BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAI'I

In the Matter of the Application of	)	
	)	
HAWAI'I ELECTRIC LIGHT COMPANY, INC.	)	Docket No. 2015-0170
	)	
	)	
For Approval of General Rate Case and Revised Rate Schedules and Rules	)	
	)	

HAWAI'I ELECTRIC LIGHT COMPANY, INC.
2016 TEST YEAR

DIRECT TESTIMONIES AND EXHIBITS

FILED
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PUBLIC UTILITIES COMMISSION

Book 7

TESTIMONY OF
RHEA R. LEE-MOKU

MANAGER
ADMINISTRATION DEPARTMENT
HAWAI'I ELECTRIC LIGHT COMPANY, INC.

Subject: Hawai'i Electric Light Employee Count
Hawai'i Electric Light Customer Service Expense Operation and Maintenance ("O&M") Expense
Administration Department O&M Expense
President's Office Staffing
Cost Control Measures of the Administration Department

EXECUTIVE SUMMARY

- Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light") budgets employee count to the minimum staffing level necessary to operate and maintain the existing power infrastructure, design and build new distribution, transmission, and generation facilities to meet Hawai'i Island's generation needs, enhance the customer service experience, and carry out strategies and initiatives in support of safe and reliable clean energy for the island of Hawai'i. Therefore, the Company believes the total 2016 test year budgeted employee count of 319 is necessary to achieve these objectives.
- In Hawai'i's dynamic and changing energy landscape, the Hawaiian Electric Companies set in motion a Company-wide effort that will transform the way the Hawaiian Electric Companies do business and deliver the value and results customers want and deserve. The Hawaiian Electric Companies Strategic Transformation Plan 2015 – 2020 lays the foundation for the Company's 2030 Vision with:
    - More than 65% renewables
    - Nearly triple distributed solar
    - Lower customer bills by 20%
    - Expanded customer options
- The employee count of 319 is required to accomplish this vision and complete the transformative and foundational initiatives that the Company will build upon for Hawai'i's clean energy future.
- Achieving this vision requires collaborating with key stakeholders and gaining support from the community as a whole. The Hawaiian Electric Companies recognize that effective communication, education and community outreach, and transparency are

critical and necessary to achieving these goals. As a result, since the 2010 rate case, new roles were established within the Company and certain organizational changes occurred company-wide to provide clear, concise, credible, and timely communication to both internal and external audiences in the most efficient and cost-effective manner.

TABLE OF CONTENTS

INTRODUCTION 1

TOTAL EMPLOYEE COUNT OVERVIEW 3

ORGANIZATIONAL STRUCTURE AND CHANGES 4

2016 TEST YEAR EMPLOYEE COUNT 13

- 2016 Test Year Compared to the 2013 Recorded Average Employee Count 15
- Retirement-Eligible Employees 17
- Labor Cost Adjustment 19

EFFORTS TO ACHIEVE THE 2016 TEST YEAR EMPLOYEE COUNT 21

HAWAI'I ELECTRIC LIGHT CUSTOMER SERVICE EXPENSE O&M SUMMARY 29

ADMINISTRATION DEPARTMENT O&M EXPENSE AND STAFFING 31

- Administrative Division 35
- Human Resources Division 36
- Government and Community Relations Division 38
- Communications and Media Division 38
- Community Education Division 39

SUMMARY 45

INTRODUCTION

Q. Please state your name and business address.

A. My name is Rhea Lee-Moku and my business address is 54 Halekauila Street, Hilo, HI, 96720.

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

A. I am employed by Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light" or "Company") as the Manager of the Administration Department. HELCO-1500 provides my educational background and work experience.

Q. What will your testimony cover?

A. My testimony will cover the following topics:

1. Company's total employee count for the 2016 test year;
2. Hawai'i Electric Light's customer service Operation and Maintenance ("O&M") expense;
3. Administration Department O&M expense;
4. President's Office Staffing; and
5. Cost control measures of the Administration Department.

SUMMARY

Q. Please summarize key points that you would like to emphasize as part of your testimony.

A. Company Employee Count

The total Company's budgeted employee count for the 2016 test year is 319 employees, as shown in HELCO-1508. The Company budgets employee count to

the minimum staffing level necessary to operate and maintain the existing power infrastructure, design and build new distribution, transmission, and generation facilities to meet Hawai'i Island's generation needs, enhance the customer service experience, and carry out strategies and initiatives in support of reliable and safe clean energy for the island of Hawai'i. In doing so, the Company recognizes the critical importance of reducing the State of Hawai'i's dependence on fossil fuels, ensuring property and equipment are properly maintained to provide safe and reliable clean energy, and ensuring the Company operates in a financially sound manner. Therefore, the 2016 test year budgeted employee count of 319 employees is necessary to achieve these objectives.

