCELLENCE	P6V	2	0	0	2	2			2			
WORKFORCE STAFFING & DEVELOP	ADMINISTRATION	PFA	4	0	0	4	4			4			
WORKFORCE STAFFING & DEVELOP	CLIENT SERVICES & CONSULTING	PFD	9	0	0	9	10			10	(1)	Analyst	
WORKFORCE STAFFING & DEVELOP	ORGANIZ DEV & CONTIN IMPRVMT	PFI	3	0	0	3	3			3			
	CORPORATE EXCELLECE SUBTOTAL		**82**	**0**	**0**	**82**	**90**			**90**	**(8)**		
CORPORATE COMMUNICATIONS	CORPORATE COMMUNICATIONS	PQC	7	1	0	8	9			9	(1)	Director, Corporate Communications	
VP CORPORATE RELATIONS	VP CORPORATE RELATIONS	P1V	3	0	0	3	3			3			
	CORPORATE RELATIONS SUBTOTAL		**10**	**1**	**0**	**11**	**12**			**12**	**(1)**		
CUSTOMER TECH APPLICATIONS	CUSTOMER TECH APPLICATIONS	PSR	8	0	0	8	10			10	(2)	Sr. Technical Services Engineer	
												Clerk Typist III (Offered & Accepted)	
ENERGY SERVICES	ADMINISTRATION	PSA	3	0	0	3	3			3			
ENERGY SERVICES	CUSTOMER EFFICIENCY PROGRAM	PSD**	11	0	0	11	11			11			
ENERGY SERVICES	PRICING	PSP	4	0	0	4	5			5	(1)	Rate Analyst	
FORECASTS & RESEARCH	FORECASTS & RESEARCH	PSM**	10	0	0	10	10			10			
MARKETING SERVICES	MARKETING SERVICES	PSN	11	0	0	11	12			12	(1)	Account Manager	
VP CUSTOMER SOLUTIONS	CUSTOMER SOLUTIONS	P1W	2	0	0	2	2			2			
	CUSTOMER SOLUTIONS SUBTOTAL		**49**	**0**	**0**	**49**	**53**			**53**	**(4)**		
CONSTRUCTION & MAINTENANCE	ADMINISTRATION	PDA	5	0	0	5	6			6	(1)		Training Administrator (c)
CONSTRUCTION & MAINTENANCE	CONTROL SECTION	PDC	5	0	0	5	8	(2)	Move 2 positions to PDP	6	(1)		Clerk Typist III (c)
CONSTRUCTION & MAINTENANCE	FIELD OPERATION	PDF	22	0	0	22	22	1	Move 1 position from PDS	23	(1)	Supervisor	
CONSTRUCTION & MAINTENANCE	TRAINING SECTION	PDD*	8	0	0	8							
CONSTRUCTION & MAINTENANCE	WEST OVERHEAD	PDJ*	43	0	0	43							
CONSTRUCTION & MAINTENANCE	EAST OVERHEAD-KOOLAU	PDK*	27	0	0	27							
CONSTRUCTION & MAINTENANCE	EAST OVERHEAD-WARD	PDL*	40	0	0	40							
CONSTRUCTION & MAINTENANCE	UNDERGROUND	PDU*	27	0	0	27							
CONSTRUCTION & MAINTENANCE	OPERATIONS	PDS*	12	0	0	12	170	(10)	Move 8 positions to PDP	160	(3)		Sr. Helper (d)
									Move 1 position to PDV				Sr. Helper (d)
									Move 1 position to PDF				Sr. Helper (d)
CONSTRUCTION & MAINTENANCE	PLANNING	PDP	23	0	0	23	13	10	Move 8 positions from PDS	23			
									Move 2 positions from PDC				
CONSTRUCTION & MAINTENANCE	VEGETATION MANAGEMENT	PDV	2	0	0	2	1	1	Move 1 position from PDS	2			
ENGINEERING	ADMINISTRATION	PBA	7	0	0	7	7			7			
ENGINEERING	T&D ENGINEERING	PBE	23	0	0	23	23			23			
ENGINEERING	PROJECT MANAGEMENT	PBP	10	0	0	10	7			7	3	Overstaffed for Beginning Engineer Program (Filled 6/12/07).	
												Overstaffed for Beginning Engineer Program (Filled 6/12/07).	
												Overstaffed for Beginning Engineer Program (Filled 6/12/07).	
ENGINEERING	STRUCTURAL	PBT	18	0	0	18	18			18			
ENGINEERING	SUBST,PROTECTION&TELECOM	PBY	23	0	0	23	22			22	1	Lead Engineer retiring 8/1/07. Replacement started 3/5/07.	
ENGINEERING	T&D TECHNICAL SERVICES	PBZ	8	0	0	8	8			8			
SUPPORT SERVICES	ADMINISTRATION	PVA	5	0	0	5	5			5			
SUPPORT SERVICES	FLEET	PVF	23	0	0	23	25			25	(2)	Mechanic Helper	

Hawaiian Electric Company, Inc.
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as of June 30, 2007

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			A	B	C	D	E	F	G	H	I	J	K
DEPARTMENT	DIVISION	RA	FULL TIME	PART TIME	TEMP†	TOTAL	UPDATED 2007 EOY TEST YEAR	MGMT TSFS	MANAGEMENT TRANSFERS[1]	CURRENT UPD 2007 EOY TEST YEAR (E + F)	DIFF (D - H)	JVR RECEIVED	JVR NOT YET RECEIVED
												Tire Repairer	
SUPPORT SERVICES	ELECTRICAL & WELDING SERVICES	PVL	12	0	0	12	12			12			
SUPPORT SERVICES	MATERIALS MANAGEMENT	PVM	27	0	0	27	28			28	(1)	Director, Materials Management (Returning August 2007)	
SUPPORT SERVICES	PURCHASING	PVP	15	0	0	15	15			15			
SYSTEM OPERATION	ADMINISTRATION	PRA	7	0	0	7	7			7			
SYSTEM OPERATION	COMMUNICATIONS	PRC	8	0	0	8	8			8			
SYSTEM OPERATION	OPERATING DISPATCH	PRD	24	0	0	24	27			27	(3)	Trouble Dispatcher	
												Technical Trainer	
												Switching Coordinator	
SYSTEM OPERATION	OPERATING ENGINEERING	PRE	11	0	0	11	14			14	(3)	EFMS Technician	
												EFMS Technician	
												System Analyst	
SYSTEM OPERATION	INSTRUMENT & CONTROL	PRI	9	0	0	9	9			9			
SYSTEM OPERATION	RELAY	PRR	10	0	0	10	10			10			
SYSTEM OPERATION	SUBSTATION	PRS	37	0	0	37	39			39	(2)	Substation Operations Specialist	
												Substation Electrician	
SYSTEM OPERATION	CONSTRUCTION MANAGEMENT	PRX	3	0	0	3	3			3			
VP ENERGY DELIVERY	VP ENERGY DELIVERY	P2V	2	0	0	2	2			2			
	ENERGY DELIVERY SUBTOTAL		**496**	**0**	**0**	**496**	**509**			**509**	**(13)**		
FINANCIAL VICE PRESIDENT	FINANCIAL VICE PRESIDENT	P4V	4	0	0	4	4			4			
GENERAL ACCOUNTING	ADMINISTRATION	PAA	6	0	0	6	6			6			
GENERAL ACCOUNTING	CORPORATE ACCOUNTING	PAC	5	0	0	5	5			5			
GENERAL ACCOUNTING	COST ACCOUNTING	PAD	9	0	0	9	10			10	(1)	Accounting Clerk II (Filled start 7/23/07)	
GENERAL ACCOUNTING	PROPERTY ACCOUNTING	PAT	5	0	0	5	5			5			
INFO TECHNOLOGY & SVCS	ADMINISTRATION	PEA	2	0	0	2	2			2			
INFO TECHNOLOGY & SVCS	CUSTOMER CARE	PEC	25	0	0	25	23	2	Move 2 positions from PEI	25			
INFO TECHNOLOGY & SVCS	DEVELOPMENT SERVICES	PED	35	0	0	35	37			37	(2)	Development Analyst	
													Development Specialist (b)
INFO TECHNOLOGY & SVCS	INFRASTRUCTURE & OPERATIONS	PEI	22	0	0	22	24	(2)	Move 2 positions to PEC	22			
INFO TECHNOLOGY & SVCS	MAILING SERVICES	PEM	7	0	0	7	8			8	(1)	Mailing Services Coordinator	
MANAGEMENT ACCTG & FIN SVCS	ADMINISTRATION	PKB	4	0	0	4	4			4			
MANAGEMENT ACCTG & FIN SVCS	BUDGETS	PKC	7	0	0	7	7			7			
MANAGEMENT ACCTG & FIN SVCS	FINANCIAL ANALYSIS	PKF	3	0	0	3	3			3			
MANAGEMENT ACCTG & FIN SVCS	ERP ADMINISTRATION	PKM	3	0	0	3	3			3			
MANAGEMENT ACCTG & FIN SVCS	TREASURY	PKT	3	0	0	3	5			5	(2)	Treasury Associate	
												Treasury Analyst (Offered & Accepted)	
RISK MANAGEMENT	RISK MANAGEMENT	PKI	9	0	0	9	9			9			
	FINANCE SUBTOTAL		**149**	**0**	**0**	**149**	**155**			**155**	**(6)**		
LEGAL	LEGAL	PNC	12	0	0	12	11			11	1	Overstaff approved - Associate General Counsel filled 3/5/07	
LEGAL	LAND & RIGHTS OF WAY	PNL	5	0	0	5	5			5			
VP GENERAL COUNSEL	VP-GENERAL COUNSEL	P5V	2	0	0	2	2			2			
	GENERAL COUNSEL SUBTOTAL		**19**	**0**	**0**	**19**	**18**			**18**	**1**		
EDUCATION & CONSUMER AFFAIRS	EDUCATION & CONSUMER AFFAIRS	PQE	6	0	0	6	8			8	(2)	Education & Consumer Affairs Administrator	
												Clerk Typist III (Filled start 7/9/07)	
REGULATORY AFFAIRS	REGULATORY AFFAIRS	PNP	10	0	0	10	15			15	(5)	Regulatory Analyst II	Manager, Regulatory Affairs (e)
												Regulatory Analyst II	Director Position (Title to be developed) (e)
													Legal Assistant (e)
VP GOVT & COMMUNITY AFFAIRS	VP GOVT & COMMUNITY AFFAIRS	P3V	7	0	1	8	7			7	1	Temporarily filled by a HECO Temp until October 2007	
	GOVT & COMMUNITY AFFAIRS SUBTOTAL		**23**	**0**	**1**	**24**	**30**			**30**	**(6)**		
ENVIRONMENTAL	ADMINISTRATION	PJA	4	0	0	4	4			4			
ENVIRONMENTAL	AIR QUALITY & NOISE	PJB	4	0	0	4	6			6	(2)	Sr. Environmental Scientist	
												Principal, Environmental Scientist	
ENVIRONMENTAL	CHEMISTRY	PJC	5	0	0	5	6			6	(1)	Analytical Chemist	
ENVIRONMENTAL	WATER & HAZARDOUS MATERIAL	PJW	7	0	0	7	8			8	(1)		Environmental Scientist (f)
POWER SUPPLY ENGINEERING	ADMINISTRATION	PYA	3	0	0	3	3			3			
POWER SUPPLY ENGINEERING	SUPPORT STAFF	PYC	2	0	0	2	2			2			
POWER SUPPLY ENGINEERING	PS TECHNICAL SERVICES	PYE	8	0	0	8	9			9	(1)	Sr. Staff Engineer - Controls	

Hawaiian Electric Company, Inc.
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as of June 30, 2007

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DEPARTMENT	DIVISION	RA	FULL TIME	PART TIME	TEMP†	TOTAL	UPDATED 2007 EOY TEST YEAR	MGMT TSFS	MANAGEMENT TRANSFERS[1]	CURRENT UPD 2007 EOY TEST YEAR (E + F)	DIFF (D - H)	JVR RECEIVED	JVR NOT YET RECEIVED
POWER SUPPLY ENGINEERING	POWER PLANT ELECT ENGRG	PYF	10	0	0	10	12	(1)	Move 1 position to PYM	11	(1)	Engineer II - Electrical	
POWER SUPPLY ENGINEERING	POWER PLANT DRAFTING	PYG	2	0	0	2	2			2			
POWER SUPPLY ENGINEERING	POWER PLANT PROJECT MGT	PYJ	4	0	0	4	5	(1)	Move 1 position to PYM	4			
POWER SUPPLY ENGINEERING	POWR PLANT MECH ENGRG	PYM	13	0	0	13	12	2	Move 1 position from PYJ	14	(1)	Engineer II - Mechanical	
									Move 1 position from PYF				
POWER SUPPLY OPER & MAINT	O&M ADMINISTRATION	PIB[2]	9	0	0	9	9			9			
POWER SUPPLY OPER & MAINT	TRAINING	PID	2	0	0	2	3			3	(1)		Technical Trainer (e)
POWER SUPPLY OPER & MAINT	HONOLULU STATION OPERATIONS	PIH	25	0	0	25	27			27	(2)	Operator Trainee	
												Shift Supervisor	
POWER SUPPLY OPER & MAINT	KAHE STATION OPERATIONS	PIK	60	0	0	60	61			61	(1)	Operator Trainee	
POWER SUPPLY OPER & MAINT	KAHE STATION MAINTENANCE	PIL	29	0	0	29	33			33	(4)	Pipefitter Mechanic	
												Pipefitter Mechanic	
												Control Technician	
												Control Technician	
POWER SUPPLY OPER & MAINT	MAINTENANCE ADMINISTRATION	PIM	2	0	0	2	3			3	(1)		Rotating Equipment Specialist (e)
POWER SUPPLY OPER & MAINT	HONOLULU STATION MAINTENANCE	PIN	12	0	0	12	12	(1)	Move 1 position to PIP	11	1	Maintenance Planner/Supervisor retiring 7/20/07. Replacement started on 6/18/07.	
POWER SUPPLY OPER & MAINT	OPERATIONS ADMINISTRATION	PIO	2	0	0	2	2			2			
POWER SUPPLY OPER & MAINT	PLANNING AND ENGINEERING	PIP	21	0	0	21	24	1	Move 1 position from PIN	25	(4)	Resource Planner	
												Resource Planner	
												Predictive Maintenance Specialist	
												Predictive Maintenance Specialist	
POWER SUPPLY OPER & MAINT	TRAVELING MAINTENANCE	PIT	72	0	0	72	81			81	(9)	Mobile Crane & Equp Operator (Filled Start 7/23/07)	Condenser Cleaner (g)
												Pipefitter Mechanic	
												Control Technician	
												Welder	
												Welder	
												Insulator	
												Insulator	
												Machinist	
POWER SUPPLY OPER & MAINT	WAIAU STATION OPERATIONS	PIW	64	0	0	64	66			66	(2)	Operator Trainee	Operator Trainee (h)
POWER SUPPLY OPER & MAINT	WAIAU STATION MAINTENANCE	PIX	30	0	0	30	32			32	(2)	Control Technician	Maintenance Helper (g)
POWER SUPPLY SERVICES	SERVICES ADMINISTRATION	PIA	3	0	0	3	3			3			
POWER SUPPLY SERVICES	POWER PURCHASE	PIC	6	0	0	6	6			6			
POWER SUPPLY SERVICES	FUEL RESOURCES	PIF	2	0	0	2	4			4	(2)	Fuels Contract Administrator	
												Fuels Contract Administrator	
POWER SUPPLY SERVICES	FUEL INFRASTRUCTURE	PIJ[2]	1	0	0	1	3			3	(2)	Staff Engineer	
												Staff Engineer	
SYSTEM PLANNING	ADMINISTRATION	PXA	2	0	0	2	2			2			
SYSTEM PLANNING	GENERATION BIDDING	PXB[2]	1	0	0	1	3			3	(2)	Project Manager	
												Project Manager	
SYSTEM PLANNING	GENERATION PLANNING	PYB	9	0	0	9	9			9			
SYSTEM PLANNING	TRANSMISSION PLANNING	PYT	5	0	0	5	8			8	(3)	Lead Trans Plng Engineer	
												Lead Trans Plng Engineer	
												Transmission Plng Engineer	
VP POWER SUPPLY	VP POWER SUPPLY	P7V	2	0	0	2	2			2			
	POWER SUPPLY SUBTOTAL		**421**	**0**	**0**	**421**	**462**			**462**	**(41)**		
CORPORATE AUDIT & COMPLIANCE	INTERNAL AUDIT	PNA	7	0	0	7	8			8	(1)		Internal Auditor (i)
CORPORATE AUDIT & COMPLIANCE	ADMINISTRATION	PNX	3	0	0	3	4			4	(1)		Secretary (i)
PRESIDENTS OFFICE	PRESIDENTS OFFICE	P9P	3	0	0	3	3			3			
	PRESIDENT - HECO SUBTOTAL		**13**	**0**	**0**	**13**	**15**			**15**	**(2)**		
CUSTOMER INSTALLATION	ADMINISTRATION	PWA	12	0	0	12	12			12			
CUSTOMER INSTALLATION	PLANNING & DESIGN	PWP	21	0	0	21	27			27	(6)	Jr. Drafter	Jr. Drafter (c)
													Jr. Customer Planner (c)
													Jr. Customer Planner (c)
													Jr. Customer Planner (c)
													Customer Engineer (c)
CUSTOMER INSTALLATION	ENGINEERING & METER	PWX	11	0	0	11	14			14	(3)	Meter Engineer	Sr. Meter Electrician (c)
												Director, Advanced Meter Infrastructure (Filled Start 7/2/07)	

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DEPARTMENT	DIVISION	RA	FULL TIME	PART TIME	TEMP†	TOTAL	UPDATED 2007 EOY TEST YEAR	MGMT TSFS	MANAGEMENT TRANSFERS†	CURRENT UPD 2007 EOY TEST YEAR (E + F)	DIFF (D - H)	JVR RECEIVED	JVR NOT YET RECEIVED
ENERGY PROJECTS	ENERGY PROJECTS	PNG	9	0	0	9	9			9			
SR VP ENERGY SOLUTIONS	SR VP ENERGY SOLUTIONS	P9S	4	0	0	4	4			4			
TECHNOLOGY	TECHNOLOGY	PNR	2	0	1	3	3			3			
	SR VP ENERGY SOLUTIONS SUBTOTAL		**59**	**0**	**1**	**60**	**69**			**69**	**(9)**		
CUSTOMER SERVICE	ADMINISTRATION	PCA***	4	0	0	4	5			5	(1)		Operations Analyst (c)
CUSTOMER SERVICE	CUST ACCOUNTING & BILLING	PCB	6	0	0	6	6			6			
CUSTOMER SERVICE	CREDIT	PCD	5	0	0	5	5			5			
CUSTOMER SERVICE	CUSTOMER FIELD SERVICES	PCF***	4	0	1	5	5			5			
CUSTOMER SERVICE	FIELD SERVICE & COLLECTIONS	PCG***	26	0	0	26	26			26			
CUSTOMER SERVICE	CUSTOMER ASSISTANCE CENTER	PCH	31	0	0	31	30			30	1	Temporarily Overstaffed due to CIS Project	
CUSTOMER SERVICE	METER READING	PCM	34	0	2	36	34			34	2	Temporarily filled by a HECO Temp until December 2008	
												Temporarily filled by a HECO Temp until December 2008	
CUSTOMER SERVICE	PAYMT PROCESS & SUPPORT CTR	PCP	17	0	0	17	17			17			
CUSTOMER SERVICE	CUSTOMER ACCOUNT SERVICES	PCS	5	0	0	5	5			5			
SR VP OPERATIONS	SR VP OPERATIONS	P8V	2	0	0	2	2			2			
	SR VP OPERATIONS SUBTOTAL		**134**	**0**	**3**	**137**	**135**			**135**	**2**		
GOVERNMENTAL RELATIONS	GOVERNMENTAL RELATIONS	PNI	2	0	0	2	3			3	(1)	Director, Government Relations	
INTEGRATED RESOURCE PLNG	INTEGRATED RESOURCE PLANNING	PYP	5	0	0	5	6			6	(1)	Sr. Resource Planning Analyst	
SR VP PUBLIC AFFAIRS	SR VP PUBLIC AFFAIRS	P9V	3	0	0	3	3			3			
	SR VP PUBLIC AFFAIRS SUBTOTAL		**10**	**0**	**0**	**10**	**12**			**12**	**(2)**		
	COMPANY TOTAL		**1465**	**1**	**5**	**1471**	**1560**			**1560**	**(89)**		

N.1. Reflects current organizational structure as of 6/30/07.
N.2. Column D excludes 20 summer interns working in various departments.
N.3. See F.Chiogioji (T-14) June 2007 Update (revised 6/29/07) for Company Totals (columns E and H).
(a) JVR received; posted on 7/17/07
(b) Services contracted while department re-evaluates organization structure
(c) Organization structure under re-evaluation
(d) Deferred filling until October 2007
(e) Position description to be developed
(f) Newly added position
(g) JVR in process
(h) JVR received; posted on 7/12/07

(i) Organization structure, including the secretary 's position, is under re-evaluation due to the recent start of HEI Internal Auditor. David Kostecki joined HEI as Internal Auditor on July 15th, and will also serve as Internal Auditor for HECO and Senior Vice President, Internal Audit at ASB. Mr. Kostecki will report directly to the HEI, HECO and ASB Audit Committees and will report indirectly to the company Chief Executive Officer. The HECO and ASB Internal Audit departments will report directly to Mr. Kostecki. HECO will be billed for the hours Mr. Kostecki spends on HECO matters (and for an appropriate share of his secretarial cost) . (Mr. Kostecki most recently was a Principal at Accuity, LLP and previously worked with the international accounting firm PriceWaterhouseCoopers in Hawaii, Los Angeles, and Washington D.C. He is a Certified Public Accountant and has a Bachelor of Science in Business Administration and a Post-Baccalaureate degree in pre-medical studies from Georgetown University.)

CA-IR-466

Ref: HECO Response to CA-IR-305 (AFUDC/TCI "in CWIP").

Please provide the following:

a. Confirm that both AFUDC timing differences and TCI timing differences relate to CWIP investment that is not presently included in rate base (or explain the basis for any inability to confirm this statement).

b. Confirm that in HECO Docket No. 04-0113 and HELCO Docket 05-0315 both AFUDC and TCI deferred tax balances were removed from rate base (or explain the basis for any inability to confirm this statement).

c. Explain whether or not AFUDC is computed on a compounding basis, such that previously accrued AFUDC in a particular AFUDC-eligible work order is included in the base upon which subsequent months' AFUDC is accrued.

d. Explain whether or not the CWIP investment base, upon which AFUDC is accrued, has been reduced by deferred tax balances provided on (arising from) AFUDC timing differences, so that the net impact upon invested capital associated with AFUDC (gross AFUDC return less related tax deferrals) are recognized.

e. Explain whether or not the CWIP investment base, upon which AFUDC is accrued, has been increased by deferred tax balances provided on (arising from) TCI-related timing differences, so that the net impact upon invested capital associated with TCI (gross AFUDC return plus TCI-related tax deferrals) are recognized.

f. With respect to TCI, the response states at page 2, "The impact on invested capital is immediate, and therefore the related negative deferred income taxes should be an includable part of rate base as incurred." Please explain whether or not tax deferral associated with AFUDC does not have a comparable "impact on invested capital [that] is immediate", because of the non-taxable nature of AFUDC returns.

g. Explain all reasons why it is now believed that "TCI was incorrectly excluded from rate base" and why this "error" is now believed to exist, indicating the basis for not correcting what is now believed to be an "error" in recent HECO and HELCO rate cases.

h. Please confirm that HECO's Calculation of deductible test year Interest Expense for Use in Income Tax Expense Calculation at HECO-WP-1502 has been reduced for interest attributable to "AFUDC debt", effectively denying ratepayers the current tax deduction taken by the Company for interest paid to finance CWIP assets (or explain the basis for any inability to confirm this statement).

HECO Response:

a. Yes, the AFUDC and TCI are identified as relating to CWIP that is presently not included in rate base.

b. Yes, both AFUDC and TCI deferred tax balances were excluded from rate base.

c. Yes, AFUDC is compounded on a monthly basis.

d. The CWIP investment base has not been reduced by deferred tax balances provided on AFUDC timing differences because AFUDC in CWIP is calculated on a pretax basis, as required under SFAS 109. The related income tax effect is calculated separately as deferred income taxes, which ultimately impacts the invested capital associated with AFUDC.

e. The CWIP investment base, upon which AFUDC is accrued, has not been increased by deferred tax balances provided on the TCI-related timing differences because the latter is a difference imposed by the tax law and should have no effect on how the CWIP investment base is computed under financial accounting rules. However, the TCI tax rules impact (increase) the amount of income taxes currently paid by HECO, irrespective of whether the related costs are in CWIP. TCI is a tax phenomenon that increases current taxes immediately as incurred (i.e., the reduced interest deduction is taken as the asset is being constructed) and decreases taxes thereafter via tax depreciation. TCI does not impact the book and ratemaking calculations of income tax expense.

f. The tax deferral associated with AFUDC does not have an immediate impact on invested capital since AFUDC is a book phenomenon and is never recognized for income tax purposes. The fact that AFUDC increases book income in the period it is incurred and decreases book income as it is depreciated with the associated asset has no impact on the income taxes actually paid in those periods.

g. The rationale for the inclusion of the deferred income taxes associated with TCI is explained in the response to CA-IR-305 on page 2 of 5. The propriety of the inclusion in rate base of the deferred income taxes related to TCI was not discovered until the Company was working on the response to CA-IR-305 in this docket. Consequently, the Company did not take this position in HECO's prior rate case in Docket No. 04-0113 and in the recent HELCO rate case in Docket No. 05-0315.

To reiterate, the test year interest expense is, in part, not deductible for tax purposes. Section 263A of the Internal Revenue Code requires interest related to self-constructed assets to be deferred and depreciated over the tax life of the asset. The tax effect of this interest deduction deferral has an immediate impact on invested capital, irrespective of when the associated assets are placed into service. TCI is subsequently deducted through tax depreciation; however, there is no mechanism for recovering the cost of the funds used to pay the taxes on TCI incurred related to CWIP costs, except to include the related deferred income taxes in rate base. Thus, the deferred income taxes associated with all TCI recognized should be included in rate base.

h. Yes, the calculation of deductible interest expense has been reduced for interest attributable to AFUDC debt. The rationale for this adjustment is to reflect the appropriate book interest cost related to operations in the test year in the income tax calculation (versus tax deductible interest to determine current tax liability) and to match the tax effect of AFUDC debt in the period in which it is recognized through depreciation.

Ratepayers are not denied the current tax deduction taken for interest relating to AFUDC recognition. The financing costs of construction are embodied in the recognition of AFUDC for book and ratemaking purposes. As AFUDC is depreciated as part of an asset

for book and ratemaking purposes, the associated income tax benefit is recognized, matching the recovery of this deferred cost, including the debt portion of AFUDC. For ratemaking purposes, the Company reduces test year deductible interest for the interest attributable to AFUDC debt for the test year income tax calculation to prevent the duplication of the tax benefit associated with AFUDC debt and to properly match the tax effect with the period in which the AFUDC cost is recovered in rates.

CA-IR-467

Ref: Response to CA-IR-385 (Preferred Dividends Deduction).

According to this response, "The tax effect of this deduction has not been considered for ratemaking purposes and will be factored into our income tax calculation at the next opportunity." Please provide the following information:

a. Calculations supporting the actual deduction amounts taken on the two most recently filed income tax returns.

b. Calculations supporting the appropriate test year deduction amount.

HECO Response:

a. See page 2 of this response. The deduction of $66,463 was taken on the 2004 and 2005 consolidated income tax returns.

b. The deduction would also be $66,463 in test year 2007 as the dividends and the federal corporate income tax rate have not changed.

HAWAIIAN ELECTRIC CO., INC.
DIVIDEND DEDUCTION

		Reference
Total Series C dividends paid	127,500	HECO-1905
Percentage of Series C proceeds used to redeem Series A	60%	
Dividend on Series C	76,500	
Dividend on Series I	89,657	HECO-1905
Total Dividends	166,157	
14% / 35% as allowed under Sec. 247	40%	
Dividend Deduction Allowed	66,463	

CA-IR-468

Ref: HECO Response to CA-IR-384, Confidential page 4 (Actual Interest Expense).

Please provide the following:

a. Confirm that the amounts shown on page 4 are net of AFUDC debt and are comparable to the $30,586,532 on HECO-WP-1502, page 2 which has also been reduced for AFUDC debt (or explain the basis for any inability to confirm this statement).

b. Provide June actual data to update page 4 and provide additional monthly projected data by month through December 2007 for Accounts 427, 430 and 431.

c. Explain why no Interest on Debt Payable to Assoc. Co has been recognized in estimating test year deductible interest for income tax purposes, given the preparation of HECO ratemaking income tax expenses on a stand-alone basis.

d. Provide calculations and any additional information required to reconcile the monthly projected income statement interest expense, per your response to part (b) of this information request to the proposed Net Interest Expense on HECO-WP-1502, page 2, as proposed for ratemaking income tax purposes.

e. Explain all reasons why the test year projected interest expense for ratemaking purposes on HECO-WP-1502 appears to be much lower than recorded to-date 2007 interest expense (if annualized at 12/5 months) and why the test year estimate is reasonable at such levels.