Hawai'i Electric Light Customer Service O&M Expense

The Company's 2016 test year estimate for customer service O&M Expense is $380,000 for labor and $855,000 for non-labor. This results in a 2016 test year total of $1,235,000 for customer service O&M Expense, as shown in HELCO-1503 and HELCO-1101.

Administration Department O&M

The Administration Department's 2016 test year estimate for labor O&M expense is $987,000 and non-labor O&M expense is $18,091,000. This results in a 2016 test year total O&M expense estimate for the Administration Department of $19,078,000, as shown in HELCO-1501 and HELCO-1101.

Administration Department and President's Office Employee Count

The total number of employees in the Administration Department is 10, as of May 31, 2016. The budgeted employee count for the Administration Department in

the 2016 test year is 11. The Company expects to fill the vacant Administrator position in August 2016.

The total number of employees in the President's Office is three, as of May 31, 2016. The budgeted employee count for the President's Office in the 2016 test year is three positions.[1]

TOTAL EMPLOYEE COUNT OVERVIEW

Q. What is the total Company's budgeted employee count for the 2016 test year?

A. The total Company's budgeted employee count for the 2016 test year is 319, as shown, by department and division, in HELCO-1508.

Q. Is this total Company budgeted count of 319 necessary and reasonable for purposes of the 2016 test year?

A. Yes, for the reasons discussed in my testimony as well as other testimonies submitted by other Company witnesses who also address the applicable employee needs for all of the Hawai'i Electric Light departments.

Q. What departments does your testimony cover with respect to employee needs?

A. My testimony addresses the employee needs of the Administration Department and the President's Office.

Q. Who discusses the employee needs for each of the other Hawai'i Electric Light departments?

[1] On July 11, 2016, the General Manager, Hawai'i Island position was vacated when the incumbent transferred to Hawaiian Electric Company, Inc. ("Hawaiian Electric") on an interim basis. The President's Office does not plan to backfill this vacancy in 2016 and projects its staffing level will remain at two (2) positions through December 31, 2016. Therefore, the Company will be adjusting its 2016 test year employee count to 318 positions and will be removing the associated O&M labor and on-costs expenses for the General Manager position from its 2016 test year revenue requirements at the next opportunity.

A. The list below identifies the applicable witnesses addressing the employee needs of each of the other departments:

1. Lisa Dangelmaier (HELCO T-6) – System Operations and Planning Department
2. Norman Uchida (HELCO T-7) – Production Department
3. Miles Nagato (HELCO T-8) – Distribution Department
4. Natalie Epenesa (HELCO T-9) – Hawaiian Electric's Customer Service Department[2]
5. Tom Cummins (HELCO T-10) – Support Services Department
6. Paul Franklin (HELCO T-11) – Accounting Department
7. Dave Okamura (HELCO T-18) – Engineering Department

ORGANIZATIONAL STRUCTURE AND CHANGES

Q. What is the Company's scope of operations, service territory, and district boundaries on the island of Hawai'i?

A. The Company's scope of operations is to generate, transmit, and distribute electricity to its customers on the island of Hawai'i. The Company's service territory covers the entire island, an area of over 4,000 square miles. The Company divides the Hawai'i Island into three operating districts (Hilo, Waimea, and Kona), as shown in HELCO-1509. The Hilo district is comprised of the area between O'okala and north east of Hawaiian Ocean View Estates. The Waimea district is comprised of the area between O'okala and Waikoloa, including the area of North Kohala. The Kona

[2] As discussed below and in HELCO T-9, in 2015, the Company's Customer Service Department was transferred, in its entirety, to Hawaiian Electric.

district is comprised of the area between south of Waikoloa through Hawaiian Ocean View Estates. Each district serves customers located within the boundary lines of the district.

Q. Please describe the organizational structure of the Company.

A. There are eight distinct departments in the Company. As shown in HELCO-1508, the eight departments are: President's Office; Accounting; Administration; Distribution; Engineering; Production; System Operations and Planning; and Support Services. Each department is organized by responsibility area or ("RA"). The Company routinely refers to an RA as a division. Although a division is normally assigned to one of the three above described operating districts (Hilo, Waimea, and Kona) where it is prudent and cost effective, certain divisions serve more than one district. For example, the divisions within the Administration Department provide services to employees in all three districts.