HECO Response:

a. The amounts on CA-IR-384, page 4 are not net of AFUDC Debt. Therefore, it is not comparable to the $30,586,532 on HECO-WP-1502, page 2.

b. See page 3 of this response. Page 3 contains confidential financial information, and will be submitted pursuant to Amended Protective Order No. 23378, dated June 4, 2007.

c. Interest on Debt Payable to Assoc. Co includes interest payable to HELCO, MECO, and HECO Capital Trust III. Interest payable to HECO Capital Trust III (or hybrid securities) of $2,050,516 (see CA-IR-384, page 3 and page 5 of this response) is included in deductible interest for income tax calculation for ratemaking purposes. Interest payable to HELCO and MECO is netted with interest receivable from HELCO and MECO. The intercompany

borrowings between HECO and its subsidiaries (i.e. HELCO and MECO) are factored into the calculation of HECO's short-term borrowing balance (see HECO-WP-1902, page 1), which is used to calculate the interest expense on short-term debt for the Test Year 2007.

d. See pages 4-6 of this response. Interest expense for the income tax calculation for ratemaking purposes includes amortization of debt discount and amortization of investment income differential. The amortization of debt discount and expenses is recorded to account #428. The investment income differential amortization is recorded to #403. Both account #428 and #403 are not included in part (b) above, but are included in net interest expense on HECO-WP-1502, page 2.

e. As discussed above, the differences between test year projected interest expense for the income tax calculation for ratemaking purposes and recorded interest expense are:

1. Recorded interest expense does not include a reduction for AFUDC Debt.
2. Recorded interest expense includes interest expense on RAR, Keyman Insurance, and Customer Deposits that are not included in interest expense for ratemaking purposes.
3. Amortization expense is not included in recorded interest expense, but is included in interest expense for ratemaking purposes.

The test year estimate of $30,613,524 (CA-IR-387, page 5) is reasonable and consistent with our cost of capital.

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

HAWAIIAN ELECTRIC CO., INC.
INTEREST EXPENSE RECONCILIATION
TEST YEAR 2007

Interest Expense per page 3		-	
Actual Jan - June interest amounts not included in income tax calculation:			
43002000	Interest Assoc Co - MECO	(45,452.92)	
43102000	Other Interest Expense - RAR	(172,967.04)	
43103000	Interest Expense - Keyman Insurance	(333,376.50)	
43105000	Other Interest Expense - Customer Deposits	(193,678.25)	
Adjustments not included in page 3:			
428	Amortization of Debt Discount and Expense	1,491,720.00	
403030	Depr Exp - Amortization Investment Income Differential	217,919.00	
42107000	Equity in HECO Capital Trust III	(100,516.00)	
42003000	AFUDC Debt	(2,661,026.00)	
	Change in direct and forecast	(212,448.00)	
Total Interest Expense for Test Year 2007 (See pages 5 and 6)		(2,009,825.71)	CA-IR-387, page 5

HAWAIIAN ELECTRIC CO., INC.
DETAIL OF INTEREST EXPENSE

Account #		Description	Direct TY 2007	Reference
427		Interest on Long Term Debt		
	42710000	Interest Expense - 93A RB	2,725,000	HECO-1903, Column C
	42712000	Interest Expense - 96A RB	2,976,000	HECO-1903, Column C
	42713000	Interest Expense - 96B RB	822,500	HECO-1903, Column C
	42714000	Interest Expense - 97A RB	2,825,000	HECO-1903, Column C
	42716000	Interest Expense - 98A RB	2,107,710	HECO-1903, Column C
	42719000	Interest Expense - Ref 99B RB	1,725,000	HECO-1903, Column C
	42720000	Interest Expense - 99C RB	2,170,000	HECO-1903, Column C
	42721000	Interest Expense - Ref 99D RB	984,000	HECO-1903, Column C
	42722000	Interest Expense - Ref 2000 RB	2,622,000	HECO-1903, Column C
	42725000	Interest Expense - 2002A RB	2,039,069	HECO-1903, Column C
	42727000	Interest Expense - Ref 2003B RB	2,000,000	HECO-1903, Column C
	42728000	Interest Expense - Ref 2005A RB	1,920,000	HECO-1903, Column C
	42730000	Interest Expense - 2007A RB	2,750,000	HECO-1903, Column C
	42731000	Interest Expense - Ref 2007B RB		did not estimate in direct
		TOTAL	27,666,279	
430		Interest on Debt Payable to Assoc Co		
	43001000	Interest Assoc Co - HELCO		included as short term debt (see #43100000)
	43002000	Interest Assoc Co - MECO		included as short term debt (see #43100000)
	43006000	Interst on Debt-HECO Cap Trust III	2,050,516	HECO-1904
		TOTAL	2,050,516	
431		Other Interest Expense		
	43100000	Interest Expense - Commercial Paper	1,948,550	HECO-1902
	43102000	Other Interest Expense - RAR		not included for ratemaking purposes
	43103000	Interest Expense - Keyman Insurance		not included for ratemaking purposes
	43105000	Other Interest Expense - Customer Deposits		not included for ratemaking purposes
		TOTAL	1,948,550	
428		Amortization of Debt Discount and Expense		
	428QUID1	Amortization QUID 1 issue expense	40,416	
	428QUID2	Amortization QUID 2 issue expense	37,900	109,416 HECO-1904
	428QUID3	Amortization QUID 3 issue expense	31,100	
	42801000	Amortization Expense - FMB	66,633	HECO-1903
	42801100	Amortization Expense - SCF costs	34,371	HECO-WP-1903, page 9
	42802000	Amortization Expense - 82 RB	45,762	HECO-WP-1903, page 2
	42804000	Amortization Expense - 87 RB	116,739	HECO-WP-1903, page 2
	42805000	Amortization Expense - 88 RB	17,243	HECO-WP-1903, page 2
	42806000	Amortization Expense - 88 RB Fix	43,030	HECO-WP-1903, page 2
	42807000	Amortization Expense - 90A RB	29,573	HECO-WP-1903, page 2
	42808000	Amortization Expense - 90B RB	36,597	HECO-WP-1903, page 2
	42809000	Amortization Expense - 90C RB	51,386	HECO-WP-1903, page 2
	42810000	Amortization Expense - 92 RB	70,240	HECO-WP-1903, page 2
	42812000	Amortization Expense - 93A RB	78,255	*HECO-WP-1903, page 2
	42813000	Amortization Expense - 95 RB	74,697	*HECO-WP-1903, page 2
	42814000	Amortization Expense - 96A RB	77,315	*HECO-WP-1903, page 2
	42815000	Amortization Expense - 96B RB	20,462	**HECO-WP-1903, page 2
	42816000	Amortization Expense - 97A RB	89,058	**HECO-WP-1903, page 2
	42817000	Amortization Expense - 98A RB	54,247	HECO-WP-1903, page 2

HAWAIIAN ELECTRIC CO., INC.
RECONCILIATION OF INTEREST EXPENSE

Account #	Description	Direct TY 2007	Reference
42820000	Amortization Expense - Ref 99B RB	57,581	*HECO-WP-1903, page 2
42821000	Amortization Expense - 99C RB	37,330	HECO-WP-1903, page 2
42822000	Amortization Expense - Ref 99D RB	20,830	HECO-WP-1903, page 2
42823000	Amortization Expense - Ref 2000 RB	65,275	*HECO-WP-1903, page 2
42824000	Amortization Expense - 2002A RB	69,487	*HECO-WP-1903, page 2
42826000	Amortization Expense - Ref 2003B RB	78,137	HECO-WP-1903, page 2
42827000	Amortization Expense - Ref 2005A RB	82,056	HECO-WP-1903, page 2
42829000	Amortization Expense - 2007A RB	66,000	HECO-WP-1903, page 2
42830000	Amortization Expense - Ref 2007B RB		did not estimate in direct
	TOTAL	1,491,720	

* The total amortization expense includes issuance and redemption amortization (HECO-WP-1903, page 2, Column A) and discount amortization (HECO-WP-1903, page 2, Column C).

** The total amortization expense includes issuance and redemption amortization (HECO-WP-1903, page 2, Column A) and discount amortization (HECO-WP-1903, page 2, Column C) and annual insurance premium (HECO-1903, Column E)

403030	Depreciation Expense - Amortization Investment Income Differential		
40303001	Amortization Differential - 82 RB	37,177	HECO-WP-1903, page 2
40303005	Amortization Differential - 90A RB	(1,162)	HECO-WP-1903, page 2
40303006	Amortization Differential - 90B RB	(399)	HECO-WP-1903, page 2
40303007	Amortization Differential - 90C RB	27,660	HECO-WP-1903, page 2
40303008	Amortization Differential - 92 RB	46,261	HECO-WP-1903, page 2
40303009	Amortization Differential - 93A RB	10,665	HECO-WP-1903, page 2
40303010	Amortization Differential - 95A RB	1,281	HECO-WP-1903, page 2
40303011	Amortization Differential - 96A RB	2,018	HECO-WP-1903, page 2
40303012	Amortization Differential - 96B RB	549	HECO-WP-1903, page 2
40303013	Amortization Differential - 97A RB	17,037	HECO-WP-1903, page 2
40303014	Amortization Differential - 99C RB	26,168	HECO-WP-1903, page 2
40303015	Amortization Differential - 2002A RB	50,664	HECO-WP-1903, page 2
40303016	Amortization Differential - 2007A RB		did not estimate in direct
	TOTAL	217,919	
42107000	Equity in HECO Capital Trust III	(100,516)	
42003000	AFUDC Debt	(2,661,026)	
	Rounding	82	
TOTAL INTEREST EXPENSE FOR RATEMAKING PURPOSES		30,613,524	CA-IR-387, page 5

CA-IR-469

Ref: June 2007 Update; T-15, pages 6, 7, 9 and 11 (SFAS 109 Reconciliation – AFUDC Equity Adjustment).

According to the footnote, "The total of $55,947 does not match the total of $51,399 per HECO-1506 (updated 6-29-07) because of the adjustment for AFUDC Equity Gross up in CWIP." Please provide the following information:

a. Explain whether the mismatch as of year-end 2007 results from the new adjustment to SFAS 109 in the amount of $4,548 on page 7 at the "Difference" line.

b. If the $4,548 amount is considered, along with the incremental "Deferred Tax Effect of Reg Asset" totaling $1,770, is the net effect of this HECO revision a reduction to rate base of $2,778 (as of December 31, 2007)?

c. Did HECO make any adjustment for AFUDC equity gross-up or related SFAS 109 amounts in the 2005 test year (Docket No. 04-0113), because of "AFUDC in CWIP?"

d. If your response to part (c) of this information request is affirmative, please identify the amount and provide reference to such adjustment(s).

e. If your response to part (c) of this information request is negative, please identify and describe each of the changed circumstances making such an adjustment appropriate at this time.

f. Explain all reasons why this new adjustment is viewed to be necessary, given the CWIP investment base upon which AFUDC rates are applied (for example, AFUDC compounding conventions).

g. Provide detailed calculations of the Federal Deferred Income Tax amounts for the line captioned "AFUDC in CWIP) on page 9 of 11 for all years, culminating in the $7,008,899 amount at year-end 2007.

h. Provide detailed calculations of the State Deferred Income Tax amounts for the line captioned "AFUDC in CWIP) on page 11 of 11 for all years, culminating in the $1,281,621 amount at year-end 2007.

HECO Response:

a. Yes, this is a result of the new adjustment to SFAS 109 of $4,548.

b. Yes, the net effect of the adjustment is $2,778 as of December 31, 2007.

c. No.

d. Not applicable.

e. See June 2007 update, HECO T-15, page 7 for the proposed adjustments for the prior years.

f. As explained in CA-IR-305, CWIP is not included in rate base until the asset is placed into service. The tax gross up of AFUDC equity is capitalized to a regulatory asset (CWIP Equity Ongoing) pursuant to FAS 109 and is amortized over the life of the related assets. Due to the administrative burden of tracking projects, the Company has applied an accounting convention assuming that the regulatory asset is placed into service equally over a four year period starting in the year AFUDC is incurred. Therefore, there is a portion of the regulatory asset that should be excluded from rate base because the related project costs are still in CWIP. See June 2007 Update, HECO T-17, page 7 for rate base change.

g. See page 3 of this response.

h. See page 3 of this response.

HAWAIIAN ELECTRIC COMPANY, INC.
AFUDC IN CWIP

		AFUDC IN CWIP	
		32.8947%	6.0150%
	AFUDC	Fed Def	State def
AMOUNT IN CWIP @ 12/31/99	12,953,428.40	4,260,991.41	779,148.72
Incurred in 2000	6,588,462.47	2,167,254.96	396,296.02
Closed to Plant in 2000	(6,048,128.04)	(1,989,513.57)	(363,794.90)
Total	540,334.43	177,741.39	32,501.12
AMOUNT IN CWIP @ 12/31/00	13,493,762.83	4,438,732.80	811,649.83
Incurred in 2001	5,389,005.76	1,772,697.28	324,148.70
Closed to Plant in 2001	(6,079,475.77)	(1,999,825.32)	(365,680.47)
Total	(690,470.01)	(227,128.04)	(41,531.77)
AMOUNT IN CWIP @ 12/31/01	12,803,292.82	4,211,604.76	770,118.06
Incurred in 2002	5,156,849.81	1,696,330.27	310,184.52
Closed to Plant in 2002	(5,008,358.70)	(1,647,484.57)	(301,252.78)
Total	*148,491.11*	*48,845.71*	*8,931.74*
AMOUNT IN CWIP @ 12/31/02	12,951,783.93	4,260,450.47	779,049.80
Incurred in 2003	5,310,850.36	1,746,988.29	319,447.65
Closed to Plant in 2003	(3,177,183.60)	(1,045,125.01)	(191,107.59)
Total	2,133,666.76	701,863.28	128,340.06
AMOUNT IN CWIP @ 12/31/03	15,085,450.69	4,962,313.75	907,389.86
Incurred in 2004	7,538,166.42	2,479,657.23	453,420.71
Closed to Plant in 2004	(7,171,748.00)	(2,359,124.99)	(431,380.64)
Total	366,418.42	120,532.24	22,040.07
AMOUNT IN CWIP @ 12/31/04	15,451,869.11	5,082,845.99	929,429.93
Incurred in 2005	5,606,057.27	1,844,095.72	337,204.34
Closed to Plant in 2005	(3,099,708.29)	(1,019,639.74)	(186,447.45)
Total	2,506,348.98	824,455.98	150,756.89
AMOUNT IN CWIP @ 12/31/05	17,958,218.09	5,907,301.97	1,080,186.82
Incurred in 2006	5,874,996.95	1,932,562.62	353,381.07
Closed to Plant in 2006	(3,795,751.52)	(1,248,601.08)	(228,314.45)
Total	2,079,245.43	683,961.55	125,066.61
AMOUNT IN CWIP @ 12/31/06	20,037,463.52	6,591,263.51	1,205,253.43
Incurred in 2007	7,557,664.00	2,486,070.90	454,593.49
Closed to Plant in 2007	(6,288,052.00)	(2,068,435.84)	(378,226.33)
Total	1,269,612.00	417,635.06	76,367.16
AMOUNT IN CWIP @ 12/31/07	21,307,075.52	7,008,898.57	1,281,620.59

CA-IR-470

Ref: June 2007 Update; T-15, pages 9 and 11 (Account 282 Depreciation Deferred Tax Updates).

Please provide the following:

a. Calculations supporting the "Updated 2007" amounts for depreciation related deferred tax changes to Account 282 in the amounts ($2,844,724) Federal and ($279,895) State.

b. Calculations supporting the "Estimate 2006 Post Year Ends" amounts for depreciation related deferred tax changes to Account 282 in the amounts $534,712 Federal and $92,799 State.

HECO Response:

a. See pages 2 – 16 of this response, of which pages 8 – 14 are confidential and are being provided pursuant to Amended Protective Order No. 23378, dated June 4, 2007.

b. See page 17 of this response. Note that the federal deferred tax should be $497,338. We will correct this at the next opportunity.

HAWAIIAN ELECTRIC CO., INC.
DEPRECIATION DEFERRED TAX
TEST YEAR 2007

	FEDERAL	STATE	DIFFERENCE	Source
Book Depreciation on tax basis	73,558,964.02	73,558,964.02	-	CA-IR-470, page 3
Tax Depreciation	(64,563,058.21)	(67,629,244.04)	3,066,185.83	CA-IR-470, pages 4-7
Adjustments not in Power Tax				
RAR 92-96	(309,846.57)	(309,846.57)	-	CA-IR-470, pages 8-9
RAR 97-99	(183,831.89)	(183,831.89)	-	CA-IR-470, page 10
RAR 00-02 (1st)	120,425.00	120,425.00	-	CA-IR-470, page 11
RAR 00-02 (2nd)	45,870.07	45,870.07	-	CA-IR-470, page 12
CWIP scrub	809,146.00	120,940.00	688,206.00	CA-IR-470, page 13
MACRS life reclass	(276,367.00)	(276,367.00)	-	CA-IR-470, page 14
Reg Asset Amort - deficit deferreds	110,682.00	110,682.00	-	CA-IR-470, page 15
Reg Liability Amort - excess deferreds	(904,297.00)	(904,297.00)	-	CA-IR-470, page 16
Total Depreciation adjustment	8,407,686.42	4,653,294.59	3,754,391.83	
Deferred Tax Rate	NOTE A	6.0150%		
Deferred Tax Liability	2,844,724.44	279,895.67		

NOTE A: The deferred tax rate for federal deferred taxes is a blended rate, since there is a federal and Hawaii difference. The formula is
(State depreciation x .328947) + (Federal/State difference x .35)

HAWAIIAN ELECTRIC CO., INC.
BOOK DEPRECIATION
TEST YEAR 2007

Gross Book Depreciation	82,258,566.31
Vehicle Depreciation	(1,789,994.68)
Leasehold Amortization	19,394.50
Vintage Acctg Amortization	6,526,301.48
Total Gross Book Depr	87,014,267.61
Less: Amort of CIAC	(8,488,329.59)
Net Book Depr	78,525,938.02
Book Basis Adjustments	
Bk Depr - AFUDC	(1,606,093.00)
Bk Depr - Flow Through	(512,308.00)
Bk Depr - CWIP Debt Ongoing	(748,152.00)
Bk Depr - CWIP Debt Trans	(63,504.00)
Bk Depr - CWIP Equity	(1,467,528.00)
Bk Depr - CWIP Equity Trans	(118,476.00)
Bk Depr - Post Norm	(450,913.00)
Book Depreciation on Tax Basis	73,558,964.02

Hawaiian ' ic Company
PowerTax Deprec...n Compare Report 2
HECO 2007 Rate Case
Rpt # 36 ROLLUP 6/1/2007 9:52 AM
Excludes CIAC, CPI, Cust Adv, DSM/IRP, Non Util, Vehicles, Waiau 3, RAR Legal
Grouped By: Total Tax Classes

Tax Year : 2007	Federal Depreciation	vs.	State Depreciation	Difference
V1903	$0.00		$0.00	$0.00
V1914	$0.00		$0.00	$0.00
V1915	$0.00		$0.00	$0.00
V1916	$0.00		$0.00	$0.00
V1917	$0.00		$0.00	$0.00
V1918	$0.00		$0.00	$0.00
V1919	$0.00		$0.00	$0.00
V1920	$0.00		$0.00	$0.00
V1921	$0.00		$0.00	$0.00
V1922	$0.00		$0.00	$0.00
V1923	$0.00		$0.00	$0.00
V1924	$0.00		$0.00	$0.00
V1925	$0.00		$0.00	$0.00
V1926	$0.00		$0.00	$0.00
V1927	$0.00		$0.00	$0.00
V1928	$0.00		$0.00	$0.00
V1929	$0.00		$0.00	$0.00
V1930	$0.00		$0.00	$0.00
V1931	$0.00		$0.00	$0.00
V1932	$0.00		$0.00	$0.00
V1933	$0.00		$0.00	$0.00
V1934	$0.00		$0.00	$0.00
V1935	$0.00		$0.00	$0.00
V1936	$0.00		$0.00	$0.00
V1937	$0.00		$0.00	$0.00
V1938	$0.00		$0.00	$0.00
V1939	$0.00		$0.00	$0.00
V1940	$0.00		$0.00	$0.00
V1941	$0.00		$0.00	$0.00
V1942	$0.00		$0.00	$0.00
V1943	$0.00		$0.00	$0.00
V1944	$0.00		$0.00	$0.00
V1945	$0.00		$0.00	$0.00
V1946	$0.00		$0.00	$0.00
V1947	$0.00		$0.00	$0.00
V1948	$0.00		$0.00	$0.00
V1949	$0.00		$0.00	$0.00

Hawaiian [illegible]ic Company
PowerTax Deprec[illegible]n Compare Report 2
HECO 2007 Rate Case
Rpt # 36 ROLLUP 6/1/2007 9:52 AM
Excludes CIAC, CPI, Cust Adv, DSM/IRP, Non Util, Vehicles, Waiau 3, RAR Legal
Grouped By: Total Tax Classes

Tax Year : 2007	Federal Depreciation	vs.	State Depreciation	Difference
V1950	$0.00		$0.00	$0.00
V1951	$0.00		$0.00	$0.00
V1952	$0.00		$0.00	$0.00
V1953	$0.00		$0.00	$0.00
V1954	$0.00		$0.00	$0.00
V1954 H1	$0.00		$0.00	$0.00
V1954 H2	$0.00		$0.00	$0.00
V1955	$0.00		$0.00	$0.00
V1956	$0.00		$0.00	$0.00
V1957	$0.00		$0.00	$0.00
V1958	$0.00		$0.00	$0.00
V1959	$0.00		$0.00	$0.00
V1960	$0.00		$0.00	$0.00
V1961	$0.00		$0.00	$0.00
V1962	$399.22		$399.22	$0.00
V1963	$0.00		$0.00	$0.00
V1964	$0.00		$0.00	$0.00
V1965	$6,401.39		$6,342.59	$58.80
V1966	$1,609.77		$1,609.77	$0.00
V1967	$5,058.03		$4,981.62	$76.41
V1968	$1,780.98		$1,780.98	$0.00
V1969	$743.30		$743.30	$0.00
V1970	$74,383.93		$74,383.94	($0.01)
V1971	$9,166.10		$9,166.10	$0.00
V1972	$2,487.24		$2,487.24	$0.00
V1973	$2,129.26		$2,129.26	$0.00
V1974	$2,639.27		$2,639.27	$0.00
V1975	$921.68		$921.68	$0.00
V1976	$4,611.89		$4,611.89	$0.00
V1977	$1,205.08		$1,205.08	$0.00
V1978	$6,328.18		$6,328.18	$0.00
V1979	$5,795.23		$5,795.23	$0.00
V1980	$4,972.10		$4,972.10	$0.00
V1981	$3,243.51		$3,243.51	$0.00
V1982	$1,086.14		$1,086.14	$0.00
V1983	$968.14		$968.14	$0.00
V1984	$6,319.03		$6,319.03	$0.00

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PowerTax Depreci[illegible]n Compare Report 2
HECO 2007 Rate Case
Rpt # 36 ROLLUP 6/1/2007 9:52 AM
Excludes CIAC, CPI, Cust Adv, DSM/IRP, Non Util, Vehicles, Waiau 3, RAR Legal
Grouped By: Total Tax Classes

Tax Year : 2007	Federal Depreciation	vs.	State Depreciation	Difference
V1985	$181.81		$181.81	$0.00
V1986	$473.12		$473.12	$0.00
V1987	$280,150.84		$280,150.84	$0.00
V1988	$1,615,536.85		$1,615,536.85	$0.00
V1989	$1,908,987.33		$1,908,987.33	$0.00
V1990	$2,599,542.84		$2,599,542.84	$0.00
V1991	$1,424,035.33		$1,424,035.33	$0.00
V1992	$2,415,571.86		$2,415,571.86	$0.00
V1993	$2,986,179.18		$2,986,179.18	$0.00
V1994	$3,203,306.38		$3,203,306.38	$0.00
V1995	$3,517,143.47		$3,517,143.47	$0.00
V1996 Q1	$513,433.04		$513,433.04	$0.00
V1996 Q2	$413,155.48		$413,155.48	$0.00
V1996 Q3	$725,876.68		$725,876.68	$0.00
V1996 Q4	$836,631.94		$836,631.94	$0.00
V1997	$2,503,291.42		$2,503,291.42	$0.00
V1998	$3,422,287.75		$3,422,287.75	$0.00
V1999 Q1	$415,666.23		$415,666.23	$0.00
V1999 Q2	$137,076.43		$137,076.43	$0.00
V1999 Q3	$393,595.24		$393,595.24	$0.00
V1999 Q4	$762,466.73		$762,466.73	$0.00
V2000	$2,371,619.40		$2,371,619.40	$0.00
V2001	$3,399,176.64		$3,399,176.64	$0.00
V2001_JC	$27,782.37		$39,671.64	($11,889.27)
V2002	$2,136,868.79		$2,136,868.79	$0.00
V2002_JC	$781,470.71		$1,112,704.97	($331,234.26)
V2003	$855,967.35		$855,967.35	$0.00
V2003_JC	$899,524.37		$1,284,900.64	($385,376.27)
V2003_JGT	$400,040.69		$799,874.19	($399,833.50)
V2004	$3,587,847.29		$3,587,847.29	$0.00
V2004_JC	$908,295.50		$1,282,416.13	($374,120.63)
V2004_JGT	$1,436,318.92		$2,842,412.04	($1,406,093.12)
V2005	$5,565,393.04		$5,565,393.04	$0.00
V2005_JC	$202,207.57		$294,837.42	($92,629.85)
V2005_JGT	$32,793.35		$97,937.48	($65,144.13)
V2006 Q1	$3,334,988.87		$3,334,988.87	$0.00
V2006 Q2	$1,414,545.38		$1,414,545.38	$0.00

Hawaiian f ic Company
PowerTax Depreci..on Compare Report 2
HECO 2007 Rate Case
Rpt # 36 ROLLUP 6/1/2007 9:52 AM
Excludes CIAC, CPI, Cust Adv, DSM/IRP, Non Util, Vehicles, Waiau 3, RAR Legal
Grouped By: Total Tax Classes

Tax Year : 2007	Federal Depreciation	vs.	State Depreciation	Difference
V2006 Q3	$1,234,076.87		$1,234,076.87	$0.00
V2006 Q4	$2,641,710.06		$2,641,710.06	$0.00
V2007	$3,115,591.62		$3,115,591.62	$0.00
Total Tax Classes	$64,563,058.21		$67,629,244.04	($3,066,185.83)
Year Total :	$64,563,058.21		$67,629,244.04	($3,066,185.83)
Company Total :	$64,563,058.21		$67,629,244.04	($3,066,185.83)

Pages 8-14 contain confidential information and are being provided subject to

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

HAWAIIAN ELECTRIC COMPANY
REGULATORY ASSET RELATED TO DEFICIT DEFERRED INCOME TAXES
ATTRIBUTABLE TO ACCOUNT 282
TEST YEAR 2007

Estimated Deficit Deferred Taxes at 12/31/92 (282)	2,231,330.00
Computation of Probable Increase in Future Revenue 2,231,330.00 x 1/(1-.389097744)	3,652,515.57
Future Tax Cost Associated with Rate Increase 3,652,515.57 x 38.9097744%	1,421,185.57

AMORTIZATION OF REGULATORY ASSET

	2007	
Amortized of Deficit Deferred Taxes (1)	67,616.06	
Reg Asset Amortization (future revenue increases) 67,616.06 x 1/(1-.389097744)	110,682.29	CA-IR-470, page 2
Future Tax Costs Associated with Revenue Decrease 110,682.29 x 38.9097744%	43,066.23	

HAWAIIAN ELECTRIC COMPANY
REGULATORY LIABILITY RELATED TO EXCESS DEFERRED INCOME TAXES
ATTRIBUTABLE TO ACCOUNT 282
TEST YEAR 2007

Estimated Excess Deferred Taxes at 12/31/92 (282)	11,725,072.00
Computation of Probable Decrease in Future Revenue 11,725,072.00 x 1/(1-.389097744)	19,193,040.92
Future Tax Savings Associated with Rate Decrease 19,193,040.92 x 38.9097744%	7,467,968.92

AMORTIZATION OF REGULATORY LIABILITY

	2007	
Amortized of Excess Deferred Taxes (1)	552,436.00	
Reg Liability Amortization (future revenue decreases) 552,436.00 x 1/(1-.389097744)	904,295.24	CA-IR-470, page 2
Future Tax Costs Associated with Revenue Decrease 904,295.24 x 38.9097744%	351,859.24	

HAWAIIAN ELECTRIC CO., INC.
DEPRECIATION DEFERRED TAX
2006

	ACCRUAL	TAX RETURN	DIFFERENCE
FEDERAL			
Book Depreciation	69,607,305.00	69,612,134.00	(4,829.00)
Tax Depreciation	(59,626,966.88)	(61,145,561.22)	1,518,594.34
Adjustments not in Power Tax			
RAR 92-96	(309,823.51)	(309,823.51)	-
RAR 97-99	(129,607.50)	(129,607.50)	-
RAR 00-02 (1st)	103,234.00	103,234.00	-
RAR 00-02 (2nd)	68,972.40	68,972.40	-
CWIP scrub	883,548.00	883,548.00	-
MACRS life reclass	(301,383.55)	(301,383.55)	-
Reg Asset Amort - deficit deferreds	110,682.00	110,682.00	-
Reg Liability Amort - excess deferreds	(904,297.00)	(904,297.00)	-
Total Depreciation adjustment	9,501,662.96	7,987,897.62	1,513,765.34
STATE			
Book Depreciation	69,607,305.00	69,612,134.00	(4,829.00)
Tax Depreciation	(63,048,296.23)	(64,595,893.95)	1,547,597.72
Adjustments not in Power Tax			-
RAR 92-96	(309,823.51)	(309,823.51)	-
RAR 97-99	(129,607.50)	(129,607.50)	-
RAR 00-02 (1st)	103,234.00	103,234.00	-
RAR 00-02 (2nd)	68,972.40	68,972.40	-
CWIP scrub	134,872.00	134,872.00	-
MACRS life reclass	(301,383.55)	(301,383.55)	-
Reg Asset Amort - deficit deferreds	110,682.00	110,682.00	-
Reg Liability Amort - excess deferreds	(904,297.00)	(904,297.00)	-
Total Depreciation adjustment	5,331,657.61	3,788,888.89	1,542,768.72
FED/STATE DIFFERENCE	4,170,005.35	4,199,008.73	(29,003.38)
Deferred Federal Tax Rate	NOTE A	NOTE A	NOTE A
Deferred Federal Tax Liability	3,213,334.65	2,715,996.69	497,337.96
Deferred State Tax Rate	6.0150%	6.0150%	6.0150%
Deferred State Tax Liability	320,699.21	227,901.67	92,797.54

NOTE A: The deferred tax rate for federal deferred taxes is a blended rate, since there is a federal and Hawaii difference. The formula is
(State depreciation x .328947) + (Federal/State difference x .35)

CA-IR-471

Ref: HECO Response to CA-IR-182 (R&D New Technology & AMI).

In response to part (a) of CA-IR-182, HECO discusses an ongoing AMI pilot project and the use of the AMI program to bill residential and commercial customers, including the installation of about 3,000 meters in the Ocean Pointe subdivision. The meter installation work was completed in April 2007 with the pilot facilities scheduled to be placed in service in July 2007 when AMR billing services are expected to commence. Specifically, $392,000 of the $483,000 project is capital related and included in the 2007 test year plant additions sponsored by HECO T-16. Please provide the following:

a. Please define the phase "used and useful in providing utility service," as employed by HECO.

b. Referring to part (a) above, does HECO employ a different definition of that phrase in the context of R&D or pilot projects than for typical projects, such as overhead distribution lines or generating units? Please explain.

c. Please identify the AMI capital project number and related meter investment HECO has proposed to include in the beginning and ending test year plant in service balance.

d. In the event that HECO halts the AMI pilot project or decides to not proceed with the deployment of such technology, are there any limitations to the continued use of the FlexNet meters or other specific program requirements that would require the FlexNet meters be removed from service or otherwise decommissioned? Please explain.

e. When did HECO install the original meters in the Ocean Pointe subdivision that were replaced by the FlexNet meters? Please explain.

f. Does HECO anticipate reusing the original Ocean Pointe meters in other installations or were the meters removed from service and salvaged? Please explain.

g. How has the decision to install FlexNet meters impacted the number of residential and commercial meters HECO proposes to include in rate base, under "cradle to grave" accounting for utility meters? Please explain.

HECO Response:

a. The Company employs the phrase "used **or** useful **for** providing utility service" as reflected in the Hawaii Revised Statutes §269-16 (b)(3) and defines this phrase as follows:

"Facilities become used when they are placed into service. Facilities become useful generally when: 1) construction is for the most part complete, 2) the facilities have been tested (if testing is possible and appropriate), and 3) the facilities are ready for use (i.e. they are able to perform their intended function, and can be energized, pending completion of a related facility(ies), without a significant amount of additional costs incurred). As a general rule, it is expected that facilities will become used within a reasonable period of time after they become useful."

b. Referring to part (a) above, HECO does not employ a different definition of that phrase in the context of R&D or pilot projects.

c. The AMI Ocean Point Expansion capital project number is P0001394. The related meter investment HECO has proposed to include in the beginning and ending test year plant in service balance is $0 and $337,107, respectively. The components of the ending test year balance are listed below:

Meter Equipment	$ 288,841
Meter Installation-Contractor	40,193
Meter Installation-HECO	2,702
Meter Investment	$ 337,107

d. In the event that HECO halts the AMI pilot project or decides to not proceed with the deployment of such technology, there are no limitations to the continued use of the FlexNet meters or other specific program requirements that would require the FlexNet meters be removed from service or otherwise decommissioned. HECO would leave the FlexNet meters in place since they perform the same functions as HECO's non-FlexNet meters.

e. For the AMI Expansion Pilot Project, HECO replaced a total of 3,120 meters, most of which were in the Ocean Pointe subdivision. Counts of HECO installed (original) meters that were replaced by the FlexNet meters shown by the year of installation are as follows:

	YEAR	NO. of METERS
a.	1989	1
b.	1990	0
c.	1991	0
d.	1992	17
e.	1993	174
f.	1994	26
g.	1995	60
h.	1996	47
i.	1997	30
j.	1998	79
k.	1999	183
l.	2000	171
m.	2001	217
n.	2002	300
o.	2003	453
p.	2004	383
q.	2005	462
r.	2006	445
s.	2007	72
	Total	3,120

f. HECO replaced a total of 3,120 meters of which 2,427 meters were disposed and 693 meters were retained for reuse in other installations.

g. The decision to install FlexNet meters should have no impact on the number of residential and commercial meters HECO proposes to include in rate base, under "cradle to grave" accounting for utility meters. Upon approval of a multi-year AMI project and

in areas with FlexNet coverage, HECO's plan is to replace existing residential and commercial meters with remotely read FlexNet meters. In FlexNet non-coverage areas (or locations), HECO's existing meters will remain in place, until normal replacement is needed. At that juncture, these meters will be replaced by solid state (non-FlexNet) meters. For new residential subdivisions, HECO's plan is to install FlexNet meters. For the "old" meters that are replaced and then disposed, the plant is retired and the cost of removal is recorded. For the "old" meters that are replaced but retained for reuse, the plant is not retired and the costs to remove are recorded as expense.

CA-IR-472

Ref: HECO Responses to CA-IR-307, Original & Updated 6/8/07 (Plant Update).

In the 6/8/07 Update to HECO's response to CA-IR-307, the Company provided Project Identification Forms (see Attachment 5) for "nine additional projects that amount to more than $1,000,000 in plant additions." In comparing the projected forecast amount set forth in these PIFs with the revised 2007 test year plant addition forecast HECO supplied in the original response to CA-IR-307 (see Attachment 1), the revised forecast was materially higher for several of these projects. Please provide a detailed explanation of the significant change (i.e., either increase or decrease) for each of the following projects:

a. P0000640: Original forecast $1.2 million; 2007 revised test year forecast $1.7 million.

b. P0000815: Original forecast $0.4 million; 2007 revised test year forecast $1.3 million.

c. P0000816: Original forecast $1.2 million; 2007 revised test year forecast $0.9 million.

d. P0000870: Original forecast $1 million; 2007 revised test year forecast $1.6 million.

e. P0000957: Original forecast $0.77 million; 2007 revised test year forecast $1.6 million.

f. P0000959: Original forecast $1.1 million; 2007 revised test year forecast $1.4 million.

g. P0001047: Original forecast $0.33 million; 2007 revised test year forecast $1 million.

HECO Response:

a. P0000640: This project was budgeted in 2002 with a planned service date in 2006. Delays in finalizing the equipment contract and vendor delivery pushed the actual project completion date to May 2007. The revised test year estimate increased because actual construction costs in 2007 were higher than anticipated and additional items, as described below, were added to improve the operability of the equipment.

Outside services are currently estimated at $727,000 compared to the budgeted $650,000 due to higher than estimated contractor bids. Material purchases are estimated at $753,000 compared to the budgeted $445,000. This is primarily due to the purchase of a new motor

control center ("MCC") and its associated power cables. A new MCC was added to the project to provide power to the demineralizer equipment, instead of using the existing 1940s vintage MCC. Additional lighting was also included in the project for operator safety.

Labor costs increased from $38,000 to the current estimate of $125,000. This was due to HECO crews installing the new MCC and additional lighting as well as spending more time than budgeted to troubleshoot the equipment during start-up. The increase in labor and material costs also resulted in increased on-costs and AFUDC costs.

b. P0000815: The original scope of this project was to replace the existing shaft-driven exciter with a new shaft-driven exciter. After further engineering, the project scope was changed to replace the existing shaft-driven exciter with a compound-source static exciter (see the Company's response to CA-IR-474 for additional information). This change in scope was the primary driver for the following increases in cost: material costs increased by $300,000; outside construction services costs for the electrical installation increased by $200,000; outside engineering costs increased by $100,000; and outside construction services costs for structural work increased by $200,000. The compound-source static excitation system requires more pieces of equipment than the shaft-driven exciter. Structural modifications to the existing equipment locations, additional engineering time for the retrofit design, additional installation labor for the new pieces of equipment, and additional materials were all required to undertake the expanded scope of the project.

c. P0000816: There is no change to the original forecast of $1,200,000 for this project. Due to a revised overhaul schedule, the project construction is scheduled to begin at the end of 2007 and be completed at the beginning of 2008, resulting in expenditures of $900,000 in 2007 and $300,000 in 2008, with plant additions recorded for $1,200,000 in 2008. As a result, the

impact of the $900,000 that is incorrectly reflected as plant additions in the 2007 test year will be addressed during settlement.

d. P0000870: This project was originally scheduled to be completed in September 2005. Due to tight generation reserve margins and changes in the maintenance overhaul schedule, the unit overhaul was deferred to 2006 with an estimated completion date of April 2007. The project was actually completed in March 2007. The following contributed to the total cost increase: $150,000 increase in materials cost due to copper price increase and inflation, as the original forecasted amount was based on a 2005 quote; $200,000 increase due to higher than estimated contractor labor cost for inspection/testing and installation; $150,000 increase in contractor labor cost due to higher labor rates as well as work that was required to be performed during the holiday season due to the construction schedule change; and $30,000 increase to add rotor balancing to the project scope. Furhermore, there was a $15,000 increase to add main terminal seal replacement work, as the main terminal seal was found to be in poor condition during construction and its replacement was required for reliable operation.

e. P0000957: This project was competed in March 2007. The cost variance is mainly due to higher material costs due to material price escalations and construction schedule impacts due to longer material delivery lead times. Materials costs are currently projected to be $657,000 compared to the original $425,000, an increase of approximately $232,000. This increase is due to higher costs caused by a global shortage of steel and higher demand for construction material (see Attachment 1). Also, scope changes, shortage of in-house labor, and the general complexity of the project as described below contributed to the cost variance.

The project scope expanded when it was determined that a section of the boiler external

piping header needed to be replaced. This involved work on the boiler walls, replacement and upgrade of all safety relief and motor operated pressure seal valves, and new relief valve discharge piping. Also, asbestos siding material had to be removed in order to access the main steam piping and was replaced with non-asbestos siding.

A shortage of in-house craft labor necessitated HECO to outsource a large portion of the trade activities to outside contractors to supplement HECO's in-house crews. This significantly increased the Outside Services costs on the project. Outside services are now expected to cost $336,000, as compared to the original estimate of $30,000.

In-house crews also were required to work overtime and weekends to meet the project schedule as they juggled between this and other projects. The timing of all construction was impacted by the delivery of major project materials as explained above. In-house labor costs are projected to be $291,000 compared to the original budget of $120,000.

In addition to the labor cost variances associated with the scope changes mentioned above, the project was a complex undertaking involving the replacement of extra-heavy, high energy piping and components that are collocated around other piping systems. The main steam lines are directed through very tight areas that span multiple levels, requiring work aloft on scaffolding. This resulted in extremely difficult working conditions, requiring more labor hours than originally budgeted. While these conditions existed when the project was initially scoped, the efforts required to address the complex work were underestimated. Due to the longer than anticipated delivery lead times for materials, crews were required to "re-sequence" their activities as installation plans were revised to accommodate the longer delivery dates. This included having to revert to a more labor-intensive field installation approach for sections of main steam piping that were originally planned to be shop

assembled. The increase in materials, outside services, and labor costs resulted in increased on-costs and AFUDC costs of approximately $138,000.

f. P0000959: This project was placed in service in April, 2007. This project's final cost is approximately $240,000 over the original forecast primarily due to the use of an outside contractor. Because HECO crews were not available to perform this work as originally budgeted, an outside contractor was used. The cost for outside services is $961,000, compared to the originally estimated amount of $81,000. Offsetting this increase, HECO labor costs amounted to $20,000, much less than the $135,000 that was originally estimated.

Because the materials that were used for the installation were provided under the outside services contract, actual material costs incurred by the Company were $357,000, less than half of the $791,000 originally budgeted. On-costs costs were also less than budgeted; $18,000 of actual costs compared to $112,000 that was originally estimated.

g. P0001047: This project was completed and placed in service on July 20, 2007. The major factor that attributed to the cost increase for this project was related to the ductline construction. Based on the best available information at the time, the cost estimate developed for the construction of the ductline reflected in the project's 2004 PIF was approximately $50,000.

Subsequently, in 2005, the City and County of Honolulu's ("City") review of the construction drawings prompted certain changes, which increased the scope of the ductline construction. These changes included: 1) bypassing an existing handhole in a driveway with the new ductlines (the alternative to constructing the new ductlines was to modify the entire driveway to be American Disabilities Act ("ADA") compliant at a much higher cost); and 2) providing more clearance between HECO's proposed ductlines and the City's

existing sewer lines. HECO was unaware of the existence of these sewer lines at this location when the ductline estimate was developed in 2004.

In addition to the City's sewer lines, the contractor came across numerous other undocumented existing underground utilities during construction. Careful hand excavation was needed to minimize damage to all existing utilities that were not reflected on any drawings. This caused delays and increased the project costs. As a result, the total cost expended on the ductline construction was approximately $600,000, approximately $550,000 more than what was originally estimated as noted above.

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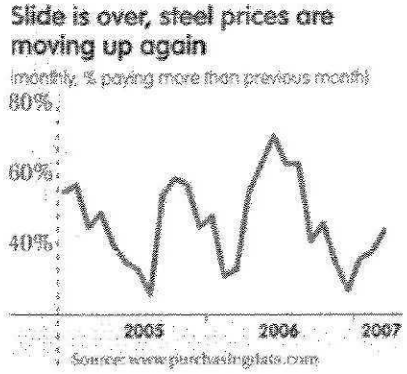
From the pages of Purchasing Magazine Online

Steel prices are rising but by how much?

By Tom Stundza -- 3/14/2007 7:50:00 AM



Steel prices paid have increased for 44% of the buyers polled this month, the highest such response in six months, and 48% believe prices will continue to rise over the second quarter. Early polls of steel buyers at manufacturing companies put the March price in the $520-$530 range, up from $500-$510 last month. However, some media and analysts are touting hot-rolled steel sheet sales at $560-$570 to service center buyers for deliveries in April and May,

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And that could create a big problem in the marketplace: "While the mills think that everything is going to go boom again, our customers are not responding positively to price increases or extended leadtimes," says Bill Sutfin, director of purchasing at distribution firm Kelco Metals Inc., Gary, Ind. Analyst Chuck Bradford at Bradford Research/Soleil Securities in New York adds that "steel buyers are concerned that the mills have increased their prices too much and too fast. Thus, they may be pulling back their purchases next month as their inventories remain high."

The steel market really isn't all that strong as only 34% of the buyers polled plan to increase their bookings through April—while 16% plan to less buying and 50% plan to book only what they bought last month. Most steel buyers at original equipment manufacturers (OEMs) say their steel inventories remain in oversupply and they will be reducing stocks over the next six months.

Sixty-five percent of the buyers polled by the Institute of Steel Management in February thought their steel inventories were too high for demand and 66% surveyed by Purchasing Magazine in March said the same. Also, Bradford says that "some steel distributors were impacted by the severe weather in the Midwest during February and that service center inventories might have increased."

"It's a strange market," admits Tom Moseley, vice president of sales at the MST Steel Corp. distributorship in Warren, Mich., "since demand doesn't seem that strong but increases in shredded steel scrap prices of more than $80/long ton since January are causing mills to all announce price increases for March and April." And that has resulted in buyers grousing that the mills aren't paying attention to supply-demand realities and that many service centers aren't doing enough to keep price tags down. "Demand for carbon steels is soft (yet) little downward pressure is being exerted on the mills to contain them by the metals service centers," says the steel buyer at the Chicago manufacturer of diagnostic radiographic equipment.

"Whether the mills realize the full amount of announced price increases is not entirely clear," writes analyst Randy Cousins at BMO Capital Markets in Toronto. "The cross currents in the North American steel market are numerous (with) soft demand from select key sectors, excess inventories juxtaposed against falling imports and supplier discipline." As he points out, "in the bad old days (before intense Internet-driven scrutiny of the steel market), the steel companies would announce price increases that would often fail." So, they would just raise prices again and again. "The real test of the current steel market will likely come in the softer summer season," suggests Cousins.

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CA-IR-473

Ref: HECO Response to CA-IR-307, Updated June 8, 2007 (Plant Update).

Attachment 5, pages 1-8, represents the PIF for Project P0000640, HNL Demineralizer Upgrade. Please provide the following:

a. Please confirm that a new reverse osmosis and electro-deionization process (RO/EDI) will replace the existing conventional ion exchange (IX) demineralizer, which was installed at the Honolulu Power Plant in the 1950's. If this cannot be confirmed, please explain.

b. Please confirm that the new RO/EDI will consume more water (about 18 million gallons per year) than the original IX demineralizer (fluctuates significantly from 6.5-16.6 million gallons per year), but at a much reduced operating cost (HNL IX cost of about $9.64/kgal vs. RO/EDI cost of $3.81/kgal using City water). If this cannot be confirmed, please explain.

   1. Are these RO/EDI and IX water volumes still accurate? Please explain.

   2. Are these RO/EDI and IX operating costs still accurate? Please explain.

c. Does HECO's June 2007 Update include the estimated cost savings expected to be achieved as a result of the Honolulu Demineralizer Upgrade?

   1. If so, please provide the amount of the annual cost reduction recognized in the test year forecast, showing all calculations.

   2. If not, please explain why the Company's June 2007 Update does not recognize these savings.

d. Should the 2007 test year forecast reflect the reduction in demineralizer operating costs, since HECO is proposing to include the new demineralizer in plant in service? Please explain.

HECO Response:

a. Yes, the new RO/EDI demineralizer will replace the existing IX demineralizer.

b. Yes, the new RO/EDI will consume more water than the original IX demineralizer to produce the same amount of demineralized water. Due to differences in the demineralization process, the RO/EDI produces less demineralized water per a given amount of City water than does the IX process. Please note that the City water volumes presented in the PIF for both the RO/EDI and the IX were for different amounts of

demineralized water produced.

The operating cost of the new RO/EDI demineralizer is expected to be lower than the operating cost of the existing IX demineralizer. However, please note that the operating costs cited in the PIF were relative estimates used for the evaluation of different types of demineralization equipment for the selection of a specific type of demineralization equipment for the installation at the Honolulu Power Plant. The unit operating cost includes the amount of City water that is assumed to be used to produce a unit of demineralized water. Actual operating costs, in general, are site-dependent and will be determined after HECO gains operating experience with the new equipment.

1. Yes, the water volumes given in the PIF for Project P0000640 are still representative of the possible range of expected City water consumption volumes. However, as mentioned above, the City water volumes presented in the PIF are for different amounts of demineralized water. The Honolulu Power Plant demineralized water requirements are dependent on the amount of electricity generated. Generally, more demineralized water is needed when more electricity is generated. For clarification, it is estimated that the RO/EDI demineralizer may use as much as 18 million gallons of City water per year because of expected higher electricity generation requirements from the Honolulu Power Plant.
2. See response to item b above.

c. The June 2007 Update does not include the estimated cost savings expected to be achieved as a result of the Honolulu Demineralizer Upgrade. At the time of the update, the new system was producing demineralized water but was still undergoing equipment

commissioning procedures. For now, both demineralizers are being used by HECO to support needed operation of the Honolulu Power Plant.

1, See response to items b and c above.

2. See response to items b and c above.

d. The 2007 test year estimate should not reflect the reduction in demineralizer operating costs. Given the current status and ongoing commissioning efforts for the new demineralizer and the need to support Honolulu Power Plant operations, HECO has estimated that past historical costs will be incurred for the rest of 2007. These estimated costs reflect the operation of the old demineralizer and do not include the additional costs that HECO is also incurring for operating the new demineralizer.

CA-IR-474

Ref: HECO Response to CA-IR-307, Updated June 8, 2007 (Plant Update).

Attachment 5, pages 9-14, represents the PIF for Project P0000815, H9 Volt Reg/Exciter Replace. This project will install a new motor driven exciter and voltage regulator on Honolulu Unit to replace existing equipment installed in 1957. According to the PIF, the existing equipment is a maintenance burden to keep operational. Please provide the following:

a. Does the 2007 test year forecast include the maintenance cost related to the original equipment or the new equipment? Please explain.

   1. If the response to part (a) above indicates that the 2007 test year forecast includes maintenance costs related to the original equipment that was a "maintenance burden," please explain why the Company's June 2007 Update does not recognize the maintenance savings associated with the new equipment.

   2. Does HECO concur that the 2007 test year forecast should reflect the reduction in maintenance costs, since HECO is proposing to include the equipment in plant in service? Please explain.

b. Referring to the response to part (a) above, please provide the Company's best estimate of the maintenance costs related to this equipment that was included in the 2007 test year forecast. If none, please explain.

c. Please provide the Company's best estimate of the maintenance savings expected to result from the installation of the new equipment.

d. According the PIF, this project was planned for completion in 2004. Please provide the following:

   1. Please provide the actual (or current planned) completion date of this project.

   2. Please explain why this project was note completed in 2004, as originally planned.

HECO Response:

a. The 2007 test year estimate is based on the new equipment and does not include any maintenance costs related to the voltage regulator/exciter that will be mitigated by the completion of P0000815. The H9 Volt Reg/Exciter Replace project started in October 2006 and was completed in March 2007. With the completion of this project, there should be less future maintenance costs had this project not been completed. Moreover,

maintenance resources (e.g., Maintenance Electricians and Machinists) would no longer be required to devote significant time to troubleshooting problems or polishing rings with the old rotating exciter. Accordingly, there were no specific costs included in the 2007 test year estimate for such maintenance activities. The maintenance resources that had to attend to such needs in prior years are being assigned to perform other discretionary maintenance work (e.g., preventative maintenance, work on the backlog of maintenance work orders, etc.) that was subject to deferral (please see the response to CA-IR-240 for the discussion of discretionary and non-discretionary maintenance work).

1. Not applicable. See the response above.

2. Not applicable.

b. Not applicable. See response to item a.

c. Not applicable. See response to item a.

d. 1. This project was completed on March 5, 2007.

2. A HECO study was initiated in early 2004 to look at the effect of motor-driven exciters and static exciters on system stability. The results of this study identified benefits of installing static exciters over motor-driven exciters, which required an expansion to the original project scope. This then extended the project schedule beyond the planned 2004 completion date. Subsequently, the project was scheduled with the next unit overhaul that started in late 2006 and ended in March 2007.

CA-IR-475

Ref: HECO Response to CA-IR-307, Updated June 8, 2007 (Plant Update).

Attachment 5, pages 22-28, represents the PIF for Project P0000870, H9 Generator Rotor Rewind. According to the PIF, the project will rewind the generator rotor, which has shown to have shorted and broken windings. The shorted field windings cause excessive heating and could limit generator capacity or cause a forced outage due to high vibration or result in catastrophic failure. Please provide the following:

a. Does the 2007 test year forecast include any maintenance costs related to the generator rotor or winding issues that will be mitigated by the completion of this Project? Please explain original equipment or the new equipment? Please explain.

   1. Please provide the Company's best estimate of any such costs included in the 2007 test year forecast.

   2. Does HECO concur that the costs identified in response to part (a)(1) above should be removed from the test year forecast, since the Company is seeking to include the plant addition related to this Project in rate base? Please explain.

b. Does the 2007 test year forecast recognize any reduced unit availability or capacity limitations that will be mitigated by the completion of this Project? Please explain.

HECO Response:

a. The 2007 test year estimate does not include any maintenance costs related to the generator rotor or winding issues that will be mitigated by the completion of P0000870. The H9 Generator Rotor Rewind project started in October 2006 and was completed in March 2007. With the completion of this project, there should be less future maintenance costs had this project not been completed.

   1. Not Applicable. See the response above.

   2. Not applicable.

b. The intent of the project was to avoid a future limitation in generator capacity or a forced outage that could have occurred if the generator were not rewound. As there were no historical events due to this type of specific generator problem and the generator was planned to be successfully rewound, HECO did not anticipate or assume a reduction in unit availability or any capacity limitations in the 2007 test year forecast.

CA-IR-476

Ref: HECO Response to CA-IR-314, pages 9 to 11 & 95 to 253 (2007 Plant Additions).

The referenced pages of CA-IR-314 relate to Project P0000474, WSC Privatization. HECO filed the application to purchase certain electrical distribution facilities from Waialua Sugar Company, Inc., in April 2001 (Docket No. 01-0135). At the time the PIF was approved, HECO anticipated the acquisition occurring in stages or segments, with the addition to plant occurring in December 2003. Please provide the following:

a. Please identify and describe any material deviations from the planned acquisition strategy that materially contributed to the delayed completion from 2003 to 2007.

b. Please describe the ultimate status and resolution of the joint pole agreement with Verizon Hawaii, Inc. and Oceanic Cablevision.

c. Referring to the responses to parts (a) and (b) above, did either of these items contribute to the cost escalation from the PIF of $1.39 million to $1.73 million (CA-IR-307).

HECO Response:

a. The delay for this project is primarily due to the extended timeframe that Waialua Sugar Company ("WSC") has taken to construct the necessary service-related infrastructure for the conversion process. Consequently, HECO has been delayed in completing its portion of the project (e.g., installation of service connections), since the majority of HECO's work requires that construction of the various infrastructure segments be completed prior to HECO starting its work. Despite the delay, this project is still targeted to be completed by December, 2007.

b. As a result of negotiations, HECO and Verizon Hawaii, Inc. ("Verizon") (now Hawaiian Telcom) mutually agreed that HECO may charge Verizon a fixed amount of $98.50 for each existing WSC pole that HECO acquired for which Verizon requested a joint pole interest. For all new or replacement poles that are provided in conjunction with this

privatization project, the prevailing standard rate and joint pole ownership process apply. For details of this agreement, please see Attachment 1.

Oceanic Time Warner Cable (formerly Oceanic Cablevision) ("Oceanic") did not forward a request to HECO to acquire joint pole ownership or space on HECO's poles. As a result, discussions did not take place and there is no agreement with Oceanic regarding the use of these poles. Typically, Oceanic does not acquire joint pole ownership interest in pole facilities but negotiates with the telephone utility for pole attachment space.

c. Although the increase in AFUDC costs associated with the delay in completion of this project accounts for a portion of the cost increase, the primary reason for the cost increase from the PIF of $1.39 million to $1.73 million in the test year update is the larger amount of facilities that were required to be replaced than originally anticipated. The final resolution of the joint pole agreement with Verizon did not contribute to this increased cost.

Verizon Hawaii Inc.
P.O. Box 2200
Honolulu, HI 96841

August 26, 2002

Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Attention: Gary Fukumoto

Subject: Waialua Sugar Company Privitization – Proposed Unit Cost for Existing Poles

Dear Gary,

This letter is in response to your fax proposal dated 8/13/02 (attached), regarding the proposed unit cost to share for existing Waialua Sugar Poles. Of the 220 poles that are to remain, we agree to the unit cost of $236.50 per pole. Based on a 5/12 interest in each applicable pole for Verizon, the proposed unit cost per pole is $98.50.

Please proceed with the applicable billing per the standard joint pole billing process. As you noted, new and replacement poles will be priced at the current standard rates via the joint pole process.

Should you have any questions, please call me at 840-5858 or Garret Hayashi at 840-1438.

Sincerely,

Jill Z. Lee
Section Manager - OSP Engineering

cc: L. Sanders
V. Ige
File (Waialua)

Attachment (2 pages)

Hawaiian Electric Co., Inc.