Q. What is the Company's management organizational structure?

A. The Company's management organizational structure (consolidated and by RA/division) is shown in HELCO-1508. It includes reporting relationships, departmental organizations, and staffing levels for the 2016 test year consolidated, and by RA/division.

Q. What changes were made to the Company's management organizational structure since the 2013 test year rate case (Docket No. 2012-0099)?

A. HELCO-1511 shows the organizational structure of the Company as of June 30, 2012. HELCO-1511 was provided in the Company's last rate case proceeding (2013 test year rate case or Docket No. 2012-0099), as HELCO-1304. Since then, there

have been several changes to the Company's management organizational structure. The current structure, as of May 31, 2016, is shown in HELCO-1510. See HELCO-1521 for a summary of the organizational changes since 2010.

Q. Did Hawai'i Electric Light establish any new departments since the 2013 test year rate case?

A. Yes. On January 1, 2016, the Company established the System Operations and Planning Department, which used to be a division under the Production Department. See Ms. Lisa Dangelmaier's testimony (HELCO T-6), and Mr. Norman Uchida's testimony (HELCO T-7) for further details.

Q. Did Hawai'i Electric Light eliminate any departments since the 2013 test year rate case?

A. Yes, the Energy Services Department (shown in HELCO-1511, which depicts the organizational structure of the Company as of June 30, 2012), was eliminated in May 2013 following the retirement of its manager. The Energy Services Department's 10 employees were reassigned to other existing departments as follows:

Administration Department	Educational Services Administrator (1) Administrative Aide (1)
Customer Service Department (now a department of Hawaiian Electric)	Commercial Account Managers (4) Forecasting/Data Analyst (1)[3]
Engineering Department	Commercial Services Administrator (1) IRP/Energy Services Administrator (1) Administrative Aide (1)

[3] The Forecasting/Data Analyst position was transferred to the System Operations & Planning Division at the time the Customer Service Department was transferred to Hawaiian Electric.

Q. Why was the Energy Services Department eliminated?

A. When the manager of the Energy Services Department retired, the Company determined that the employee resources from that department were best used to support the Company's customer and communication-based initiatives including the Net Energy Metering program, customer education and outreach, commercial customer outreach, and sales forecasting. These functions fit well in other existing departments. To reduce employee count and cost, and provide improved service for customers, the 10 remaining employees of the Energy Services Department were transferred to other departments and placed under existing leadership. Over time, this change has materialized into improved service to customers, more information provided to the community, and reduced cost.

Q. How were the reassignments determined?

A. The reassignments were determined by each position's job functions and how each position could best support Company-wide initiatives to improve relationships with the Company's customers, reduce the price of electricity, streamline operations, and improve employee engagement.

Q. What changes, if any, were made to these 10 positions?

A. Over time, some changes were made to several of these positions. In the Administration Department, both the Educational Services Administrator and Administrative Aide positions were replaced with the Community Consultant and the Senior Communications Consultant positions, respectively, which better align with the Administration Department's vision and mission.

In the Engineering Department, the Administrative Aide position was adjusted to Administrative Assistant due to modifications in the job duties. The Commercial Services Administrator and IRP/Energy Services Administrator positions were consolidated into one position- Renewable Energy Administrator, which focuses on renewable energy and distributed generation programs.

The Forecasting/Data Analyst position was originally assigned to the Customer Service Department. However, in 2016, this position was reassigned to the Production Department for improved alignment with forecasting functions. The Commercial Account Managers were assigned to the Customer Service Department, which is now a department of Hawaiian Electric.

Q. Were any other departments eliminated since the 2013 test year rate case?

A. Yes. In 2015, the Customer Service Department was transferred in its entirety to Hawaiian Electric. All employees who were working in the Customer Service Department were able to retain their Hawai'i-Island based positions; however, they are now employees of Hawaiian Electric. Please see Natalie Epenesa's testimony (HELCO T-9), which describes the transfer of the Customer Service Department to Hawaiian Electric in greater detail.

Q. Were other positions transferred to Hawaiian Electric since the 2013 test year rate case?

A. Yes. Portions of the Accounting Department were transferred to Hawaiian Electric in 2014. Please see Mr. Paul Franklin's testimony (HELCO T-11), for details on the Accounting Department positions transferred to Hawaiian Electric. Also, the Information Technologies ("IT") Division, a division of the Support Services

Department, was transferred to Hawaiian Electric in 2015. Please see Mr. Tom Cummins testimony (HELCO T-10) for details on the transfer of the IT Division to Hawaiian Electric.