FAX COVER SHEET

August 13, 2002

To: Garrett Hayashi
Company: Verizon Hawaii
Phone: 840-1438
Fax: 840-1292

From: Gary Fukumoto GF
Department: Engineering
Phone: 543-7943
Fax: 543-7099

Subject: WSC Privatization – Proposed Unit Cost for Existing Poles

Pages including this cover page: 2

Comments:

This is a follow-up to our telephone discussion on Thursday, August 8, regarding the above subject. We understand that Verizon would like to acquire joint pole interest on several existing utility poles that HECO has recently acquired/will be acquiring from Dole Foods (formerly Waialua Sugar Company) in association with the subject project.

Based upon previous discussions, it appears that the preferred method for addressing this matter will be for Verizon to pay an agreed-upon unit cost for each existing utility pole that Verizon would like to attach. Similar to the standard joint pole process, HECO will bill Verizon for its share of this set unit cost for each existing pole Verizon attaches to, based on Verizon's response to the respective JP Applications. Please find below, the proposed methodology used in determining the unit cost per pole for this project.

Currently, HECO estimates that the total amount of utility poles involved in the above project is approximately 296 (21 new poles to be installed; 55 existing poles to be replaced; **220 existing poles to remain**). HECO has already paid Dole a purchase amount of $25,000 for their existing distribution system and has spent considerably more negotiating and finalizing agreements to acquire the system. We propose to base the unit cost for existing poles on the $25,000 purchase price ($25,000 / 220 = $113.64). In addition, we have included a nominal amount of HECO engineering labor (1 hour per pole) to account for the time necessary to investigate, document, coordinate, and ultimately process the acquisition of the poles from Dole Foods and the JP application for each pole. Based on a 5/12 interest in each applicable pole for Verizon, the proposed unit cost per pole is as follows:

Pole Cost		Engineering		Unit Cost	Verizon's Share
$113.64	+	$122.76	=	$236.40	x (5/12) = **$98.50**

Please review the above calculations and let us know if Verizon has any concerns with this proposed methodology. We believe this is a fair and relatively simple way to handle Verizon's attachment to these poles acquired by HECO. If acceptable, HECO will proceed with the applicable billings per the standard joint pole billing process. Note, as agreed upon earlier, the current standard unit cost price will be applied as applicable for all new and replacement poles installed as part of this project. In addition, easement expenses will be shared per the standard joint pole billing process.

Should you have any questions or need any further information, please feel free to give me a call. Thank you for your attention to this matter.

Cc: HECO, Engineering – Francis Hirakami/Michael Ho;
HECO, CID – Enrique Che/Gail Chun

CA-IR-477

Ref: HECO Response to CA-IR-314, pages 62 to 72 (2007 Plant Additions).

The referenced pages of CA-IR-314 relate to Project Y00030 (i.e., Projects P0000714, P0000793 thru P0000795, per HECO-WP-1601), New Dispatch Center. This PIF shows a $23 million estimated cost of the New Dispatch Center, with a plant addition date of August 2007. Please provide the following:

a. What is the overall status of the completion of the New Dispatch Center, relative to the scope envisioned at the time the $23 million estimate was prepared? Please explain.

b. With the planned 2007 completion of Projects P0000714, P0000793 and P0000795 (see response to CA-IR-307), will the New Dispatch Center be completed or are there additional project elements (e.g., Project P0000794) that remain to be completed post-2007? Please explain.

c. Please provide the cost of the New Dispatch Center, as follows:

   1. Actual plant in service as of December 2006, included in the 2007 test year rate base.

   2. Estimated 2007 plant additions, included in the 2007 test year rate base.

   3. Estimated post-2007 plant additions, not included in the 2007 test year forecast.

HECO Response:

a. The overall New Dispatch Center "grandparent" project is made up of nine projects as listed in the response to item c. below. Project P0000715 was completed in 2005, projects P0000713, P0000716, P0000717, P0000718, and P0000794 were completed in 2006, project P0000714 was completed in April, 2007, and projects P0000793 and P0000795 are scheduled to be completed and placed in-service in the 4th quarter, 2007.

b. As noted above, Project P0000794, renovation of the existing Dispatch Center to house a new Call Center and removal of unused office equipment and furniture, was placed in-service in December 2006. Project P0000714, relocation of displaced storage facilities, was placed in-service in April 2007. Projects P0000793, renovation of the existing Call Center to house the Field Service and Meter Reading divisions, and

P0000795, assignment of parking for displaced operations and employee vehicles and the removal of existing portable office trailers, are scheduled to be placed in-service in the 4th quarter of 2007. Therefore, all of the projects are scheduled to be completed by the end of 2007 with no work remaining to be completed post-2007. However, the Company estimates that straggling costs associated with P0000793 and P0000795 will be recorded in 2008 as shown in the response to item c. below.

c. The following information is the cost breakdown of the project:

		Actual 2005	Actual 2006	Est 2007	Est 2008	Total
P0000713	Dispatch Center Building		13,722,151	37,009		13,759,160
P0000714	Materials Storage Relocation			132,304		132,304
P0000715	Dispatch Boards	1,190,385	277,716	1,559		1,469,660
P0000716	Telecomm Extensions		2,973,201	103,350		3,076,551
P0000717	EMS Replacement		6,013,367	84,503		6,097,870
P0000718	Dispatch Training Simulator		181,944	37,119		219,063
P0000793	Field Service/Meter Reading			685,122	115,967	801,089
P0000794	Call Center-1st floor		1,171,446	308,964		1,480,410
P0000795	Parking-C&M,SysOp,&Employee			512,868	145,765	658,633
	Total	1,190,385	24,339,825	1,902,798	261,732	27,694,740

1. Actual plant in service as of December 2006 included in the 2007 test year base is $25,530,210.
2. Estimated 2007 plant additions included in the 2007 test year rate base is $1,902,798.
3. Estimated post-2007 plant additions not included in the 2007 test year forecast is $261,732.

CA-IR-478

Ref: HECO Responses to CA-IR-307, Attachment 5 pages 56 to 63, & CA-IR-314, pages 88 to 94 & 477 to 533 (2007 Plant Additions).

The referenced pages of CA-IR-314 relate to Project Y00044 (i.e., Projects P0000946, P0000947 & P0000948, per HECO WP 1601), KoOlina SS Tsf#1 & Ckt. This project was to increase the distribution capacity in the KoOlina area, with a June 2006 completion schedule at an estimated cost of $3.56 million. Page 56 of Attachment 5 to CA-IR-307 represents a December 2006 memorandum seeking construction expenditure authorization for $1.7 million project for the Ewa Nui and Kamokila Circuit Rearrange project. According to the referenced memorandum, the approval of the Ewa Nui and Kamokila Circuit Rearrange would result in the deferral of the KoOlina Substation project. Please provide the following:

a. Please confirm that Ewa Nui and Kamokila Circuit Rearrange (Project P0001364) will result in the deferral of the KoOlina Substation (Projects P0000946, P0000947 & P0000948). If this cannot be confirmed, please explain.

b. Were the KoOlina Substation projects actually deferred or were they cancelled? Please explain.

c. If the response to part (b) above indicates that the KoOlina Substation projects were merely deferred, please provide the following:

   1. Revised estimated cost of the projects.

   2. Expected timetable for completion of the projects.

HECO Response:

a. As stated in the PIF for the Ewa Nui and Kamokila Circuit Rearrange project on page 57 of Attachment 5 to CA-IR-307, the two objectives for this project are: 1) to address projected overloads in the Kamokila area; and 2) to defer the Ko Olina Substation project. A major portion of the project scope to meet the second objective was to provide additional capacity to serve the Ko Olina area by recircuiting lines in the vicinity of Kalaeloa Boulevard and Kapolei Parkway. This was to be done by installing a new pole in the existing median at the subject intersection to tap the existing overhead circuit. However, in January 2007, it was brought to HECO's attention that, according to the Campbell Estate's Kapolei Parkway (West) Phase 1 Project plan, the existing median would be eliminated and replaced with a narrow paved median which would not

accommodate the installation of a pole. As a result, HECO explored the option to tap the existing overhead line by using another pole in the vicinity. However, a review of the Campbell Estate's Kapolei Parkway (West) Phase 1 Project plan found that this pole would also be relocated. In addition, field inspections uncovered only partial ductlines to the existing poles. In order to prevent delays to the Ewa Nui and Kamokila Circuit Rearrange Project due to the uncertainty of the exact relocation of the poles and the lengthy period required to obtain permits to construct ductlines to the relocated poles, this portion of the project was eliminated in late January 2007. As a result, the project's objective to defer Ko Olina Substation Projects (Projects P0000946, P0000947 and P0000948) is no longer applicable under the Ewa Nui and Kamokila Circuit Rearrange Project. However, the remaining work for the Ewa Nui and Kamokila Circuit Rearrange Project is still proceeding to meet its other objective to relieve forecasted overloads in the Kamokila area and allow full use of the capacity of the new Ewa Nui 46-12 kV 10/12.5 MVA transformer #2.

b. The Ko Olina Substation projects were deferred from June 2006 to June 2008. The deferral from June 2006 was attributable to lower than expected demand for electricity in the Ko Olina area. However, updated system area reviews conducted in late January 2007 using the latest construction schedules, coupled with numerous new service requests received by HECO as of January 2007, resulted in the acceleration of the completion dates of the Ko Olina Substation projects from June 2008 to January 2008.

c. 1. Project P0000946 and Project P0000947 are estimated to cost $1,810,000 and $2,660,000, respectively. Project P0000948 is estimated to cost $60,000. Therefore, the total cost for Project Y00044 is $4,530,000.

2. P0000946, P0000947, and P0000948 are targeted to be completed by January 2008.

CA-IR-479

Ref: HECO T-20, pages 39 to 44, 55 to 58 and 62 - (TOU Rates and Riders).

Please provide the following:

a. To what extent will commercial customers be permitted to participate in one or more of the existing HECO time of use or interruptible schedules or riders (U, M, T, I) and also participate in new time of use rate schedules?

b. What work was done by HECO to evaluate and integrate the pricing under proposed Schedule TOU-C with the customer impacts and time of use savings possible under existing time of use or interruptible rate schedules/riders?

c. Please provide copies of any studies, reports, analyses, projections or other documents associated with your responses to parts (a) and (b) of this information request.

HECO Response:

a. The proposed Schedule TOU-C is available to customers with loads less than 300 kW per month, and cannot be used in conjunction with Rider M, Rider T, or Rider I; see HECO-106, page 58. The proposed Schedule U is available to customers with loads equal to or greater than 300 kW per month, and cannot be used in conjunction with Rider M, Rider T, or Rider I; see HECO-106, page 26. As proposed, service under Schedule U and Schedule TOU-C is mutually exclusive.

b. The Company did not undertake any work to compare bill impacts under the proposed Schedule TOU-C with the bill impacts under existing time of use or interruptible rate schedules/riders in this docket. The proposed rate design for Schedule TOU-C is based on the concepts put forth in Docket No. 04-0113 where Schedule TOU-C was first proposed, as described in HECO T-20, pages 57-58 in this docket. In Docket No. 04-0113, the Company did make a bill comparison for six existing Rider T accounts at the proposed rate levels in rebuttal testimony. See the response to part c. below.

c. Included in an internal analysis completed as part of the Company's work on rebuttal testimony in Docket No. 04-0113 was a comparison of 12 month bills at proposed rates for six Schedule J Rider T customers. Their bills at proposed Schedule J Rider T rates were compared against bills at proposed Schedule TOU-C rates. This analysis for the six Rider T customers is attached in the accompanying electronic spreadsheet file "CA-IR-479 HECO TY 2005 Rebuttal Rider T vs TOU-C.xls". The customer names, which are confidential, have been removed. Only the summary results for the six Rider T accounts are presented below:

12 Month Bill Comparison at Rebuttal Testimony Proposed Rates, Docket No. 04-0113

Sch J Acct	Proposed T 12 Months	Proposed TOU-C 12 Months
Rider T	$16,338.92	$16,657.57
Rider T	$79,672.32	$79,741.22
Rider T	$61,149.12	$54,332.25
Rider T	$48,997.43	$44,827.83
Rider T	$84,327.13	$93,529.34
Rider T	$29,718.55	$33,586.68

CA-IR-480

Ref: June 2007 Update; T-3, pages 4 to 6 (Interim Surcharge).

Please provide the following information:

a. Explain the origin of the Interim Surcharge for DG Fuel, trucking and LSFO trucking, and

b. Explain why the surcharge is being applied to only 8 months of the test year instead of being annualized as if effective all year.

c. Is any continuation of this surcharge planned or authorized beyond the effective date of new base rates?

HECO Response:

a. The Commission in Order No. 23377 filed April 23, 2007 in Docket No. 04-0113 authorized the Interim Surcharge. The Interim Surcharge will recover HECO's DG fuel and trucking costs and its LSFO trucking costs. The Interim Surcharge became effective May 1, 2007 as proposed by the Company in its transmittal filed April 30, 2007.

b. See HECO's response to part a. above. Since the effective date of the Interim Surcharge is May 1, 2007, for the purpose of the June 2007 Update only eight (8) months of revenue for the Interim Surcharge has been estimated.

c. The Interim Surcharge will remain in place to recover HECO's DG fuel and trucking costs and its LSFO trucking costs incurred during the remaining period that HECO's interim rates, pursuant to Interim Decision and Order No. 22050, filed September 27, 2005, are applicable. Since the Interim Surcharge recovers HECO's actual DG fuel and trucking costs and its LSFO trucking costs at approximately a two month lag, the Interim Surcharge will remain in place for about two months beyond the effective date of any new base rates authorized by a final Decision and Order in Docket No. 04-0113.

CA-IR-481

Ref: Response to CA-IR-214, part 1.

The response to CA-IR-214, part 1 indicates that HECO made refinements to the operating minimum and normal top load ratings of HECO's generating units for the updated production simulation. Please explain what changes occurred that led to updating the operating minimums and normal top load ratings as indicated in the response to CA-IR-214, part 1.

HECO Response:

Although the changes were extremely small (amounting to a 0.2% decrease in total, operating minimum and 0.0% change in total, normal top load ratings), HECO adjusted the ratings to be procedurally consistent with the auxiliary consumption as reflected in the Heat Rate Constants (HECO-WP-406, page 2, as provided in CA-IR-214, page 35). The biggest percent change was on the operating minimum ratings for Waiau 9 and 10. The change was from 6.0 MW to 5.9 MW, a drop of 0.1 MW or 1.7%. The current gross, operating minimum is 6 MW. The auxiliary consumption is 0.1 MW. Therefore the correct, net operating minimum should be 5.9 MW. The net load is the difference between gross load and auxiliary consumption.

CA-IR-482

Ref: Response to CA-IR-214, part 2 and HECO-WP-403, page 1.

The response to CA-IR-214 indicates that HECO calculated a new five-year average (2002-2006) for company use. The updated five-year average is 15.8 GWh. HECO-WP-403, page 1 indicates an increase of approximately 1,665 MWh in company use from 2005 to 2006. This is an increase of 10% and is a significant increase compared to the trend of company use from 2001 to 2005. Please explain why company use increased 10% from 2005 to 2006.

HECO Response:

The table below shows the three Company Use accounts that recorded the highest MWh changes between 2005 and 2006. HECO's new Dispatch Center at its Ward Avenue facility went into service in 2006. The increase in consumption in the Underground Division Trailer (offices) appears to be the result of longer working hours as records indicate that demand was relatively consistent between 2005 and 2006. The same appears to be the case for the Fuel Cell Test Facility. A number of smaller accounts contributed small increases between 2005 and 2006.

	Energy Consumption (MWh)		
	2005	2006	Change
Total Company Use	15,698.0	17,363.0	1,665.0
			10.6%
Highest Changes:			
New Dispatch Center	0.0	941.5	941.5
Underground Division Trailer	2,951.4	3,100.8	149.4
UH Fuel Cell Test Facility	152.9	230.2	77.3
			1,168.2

CA-IR-483

Ref: Response to CA-IR-214, part 7.

The response to CA-IR-214, part 7 indicates the in-service date for HECO-sited DG was updated from March 2007 to May 2007.

a. Please explain why the HECO-sited DG did not go in-service in March 2007.

b. Did the HECO-sited DG actually go into service in May 2007?

c. Please indicate the actual month and day the HECO-sited DG went in-service.

HECO Response:

a. The HECO-sited DG installation did not go into service in March 2007 due to delays in procuring electrical equipment. As part of the DG project, a new 10 MVA system transformer and 46 kV bus were required. HECO was unable to obtain required 46 kV bus parts until April, delaying the installation and in-service date of the HECO DG units to May.

b. Yes.

c. The HECO DG units were placed in service on May 4, 2007.

CA-IR-484

Ref: Response to CA-IR-214, part 8.

The response to CA-IR-214, part 8 indicates that customer-sited DG is not expected to be in-service before the end of 2007.

a. Please explain why the customer-sited DG is not expected to be in-service before the end of 2007.

b. When does HECO project that the customer-sited DG will be in-service?

HECO Response:

a. HECO determined in March, 2007, that the customer-sited DG project would no longer be economically feasible to pursue, and stopped further work on the project. HECO informed the customer of this by letter dated March 27, 2007. A copy of HECO's letter is attached.

b. The customer-sited DG project will not be placed in service. See the response to subpart a above.

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

March 27, 2007

Scott W. H. Seu
Manager
Energy Projects Department

Mr. Robert Musgrove
Kaiser Permanente
Facilities Planning & Development
531 Ohohia Street
Honolulu, HI 96819

Dear Mr. Musgrove:

Thank you for Kaiser Permanente's consideration of Hawaiian Electric Company, Inc.'s (HECO) Dispatchable Standby Generation (DSG) proposal.

In the DSG proposal, HECO would have funded the incremental cost for paralleling equipment for the new switchgear for Kaiser's planned 2 MW emergency generator, as paralleling switchgear is fundamental to the operability of the DSG concept. HECO would have provided this funding following execution of a DSG Agreement between Kaiser and HECO, and subsequent approval of the DSG Agreement by the Hawaii Public Utilities Commission. HECO first provided a proposed DSG Agreement to Kaiser in August of 2006.

As you know, a DSG Agreement has yet to be executed, and Kaiser has needed to order its switchgear without paralleling equipment to maintain its construction schedule. HECO has determined in discussions with Kaiser's engineering consultant C. Chong & Associates, that in order to implement DSG in the future with paralleling capability, a complete changeout of switchgear would be required and Kaiser's initial switchgear equipment would be unusable. This creates an uneconomic cost scenario for this project.

Due to the current uneconomic project scenario, HECO regrets that it must withdraw its proposed DSG Agreement to Kaiser. Although we are unable to proceed further with DSG, HECO will continue to work with Kaiser on other options to improve energy efficiency and reduce energy costs.

Should you have any questions please feel free to call me at 543-4805. Thank you again for your time and efforts in considering our proposal.

Sincerely,

CA-IR-485

Ref: HECO-WP-412, page 3, HECO-WP-501, page 1, HECO-WP-503, page 1,

HECO-WP-04, page 1.

HECO-WP-412, page 3 contains the Station Summary output result from the production simulation. HECO-WP-501, page 1, HECO-WP-503, page 1, and HECO-WP-504, page 1 contain the forecasted expenses for Kalaeloa, AES, and H-Power respectively.

a. Please explain how the monthly net MWh and operating hours were determined for one CT and two CT operation of Kalaeloa, as listed in columns C, D, F, and G of HECO-WP-501, page 1. Please provide all calculations and copies of all supporting documentation.

b. Please explain how the monthly net MWh and operating hours were determined for one boiler and two boiler operation of AES, as listed in columns C, D, F, and G of HECO-WP-503, page 1. Please provide all calculations and copies of all supporting documentation.

c. Please explain how the monthly On-Peak MWh and Off-Peak MWh were determined for H-Power, as listed in columns C and D of HECO-WP-504, page 1. Please provide all calculations and copies of all supporting documentation.

HECO Response:

a. The monthly net MWh and operating hours for Kalaeloa, shown in columns C, D, F, and G of HECO-WP-501, page 1, were extracted from updated HECO-409, page 4, provided in CA-IR-214, page 22. Please refer to the spreadsheet provided in conjunction with CA-IR-214, "HECO 2007 Rate Case T-4 DT Update Exh_WP 053007.xls". The tab "409 p4" in this spreadsheet contains the following calculations:

   1. For "1 CT Operation, Hrs" (Column G): Each month contains a different formula, which compiles the hours in which a single CT is in operation for that particular month. These formulas are manually keyed into the spreadsheet, and correspond to the Pattern 2-4 used in the production simulation (provided in CA-IR-214, page 68-70). CA-IR-261 explains how Kalaeloa maintenance schedules are implemented with these pattern files.

Example

Column G cell formula for month of January: "=(3*24+12+4*24)*0.985"

Interpretation:

"3*24" = 3 weekends in which there will be Two 12-hr outages for CT washes

"12" = 1 weekend in which there will be One 12-hr outage for CT wash

"4*24" = 4 days of contiguous outage (see 1/28/07 in Pattern 2)

"*0.985" = Adjustment for Kalaeloa EFOR of 1.5%

2. For "1 CT Operation, MWh" (Column F): Multiply the hours calculated in Column G by 90 MW. During those hours of the month where one of the CTs is unavailable due to maintenance, the other CT will be operating, on average, at 90 MW.
3. For "2 CT Operation, Hrs" (Column D): Start with the number of hours available in the month (varies with the number of days per month), and subtract the hours in which 2 CTs are unavailable (See Pattern 3 provided in CA-IR-214, page 69). Adjust for Kalaeloa EFOR of 1.5%, and subtract the hours in which only 1 CT is operating (as previously calculated in Column G).
4. For "2 CT Operation, MWh" (Column C): Extract the GWh from the P-MONTH monthly report provided in "PMONTH" tab of "HECO 2007 Rate Case T-4 DT Update Exh_WP 053007.xls", convert to MWh, and subtract MWh for 1 CT operation (calculated in Column F). Example for January: (49.483+64.709+11.773)*1000 – 15,957 = 110,008.

b. The monthly net MWh and operating hours for AES, shown in columns C, D, F, and G of HECO-WP-503, page 1, were extracted from updated HECO-409, page 3, provided in CA-IR-214, page 21. Please refer to the spreadsheet provided in conjunction with

CA-IR-214, "HECO 2007 Rate Case T-4 DT Update Exh_WP 053007.xls". The tab "409 p3" in this spreadsheet contains the following calculations:

1. For "1 Boiler Operation, Hrs" (Column G): Each month is zero with the exception of October (see Pattern 5 provided in CA-IR-214, page 71). For October, manually key in the duration of 1 boiler outage, adjusted by the AES EFOR of 1%.
2. For "1 Boiler Operation, MWh" (Column F): Each month is zero with the exception of October, consistent with the hours calculated in Column G. For October, multiply the hours calculated in Column G by 90 MW. During those hours of the month where one of the boilers in unavailable, AES will produce, on average, 90 MW.
3. For "2 Boiler Operation, Hrs" (Column D): Extract the Hrs from the P-MONTH monthly report (provided in "PMONTH" tab of "HECO 2007 Rate Case T-4 DT Update Exh_WP 053007.xls"), and subtract the "1 Boiler Operation" Hrs (Column G) from the P-MONTH value.
4. For "2 Boiler Operation, MWh" (Column C): Extract the GWh from the P-MONTH monthly report, convert to MWh, and subtract the "1 Boiler Operation" MWh (Column F) from the P-MONTH value.

c. The monthly On-Peak MWh and Off-Peak MWH shown in columns C and D of HECO-WP-504, page 1, were extracted from updated HECO-409, page 5, provided in CA-IR-214, page 23. Please refer to the spreadsheet provided in conjunction with CA-IR-214, "HECO 2007 Rate Case T-4 DT Update Exh_WP 053007.xls". The tab "409 p5" in this spreadsheet extracts the GWh from the P-MONTH monthly report (provided in "PMONTH" tab of "HECO 2007 Rate Case T-4 DT Update Exh_WP 053007.xls"), converts it to MWh, and allocates it as follows: 14/24 for On-Peak, and 10/24 for Off-Peak (corresponding to 14 hours On-Peak and 10 hours Off-Peak, for each 24-hour period).

CA-IR-486

Ref: Response to CA-IR-339, part (c), (Security Fees).

Please provide the following information regarding HECO security services costs for 2007:

a. State what is meant by "HECO's security contractor has been experiencing a staffing shortfall."

b. Explain all reasons why "HECO fully expects that its security contractor will meet its contract obligations and that the funds for security services, as estimated, will be spent in 2007."

c. Explain how actual security staffing has differed from budgeted levels to date in 2007.

d. Provide an update to Attachment 3 with actual spending up through June 2007.

HECO Response:

a. HECO's security contractor has been experiencing a staffing shortfall due to difficulties in hiring and retaining employees. While the hiring and retention of the contractor personnel is not a HECO responsibility, HECO's contractor has expressed that the difficulties are due to 1) the low unemployment rate in Hawaii constraining the pool of potential hires, 2) the competitive wage rates being offered by other security companies, and, 3) other contracts within the contractor organization offering higher pay. Because of the staffing shortfall, HECO's security contractor has not been able to provide the security officers and hours stipulated in the contract. HECO is also experiencing late invoicing for services. As will be described later in this response, HECO only recently received invoices for 2006 billing periods.

b. Attachment 1 to this response is a summary of Security Contractor hours in 2007. The actual hours for January through June 2007 are 16,864. The budgeted hours for all three power plants, for the same period, are 18,304. The hours contracted for security service are

21,840 and are higher than the budgeted hours of 18,304. Through June, HECO's security contractor is short of contracted hours by 4,976 and short of budgeted hours by 1,440. HECO's contractor is currently recruiting to fill vacancies. In the meantime, overtime is being expended, at contractor expense, to fill the required shifts.

As stated in CA-IR-339, HECO fully expects that its security contractor will meet its contract obligations, meet the staffing amounts contracted, and that the funds for security services, as estimated, will be spent in 2007. Note that if HECO's security contractor was to completely meet contract hours, HECO's security expenses would exceed the budgeted amount.

As shown in CA-IR-339, Attachment 3, January through May 2007 recording of security cost was erratic from month to month. This was due to the timing of invoices. HECO has since processed a number of invoices in late June 2007 for services ranging from periods in 2006 to May 2007. Please see Attachment 2 to this response which shows each invoice processed. The invoices that appear to be for periods in 2006 are circled. The transactions processed to date (HECO Accounting has not closed the month of June to date) total $381,964, as shown below. The amounts do not include the entire month of June, and the amounts for 2006 invoicing are separated. While separated, these 2006 charges will remain in 2007 and not revert to 2006.

	Prelim June-07	2006 Invoices	Adj Prelim June-07
WO# FA000623 – Waiau	$ 144,940	$48,989	$95,951
WO# FA000624 – Kahe	$ 131,572	$36,165	$95,407
WO# FA000625 – Honolulu	$ 105,452	$30,206	$75,246
Total	$ 381,964		$266,604

HECO has also estimated the outstanding invoices for the remainder of June. These amounts are shown in Attachment 3 to this response and total $40,072. Summing with the 2007 total above, the six-month total for Security charges is estimated to be $422,036. If the 2006 invoices are removed, the total is estimated to be $306,676. As stated above, HECO fully expects that the funds for annual security services, as estimated at $730,280 (refer to CA-IR-339, Attachment 3), will be spent in 2007.

c. Please see Attachment 1, which shows the actual hours to date, June 2007, compared to the budgeted hours used in calculating the security budget and the actual hours compared to the contracted hours. Actual hours are currently below budgeted hours by 1,440, and below contract hours by 4,976. The contracted hours are more than the budget hours by 3,536.

d. HECO Accounting has not closed the month of June to date. See response to b. above for a transaction summary of security expenses through June 2007.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Production O&M - 2007 Security Hours

Station	Jan07	Feb07	Mar07	Apr07	May07	Jun07	Total
Actual Hours							
Honolulu	744	744	672	744	768	750	4,422
Kahe	1,129	1,013	978	1,040	1,142	1,051	6,353
Waiau	1,090	1,055	855	950	1,081	1,058	6,089
Total Hours	2,963	2,812	2,505	2,734	2,991	2,859	16,864

Budgeted Hours (Jan-June 2007):		
	Honolulu	5,408
	Kahe	6,448
	Waiau	6,448
		18,304 (1)
Contracted Hours (Jan-June 2007):		
	Honolulu	4,368
	Kahe	8,736 (2)
	Waiau	8,736
		21,840
Difference Budgeted vs Actual		1,440
Difference Contracted vs Actual		4,976
Difference Contracted vs Budget		3,536

NOTE:

(1) Per CA-IR-339, Budget hours by station for half the year ((Hono 10,816 + Kahe 12,896 + Waiau 12,896 = 36,608 / 2 = 18,304 Hours)

(2) Error noted in CA-IR-2, Attachment 15, page 17, Contract Exhibit A. Kahe 6 months hours for Jan-June 2007 should be 8,736 hours and not 4,368 hours.

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P *Parent WO:* * *WO Number:* FA000623 *From Date:* 200701 *To Date:* 200706 *Show Emp Info:* No

Company: **HECO**

Parent WO: **FA000043**

Work Order: **FA000623** **Akal - Waiau Contract Services**

Invoice Transactions

Tran Dte	Acct Code	Cat No	Supplier No	Inv No	Inv Item No	Inv Item Desc	Contract No	Portion No	Element No	Tran Amt
Expense Element: 501	**Outside Svcs-General**									
03/07/2007	PHS933WSTNENPHZZZZZ501		001161	143655	001	#143655, Waiau PP, 1/				4855.84
03/20/2007	PHS933WSTNENPHZZZZZ501		001161	144587	001	#144587, Waiau PP, 2/				4757.94
03/20/2007	PHS933WSTNENPHZZZZZ501		001161	144170	001	#144170, Waiau PP, 2/				4885.21
03/20/2007	PHS933WSTNENPHZZZZZ501		001161	144795	001	#144795, Waiau PP, 1/				4743.26
03/30/2007	PHS933WSTNENPHZZZZZ501		001161	143221	001	#143221, waiau, 1/21-2				4855.84
03/30/2007	PHS933WSTNENPHZZZZZ501		001161	142395	001	#142395, waiau, 12/31/ *				4741.04
03/30/2007	PHS933WSTNENPHZZZZZ501		001161	142651	001	#142651, waiau, 1/7-13/				4855.84
04/09/2007	PHS933WSTNENPHZZZZZ501		001161	141831	001	#141831, Waiau, 12/24- *				4470.64
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	134626	001	#134626, waiau pp, 9/3-				4013.68
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	137006	001	#137006, waiau pp, 10/				3803.24
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	135049	001	#135049, waiau pp, 9/1				3962.30
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	132634	001	#132634, waiau pp, 8/6-				3912.72
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	141053	001	#141053, Waiau PP, 12				3960.32
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	135987	001	#135987, waiau, 9/24-3				3960.32
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	135286	001	#135286, waiau pp, 9/1				3960.32
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	132966	001	#132966, waiau pp, 8/1				3808.00
04/11/2007	PHS933WSTNENPHZZZZZ501		001161	136657	001	#136657, waiau, 10/1-7/				3827.04
04/19/2007	PHS933WSTNENPHZZZZZ501		001161	141241	001	#141241, Waiau, 12/17-				4569.60
04/25/2007	PHS933WSTNENPHZZZZZ501		001161	146071	001	#146071, waiau, 3/11-1				3759.36
04/25/2007	PHS933WSTNENPHZZZZZ501		001161	147369	001	#147369, waiau, 4/1-7/0				4764.29
04/25/2007	PHS933WSTNENPHZZZZZ501		001161	146412	001	#146412, waiau, 3/18-2				4209.70
05/30/2007	PHS933WSTNENPHZZZZZ501		001161	146476	001	#146476, waiau pp, 2/1				4464.24
05/30/2007	PHS933WSTNENPHZZZZZ501		001161	148422	001	#148422, waiau pp, 4/2				4229.28
05/30/2007	PHS933WSTNENPHZZZZZ501		001161	147640	001	#147640, waiau pp, 4/8-				4405.45
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	132776	001	#132776, command cen				13.23
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	149266	001	Inv # 149266 Ser date 0				4576.83
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	147061	001	#147061, waiau pp, 3/2				4447.01
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	145501	001	#145501, Waiau pp, 2/2				4385.92
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	149764	001	Inv # 149764 Ser date 0				4621.02

* By invoice description appear to be 2006 Services

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P *Parent WO:* * *WO Number:* FA000623 *From Date:* 200701 *To Date:* 200706 *Show Emp Info:* No

Company: **HECO**

Invoice Transactions

Tran Dte	Acct Code	Cat No	Supplier No	Inv No	Inv Item No	Inv Item Desc	Contract No	Portion No	Element No	Tran Amt
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	150050	001	Inv # 150050 Ser date 0				4538.62
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	145836	001	#145836, waiau pp, 3/4/				4542.56
06/29/2007	PHS933WSTNENPHZZZZZ501		001161	148026	001	#148026, Waiau PP reg				4758.25
									Expense Element: 501 Subtotal:	135658.91
									Total:	135658.91

Manual Journal Vouchers

Tran Dte	Acct Code	Voucher No	Description	Accountant Code	Qty Amt	Tran Amt
Expense Element: 501	**Outside Svcs-General**					
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3960.32
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3960.32
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3827.04
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3803.24
04/12/2007	PHS933WSTNENPHZZZZZ501	P000049462	accrue security services	0000020021	0	20536.92
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-4470.64
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	4013.68
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3912.72
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3962.30
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3960.32
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3808.00
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3808.00
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3827.04
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3803.24
04/12/2007	PHS933WSTNENPHZZZZZ501	P000049462	accrue security services	0000020021	0	-20536.92
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	4470.64
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-4013.68
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3912.72
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3962.30
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3960.32
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3960.32
04/12/2007	PHS933WSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3960.32
07/12/2007	PHS933WSTNENPHZZZZZ501	PS070711	accrue unpaid invoices at quarter end	GLINTERFAC	0	4738.36

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P *Parent WO:* * *WO Number:* FA000623 *From Date:* 200701 *To Date:* 200706 *Show Emp Info:* No

Company: HECO

Manual Journal Vouchers

Tran Dte	*Acct Code*	*Voucher No*	*Description*	*Accountant Code*	*Qty Amt*	*Tran Amt*
07/12/2007	PHS933WSTNENPHZZZZZ501	PS070711	accrue unpaid invoices at quarter end	GLINTERFAC	0	4542.56
				Expense Element: 501	**Subtotal:**	9280.92
					Total:	9280.92
					Work Order Total:	144939.83

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P *Parent WO:* * *WO Number:* FA000623 *From Date:* 200701 *To Date:* 200706 *Show Emp Info:* No

Company: HECO

Parent Work Order Total: 144939.83

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P *Parent WO:* * *WO Number:* FA000624 *From Date:* 200701 *To Date:* 200706 *Show Emp Info:* No

Company: HECO

Parent WO: FA000043

Work Order: FA000624 Akal - Kahe Contract Services

Invoice Transactions

Tran Dte	Acct Code	Cat No	Supplier No	Inv No	Inv Item No	Inv Item Desc	Contract No	Portion No	Element No	Tran Amt
Expense Element: 501	Outside Svcs-General									
03/07/2007	PHS933KSTNENPHZZZZZ501		001161	142874	001	#142874, Kahe pp, 1/14				5296.39
03/20/2007	PHS933KSTNENPHZZZZZ501		001161	144790	001	#144790, Kahe PP, 1/2				4375.15
03/20/2007	PHS933KSTNENPHZZZZZ501		001161	144801	001	#144801, Kahe PP, 1/7-				5311.08
03/20/2007	PHS933KSTNENPHZZZZZ501		001161	144169	001	#144169, Kahe PP, 2/4-				4532.77
04/09/2007	PHS933KSTNENPHZZZZZ501		001161	141830	001	#141830, Kahe, 12/24-3 *				4622.96
04/11/2007	PHS933KSTNENPHZZZZZ501		001161	135048	001	#135048, kahe pp, 9/10-				3198.72
04/11/2007	PHS933KSTNENPHZZZZZ501		001161	135285	001	#135285, kahe pp, 9/17				3198.72
04/11/2007	PHS933KSTNENPHZZZZZ501		001161	137005	001	#137005, Kahe pp, 10/8				3198.72
04/11/2007	PHS933KSTNENPHZZZZZ501		001161	141052	001	#141052, Kahe PP, 12/				3198.72
04/11/2007	PHS933KSTNENPHZZZZZ501		001161	136656	001	#136656, kahe, 10/1-7/0				3198.72
04/11/2007	PHS933KSTNENPHZZZZZ501		001161	135986	001	#135986, kahe, 9/24-30/				3198.72
04/19/2007	PHS933KSTNENPHZZZZZ501		001161	141240	001	#141240, Kahe, 12/17-2				4112.64
04/25/2007	PHS933KSTNENPHZZZZZ501		001161	147060	001	#147060, kahe, 3/25-31/				4843.50
05/30/2007	PHS933KSTNENPHZZZZZ501		001161	148421	001	#148421, kahe pp, 4/22-				4804.34
05/30/2007	PHS933KSTNENPHZZZZZ501		001161	146492	001	#146492, kahe pp, 1/21-				4699.20
05/30/2007	PHS933KSTNENPHZZZZZ501		001161	147639	001	#147639, kahe pp, 4/8-1				5002.42
05/30/2007	PHS933KSTNENPHZZZZZ501		001161	145292	001	#145292, kahe pp, 2/11-				4797.10
05/30/2007	PHS933KSTNENPHZZZZZ501		001161	146478	001	#146478, kahe pp, 2/18-				4258.65
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	149265	001	Inv # 149265 Ser date 0				4718.78
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	147368	001	#147368, kahe pp, 4/1/0				5018.94
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	146411	001	#146411, kahe pp, 3/18/				5138.18
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	150049	001	Inv # 150049 Ser date 0				4421.14
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	148910	001	#148910, Kahe PP, 4/2				5001.12
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	145835	001	#145835, kahe pp, 3/4/0				4385.92
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	148025	001	#148025, kahe pp, 4/15/				4847.03
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	146070	001	#146070, kahe pp, 3/11/				4642.03
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	145500	001	#145500, kahe pp, 2/25/				4425.08
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	142394	001	#142394, kahe pp, 12/3 *				4917.26
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	149763	001	Inv # 149763 Ser date 0				4887.34

* By inv desc appear to be 2006 Services

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P Parent WO: * WO Number: FA000624 From Date: 200701 To Date: 200706 Show Emp Info: No

Company: HECO

Invoice Transactions

Tran Dte	Acct Code	Cat No	Supplier No	Inv No	Inv Item No	Inv Item Desc	Contract No	Portion No	Element No	Tran Amt
06/29/2007	PHS933KSTNENPHZZZZZ501		001161	134625	001	#134625, kahe pp, 9/3/0				3320.20
									Expense Element: 501 Subtotal:	131571.54
									Total:	131571.54

Manual Journal Vouchers

Tran Dte	Acct Code	Voucher No	Description	Accountant Code	Qty Amt	Tran Amt
Expense Element: 501	Outside Svcs-General					
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	P000049462	accrue security services	0000020021	0	-20536.92
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	P000049462	accrue security services	0000020021	0	20536.92
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	4622.96
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933KSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-4622.96
				Expense Element: 501	Subtotal:	0.00
					Total:	0.00
					Work Order Total:	131571.54

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District:	Parent WO:	WO Number:	From Date:	To Date:	Show Emp Info:
P	*	FA000624	200701	200706	No

Company: HECO

Parent Work Order Total: 131571.54

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P *Parent WO:* * *WO Number:* FA000625 *From Date:* 200701 *To Date:* 200706 *Show Emp Info:* No

Company: HECO

Parent WO: FA000043

Work Order: FA000625 AKAL SECURITY SERVICES HPP

Invoice Transactions

Tran Dte	Acct Code	Cat No	Supplier No	Inv No	Inv Item No	Inv Item Desc	Contract No	Portion No	Element No	Tran Amt
Expense Element: 501	Outside Svcs-General									
03/07/2007	PHS933HSTNENPHZZZZZ501		001161	143653	001	#143653, Honolulu PP,				3289.44
03/20/2007	PHS933HSTNENPHZZZZZ501		001161	142873	001	#142873, Honolulu PP,				3289.44
03/20/2007	PHS933HSTNENPHZZZZZ501		001161	144168	001	#144168, Honolulu PP,				3289.44
03/20/2007	PHS933HSTNENPHZZZZZ501		001161	144985	001	#144985, Honolulu PP,				3289.44
03/30/2007	PHS933HSTNENPHZZZZZ501		001161	142393	001	#142393, honolulu, 12/3 *				3473.64
03/30/2007	PHS933HSTNENPHZZZZZ501		001161	142649	001	#142649, honolulu, 1/7-				3289.44
03/30/2007	PHS933HSTNENPHZZZZZ501		001161	143219	001	#143219, honolulu, 1/21				3289.44
04/09/2007	PHS933HSTNENPHZZZZZ501		001161	141829	001	#141829, Honolulu, 12/2 *				3404.40
04/11/2007	PHS933HSTNENPHZZZZZ501		001161	141051	001	#141051, Honolulu PP,				3198.72
04/11/2007	PHS933HSTNENPHZZZZZ501		001161	134624	001	#134624, honolulu pp, 9 *				3404.40
04/11/2007	PHS933HSTNENPHZZZZZ501		001161	135284	001	#135284, honolulu pp, 9 *				3198.72
04/11/2007	PHS933HSTNENPHZZZZZ501		001161	135985	001	#135985, honolulu, 9/24 *				3198.72
04/11/2007	PHS933HSTNENPHZZZZZ501		001161	136655	001	#136655, honolulu, 10/1 *				3198.72
04/11/2007	PHS933HSTNENPHZZZZZ501		001161	137004	001	#137004, Honolulu pp, 1				3198.72
04/19/2007	PHS933HSTNENPHZZZZZ501		001161	141239	001	#141239, Honolulu, 12/1 *				3198.72
04/25/2007	PHS933HSTNENPHZZZZZ501		001161	146069	001	146069, honolulu pp, 3/				3289.44
04/25/2007	PHS933HSTNENPHZZZZZ501		001161	147059	001	#147059, honolulu pp, 3				3288.85
04/25/2007	PHS933HSTNENPHZZZZZ501		001161	147367	001	#147367, honolulu pp, 4				3289.44
04/25/2007	PHS933HSTNENPHZZZZZ501		001161	145499	001	#145499, honolulu pp, 2				3289.44
05/22/2007	PHS933HSTNENPHZZZZZ501		001161	145834	001	#145834, honolulu pp, 3				3289.44
05/30/2007	PHS933HSTNENPHZZZZZ501		001161	145291	001	#145291, honolulu pp, 2				3289.44
05/30/2007	PHS933HSTNENPHZZZZZ501		001161	147638	001	#147638, honolulu pp, 4				3289.44
05/30/2007	PHS933HSTNENPHZZZZZ501		001161	148420	001	#148420, honolulu pp, 4				3289.44
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	150048	001	Inv # 150048 Ser date 0				3500.88
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	134490	001	#134490, honolulu pp, 8 *				3922.24
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	134625	001	#134625, kahe pp, 9/3/0 *				236.52
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	135047	001	#135047, honolulu pp, 9 *				2970.29
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	146410	001	#146410, honolulu pp, 3				3127.51
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	148024	001	#148024, honolulu pp, 4				3274.76

* By inv desc appear to be 2006 services

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District: P Parent WO: * WO Number: FA000625 From Date: 200701 To Date: 200706 Show Emp Info: No

Company: HECO

Invoice Transactions

Tran Dte	Acct Code	Cat No	Supplier No	Inv No	Inv Item No	Inv Item Desc	Contract No	Portion No	Element No	Tran Amt
06/29/2007	PHS933HSTNENPHZZZZZ501		001161	148909	001	#148909, Honolulu PP,				3289.44
									Expense Element: 501 Subtotal:	95847.97
									Total:	95847.97

Manual Journal Vouchers

Tran Dte	Acct Code	Voucher No	Description	Accountant Code	Qty Amt	Tran Amt
Expense Element: 501	Outside Svcs-General					
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	P000049462	accrue security services	0000020021	0	17224.50
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3404.40
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3404.40
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	P000049462	accrue security services	0000020021	0	-17224.50
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	3404.40
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3198.72
04/12/2007	PHS933HSTNENPHZZZZZ501	PS070411	accrue unpaid invoices at quarter end	GLINTERFAC	0	-3404.40
07/06/2007	PHS933HSTNENPHZZZZZ501	PS070705	accrue unpaid invoices at quarter end	GLINTERFAC	0	3171.96
07/06/2007	PHS933HSTNENPHZZZZZ501	PS070705	accrue unpaid invoices at quarter end	GLINTERFAC	0	3132.80
07/12/2007	PHS933HSTNENPHZZZZZ501	PS070711	accrue unpaid invoices at quarter end	GLINTERFAC	0	3299.23
					Expense Element: 501 Subtotal:	9603.99
					Total:	9603.99
					Work Order Total:	105451.96

1652 Work Order Detail / Summarized Labor Report

Report Parameters

District:	Parent WO:	WO Number:	From Date:	To Date:	Show Emp Info:
P	*	FA000625	200701	200706	No

Company: HECO

Parent Work Order Total: 105451.96

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Estimate of Outstanding June Invoices for Security Contractor

Location	Week	Hours	Amount w/ 4.166% Tax
Waiau PP	6-10 to 6-16-07	248	$ 5,058.13
	6-17 to 6-23-07	248	$ 5,058.13
	6-24 to 6-30-07	248	$ 5,058.13
Subtotal			15,174.39
Kahe PP	6-10 to 6-16-07	248	$ 5,058.13
	6-17 to 6-23-07	248	$ 5,058.13
	6-24 to 6-30-07	232	$ 4,731.80
Subtotal			$ 14,848.06
HPP	6-10 to 6-16-07	168	$ 3,311.73
	6-17 to 6-23-07	168	$ 3,311.73
	6-24 to 6-30-07	168	$ 3,426.48
Subtotal			$ 10,049.94
Total			$ 40,072.39

CA-IR-487

Ref: Responses to CA-IR-240, CA-IR-241, and CA-IR-242 (Generating Station Priority List).

Please provide an updated estimate of actual year to date and projected total 2007 spending on each generating station priority list line item with supporting narrative for each change relative to test year projected amounts for each line item.

HECO Response:

Actual year to date and projected total 2007 spending for each generating station priority list is shown in Attachment 1 to this response. Items that have been deferred and will not be performed in 2007 are shown to have "$0" in the "Projected 2007" column.

The forecast amounts for the remainder of the priority list items have been updated to reflect an increase, a decrease, or no change in the projected year-end amounts.

Priority list items that are deferred or cancelled are usually discretionary or of lower priority. As described in CA-IR-240, -241, and -242, 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 that discretionary work 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.

Please also refer to HECO's responses to CA-IR-240 and CA-IR-488 for additional discussion on the deferring of discretionary work to offset the higher costs of other non-discretionary work.

HAWAIIAN ELECTRIC COMPANY, INC.

2007 RATE CASE

Production Operations and Maintenance

2007 STATION PRIORITY LIST - MATERIALS AND OUTSIDE SERVICE ONLY

(In Thousands)

PROG	DESCRIPTION	2007 Total Budget	RA	ABM	LOC	EE	2007 INCURRED COST JAN07	FEB07	MAR07	APR07	MAY07	TOTAL JAN-MAY 07	PROJECTED 2007 (a)
KAHE													
O&M	Kahe Boiler Feed Pump OH (1)	$170,000	IL	258	KST	201						$0	$0
O&M	Kahe Basin Dredging	$200,000	IL	260	KST	501				$124,200	$8,200	$132,400	$132,400
O&M	Lube Oil Tanks 11,12, 31,32	$200,000	IL	260	KST	501						$0	$0
O&M	Kahe Stilling Basin Structural Repairs	$150,000	IL	262	KST	501			$6,300		$3,100	$9,400	$159,500
O&M	Kahe 1-6 Corrosion Control	$250,000	IL	265	KST	501						$0	$0
O&M	Kahe 5&6 ACW Lines/ Inspect, Repair, Replace	$250,000	IL	265	KST	501						$0	$0
O&M	Kahe Turbine Deck Coating Repairs	$300,000	IL	265	KST	501						$0	$200,000
	Kahe Burner Tips Replacements	$80,000	IL	257	KST	201						$0	$80,000
	Kahe ABB Engineer	$36,000	IL	257	KST	501			$4,000		$300	$4,300	$25,800
	Kahe Contract Helpers and Insulator	$360,000	IL	258	KST	501			$102,800			$102,800	$325,700
	Kahe Condenser Scrapers	$12,000	IL	260	KST	501						$0	$12,000
	Kahe Intake Bar Grills Insp & Cln	$5,000	IL	260	KST	501						$0	$5,000
	Kahe Westinghouse Engineer	$25,000	IL	260	KST	501			$400			$400	$19,200
	Kahe Condenser Clean	$60,000	IL	260	KST	501	$48,000	$2,900	$20,100	$600	($1,200)	$70,400	$105,300
	Kahe Black start Annual Maint.	$20,000	IL	260	KST	501		$1,200				$1,200	$21,200
	Kahe Discharge Structure Bar Grills - Cln & Insp	$15,000	IL	260	KST	501						$0	$0
	Kahe Circ Water Pump OH (1)	$50,000	IL	261	KST	201						$0	$50,000
	Kahe Condensate Pump OH	$15,000	IL	261	KST	201						$0	$15,000
	Kahe Screen Wash Water Piping	$25,000	IL	262	KST	501						$0	$25,000
	Kahe Demin Mixed Bed Resin Replace	$90,000	IL	263	KWT	201						$0	$90,000
	Kahe Septic Tank Pumping	$4,000	IL	265	KWW	501						$0	$3,000
	Kahe Waste Water Structural Maint	$60,000	IL	265	KWW	501						$0	$60,000
	Kahe Locker Room Lockers/Replace/Realign	$25,000	IL	265	KST	501						$0	$25,000
	Kahe Admin Office/Refurbish, Paint, Ceiling Panels	$50,000	IL	265	KST	501						$0	$0
	Kahe Culvert Drain Maintenance	$10,000	IL	265	KST	501						$0	$10,000
	Kahe Roll-up Door Maintenance	$19,800	IL	265	KST	501						$0	$13,200
	Kahe Gate Maintenance	$15,000	IL	265	KST	501						$0	$10,000
	Kahe Discharge Shoebox Repairs	$50,000	IL	265	KST	501						$0	$92,500
	Kahe Turbine Deck Drains	$50,000	IL	265	KST	501						$0	$200,000
	Farrington Hwy Culvert Clean up	$50,000	IL	265	KST	501						$0	$50,000
	Kahe Fence Repairs	$30,000	IL	265	KST	501						$0	$30,000
	Kahe Fire Break Clearing	$20,000	IL	265	KST	501						$0	$20,000
	Kahe Roadway Repairs	$100,000	IL	265	KST	501						$0	$0
	Kahe Demin Structural Maint	$30,000	IL	265	KWT	501						$0	$30,000
	Kahe Distilled Water Tanks Insp & Rpr.	$30,000	IL	265	KWT	501						$0	$15,000
	Kahe A/C Duct Cleaning and Disinfection	$20,000	IL	266	KST	501					$21,500	$21,500	$21,500
	Kahe Drott Maint./Certification	$20,000	IL	266	KST	501						$0	$0
	Kahe Gantry Crane Annual Insp.	$3,000	IL	266	KST	501						$0	$3,000
	Kahe Fuel Oil Pipeline Repairs/Insp.	$50,000	IL	269	KTF	501						$0	$23,000
	K6 CEMS Maintenance	$54,000	IL	875	KST	501	$0	$5,300	$4,900	$3,600	$3,500	$17,300	$48,800
	Kahe Asbestos Abatement/Disposal	$20,000	IL	878	KST	501						$0	$15,000

2007 STATION PRIORITY LIST - MATERIALS AND OUTSIDE SERVICE ONLY

(In Thousands)

PROG	DESCRIPTION	2007 Total Budget	RA	ABM	LOC	EE	2007 INCURRED COST JAN07	FEB07	MAR07	APR07	MAY07	TOTAL JAN-MAY 07	PROJECTED 2007 (a)
	Kahe Hazardous Waste Disposal	$20,000	IL	878	KST	501						$0	$15,000
	Kahe Lead Abatement	$4,000	IL	878	KST	501						$0	$3,000
	Kahe Mercury Disposal	$20,000	IL	878	KST	501						$0	$15,000
	Kahe Waste Oil Disposal	$20,000	IL	878	KST	501		$200				$200	$20,200
	Kahe Roadside Landscaping	$20,000	IL	931	KST	501						$0	$20,000
	Kahe Tree Trimming	$20,000	IL	931	KST	501						$0	$19,500
	TOTAL	$3,127,800	(b)									$359,900	$2,028,800
HONOLULU													
O&M	Hon Building Repairs	$160,000	IN	265	HST	501						$0	$210,000
O&M	Hon Boiler Feed Pump overhaul	$170,000	IN	258	HST	201						$0	$0
O&M	Iwilei pipeline Inspection	$120,000	IN	270	ITF	501						$0	$120,000
O&M	Iwilei pipeline Repairs	$300,000	IN	270	ITF	501						$0	$0
	Hon Iwilei Tank Farm Office Reprs	$25,000	IN	265	ITF	501						$0	$7,000
	Hon Contract Welder and Insulator	$288,000	IN	258	HST	501	($11,600)	$25,800	$11,600	$0	$26,000	$51,800	$219,800
	Hon Traveling Screen OH	$50,000	IN	260	HST	201						$0	$0
	Hon Fuel Oil Tank Berm Mods	$100,000	IN	269	HTF	501						$0	$0
	Hon Lube Oil tank 81/82 Clean, inspect, repair	$100,000	IN	261	HST	501						$0	$0
	Hon Waste Water Pit Repairs	$50,000	IN	265	HWW	501	$0	$600	$0	$8,500	$17,300	$26,400	$50,600
	Hon Burner Tips Replacement	$9,000	IN	257	HST	201	$0	$0	$0	$3,100	$0	$3,100	$9,000
	Hon A/C Duct Cleaning and Disinfection	$5,000	IN	263	HST	501						$0	$8,900
	Hon Gantry Crane Annual Inspection	$4,000	IN	266	HST	501						$0	$4,000
	Iwilei pipeline DOT Compliance	$75,000	IN	271	ITF	501	$0	$0	$0	$600	$0	$600	$75,600
	Iwilei pipeline Miscellaneous Repairs	$30,000	IN	271	ITF	501						$0	$0
	Hon Asbestos Removal	$100,000	IN	878	HST	501	$51,600	$500	$37,600	$0	$1,800	$91,500	$141,500
	Hon Haz Waste Disposal	$28,000	IN	878	HST	501	$0	$0	$1,200	$1,000	$900	$3,100	$24,100
	Hon Lead Abatement	$4,000	IN	878	HST	501						$0	$2,000
	Hon Tree Trimming	$4,000	IN	931	HST	501						$0	$3,400
	Hon Mercury Disposal	$4,000	IN	878	HST	501	$0	$3,400	$0	$0	$0	$3,400	$5,400
		$1,626,000	(c)									$179,900	$881,300
WAIAU													
O&M	Waiau Boiler Feed Pump Overhaul	$170,000	IX	258	WST	201						$0	$188,000
O&M	Waiau Traveling Screens Overhaul W 5/6	$240,000	IX	260	WST	201	$0	$0	$109,500	$19,900	$3,400	$132,800	$265,900
O&M	Waiau Circ Water Pump Overhaul	$180,000	IX	261	WST	201						$0	$199,700
O&M	Waiau Paint - Corrosion Control	$200,000	IX	265	WST	501						$0	$0
O&M	Waiau Shop Bldg Repairs	$150,000	IX	265	WST	501						$0	$150,000
	Waiau Burner Tips Replacement	$50,000	IX	257	WST	201	$1,400	$0	$12,500	$2,700	$0	$16,600	$41,600
	Waiau ABB Engineer	$36,000	IX	257	WST	501	$0	$0	$4,000	$0	$0	$4,000	$28,000
	Waiau Contract Blr Mkr, Helper and Insulator	$360,000	IX	258	WST	501	$17,700	$14,900	$44,400	$7,200	$27,400	$111,600	$313,100
	Lube Oil Analysis Services - PDM	$0	IP	258	WST	501	$576	$674	$2,363	$2,098	$5,562	$11,273	$2,000
	Misc. PDM Purchases	$0	IP	258	WST	501	$42	$2,264	$0	$75	$381	$2,762	$3,000
	Waiau Condenser Scrapers	$15,000	IX	260	WST	501						$0	$10,000
	Waiau Westinghouse Engineer	$25,000	IX	260	WST	501	$0	$0	$300	$0	$0	$300	$19,100
	Waiau Condenser Clean	$60,000	IX	260	WST	501	$5,600	$400	$24,900	$1,500	$600	$33,000	$63,400
	Waiau Condensate Pump Overhaul	$40,000	IX	261	WST	201	$200	$0	$0	$500	$36,500	$37,200	$57,200
	Waiau Demin Mixed Bed Regen (Barney fill in)	$20,000	IX	263	WWT	501						$0	$15,000
	Waiau Demin Reverse Osmosis Filters (Barney fill in)	$35,000	IX	263	WWT	501						$0	$0
	Waiau Demin Remote Monitoring	$12,000	IX	263	WWT	501						$0	$8,000
	Waiau Bathroom/Shower/Locker room Refurbishment	$20,000	IX	265	WST	501						$0	$20,000

2007 STATION PRIORITY LIST - MATERIALS AND OUTSIDE SERVICE ONLY

(In Thousands)

PROG	DESCRIPTION	2007 Total Budget	RA	ABM	LOC	EE	2007 INCURRED COST JAN07	FEB07	MAR07	APR07	MAY07	TOTAL JAN-MAY 07	PROJECTED 2007 (a)
	Waiau Roll-up Door Maintenance	$19,800	IX	265	WST	501						$0	$9,900
	Waiau Gate Maintenance	$15,000	IX	265	WST	501						$0	$10,000
	Waiau Distilled Water Tank Maintenance Tank 4	$80,000	IX	265	WT2	501	$2,800	$2,000	$600	$0	$0	$5,400	$85,400
	Waiau Waste Water Treatment Facility Repairs - Gene	$75,000	IX	265	WWW	501						$0	$75,000
	Waiau Fence Repairs	$80,000	IX	265	WST	501	$0	$2,000	$0	$0	$0	$2,000	$22,000
	Waiau Roadway Repairs	$100,000	IX	265	WST	501	$0	$2,000	$0	$5,000	$2,000	$9,000	$109,000
	Waiau Sludge Bed Drying Cell Renewal	$50,000	IX	265	WWW	501	$10,100	$0	$0	$0	$0	$10,100	$60,100
	Waiau A/C Duct Cleaning and Disinfection	$34,000	IX	266	WST	501	$8,500	$10,200	$0	$0	$0	$18,700	$52,700
	Waiau Fire Protection System Maintenance	$50,000	IX	266	WST	501						$0	$166,600
	Waiau Equipment Maintenance (Snorkle/Fork/Carts)	$15,300	IX	266	WST	501						$0	$11,600
	Waiau Gantry Crane Certification	$6,400	IX	266	WST	501	$0	$0	$0	$400	$0	$400	$4,400
	Waiau Gantry Crane Mech/Hydraulic Repairs	$45,000	IX	268	WST	501						$0	$45,000
	Waiau Fuel Oil Tank Maint.	$50,000	IX	269	WFS	501						$0	$0
	Transformer Oil Analysis Services - PDM	$0	IP	349	WST	501						$0	$0
	Used Transformer Oil Disposal - PDM	$0	IP	349	WST	501	$0	$0	$377	$1,000		$1,377	$1,000
	Waiau Asbestos Abatement	$100,000	IX	878	WST	501						$0	$52,500
	Waiau Hazardous Waste Disposal	$100,000	IX	878	WST	501	$0	$0	$0	$100	$0	$100	$100,100
	Waiau Lead Abatement	$40,000	IX	878	WST	501						$0	$30,000
	Waiau Mercury Disposal	$4,000	IX	878	WST	501						$0	$3,000
	Waiau Tree Trimming (Safety & Security)	$10,000	IX	931	WST	501	$100	$0	$20,900	$0	$0	$21,000	$33,100
		$2,487,500	(d)									$417,612	$2,255,400
	GRAND TOTAL	$7,241,300										$957,412	$5,165,500

NOTES:
(a) - As of 06/27/07.
(b) - Kahe total agrees with CA-IR-2, HECO T-6. Attachment 13D, page 4.
(c) - Honolulu total agrees with CA-IR-2, HECO T-6, Attachment 13F, page 4.
(d) - Waiau total agrees with CA-IR-2, HECO T-6, Attachment 13K, page 3.