Q. In addition to the organizational structure shown in HELCO-1508, is there any other functional reporting structure to the Company's parent company, Hawaiian Electric?

A. Yes. The Hawai'i Electric Light President reports directly to the President and Chief Executive Officer of Hawaiian Electric.

The Hawai'i Electric Light General Manager, Finance has a dual reporting relationship to both the Hawai'i Electric Light President and the Maui Electric Company Limited ("Maui Electric") President. The Hawai'i Electric Light Administration Manager has a dual reporting relationship to both the Hawai'i Electric Light President and Hawaiian Electric Senior Vice President General Counsel, Chief Compliance & Administrative Officer, and Corporate Secretary.

The System Operations and System Planning Manager has a dual reporting relationship to both the Hawai'i Electric Light President and the Hawaiian Electric Vice President System Operation.

Q. What benefit do the multiple or dual reporting relationships provide for the General Manager, Finance, Administration Manager, and System Operation and System Planning Manager?

A. The General Manager, Finance, has overall responsibility for financial reporting, budgeting, and other accounting and finance-related areas for Hawai'i Electric Light and Maui Electric. This position advises the Presidents of Hawai'i Electric Light

and Maui Electric on financial matters and the dual reporting ensures consistency and compliance with all laws, regulations, and corporate finance policy.

The Administration Department is responsible for the human resources ("HR") function at the Company, among other areas of responsibility. Oversight of the Administration Manager by both the Company's President's and the Hawaiian Electric Senior Vice President General Counsel ensures consistency and compliance with all laws, regulations, and corporate policy concerning HR at both Hawai'i Electric Light and Hawaiian Electric.

The System Operations and Planning Department Manager has overall responsibility for the Hawai'i Island system grid operations. Reporting to both the Hawai'i Electric Light President and the Hawaiian Electric Vice President of System Operations ensures consistency and best practices in grid operation are applied across the Companies.[4]

Q. Please explain any other key changes in the organization and positions in Hawai'i Electric Light.

A. There were several other key changes in the Company's organization. For a summary of organizational changes, please see HELCO-1521.

One of the key changes was the implementation of a Shared Services model for the Hawaiian Electric Companies. Shared Services standardizes processes across the Companies among similar functions, reduces redundancies, and provides specialized support resulting in increased service quality through the delivery of

[4] Hawai'i Electric Light, Hawaiian Electric, and Maui Electric (collectively "The Hawaiian Electric Companies" or "The Companies").

consistent services that leverage technical expertise. In 2013, the Administration Department was the first department to apply the shared services model, applying the model specifically to its HR, benefits, and risk management activities. Then, in late October 2013, several functions were consolidated at Hawaiian Electric including benefit processing and administration, some transactional HR work, and leave management processing and administration. In 2015, workers' compensation case management and administration were consolidated at Hawaiian Electric. In the first quarter of 2016, pension processing and employee retirement counseling services were also consolidated at Hawaiian Electric. Ultimately, the Shared Services model resulted in the reduction of two positions in the Administration Department: (1) the HR Generalist that performed clerical and administrative support work for the HR Division was eliminated; and (2) the Benefits Specialist position was eliminated when the benefit processing and administrative work, and leave management administration was consolidated at Hawaiian Electric. By consolidating various functions at Hawaiian Electric, the responsibilities of the positions remaining at Hawai'i Electric Light were expanded to include other responsibilities that provide additional value and services to the Company's customers.

Another key change was the reorganization of the following departments and divisions: Customer Service Department (see Ms. Natalie Epenesa testimony, HELCO T-9), IT Division (see Mr. Tom Cummins testimony, HELCO T-10), and the Accounting Department (see Mr. Paul Franklin's testimony, HELCO T-11). These reorganizations resulted in the transfer of employees from Hawai'i Electric

Light to Hawaiian Electric. Those transferred employees now provide services to all three of the Hawaiian Electric Companies, but as Hawaiian Electric employees who are based on Hawai'i Island.

The third key change (since the 2013 rate case test year) is the 2014 retirement of the Hawai'i Electric Light Rate Case Manager. Following that retirement, the Company moved the functions of the Rate Case Manager position to Hawaiian Electric.

The fourth key change was the 2016 closure of the Waimea Baseyard to walk-in customers. Due to this closure, the Customer Engineering Waimea Division was eliminated and the one position from the Customer Engineering Waimea Division was transferred to the Customer Engineering Kona Division. Please also see Mr. Dave Okamura's testimony (HELCO T-18) for further details.