CA-IR-488

Ref: June 2007 Update, HECO T-6, Response to CA-IR-244, page 4 (Excluded Overhaul Expenses).

According to the response to CA-IR-244 at page 4, "The exclusion of the HP/LP steam turbine major overhaul expenses in the 2007 budget for these three units was an oversight." On page 3, the same response states, "…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)." In its June 2007 update, HECO is not proposing any revision to "overhaul expenses." Please provide the following information:

a. Provide all analyses, workpapers, studies and other information relied upon to conclude in CA-IR-244, part (c), that, "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."

b. Confirm that the detailed calculations supporting the expense amounts associated with the "oversight" associated with exclusion of steam turbine overhaul expenses, as referenced in your response to CA-IR-244, part (f), are included as Attachment 4 to your response to CA-IR-240, or provide corrected and updated calculations as necessary.

c. Explain how the "Other Production O&M expenses, in total, as presented in HECO T-6" can represent a "reasonable ongoing level of expenses for the 2007 test year," given the amounts omitted for normalized overhaul activities as stated in Attachment 4 to CA-IR-240.

d. State with specificity which elements and what expense amounts of the "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," as stated at CA-IR-244, page 4.

HECO Response

a. HECO does not have an analysis supporting the quoted statement, other than the detailed information already provided in this proceeding. In general, HECO's expectation that the total amount would be sufficient despite the substantially higher overhaul expenses now expected for 2007 was based on monthly reviews of year-to-date results and current month-to-December updates. (Without waiving its objections to providing internal management reports and budget variance reports, HECO plans to provide the monthly Forward Looking

Financial Update information for the Power Supply O&M Department, under protective order, in response to CA-IR-408.) However, HECO's more recent look at the expected 2007 results for the Power Supply Process area, as well as current work being undertaken as part of the 2008 budget development process, indicates that the 2007 test year estimate, even with the June 2007 updates, will be inadequate. Attachment 4 to the response to CA-IR-240 summarized the overhaul and outage project expenses for 2007. These expenses had been revised to a total of $21,607,000 (before subtraction of non-labor G/L Codes), an increase of $5,886,000 over the 2007 test year estimate of $15,721,000 (before subtraction of non-labor G/L Codes). (Refer to CA-IR-335, Attachment 3, page 2.) While HECO anticipated an overrun of $5,886,000 for 2007 overhaul and outage projects, at the time of the June 2007 Update, HECO stated that it was not currently seeking an increase in 2007 test year expenses. Instead, HECO indicated that the funds initially allocated for lower priority work or the discretionary work[1] described in the response to CA-IR-240 and identified in Attachment 3 to that response, as well as in the responses to CA-IR-241 and CA-IR-242, will be used to help offset the unbudgeted increases in these overhaul and outage projects.

[1] As stated in the response to CA-IR-240, 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.

Moreover, in addition to the deferred discretionary work identified in Attachment 3 to the response to CA-IR-240, other work would also have to be deferred to allow performance of all the necessary overhaul and outage project work and avoid significant overruns of the budget.[2]

The estimated costs for the 2007 scheduled overhauls have continued to increase, and are now estimated to total $22,425,000 (before subtraction of non-labor G/L codes), as shown in Attachment 3, page 3, and will be discussed in detail in the response to CA-IR-420. A more recent review of the costs for the recently completed Kahe 1 and Waiau 7 overhaul further illustrates how costs have increased dramatically in a relatively short period. As illustrated in Attachment 1 to this response, the 2007 expenses incurred for the Kahe 1 and Waiau 7 overhauls through July 12, 2007, are $4,074,000, and $5,558,000, respectively, which are $2,345,000 and $1,426,000, greater than the cost estimates for this work included in the 2007 test year estimate. A general reason for these increases is that the cost of materials and services utilized during the overhauls continues to increase. As shown in Attachment 2 to this response, which is a summary provided to HECO by its contractor, ABB, commodity prices for electrical steel, copper, aluminum, and crude oil have increased substantially over the past few years, including the first several months of 2007. The higher commodity prices have translated into increased material prices. ABB provides several reasons for the increases, including: speculative investments in metals, strong demand from China and India, Middle East tensions, and the overall strength of the global economy.

[2] However, as stated in the response to CA-IR-244, subpart c, "…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)."

A specific and major factor for the increases in overhaul costs is the non-labor expense for the high pressure/low pressure (HP/LP) steam turbine overhaul of Kahe 1 and Waiau 7. Costs for these HP/LP steam turbine overhauls resulted in actual costs of $1,005,274 and $769,051 for Kahe 1 and Waiau 7, respectively (see Attachments 4 and 5 to this response).

It is currently evident that funds saved by deferral of discretionary work are not sufficient to offset the higher costs of overhauls in 2007. Attachment 3 to this response shows forecast expenses (i.e., "Financial View") for the Power Supply Process Area, summarizing the expected overrun in 2007. As shown, despite the deferral of significant amounts of discretionary work, the current expectation is that total expenditures will exceed budget by $2,545,000. The cost of HP/LP steam turbine overhauls is a major contributor to this overage and, as discussed in subpart c (below), is the basis for a proposed adjustment to the 2007 test year estimate.

b. Yes, the detailed calculations supporting the expense amounts associated with the "oversight" associated with exclusion of steam turbine overhaul expenses, as referenced in HECO's response to CA-IR-244, subpart f, are included as Attachment 4 to HECO's response to CA-IR-240.

c. Based on HECO's most recent analysis of actual and estimated costs for required overhaul work in 2007 and the typical non-labor cost of a HP/LP steam turbine overhaul, HECO proposes an adjustment of $1,557,000 to the test year estimate to correct for the "oversight" associated with exclusion of steam turbine overhaul expenses. As shown in Attachments 4 and 5 to this response, respectively, the actual non-labor costs for the HP/LP steam turbine overhauls of Kahe 1 and Waiau 7 were $1,005,274 and $769,051. These HP/LP steam turbine overhauls are typical of those performed during the major inspections that occur

once every six years for each steam generating unit. The average cost for these two HP/LP steam turbine overhauls was $887,163 (the average of $1,005,274 and $769,051). (As shown in Attachment 6, the comparable cost for the HP/LP steam turbine overhauls of Waiau 5 and Kahe 3, both of which are to be performed in 2007, are currently forecast to be $822,000 and $769,000, respectively, but the actuals have been exceeding the forecast.)

As discussed in the response to CA-IR-231, "Two to three steam turbine overhauls per year would be more representative of a 'normal' year based on the fact that there are 14 steam electric units and each one is scheduled to have a steam turbine overhaul every six years." The two combustion turbines also require major turbine overhauls on a periodic basis, and that will depend, in parts, on the service hours and number of starts of the combustion turbines. Accordingly, it is reasonable to assume that a "normal" year would have the equivalent of two-and-one-half (i.e., "2.5") steam turbine overhauls.[3] A reasonable cost for one steam overhaul based on the most recent experiences at Kahe 1 and Waiau 7 would be $887,163. Thus, a reasonable forecast of expense for steam turbine overhauls in a "normal" year would be 2.5 x $887,163 = $2,217,906 (rounded to $2,218,000). As detailed in Attachment 7 to this response, $661,000 is currently included in the test year estimate for the non-labor steam turbine overhauls work (of which $50,000 relates to the Kahe 1 and Waiau 7 overhauls). These expenses are expressly for steam turbine work related to overhauls that occur every six years, and do not include the turbine inspection work (e.g., change out of lube oil, instrumentation preventive maintenance) that is typically associated

[3] The derivation of 2.5 steam turbine overhauls per year being normal was based on the following: (1) Each of 14 steam turbines being overhauled every 6 years = 14/6 = 2.333. (2) Periodic combustion turbine overhauls occurring on a periodic basis in addition to the steam turbine overhauls would increase the number of steam turbine overhauls per "normal" year by a nominal amount. Thus, the factor of 2.333 was rounded up to 2.5. See response to CA-IR-231.g.

with turbine inspections that occur every three years.[4] The proposed adjustment to the test year expense is $1,557,000, or $2,218,000 less $661,000.

It should also be noted that in accordance with the Planned Maintenance Schedule dated June 15, 2007, and provided as Attachment 1 to the response to CA-IR-335, there will be four HP/LP steam turbine overhauls performed in 2007, for Kahe 1, Waiau 7, Kahe 3, and Waiau 5. Using the logic described above, the estimated total cost for this work would be: 4 x $887,163 = $3,548,652. The current estimate for this work, including the actual costs for Kahe 1 and Waiau 7 and estimates for Kahe 3 and Waiau 5, is $3,365,325 (i.e., the sum of the actual costs of the Kahe 1 and Waiau 7 steam turbine overhauls per Attachments 4 and 5 to this response, plus the forecast of the Kahe 3 and Waiau 5 steam turbine overhauls per Attachment 6 to this response). Of this total, there is only $661,000 included in the test year estimate for this work, leaving a deficit of $2,704,325. As proposed above, the proposed adjustment would offset $1,557,000, and the remaining $1,147,000 would be covered using funds originally earmarked for discretionary work.

d. As described in CA-IR-240, page 3, The funds initially allocated for the work described in CA-IR-240, Attachment 3; CA-IR-241, Attachment 3; and CA-IR-242, Attachment 3 will be used to partially offset the unbudgeted increases in the overhaul and outage projects. The sum of the expenses for these is $1,812,000, which is a partial list of discretionary work being deferred to offset the higher cost of overhauls.

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[4] Attachment 1 in the response to CA-IR-244, summarized items included in steam turbine overhauls in the June 2007 Update of the test year estimate but it was only a partial list.

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

Project Number	Project Name	2007 Test Year	2007 Actuals thru 7/12/07 (1)	Difference
P0000846	Kahe 1 Overhaul (2005)	$1,729	$4,074	$2,345
P0001106	Waiau 7 Overhaul (2007)	$4,132	$5,558	$1,426
TOTAL		$5,861	$9,632	$3,771
	Other Overhaul Proj Cost	$9,860		
	Total Overhaul Proj Cost	$15,721	Agrees with CA-IR-240, Attachment 4.	

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

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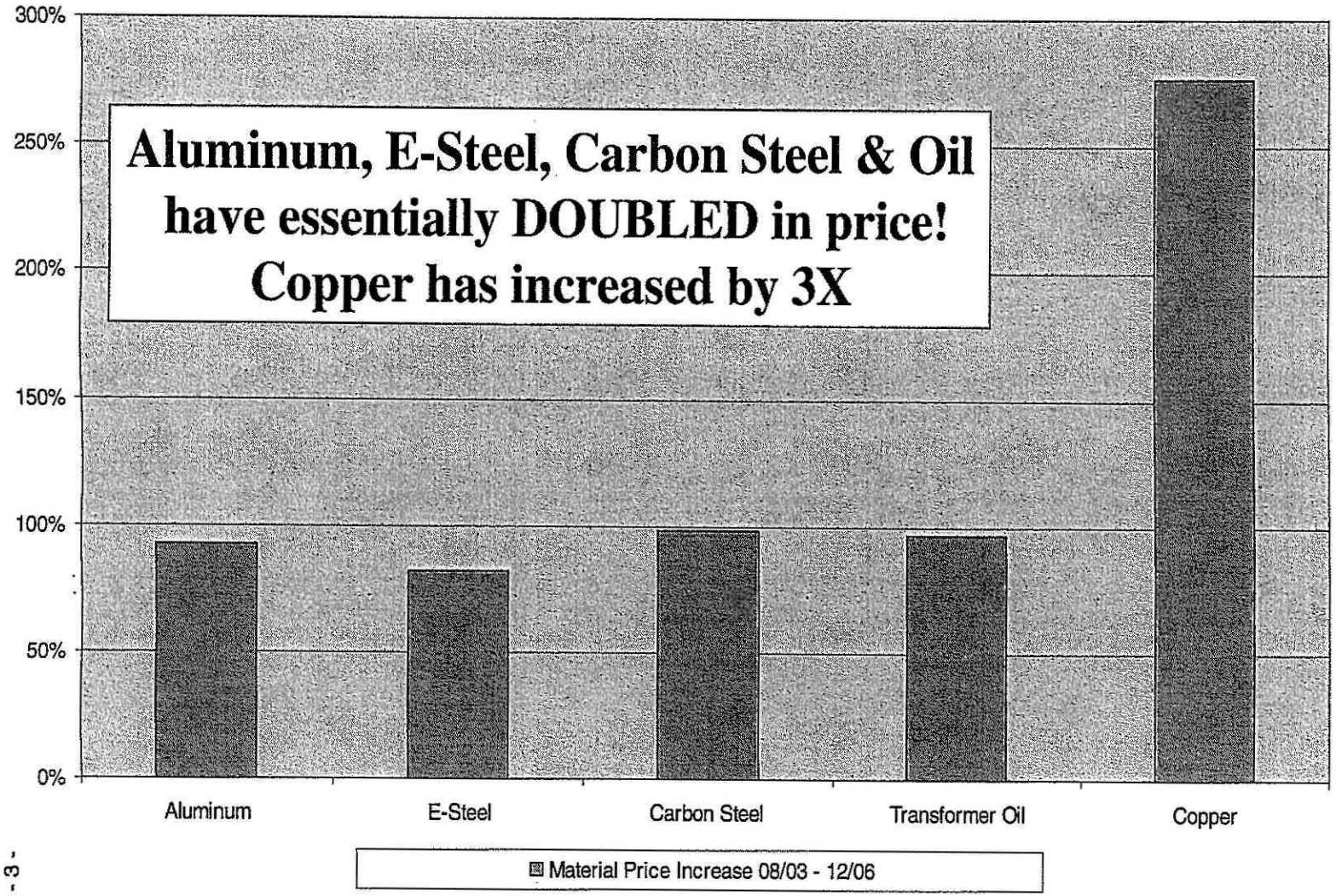
Txfmr Commodity Increases Aug '03 – Dec '06



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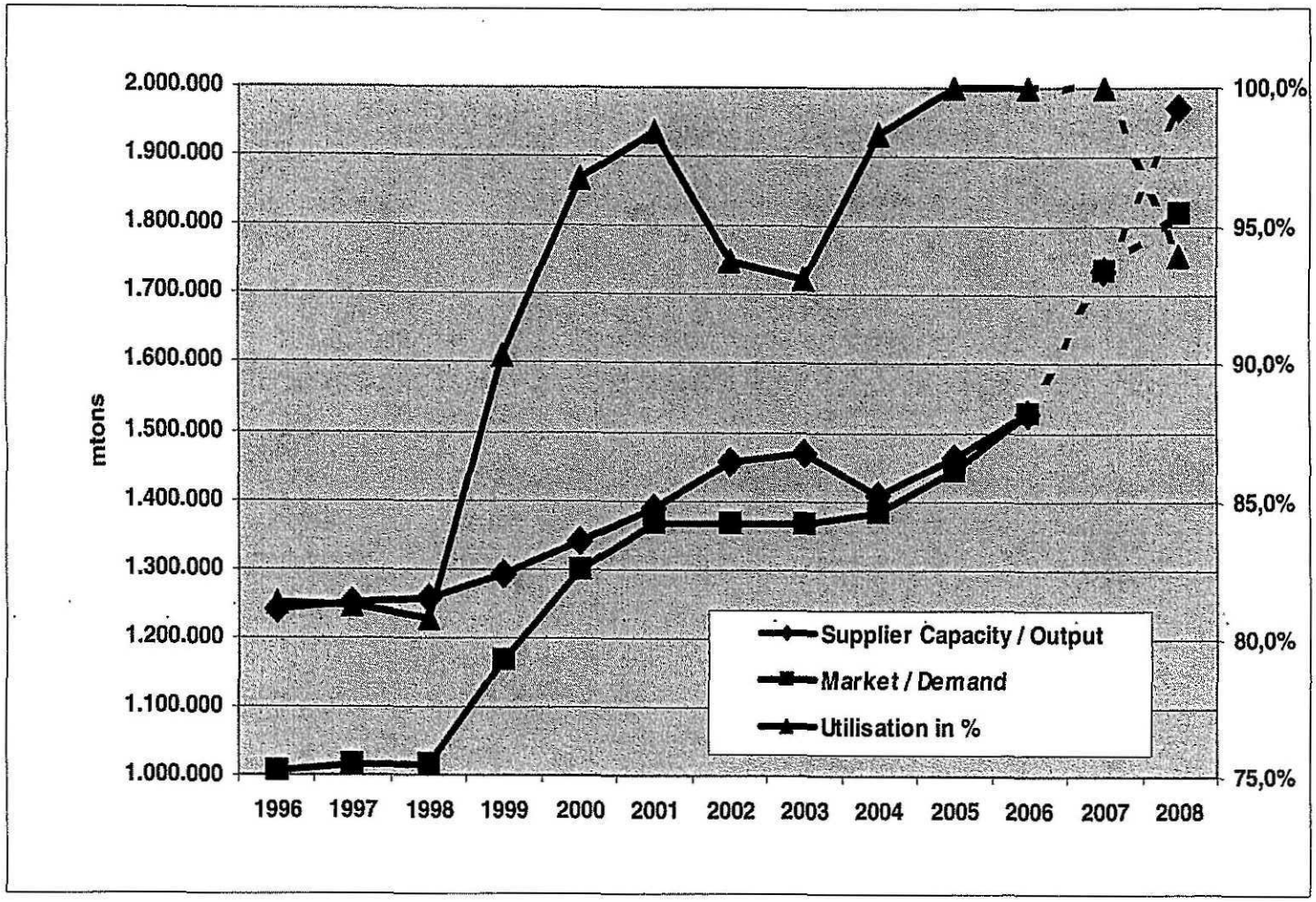
Electrical Steel Worldwide Market



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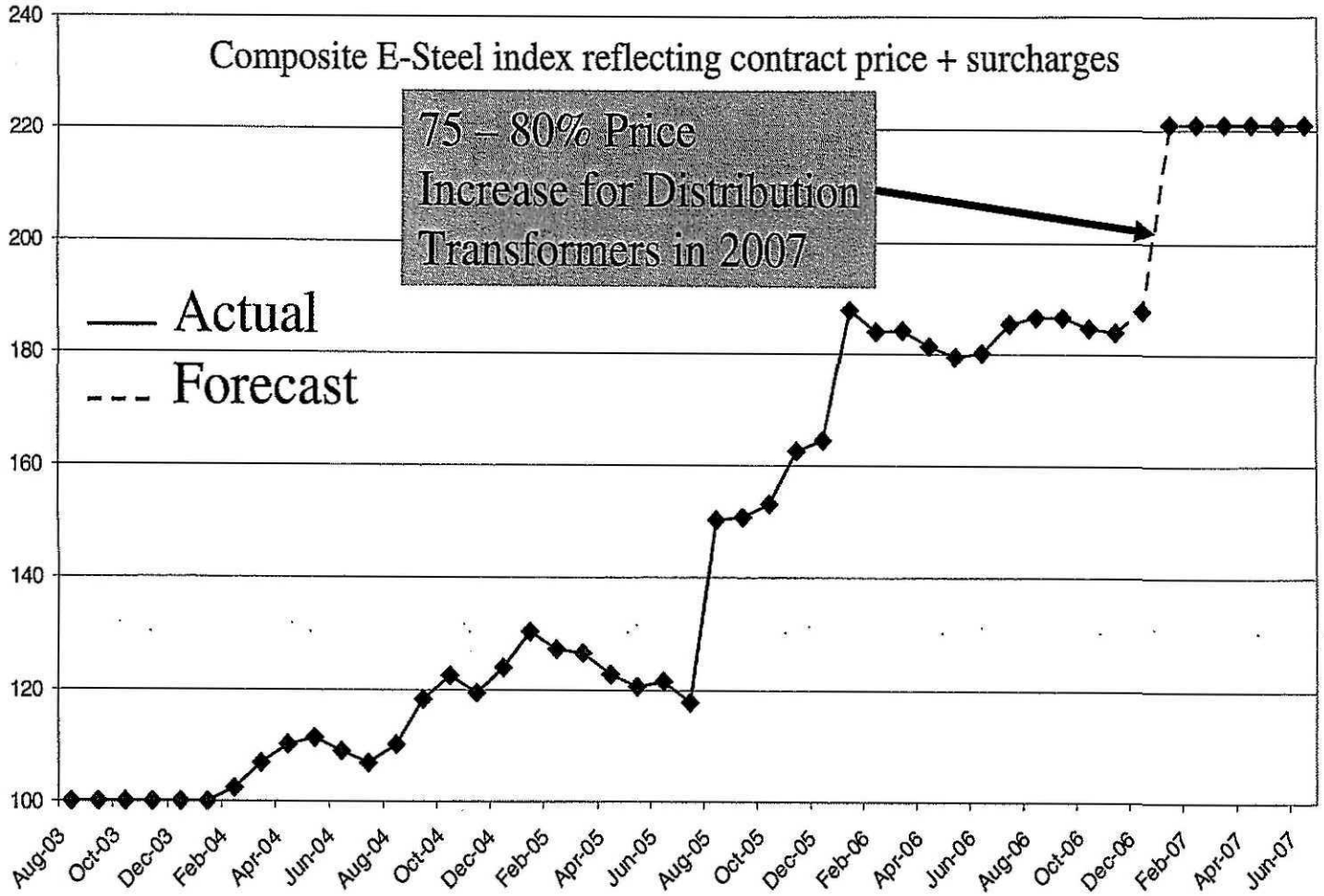
10-Jul-07

2007 E-Steel Price Increase



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Copper & Aluminum Metal Forecast

Price/Mton	2002 Actual	2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Fcst	2008 Fcst
Copper	$ .706	$ .806	$ 1.30	$ 1.67	$ 3.05	$ 3.42	$ 2.91
Cumulative Change	Base	+14%	+84%	+136%	+332%	+384%	+312%
Aluminum	$ .612	$ .649	$ .778	$ .861	$ 1.165	$ 1.24	$ 1.163
Cumulative Change	Base	+6%	+27%	+41%	+90%	+103%	+90%

Forecast from Barclays, January 2007

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Crude Oil Forecast (USD/Barrel)

2003 Actual	2004 Actual	2005 Actual	2006 Actual	2007 Fcst	2008 Fcst	
31.0	41.5	56.7	66.2	76.0	67.3	
	+34%	+83%	+113%	+145%	+117%	Cumulative Change

Forecast from Barclays, January 2007

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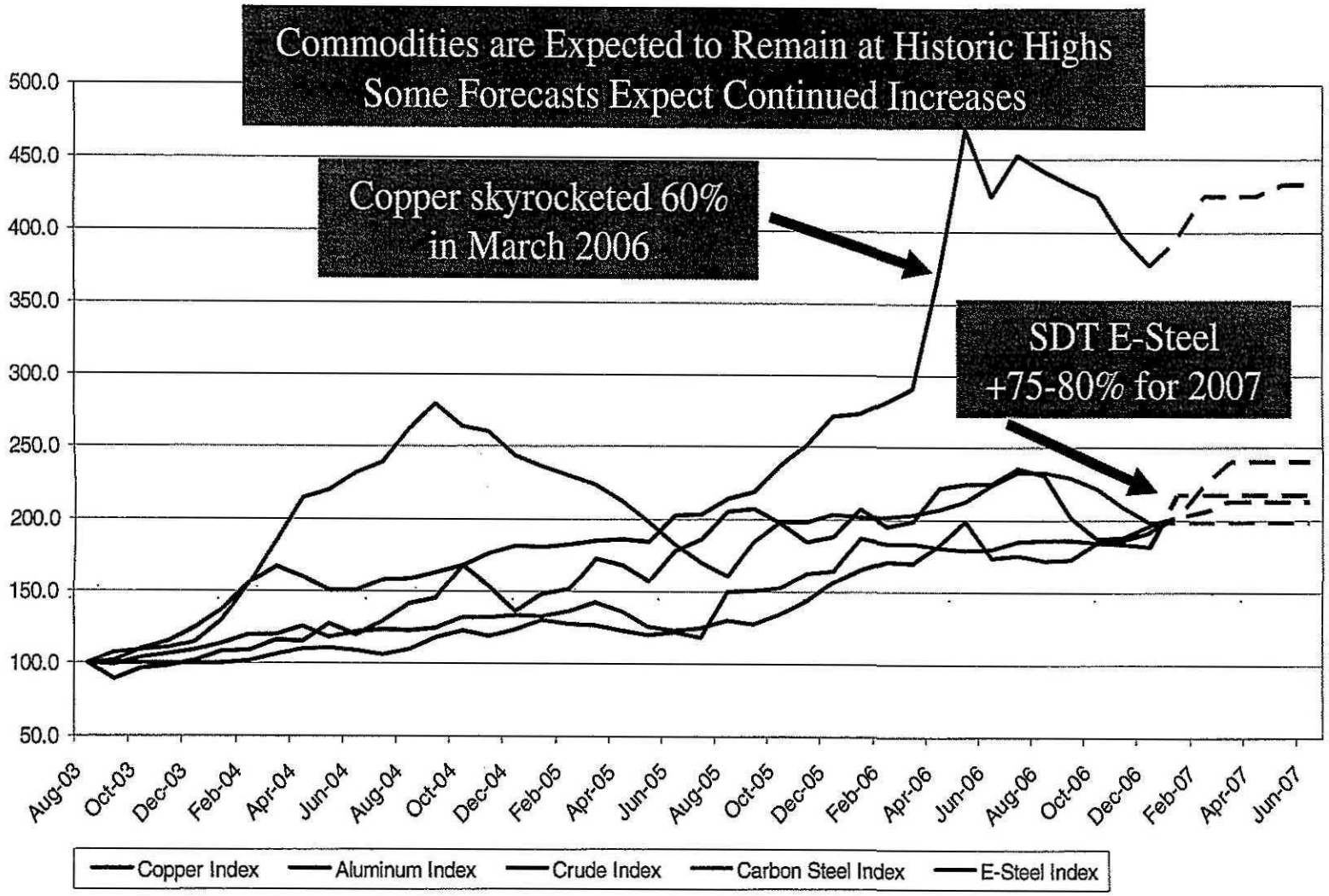
2007 Key Commodity Market Index Forecast



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2007 Commodity Forecast

- Investment fund speculative buying driving metals up
- Continued strong demand from China, India
- E-Steel demand will continue to outpace supply
  - 75-80% E-Steel price increase for Distribution Transformers, '07
- Middle East tensions; uncertainty over Iran, Iraq, Israel & Lebanon maintain pressure on oil
- Continued strength in the global economy
- Commodity prices are expected to continue at high levels through 2007

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Power Supply Process Area - Financial View
Budget to Forward Looking (Projected) - As of June 30, 2007
(In Thousands)

2007 YTD-----

	Budget	Fwd Look (Projected)	Change		
PSSD, SysPlan, VP	$2,195	$2,878	$683		Process Area Reorganization affecting cost in PSSD and Gen Bidding
Environmental	$3,665	$3,665	$0		No Net Change
Pwr Supply Eng	$2,298	$2,198	($100)		Variance due to engineer vacancy
Pwr Supply O&M	$73,164	$75,126	$1,962		See below for breakdown
TOTAL	**$81,322**	**$83,867**	**$2,545**		

Breakdown- Pwr Supply O&M					
Station	$47,905	$45,265	($2,640)		
Station Program	$3,312	$2,927	($385)		See page 2
Overhauls	$15,787	$22,425	$6,638		See page 3
Dist Generation	$3,286	$3,692	$406		
Misc Projects	$2,874	$44	($2,830)		See page 4
316(b) Cost	$0	$773	$773		(1)
Total	**$73,164**	**$75,126**	**$1,962**		

(1) Represents the Pwr Supply O&M dept's portion of the 316(b) cost that was reclassed from preliminary engineering to clearing in April 2007.

Hawaiian Electric Company, Inc.
Rate Case - 2007 Test Year
Station Program - By Station and Item

2007 YTD----	EE	Budget Ref	Budget	Spent & Projected	Diff
Kahe-					
Kahe Boiler Feed Pump OH (1)	201	CA-IR-2, HECO T-6, Att 13D, pg 4	$188	$0	($188)
Kahe Basin Dredging	501	CA-IR-2, HECO T-6, Att 13D, pg 4	$200	$132	($68)
Lube Oil Tanks 11,12, 31,32	501	CA-IR-2, HECO T-6, Att 13D, pg 4	$200	$0	($200)
Kahe Stilling Basin Structural Rep	501	CA-IR-2, HECO T-6, Att 13D, pg 4	$150	$160	$10
Kahe 1-6 Corrosion Control	501	CA-IR-2, HECO T-6, Att 13D, pg 4	$250	$0	($250)
Kahe 5&6 ACW Ln/ Insp, Rep, Repl	501	CA-IR-2, HECO T-6, Att 13D, pg 4	$250	$0	($250)
Kahe Turbine Deck Coating Rep	501	CA-IR-2, HECO T-6, Att 13D, pg 4	$300	$200	($100)
K1 Hot & Cold Interm Baskets	501	Unbudgeted	$0	$130	$130
Kahe Asp Pave Repr & Sealcoat	501	Unbudgeted	$0	$158	$158
Kahe 1-4 Gantry Crane Control	501	Unbudgeted	$0	$150	$150
Kahe 5-6 Gantry Crane Control	501	Unbudgeted	$0	$150	$150
			$1,538	$1,080	($458)
Honolulu-					
Hon Building Repairs	501	CA-IR-2, HECO T-6, Att 13F, pg 4	$160	$210	$50
Hon Boiler Feed Pump overhaul	201	CA-IR-2, HECO T-6, Att 13F, pg 4	$170	$0	($170)
Iwilei pipeline Inspection	501	CA-IR-2, HECO T-6, Att 13F, pg 4	$120	$120	$0
Iwilei pipeline Repairs	501	CA-IR-2, HECO T-6, Att 13F, pg 4	$300	$0	($300)
			$750	$330	($420)
Waiau-					
Waiau Boiler Feed Pump Overhaul	201	CA-IR-2, HECO T-6, Att 13K, pg 4	$170	$188	$18
Waiau Travel Scn Overhaul W 5/6	201	CA-IR-2, HECO T-6, Att 13K, pg 4	$240	$266	$26
Waiau Circ Water Pump Overhaul	201	CA-IR-2, HECO T-6, Att 13K, pg 4	$180	$200	$20
Waiau Paint - Corrosion Control	501	CA-IR-2, HECO T-6, Att 13K, pg 4	$200	$0	($200)
Waiau Shop Bldg Repairs	501	CA-IR-2, HECO T-6, Att 13K, pg 4	$150	$150	$0
W3/4-Bridge Crane rep	501	Unbudgeted	$0	$150	$150
			$940	$954	$14
Total Identified Above			$3,228	$2,364	($864)
Increase Budget for Stores On-Cost			$84	$0	($84)
Misc Hono, Waiau, Kahe Activities			$0	$563	$563
Total			$3,312	$2,927	($385)

Hawaiian Electric Company, Inc.
Rate Case - 2007 Test Year
Station Program - By Station and Item

Consistent with FLFU scheduled for 7/30/07.

Overhauls (Financial View):
(In thousands)

Project Number	Project Description	Rpt1 Budget	Year End Projection	Variance
P0000654	Waiau 6 Overhaul (2004)	$0	($127)	($127)
P0000844	Kahe 6 Overhaul (2005)	$0	($33)	($33)
P0000845	Kahe 4 Overhaul (2005)	$0	$131	$131
P0000846	Kahe 1 Overhaul (2005)	$1,736	$4,136	$2,400
P0000847	Waiau 4 Overhaul (2005)	$0	$120	$120
P0000938	Waiau 10 Major Inspection	$0	$1	$1
P0001105	Kahe 3 Overhaul (2006)	$3,733	$5,111	$1,378
P0001106	Waiau 7 Overhaul (2007)	$4,143	$6,031	$1,888
P0001277	Waiau 9 Overhaul (2007)	$1,096	$903	($193)
P0001278	Hono 8 Overhaul (2007)	$1,208	$411	($797)
P0001279	Waiau 5 Overhaul (2007)	$3,490	$3,291	($199)
P0001280	Hono 9 Outage (2006)	$381	$1,354	$973
P000XXXX	Hono 9 Outage (2007)	$0	$1,096	$1,096
Total		**$15,787**	**$22,425**	**$6,638**
Total per CA-IR-335, Att 3, pg 2		**$15,721**	**$21,607**	**$5,886**
Difference		**$66**	**$818**	**$752**
		(1)	(2)	

Notes:
(1) - Difference due to Financial view vs. Rate Case, Naruc view
(2) - Difference between CA-IR-335, Att. 3, p2, and current est. is due primarily to the following:

Revised projection for Kahe 3 after additional review of individual items in estimate	($352)
Additional costs for Waiau 7 primarily due to unexpected Circ Wtr Discharge tunnel repairs, water wall tube leak repairs, and an additional Blr Feed Pump volute change out	$976
Revised projection for Honolulu 8 after additional review of individual items in estimate	$211

Consistent with FLFU scheduled for 7/30/07.

Misc Projects (Financial View):
(In thousands)

	Rpt1 Budget	Year End Projection	Variance	
CIS Replacement	$3	$3	$0	
Critical Skills Plng & Dev	$3	$3	$0	
K3 DCS Balance of Plant I/O	$53	$37	($16)	
Kahe FO Tank #11 Cln/Insp	$456	$0	($456)	
Kahe Pond 1A Clean & Lining	$280	$1	($279)	
Kahe Sludge Bed Removal	$1,183	$0	($1,183)	
Smart Signal Project	$896	$0	($896)	(1)
Total	**$2,874**	**$44**	**($2,830)**	

(1) Although Smart Signal technology will not be pursued, an alternative ECM technology will be evaluated (i.e., pilot project) in 2007 at a cost to be determined.

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Actual Non-Labor Cost for **K1** Turbine Overhaul

UNIT	Work Order#	Work Order Description	Material	Outside Services	TOTAL
K1	PR061377	K1 HP CASING PIPE REPAIR	$53		$53
K1	PR060655	K1 HP BLADE RING REPAIRS	$39	$324,620	$324,659
K1	PR060156	K1 TURBINE HP/IP ROTOR REPAIR		$201,492	$201,492
K1	PR059693	K1 OH HP Stout Rings - Machining		$55,453	$55,453
K1	PR059221	K1 OH Turbine Sandblasting	$9,421	$34,847	$44,269
K1	PR059138	K1 TURBINE INSULATION REMOVE/REPLACE	$30,161		$30,161
K1	PR058963	K1 TURBINE BOLT HEATER ASISST TO TM	$2,449		$2,449
K1	PR051985	K1 LP Turb Rupture Diaphragms	$1,202	$2,226	$3,428
K1	PR058106	K1 #4 BEARING SERVICE	$529		$529
K1	PR058104	K1 #3 BEARING SERVICE	$62		$62
K1	PR058103	K1 #3 BEARING SERVICE	$59		$59
K1	PR058096	K1 #2 BEARING SERVICE		$8,777	$8,777
K1	PR058094	K1 #1 BEARING SERVICE		$8,777	$8,777
K1	PR058108	K1 OUTER/INNER CYL/STAARY BLDE/DIAPH SVC	$10,149		$10,149
K1	PR058100	K1 TURBINE HP/IP ROTOR SERVICE	$16,468	$42,432	$58,900
K1	PR058099	K1 TURBINE HP/IP ROTOR SERVICE	$136	$14,391	$14,527
K1	PR058098	K1 OUTER/INNER CYL STAARY BLADES SVC	$76,301	$4,206	$80,507
K1	PR058097	K1 OUTER/INNER CYL STAARY BLADES SVC	$1,800		$1,800
K1	PR058108	K1 OUTER/INNER CYL/STAARY BLDE/DIAPH SVC	$10,149		$10,149
K1	PR058109	K1 LP ROTOR SERVICE	$12,048	$132,912	$144,960
K1	PR058110	K1 LP ROTOR SERVICE	$3,636		$3,636
K1	PR058168	K1 HP/LPCOUPLG (W/BRG #2 & #3 COV) SVC	$481		$481
		K1 TOTAL	**$175,141**	**$830,133**	**$1,005,274**

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Actual Non-Labor Cost for **W7** Turbine Overhaul

UNIT	Work Order#	Work Order Description	Material	Outside Services	TOTAL
W7	PR060268	W7 CROSSOVER PIPE EXPN JOINT SERVICE	$3,569		$3,569
W7	PR061837	W7 HP TURB Out/In Cyl/Station Blds Svc	$18,199	$30,392	$48,591
W7	PR060108	W7 HP TURB Out/In Cyl/Station Blds - NDT	$58	$186,318	$186,377
W7	PR060261	W7 HP TURB OUTER/INNER CYL/STAT BLDS SVC	$59,973	$75,528	$135,501
W7	PR061838	W7 HP TURBINE ROTOR SVC - PREVENTIVE	$18,240	$1,031	$19,272
W7	PR061839	W7 HP TURBINE ROTOR SVC - PRED	$18,240	$1,031	$19,272
W7	PR061840	W7 HP TURBINE ROTOR MAJOR REPAIR - PRED		$43,562	$43,562
W7	PR061842	W7 LP TURB OUTER/INNER CYL/STAT BLDS SVC	$7,975	$33,073	$41,048
W7	PR061841	W7 LP TURB OUTER/INNER CYL/STAT BLDS SVC			$0
W7	PR060265	W7 LP TURB OUTER/INNER CYL/STAT BLDS SVC	$908	$3,739	$4,647
W7	PR061843	W7 LP TURBINE ROTOR SVC - PREVENTIVE	$4,420	$1,531	$5,951
W7	PR061844	W7 LP TURBINE ROTOR SVC - PRED			$0
W7	PR061845	W7 LP TURBINE ROTOR MAJOR REPAIR - PRED		$56,274	$56,274
W7	PR060112	W7 HP TURBINE - Thrust Bearing Service	$24		$24
W7	PR060104	W7 HP TURBINE - #1 Bearing Service			$0
W7	PR060106	W7 HP TURBINE - #2 Bearing Service			$0
W7	PR060114	W7 LP TURBINE - #3 Bearing Service		$5,162	$5,162
W7	PR060116	W7 LP TURBINE - #4 Bearing Service		$5,162	$5,162
W7	PR061787	W7 TRB CONTRACT LABOR - PREVENTIVE		$155,712	$155,712
W7	PR061788	W7 TRB CONTRACT LABOR - PREDICTIVE		$38,928	$38,928
W7	PR061789	W7 TRB CONTRACT LABOR - CORRECTIVE			$0
		W7 TOTAL	**$131,607**	**$637,444**	**$769,051**

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Projected Non-Labor Cost for **W5** Turbine Overhaul

UNIT	Work Description	Material	Outside Services	TOTAL
W5	Balance HP/LP		$14,000	$14,000
W5	Balance turbine spindle		$10,000	$10,000
W5	Grind Trb/Gen Bearing Journals		$20,000	$20,000
W5	HP/LP/Gen Bore		$75,000	$75,000
W5	Machinist's - Outsourcing (Turb PM 260)		$100,000	$100,000
W5	Machinist's - Outsourcing (Turb PDM 261)		$100,000	$100,000
W5	Misc Machining (Turb CM 262)		$20,000	$20,000
W5	Sand blast grit	$10,000		$10,000
W5	Seals - steam / J&L / Art / Expandable	$45,000		$45,000
W5	T/G Insulation	$10,000		$10,000
W5	T/G Sandblast incl dust collection		$18,000	$18,000
W5	Turb Contracted repairs		$200,000	$200,000
W5	Turb NDT		$25,000	$25,000
W5	Turb/Gen Brngs Re-babbit		$50,000	$50,000
W5	Turbine Overhaul Parts	$25,000		$25,000
W5	Turbine Parts/Motor Staging Temp Shelter		$25,000	$25,000
W5	Turbine Remove/Repl (rags, consumables)	$10,000		$10,000
W5	Turbine Studs & Bolts	$40,000		$40,000
W5	Turbine Weld Repr / Machining		$25,000	$25,000
	W5 TOTAL	**$140,000**	**$682,000**	**$822,000**

HAWAIIAN ELECTRIC COMPANY, INC.
2007 RATE CASE
Projected Non-Labor Cost for **K3** Turbine Overhaul

UNIT	Work Description	Material	Outside Services	TOTAL
K3	Balance Rotors - HP/LP		$14,000	$14,000
K3	DCS Power Supply Modules (Turb Cabinet)	$15,000		$15,000
K3	Diaphragms		$80,000	$80,000
K3	Grind Trb/Gen Brg Journals		$20,000	$20,000
K3	HP/LP/Gen Bore		$35,000	$35,000
K3	J & L Seals	$20,000		$20,000
K3	Machinist - Outsourcing (Turb PM 260)		$100,000	$100,000
K3	Machinist's - Outsourcing (Turb PDM 261)		$100,000	$100,000
K3	Re-Babbitt Bearings		$40,000	$40,000
K3	Rotor Periphery Machine Repairs		$50,000	$50,000
K3	Sand Blast grit	$15,000		$15,000
K3	Stationary Machine Repairs		$15,000	$15,000
K3	Steam Seals	$25,000		$25,000
K3	T/G Insulation	$10,000		$10,000
K3	T/G NDT - Misc		$25,000	$25,000
K3	T/G Sandblast incl dust collection		$20,000	$20,000
K3	Turbine Hauling Services		$10,000	$10,000
K3	Turbine Overhaul Parts	$50,000		$50,000
K3	Turbine Part/Motor Parts Staging Shelter		$40,000	$40,000
K3	Turbine Remove/Replace	$20,000		$20,000
K3	Turbine Studs & bolts	$40,000		$40,000
K3	Turbine Weld Repair/Machining		$25,000	$25,000
	K3 TOTAL	**$195,000**	**$574,000**	**$769,000**

HAWAIIAN ELECTRIC COMPANY INC.
2007 RATE CASE
Non-Labor Budget for 2007 Turbine Overhauls

		2007 Budget - Steam Turbine Overhaul					
		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 K1: CA-IR-2, Attachment 13I, page 61
	T/G Insulation	-	-	10,000	5,000	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 K1: CA-IR-2, Attachment 13I, page 61
	Turbine Parts (incl. cooperheat)	40,000	40,000	35,000	12,500	10,000	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 K1: CA-IR-2, Attachment 13I, page 61
Service 501	T/G Sandblast incl dust collection	-	-	12,000	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 K1: CA-IR-2, Attachment 13I, page 61
	Turbine Weld Repai/Machining/brgs rebbabiting	-	-	66,667	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 K1: CA-IR-2, Attachment 13I, page 61
	Balance Turbine Spindle	-	-	6,667	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 11 K1: CA-IR-2, Attachment 13I, page 61
Turbine CM -- 262							
Material 201	Turbine Parts	-	-	25,000	12,500	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 K1: CA-IR-2, Attachment 13I, page 64
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 K1: CA-IR-2, Attachment 13I, page 64

		2007 Budget - Steam Turbine Overhaul					
		W7	K3	W5	H8	K1	Reference
	Misc Machining	-	-	66,667	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 K1: CA-IR-2, Attachment 13I, page 64
	T/G Contractor Repairs	-	-	33,333	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 14 K1: CA-IR-2, Attachment 13I, page 64
Turbine PDM -- 261							
Services 501	HP/LP/Gen Bore	-	-	33,333	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 16 K1: CA-IR-2, Attachment 13I, page 66
	T/G NDT-Misc	-	-	20,000	-	-	W7, K3, W5, H8: CA-IR-2, Attachment 13I, page 17 K1: CA-IR-2, Attachment 13I, page 66
	Total	40,000	40,000	332,000	35,000	10,000	

Total (all - steam turbines only) **$457,000**

Combustion Turbine (see W9: CA-IR-2, Attachment 13I, page 56) **$204,000**

GRAND TOTAL BUDGET **$661,000**

CA-IR-489

Ref: HECO T-10 Responses to CA-IR-275 and CA-IR-363 (ITS Costs).

In response to part (a) of CA-IR-363, the Company provided additional information regarding the $190,000 included in the 2007 forecast for enterprise software maintenance fees. This response indicated, in part, that the actual 2007 expenses are expected to exceed $190,000. The Company listed actual expenses through June 2007, including: "Business Objects Licenses (2)" of $82,352 and "Business Objects Maintenance (2)" of $14,630. Please provide the following:

a. Please describe the specific services covered by these payments.

b. Please provide a copy of the related agreements.

c. Please provide the date of each payment.

d. Please provide the term of the service period to which each payment relates.

HECO Response:

a. The $82,352 was for 2 Business Objects Enterprise Premium Test Dev XI R2 Windows CPU English License. The $14,630 was for the annual software maintenance for the two Business Objects Software Licenses. Business Objects Enterprise XI software provides a complete suite of report development tools, information management, and query and analysis. This software is a component of the Enterprise Reporting System.

b. A copy of the invoice is provided as Attachment 1. The support for the amounts provided in the response to CA-IR-363 is as follows:

License:
$70,000.00 – Net amount for 2 licenses (per invoice Line 2)
$ 3,150.00 – Sales/Use Tax at 4.5%

$73,150.00
$ 9,202.27 – HECO stores on-cost @12.58%

$82,352.27 - total

Maintenance:
$14,000.00 – Net amount for maintenance of 2 licenses (per invoice Line 1)
$ 630.00 - Sales/Use Tax at 4.5%

$14,630.00 – total

c. The payment date for both items was May 24, 2007.

d. The license fee has no term. The maintenance term is for 3/28/2007 – 3/27/2008.

Business Objects

Original

INVOICE

Invoice: US00247359
Invoice Date: March 29, 2007
Page: 1 of 1

Please Send Payment To: Business Objects Americas, Inc
BANK OF AMERICA
Lockbox 7573
7573 Collections Center Dr
Chicago IL 60693
United States

Bill To:
HAWAIIAN ELECTRIC COMPANY
PAYABLE,ACCOUNTS
PO BOX 2750
HONOLULU HI 96840
United States

PO No: V03065
Customer No: 431195
Payment Terms: Net 30 day
Due Date: April 28, 2007
Order: USC0003985
Order Date: March 28, 2007

Ship To:
HAWAIIAN ELECTRIC COMPANY
1001 BISHOP ST
PAUHAI TOWER STE 500
HONOLULU, HI, 96813
United States

Sold To:
HAWAIIAN ELECTRIC COMPANY
1001 BISHOP ST
PAUHAI TOWER STE 500
HONOLULU, HI, 96813
United States

For billing inquiries, please contact: financeCollectionsVan@businessobjects.com

Line	Item	Product Code	CD SKU	Quantity	UOM	Unit Amt	Net Amount
1	0032240	M-UTL-E-WT-00	M-UTL-E-WT-00	2.00	EA	7,000.00	14,000.00
		StartDt: 3/28/2007	EndDt: 3/27/2008				
BusinessObjects Enterprise Premium Test Dev XI R2 Windows CPU English Maintenance							
2	0032210	L-UTL-E-WT-00	L-UTL-E-WT-00	2.00	EA	35,000.00	70,000.00
BusinessObjects Enterprise Premium Test Dev XI R2 Windows CPU English License							

Subtotal: **84,000.00**
Sales/Use Tax: 4.50 % 3,780.00
Amount Due: **87,780.00 USD**

US Federal Tax ID: 94-3144290

HAWAIIAN ELECTRIC COMPANY, INC.
P.O. BOX 2750
HONOLULU HI 96840-0001

PT5 -EC
Page : 1

Purchase Order Number: V03065
Change Order:
Change Order Date:

Supplier: Scott Carpenter
ATTN: ~~ANDREW AROCHA~~
BUSINESS OBJECTS AMERICAS
3030 ORCHARD PARKWAY
SAN JOSE CA 95134

Supplier Code: 025695

Ship To: HAWAIIAN ELECTRIC COMPANY, INC.
ITS - DEVELOPMENT SERVICES
1001 BISHOP ST, PAUAHI TOWER SUITE 500
HONOLULU, HI 96813
ATTN: SYSTEMS & SERVICES DEV. DIVISION

Send Invoice: HAWAIIAN ELECTRIC COMPANY, INC.
ATTN: Accounts Payable
P.O. BOX 2750
HONOLULU HI 96840-0001

Buyer: NAKAMURA,DAVID L
Phone No.: 543-7147
Fax No.: 203-1008
E-Mail:
DAVID.NAKAMURA@HECO.COM

Freight Terms: FREIGHT PREPAID & ADD
Payment Terms: Net 30
Original Purchase Order Date: 03/27/07

P O Line No.	Description	Delivery Date	Quantity Ordered	Unit of Purchase	Unit Price Without Tax	Extended Price Including Tax
001	BUSINESS OBJECTS LICENSE BusinessObjects Enterprise Premium Test Dev XI R2 Windows CPU Eng License Electronic Software Delivery to: Thanh Giang thanh.giang@heco.com Clauses: NTE ; SACK	03/26/08	2.00	EA	35000.0000	73297.0000
002	BUSINESS OBJECTS MAINTENANCE (qty 2) BusinessObjects Enterprise Premium Test Dev XI R2 Windows CPU Eng Maint. 2 @ $7,000.00 + 4.5% tax	03/26/08	0.00	NA	14630.0000	14630.0000

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 _____
Authorized Signature

HAWAIIAN ELECTRIC COMPANY, INC.
P.O. BOX 2750
HONOLULU HI 96840-0001

PT5 -EC
Page : 2

Purchase Order Number: V03065
Change Order:
Change Order Date:

Supplier:
ATTN: ANDREW AROCHA
BUSINESS OBJECTS AMERICAS
3030 ORCHARD PARKWAY

SAN JOSE CA 95134

Supplier Code: 025695

Ship To: HAWAIIAN ELECTRIC COMPANY, INC.
ITS - DEVELOPMENT SERVICES
1001 BISHOP ST, PAUAHI TOWER SUITE 500
HONOLULU, HI 96813
ATTN: SYSTEMS & SERVICES DEV. DIVISION

Send Invoice: HAWAIIAN ELECTRIC COMPANY, INC.
ATTN: Accounts Payable
P.O. BOX 2750
HONOLULU HI 96840-0001

Buyer: NAKAMURA,DAVID L
Phone No.: 543-7147
Fax No.: 203-1008
E-Mail:
DAVID.NAKAMURA@HECO.COM

Freight Terms: FREIGHT PREPAID & ADD
Payment Terms: Net 30
Original Purchase Order Date: 03/27/07

P O Line No.	Description	Delivery Date	Quantity Ordered	Unit of Purchase	Unit Price Without Tax	Extended Price Including Tax
	The following clauses will apply to the respective line items: NTE THE INDICATED AMOUNT IS A NOT-TO-EXCEED COST. WRITTEN APPROVAL WILL BE REQUIRED PRIOR TO SERVICE OR MATERIAL(S) DELIVERY IN EXCESS OF THIS AMOUNT. SACK SUPPLIER: PLEASE ACKNOWLEDGE THIS ORDER BY SIGNING AND DATING THIS ORIGINAL PURCHASE ORDER AND RETURNING TO THE ATTENTION OF THE BUYER LISTED ON THE ORDER. MAILING ADDRESS: P.O. BOX 2750 HONOLULU, HI 96840-0001 FAILURE TO RETURN THE ACKNOWLEDGEMENT COPY MAY CAUSE A DELAY IN YOUR PAYMENT. PLEASE MAKE A COPY OF THIS PURCHASE ORDER FOR YOUR RECORDS AS NO DUPLICATE SHALL BE SENT. ACKNOWLEDGED BY: _____ DATE: _____					

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 _____
Authorized Signature

HAWAIIAN ELECTRIC COMPANY, INC.
P.O. BOX 2750
HONOLULU HI 96840-0001

PT5 -EC
Page : 3

Purchase Order Number: V03065
Change Order:
Change Order Date:

Supplier:
ATTN: ANDREW AROCHA
BUSINESS OBJECTS AMERICAS
3030 ORCHARD PARKWAY
SAN JOSE CA 95134

Supplier Code: 025695

Ship To: HAWAIIAN ELECTRIC COMPANY, INC.
ITS - DEVELOPMENT SERVICES
1001 BISHOP ST, PAUAHI TOWER SUITE 500
HONOLULU, HI 96813
ATTN: SYSTEMS & SERVICES DEV. DIVISION

Send Invoice: HAWAIIAN ELECTRIC COMPANY, INC.
ATTN: Accounts Payable
P.O. BOX 2750
HONOLULU HI 96840-0001

Buyer: NAKAMURA,DAVID L
Phone No.: 543-7147
Fax No.: 203-1008
E-Mail:
DAVID.NAKAMURA@HECO.COM

Freight Terms: FREIGHT PREPAID & ADD
Payment Terms: Net 30
Original Purchase Order Date: 03/27/07

P O Line No.	Description	Delivery Date	Quantity Ordered	Unit of Purchase	Unit Price Without Tax	Extended Price Including Tax
					TOTAL Purchase Order:	87927.00
					Page:	3 of 3

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 [signature]
for D. Nakamura
Authorized Signature

THE FOLLOWING TERMS AND CONDITIONS ARE PART OF THIS PURCHASE ORDER:

1. **AGREEMENT** - The Agreement between the parties shall consist of this Purchase Order, these Terms and Conditions herein, and any drawings, specifications or special conditions referenced herein. If Seller and Purchaser have both executed a master, major or minor Purchase Order Terms and Conditions apart from this Purchase Order, such master, major or minor Purchase Order Terms and Conditions shall take precedence over any conflicting provisions found in this Purchase Order. ADDITIONAL OR DIFFERENT TERMS PROPOSED BY THE SELLER ARE REJECTED UNLESS EXPRESSLY APPROVED IN WRITING BY PURCHASER'S DULY AUTHORIZED REPRESENTATIVE.

2. **INVOICES** - Send invoices in duplicate, with Bill of Lading, immediately to address as shown on the front of the Purchase Order.

3. **FREIGHT** - Shipments must be routed as specified by Purchaser. Otherwise, any extra expense incurred is to be charged to and assumed by Seller. In the event routing is not specified by Purchaser, ship the least expensive way. When prepaid freight charges are for the account of Purchaser, invoices for these charges must be supported by a copy of the carrier's freight bill.

4. **PACKING** - Purchaser will not pay for export packing unless specifically agreed to in writing.

5. **INSPECTION** - Material and workmanship may be subject to inspection and test by Purchaser at the plant of Seller and/or of Purchaser. Notwithstanding any inspection during manufacture or witnessed test at the plant of Seller, final inspection and acceptance of the articles ordered shall be at the plant of Purchaser.

6. **INSURANCE** - Seller to insure shipments to F.O.B. point.

7. **CANCELLATION** - Purchaser reserves the right to cancel this Purchase Order if it is not filled within a reasonable time or as specified in any drawings, specifications, or special conditions referenced herein. If Seller fails to comply with the specifications or drawings in any material respect or if Seller fails substantially to comply with any other provision of this Purchase Order, Purchaser may, without prejudice to any other right or remedy, terminate this Purchase Order in whole or in part and/or reject all or part of the goods or work herein. Upon notice of termination by Purchaser, Seller shall promptly return all monies previously paid to Seller by Purchaser for the goods or work and shall pay Purchaser direct damages equal to (a) all costs incurred by Purchaser in preparation for the goods or work, excepting only such costs which can be applied to goods or work obtained from any other supplier and (b) the difference in price between the goods or work to be provided hereunder and the equivalent work or substitute goods.

8. **WARRANTY** - Seller warrants that the goods or work completed hereunder will (a) conform to the description of the goods or work in this Purchase Order and any drawings, specifications or special conditions referenced to herein, and if none are referenced, then with industry good custom and practice, and (b) be of good quality and free from defects and, if services are provided, they shall be performed in a professional and competent manner. In the event that the goods or work do not fulfill this warranty, Seller shall take the action necessary to conform the goods or work to this Warranty, at no additional cost to Purchaser. Purchaser shall have the right, but not the obligation, to effect repair of any and all defects if Seller is unable or unwilling to effect the repair. In the event Purchaser elects to take this action, Purchaser shall be entitled to deduct from any amounts owing to Seller the direct and incidental costs incurred in remedying the breach of warranty. This warranty is in lieu of all other warranties, express or implied, including without limitation: implied warranties of merchantability and fitness for a particular purpose, including all representations to Purchaser not contained in this Purchase Order.

9. **INDEMNIFICATION** - Seller and Purchaser ("indemnifying party") shall each indemnify, defend, and hold harmless the other ("indemnified party"), its directors, officers, employees and agents from and against all liabilities, damages, losses, penalties, claims, demands, suits, costs, expenses (including attorney's fees), based upon or arising out of tortious damage to property, injuries to persons (including death) or other tortious acts to the extent caused or contributed to by the indemnifying party or anyone acting under its direction or control or in its behalf in the course of its performance under this Purchase Order. Seller shall also keep Purchaser's goods and property free and clear of all mechanics', materialmens' and other similar liens and claims, and shall defend and indemnify Purchaser against the same.

10. **COMPLIANCE WITH FEDERAL AND STATE LAWS, RULES AND REGULATIONS** - The articles purchased and the work performed hereunder shall conform to, be performed in, and be in compliance with all applicable laws, rules, and regulations (including the Occupational Safety and Health Act of Hawaii and all amendments thereto) and Seller shall indemnify, defend and hold harmless Purchaser from any and all liability, fines, and expenses, including attorneys' fees, arising from Seller's failure to do so.

11. **EQUAL EMPLOYMENT OPPORTUNITY** - (Applicable to all contracts of $10,000 or more in the whole or aggregate. 41 CFR 60-1.4.) If applicable, Seller is aware of and is fully informed of Purchaser's responsibilities under Executive Order 11246 (reference to which include amendments and orders superseding in whole or in part) and shall be bound by and agrees to the provisions as contained in Section 202 of said Executive Order and the Equal Opportunity Clause as set forth in 41 CFR 60-1.4, which clause is hereby incorporated by reference.

12. **EMPLOYMENT OF DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA** - (Applicable to all contracts of $10,000 or more in the whole or aggregate. 41 CFR 60-250.4.) If applicable, Seller agrees that it is and will remain in compliance with the rules and regulations promulgated under The Vietnam Era Veterans Readjustment Assistance Act of 1974, and The Affirmative Action for Disabled Veterans of the Vietnam Era Clause set forth in 41 CFR Sec. 60-250.4, which clause is incorporated by reference herein.

13. **NOTICE OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES** - (Applicable to all contracts exceeding $100,000) If applicable, Seller agrees that it shall comply with Executive Order 13201 and 29 CFR Part 470 regarding notice of employee rights concerning payment of union dues or fees, which are incorporated by reference herein.

14. **GOVERNING LAW** - This Purchase Order shall be governed by the laws of the State of Hawaii. It is the policy of Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc. and Maui Electric Company, Ltd. and its subsidiaries not to unlawfully discriminate against any employee or applicant because of race, religion, natural origin or ancestry, color, sex or age, disability, veteran status, marital status, arrest and court record, or sexual orientation.

CA-IR-490

Ref: HECO T-10 Responses to CA-IR-275 and CA-IR-363 (ITS Costs).

In response to part (a) of CA-IR-363, the Company provided additional information regarding the $190,000 included in the 2007 forecast for enterprise software maintenance fees. This response indicated, in part, that the actual 2007 expenses are expected to exceed $190,000. The Company also provided a detailed listing of the Websphere software maintenance expense (totaling $116,904) HECO will incur during the remainder of 2007. Please provide the following:

a. With regard to the reference to "recurring" charges for interchange processors, integration servers and adapters, are the items listed annual lease fees, maintenance related consulting fees, or equipment purchase prices? Please explain.

b. Please explain why the "discounted prices" are consistently higher than the "last paid" prices.

c. How were the "discounted prices" determined (e.g., from a contract price list, vendor invoice, vendor agreement, etc.)?

d. Please provide a copy of the source document identified in response to part (c) above.

e. Please provide the term of the service period to which each of these June 30, 2007 payments relate.

HECO Response:

a. All the Websphere charges are recurring software maintenance fees and are paid annually. Interchange processors, integration servers and adapters are different components of the Websphere software and each component has a maintenance fee.

b. The three-year agreement entered into with IBM at the end of 2004 provided diminishing annual discount rates over the three years beginning in 2005. Discounted prices for 2007 are consistently higher than previous years' prices due to the diminishing annual discount rates included in the agreement.

c. The discounted prices were determined by applying the [redacted] discount to standard IBM Level E pricing for each software maintenance item. The discount, which is provided under the three year agreement with IBM, was offered as an incentive for HECO's selection of their middleware (Websphere) software. The last year of HECO's discount under this agreement is 2007. The Pricing section of the IBM Websphere software agreement is provided as Attachment 1. The information is confidential and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

d. The IBM Software Maintenance Renewal Order Form which contains the standard "Level E" pricing is provided as Attachment 2. The information is confidential and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007. The full prices are shown on Page 4 of 8. For example, the first item (item 06), IBM Websphere Adapter for Flat Files Establishment Annual SW Maintenance Renewal, of [redacted] x [redacted] = $12,016.90, which corresponds to item 4 listed on page 3 of 6 in the response to CA-IR-363.

The cross references between the Websphere software maintenance items listed on pages 2 and 3 of the response to CA-IR-363 and Page 4 of the attached IBM Software Maintenance Renewal order Form are as follows:

	IBM Passport Advantage Software Maintenance on:	Full Price	Cross Reference to IBM SW Main Renewal Order Form – Item	Disc Price
EAI3	D56MHLL WEBSPHERE DATA INTERCH (1 @ 100 points) - EAI Ph3	[redacted]	10	$8,374.10

Confidential Information
Deleted Pursuant to
Protective Order No. 23378

EAI3	D56P3LL WEBSPHERE BUSINESS INTEGRATION MSG BRKR (1 @ 100 points) - EAI ph3	[redacted]	11	$7,964.60
EAI3	E00N5LL IBM WEBSPHERE MQ PROCESSOR (2 @ 100 points each) - EAI ph3	[redacted]	14	$1,201.20
OMS	E00N5LL IBM WEBSPHERE MQ PROCESSOR (10) – OMS	[redacted] for 3 items	13	$8,008.00
OMS	E00N5LL IBM WEBSPHERE MQ PROCESSOR (1 @ 100 points each) – OMS	[redacted]	12	$534.10
1	E00JULL IBM WEBSPHERE DATA INTERCHANGE PROCESSOR (2)	[redacted]	09	$22,330.00
2	E01CFLL IBM WEBSPHERE BUSINESS INTEGRATION SERVER PER PER PROCESSOR (3)	[redacted]	08	$38,852.10
3	E01TTLL IBM WEBSPHERE ADAPTER FOR JDBC ESTABLISHMENT (1)	[redacted]	07	$12,016.90
4	E01TVLL IBM WEBSPHERE ADAPTER FOR FLAT FILES ESTABLISHMENT (fka JTEXT) (1)	[redacted]	06	$12,016.90
5	E00N5LL IBM WEBSPHERE MQ PROCESSOR (3)	[redacted] for 3 items	13	$2,402.40
6	E00N5LL IBM WEBSPHERE MQ PROCESSOR (4)	[redacted] for 3 items	13	$3,203.20

e. The service periods for most items are July 1, 2007 – June 30, 2008. The specific service periods are shown on page 4 of Attachment 2. Note that for administrative simplicity, these items are not amortized between years as each year's payment represents 12 months of coverage.

Confidential Information
Deleted Pursuant To
Amended Protective Order No. 23378

CA-IR-490
DOCKET NO. 2006-0386
ATTACHMENTS 1-2

Attachments 1-2 contain confidential information and are being provided subject to

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

CA-IR-491

Ref: HECO T-10 Responses to CA-IR-275 and CA-IR-363 (ITS Costs).

In response to part (b) of CA-IR-363, the Company provided additional information regarding the $142,000 included in the 2007 forecast for additional third party software maintenance fees. The Company indicated that such maintenance fees are now expected to exceed $142,000, due to a contract HECO expects to sign shortly to purchase Reports Management System software for $161,000 with annual maintenance in future years of approximately $30,000. Please provide the following:

a. Is the $161,000 actually for a software purchase or a lease? Please explain.

b. Please provide a breakdown of the $161,000 purchase price, by component or element.

c. Please provide the term of the service period (or expected software life) to which the $161,000 purchase relates.

d. Does the Company anticipate capitalizing or expensing any portion of this purchase price? Please explain.

e. Please describe the functionality and application of the Reports Management System software.

f. Please explain and clarify how the $30,000 annual maintenance in "future years" relates to the $161,000 purchase price.

g. Does the $161,000 contain a maintenance component for an initial term year or period? Please explain.

HECO Response:

a. The $161,000 primarily represents the costs for a software purchase. There is also a maintenance cost component included in this amount.

b. The $161,000, which has been revised to $167,320 upon contract signing, breaks down as follows:

$146,800 – Software License cost (detailed software components are shown on the invoice provided as Attachment 1. Note that the information is confidential and is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007)
20,520 – Software Maintenance – first year

$167,320 - Total Software License and Maintenance

c. The software license term is 6/28/2007 – 6/27/2012.

d. HECO will be expensing this software license and maintenance payment in 2007. Under HECO's accounting guidelines regarding cost of computer software developed or obtained for internal use, software costs less than $500,000 are expensed as incurred. All software maintenance costs are expensed as incurred. See HECO T-10, page 52 and HECO-1016.

e. The Reports Management System will serve as the corporate document archival and distribution system. The system will permit online viewing of reports, report security, hard copy distribution of reports, hard copy printing by users, report archival and automatic purging, ability to parse reports, ability to email reports, ability to scan and store other reports, ability to browse reports via web, allow a single sign on, ability to combine separate reports to one new report, ability to create group administration privileges, eliminate report name length limits, create audit logs, ability to create a personal "preferences" folder, and ability to search multiple reports.

f. The $30,000 annual maintenance represents the estimated recurring software maintenance charges for the Reports Management System software in future years. The actual amount for the maintenance is expected to be $20,520 in 2007, based on the amount provided by the vendor in its response to our request for proposal. The maintenance fee will be due when the installation of the software is completed. The current schedule is for the software to be installed by September 2007. See Attachment 2 for the excerpt from the vendor's response to our request for proposal. The vendor's response to our request for proposal is confidential, and the information is being provided subject to Amended Protective Order No. 23378, dated June 4, 2007.

Although in total the actual software license cost and the software maintenance fee are greater than the Company's original estimate of $142,000 (as specified in its response to CA-IR-2, Attachment 13, page 10), HECO has not adjusted these costs for test year purposes.

g. Yes. As stated in part b., the maintenance component amounts to $20,520 in 2007.

Confidential Information
Deleted Pursuant To
Amended Protective Order No. 23378

Attachments 1-2 contain confidential information and are being provided subject to

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

CA-IR-492

Ref: HECO-1019 & T-10 Response to CA-IR-370 (Abandoned Projects).

Please update HECO-1019 to reflect actual abandoned project costs for calendar year 2006.

HECO Response:

See attached page 2 for an update to HECO-1019, which reflects actual abandoned project costs for calendar year 2006 and using a historical average for 5 years as was done in direct testimony.

See attached page 3 for an update to HECO-1019, which reflects actual abandoned project costs for calendar year 2006 and using a historical average for the period from 2001 through 2006.

HAWAIIAN ELECTRIC COMPANY, INC.
ABANDONED PROJECT COSTS
TEST YEAR 2007 ($ 000s)

Sum of Dec YTD Actual			CCYY_IND						Average write-off		Total Escalation to 2007	Average escalated write-off
Naruc	Proj/WO No.	WO_DESC	2002	2003	2004	2005	2006	Grand Total	per year	Account	2%/yr esc	per year
500	HP001833	ABAN-P4683000-K7 EMS & Comm Equip	-	-	18	-	-	18				
	LA000168	PS - CEIP Generation Site	58	-	-	-	-	58				
500 Total			58	-	18	-	-	75	15	500	83	17
502	FI000733	Power Supply - AFUDC Reversal	(3)	-	-	-	-	(3)				
	HP001833	ABAN-P4683000-K7 EMS & Comm Equip	-	-	24	-	-	24				
502 Total			(3)	-	24	-	-	21	4	502	22	4
546	AD001618	Expense Project - Pacific Allied	-	-	-	99	-	99				
546 Total			-	-	-	99	-	99	20	546	103	21
566	EE005651	Frq/Vlt for Kalae to DATAQ:P0000157	-	4	-	-	-	4				
	LA000180	ABAN-AES-CEIP #2 Trans Ln	-	4	-	-	-	4				
566 Total			-	8	-	-	-	8	2	566	9	2
569	CE051313	ED (Trans) - Opakapaka Line	3	-	-	-	-	3				
569 Total			3	-	-	-	-	3	1	569	3	1
570	CE051313	ED (Trans) - Opakapaka Line	37	-	-	-	-	37				
	EE011498	KAHE 5-8 CBL TRENCH COVER:P1470000	-	-	-	-	20	20				
570 Total			37	-	-	-	20	57	11	570	61	12
572	CE051313	ED (Trans) - Opakapaka Line	52	-	-	-	-	52				
572 Total			52	-	-	-	-	52	10	572	57	11
580	EE007815	BP NAS PRIVATIZATION:Y00004	-	143	-	-	-	143				
	EE009592	DIAMOND HEAD RD OH/UG IMPVT:P0000597	-	-	1	-	-	1				
	LA000166	ABAN-ED-Dist-Leilehua SS Site	10	-	-	-	-	10				
580 Total			10	143	1	-	-	154	31	580	167	33
584	CE051318	ED (Dist) - Opakapaka SS and Line	7	-	-	-	-	7				
584 Total			7	-	-	-	-	7	1	584	8	2
588	EE007815	BP NAS PRIVATIZATION:Y00004	-	335	-	-	-	335				
	EE009592	DIAMOND HEAD RD OH/UG IMPVT:P0000597	-	-	15	-	-	15				
588 Total			-	335	15	-	-	351	70	588	379	76
591	CE051318	ED (Dist) - Opakapaka SS and Line	7	-	-	-	-	7				
	EE011292	Mobile Substation Storage:P0001029	-	-	-	-	8	8				
591 Total			7	-	-	-	8	15	3	591	16	3
592	CE051318	ED (Dist) - Opakapaka SS and Line	27	-	-	-	-	27				
592 Total			27	-	-	-	-	27	5	592	30	6
593	EE007803	WAIMANALO DRAINAGE IMPVMT:P1690000	-	1	-	-	-	1				
	EE012176	KAHUKU CACTF 12KV RELO & SVC:P0001122	-	-	-	-	18	18				
593 Total			-	1	-	-	18	18	4	593	19	4
903	CS001324	ACD/IVR Project Reversal of charge	138	-	-	-	-	138				
903 Total			138	-	-	-	-	138	28	903	152	30
920	CE051313	ED (Trans) - Opakapaka Line	3	-	-	-	-	3				
	FA127056	P0000722 - Project Abandonment	-	-	1	-	-	1				
	FA127087	P1022 - Project Abandonment	-	-	-	-	2	2				
920 Total			3	-	1	-	2	6	1	920	6	1
921	CE051313	ED (Trans) - Opakapaka Line	3	-	-	-	-	3				
	FA127056	P0000722 - Project Abandonment	-	-	1	-	-	1				
	FA127063	P0000586 - Project Abandonment	-	-	-	31	-	31				
	FA127087	P1022 - Project Abandonment	-	-	-	-	17	17				
	FI000982	General Support Srvcs - AFUDC Reversal	(10)	-	-	-	-	(10)				
921 Total			(7)	-	1	31	17	42	8	921	43	9
923	CE051313	ED (Trans) - Opakapaka Line	1	-	-	-	-	1				
923 Total			1	-	-	-	-	1	-	923	1	-
Grand Total			333	487	59	130	65	1,073	214		1,159	232

HAWAIIAN ELECTRIC COMPANY, INC.
ABANDONED PROJECT COSTS
TEST YEAR 2007 ($ 000s)

Sum of Dec YTD Actual			CCYY_IND							Average write-off per year	Account	Total Escalation to 2007 2%/yr esc	Average escalated write-off per year
Naruc	Proj/WO No.	WO_DESC	2001	2002	2003	2004	2005	2006	Grand Total				
500	HP001833	ABAN-P4683000-K7 EMS & Comm Equip	-	-	-	18	-	-	18				
	LA000168	PS - CEIP Generation Site	-	58	-	-	-	-	58				
500 Total			-	58	-	18	-	-	75	13	500	83	14
502	FI000733	Power Supply - AFUDC Reversal	-	(3)	-	-	-	-	(3)				
	HP001833	ABAN-P4683000-K7 EMS & Comm Equip	-	-	-	24	-	-	24				
502 Total			-	(3)	-	24	-	-	21	4	502	22	4
546	AD001618	Expense Project - Pacific Allied	-	-	-	-	99	-	99				
546 Total			-	-	-	-	99	-	99	17	546	103	17
566	EE005651	Frq/Vlt for Kalae to DATAQ:P0000157	-	-	4	-	-	-	4				
	LA000180	ABAN-AES-CEIP #2 Trans Ln	-	-	4	-	-	-	4				
566 Total			-	-	8	-	-	-	8	1	566	9	2
569	CE051313	ED (Trans) - Opakapaka Line	-	3	-	-	-	-	3				
569 Total			-	3	-	-	-	-	3	1	569	3	1
570	CE051313	ED (Trans) - Opakapaka Line	-	37	-	-	-	-	37				
	EE011498	KAHE 5-8 CBL TRENCH COVER:P1470000	-	-	-	-	-	20	20				
570 Total			-	37	-	-	-	20	57	10	570	61	10
572	CE051313	ED (Trans) - Opakapaka Line	-	52	-	-	-	-	52				
572 Total			-	52	-	-	-	-	52	9	572	57	10
580	EE007815	BP NAS PRIVATIZATION:Y00004	-	-	143	-	-	-	143				
	EE009592	DIAMOND HEAD RD OH/UG IMPVT:P0000597	-	-	-	1	-	-	1				
	LA000166	ABAN-ED-Dist-Leilehua SS Site	-	10	-	-	-	-	10				
580 Total			-	10	143	1	-	-	154	26	580	167	28
584	CE051318	ED (Dist) - Opakapaka SS and Line	-	7	-	-	-	-	7				
584 Total			-	7	-	-	-	-	7	1	584	8	1
588	EE007815	BP NAS PRIVATIZATION:Y00004	-	-	335	-	-	-	335				
	EE009592	DIAMOND HEAD RD OH/UG IMPVT:P0000597	-	-	-	15	-	-	15				
588 Total			-	-	335	15	-	-	351	59	588	379	63
591	CE051318	ED (Dist) - Opakapaka SS and Line	-	7	-	-	-	-	7				
	EE011292	Mobile Substation Storage:P0001029	-	-	-	-	-	8	8				
591 Total			-	7	-	-	-	8	15	3	591	16	3
592	CE051318	ED (Dist) - Opakapaka SS and Line	-	27	-	-	-	-	27				
	EE003716	MAKALOA SS VLT 2603 REPL:P9535000	10	-	-	-	-	-	10				
592 Total			10	27	-	-	-	-	37	6	592	41	7
593	EE007803	WAIMANALO DRAINAGE IMPVMT:P1690000	-	-	1	-	-	-	1				
	EE012176	KAHUKU CACTF 12KV RELO & SVC:P0001122	-	-	-	-	-	18	18				
593 Total			-	-	1	-	-	18	18	3	593	19	3
594	EE003715	Queens & Mililani Vaults:P9521000	8	-	-	-	-	-	8				
594 Total			8	-	-	-	-	-	8	1	594	9	2
903	CS001324	ACD/IVR Project Reversal of charge	-	138	-	-	-	-	138				
903 Total			-	138	-	-	-	-	138	23	903	152	25
920	CE051313	ED (Trans) - Opakapaka Line	-	3	-	-	-	-	3				
	FA127056	P0000722 - Project Abandonment	-	-	-	1	-	-	1				
	FA127087	P1022 - Project Abandonment	-	-	-	-	-	2	2				
920 Total			-	3	-	1	-	2	6	1	920	6	1
921	CE051313	ED (Trans) - Opakapaka Line	-	3	-	-	-	-	3				
	FA127056	P0000722 - Project Abandonment	-	-	-	1	-	-	1				
	FA127063	P0000586 - Project Abandonment	-	-	-	-	31	-	31				
	FA127087	P1022 - Project Abandonment	-	-	-	-	-	17	17				
	FI000982	General Support Srvcs - AFUDC Reversal	-	(10)	-	-	-	-	(10)				
921 Total			-	(7)	-	1	31	17	42	7	921	43	7
923	CE051313	ED (Trans) - Opakapaka Line	-	1	-	-	-	-	1				
923 Total			-	1	-	-	-	-	1	-	923	1	-
Grand Total			18	333	487	59	130	65	1,091	185		1,179	198

CA-IR-493

Ref: HECO Response to CA-IR-390 (Plant Additions - Transformers).

CA-IR-390 identified and sought additional information on six (6) new construction projects expected to be completed during 2007 that were not included as 2007 additions in HECO's original test year forecast. Projects P0001396 and P0001401 involve the purchase of substation transformers, both of which were approved in the first quarter of 2007. The PIF documentation for each project, supplied in Attachment 1 to the referenced response, indicates that the time required to obtain new transformers is 56 weeks. Please provide the following:

a. Please explain how project approval can be obtained in the first quarter of 2007 and HECO can record the transformers as a 2007 plant addition, when the lead time is 56 weeks.

b. Attachment 2 of the response to CA-IR-390 is a 2005 HECO distribution transformer presentation. At page 3 the typical wait time for a new transformer ranges from 22-26 weeks. Please explain and reconcile this range with the 56 weeks referenced in part (a) above.

HECO Response:

a. Approvals for both projects, P0001396 and P0001401, were obtained in the first quarter of 2007. The transformer orders for both projects were placed immediately after approvals were obtained. Under HECO's purchasing "alliance" with the transformer manufacturer, HECO is able to receive preferred manufacture and delivery lead-times for its transformer orders. Although the current lead-time for a distribution transformer is 52-54 weeks for alliance customers and 56 or more weeks for non-alliance customers, HECO's engineer contacted the manufacturer and was able to better the alliance lead time. As a result, the quoted arrival dates for both projects are November 2, 2007 and December 14, 2007, for P0001396 and P0001401, respectively.

The PIF for P0001401 notes that the transformer ordered and scheduled for arrival in December replaces a spare that was used to address a transformer failure in February 2007. The transformer that arrives in November for P0001396 will replace a

spare that was installed at the UH Quarry site in April 2007, as requested by the UH. Since both transformers ordered will be used as spares, P0001396 and P0001401 will be closed to plant after the transformers are inspected, which usually takes between three to five working days after arrival. As a result, the Company still anticipates that both projects will be completed and placed into service by yearend 2007.

b. At the time that HECO's distribution transformer presentation (Attachment 2 of CA-IR-390) was prepared in 2005, the information contained on page 3 accurately described the typical lead time for new distribution transformers: alliance customers experienced lead times of 22-24 weeks while non-alliance customers experienced lead times of 26 or more weeks. However, transformer market conditions in 2006 and 2007 changed with a significant increase of demand for transformers (see page 3 of Attachment 1), resulting in transformer manufacturers having difficulties producing an adequate supply to meet the higher demand. Accordingly, transformer lead times have increased to the levels noted in the response to item a above (see page 1 of Attachment 1)[1].

[1]Attachment 1 contains relevant pages from a presentation made by ABB, HECO's transformer manufacturer, which included a few slides from a presentation made earlier by Weidmann Electrical Technology for an industry meeting.

John Marlow

Utility Marketing Manager

HECO/MECO/HELCO ABB Transformer Alliance Partners

April 2007

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Business Overview

- SPT Business Outlook
  - 2003 Act Orders → $xx.x MUSD (Held fairly steady in a cont. decline)
  - 2004 Act Orders → $xx.x MUSD (Added Square "D" Business)
  - 2005 Actual Orders --$xx.x MUSD
  - 2006 Actual Orders -- $xx.x MUSD
  - 2007 Actual Orders ---- $xx.x MUSD (through 3-31-07)
- Plan ahead and order now. Lead times are 48 weeks now and should be 52 -54 by end of April.

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IEEE PES Transformers Committee Tutorial

Transformer Fleet Health and Risk Assessment

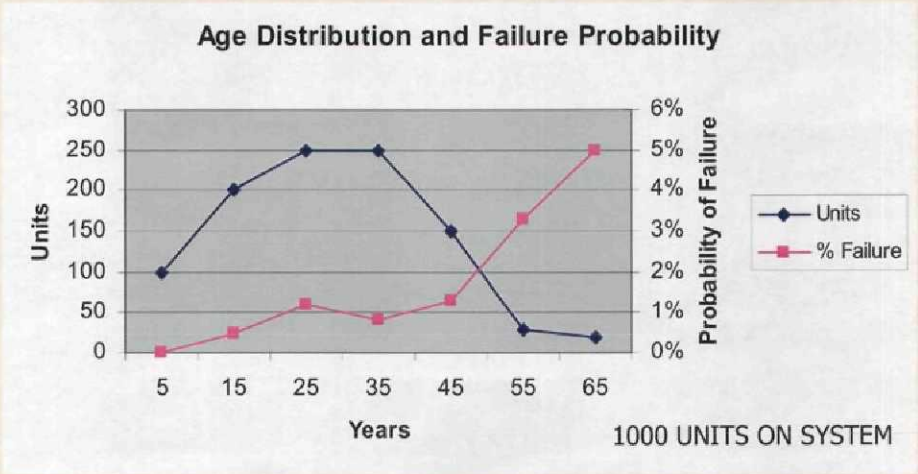
March 13, 2007, Dallas Texas

WEIDMANN
ELECTRICAL TECHNOLOGY

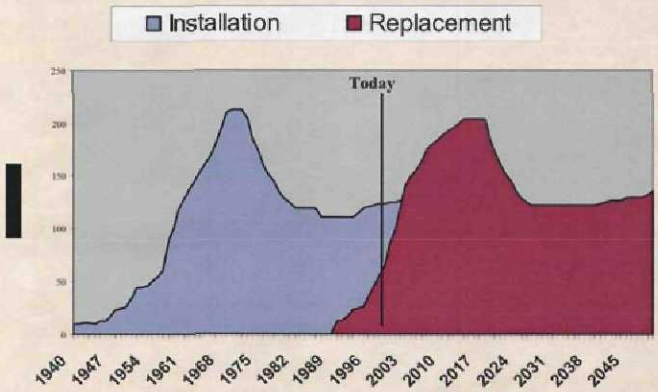
Thomas A. Prevost
for
David J. Woodcock

Weidmann-ACTI
St. Johnsbury, Vermont

Example – Rolling Five-Year Average

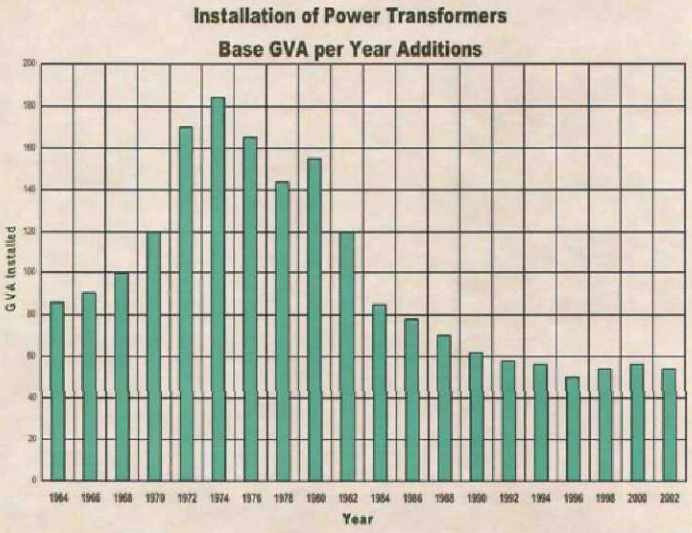


An Approaching T&D "Asset Wall"



Transformer GVA Additions

The aging transformer Population follows low T&D capital investment for the past 25+ years.

Average age of power transformers is now approaching 40 years

In the final quartile of transformer life, Failure Probability can change by 5x to 10x normal system failure-rate