Finally, several organizational changes occurred in the Production Department since the 2013 test year rate case. In 2013, a new division called Operations and System Planning was established in the Production Department; this eventually became the System Operations and Planning Department, which was established as its own department (i.e., separate from the Production Department) on January 1, 2016. The Puna power plant was placed in stand-by mode in 2015 and all nine positions were eliminated. One of the nine positions was vacant; the remaining eight employees filled vacant positions shown in the table below.

Puna Plant Position	New Division	New Position	Effective Date
Boiler Operator	HGK - Keahole	Combustion Turbine Operator Trainee	01/19/15
Boiler Operator	HGK - Keahole	Combustion Turbine Operator Trainee	5/18/15
Boiler Operator	HGK - Keahole	Combustion Turbine Operator Trainee	06/08/15
Control Operator	HGH – Hill Plant	Control Operator	01/19/15
Control Operator	HGH – Hill Plant	Control Operator	01/19/15
Control Operator	HGH – Hill Plant	Control Operator	01/19/15
Control Operator	HGH – Hill Plant	System Operator	01/19/15
Control Operator	HGH – Hill Plant	System Operator	01/19/15

In 2015, the Combustion Turbine and Diesel Division was consolidated into the Steam and Hydro Division, which provides maintenance to all Company power generation units. Please see Mr. Norman Uchida's testimony (HELCO T-7) for detailed discussion.

2016 TEST YEAR EMPLOYEE COUNT

Q. How was the 2016 test year employee count developed?

A. The test year employee count was developed as part of the Company's operating budget process described by Mr. Paul Franklin in HELCO T-11. The same methodology used in previous rate cases, including the 2013 test year rate case, was used to develop the employee count for the 2016 test year. In summary, during the budgeting process, each department manager establishes the resource requirements (number of employees needed) for his or her department over the budget period by RA, based on factors such as the planned workload and anticipated number of

retirements during the period. The RA is the lowest organization unit at which cost responsibility and accountability is delegated.

Q. How is the estimated total labor demand determined?

A. Department managers determine the work that must be accomplished in each RA. Forecasts of labor hours required to perform the work are developed and inputted into the budgeting system and results in the forecasted demand of labor hours.

Q. How are the number of employees, or resource requirements, and total demand of labor hours coordinated and reconciled during the budgeting process?

A. Starting with the forecasted demand of labor hours, the supply of Company employees are resourced or assigned to meet the labor demand for work that must be accomplished. When the labor demand exceeds the labor supply available, the increased labor demand is first analyzed to determine whether the need is permanent or temporary. When the need is identified as permanent, an increase in the number of employees to meet this need is budgeted. When the need is identified as temporary, department managers determine whether the work should be performed using paid overtime (non-exempt employees), extended work days for exempt employees (unpaid overtime), outside contractor services, or temporary workers. This process assures the Company that its budgeted labor costs are consistent with the number of employees budgeted.

Q. What is the budgeted number of employees in the 2016 test year?

A. The budgeted employee count for the 2016 test year is 319. Please see HELCO-1508 for more details.

Q. What is the average number of employees in the 2016 test year?

A. The average number of employees for the 2016 test year is 307, as shown in HELCO-1513. The 2016 test year average employee count is a 13-month average based on the recorded employee count on December 31, 2015, the recorded employee count from January 31, 2016 through May 31, 2016, plus the budgeted employee count for the balance of the 2016 test year. For definitions of different categories of employees, refer to HELCO-1514. By department, the 2016 test year average employee count and 2016 budgeted employee count are as follows:

DEPARTMENT	**2016 TY AVERAGE EE COUNT**	2016 TY BUDGETED EE COUNT
Accounting	**8**	9
Administration	**10**	11
Customer Services Department	**0**	0
Distribution Department	**129**	134
Engineering Department	**55**	55
President's Office	**3**	3
Production Department	**72**	74
Support Services Department	**16**	17
System Operations and Planning	**14**	16
TOTAL EE COUNT	**307**	319

2016 Test Year Compared to the 2013 Recorded Average Employee Count

Q. How does the Company's 2016 test year budgeted employee count compare with the Company's actual average employee count in 2013?

A. The 2016 test year employee count of 319 is 60 positions less than the 2013 average employee count of 379 as shown in HELCO-1516. The net decrease of 60 positions reflects the following changes by department as follows:

Net Decrease in Employee Count, by Department -
2013 Recorded Average Compared to 2016 Test Year

Accounting Department	-9
Administration Department	+3
Customer Service Department	-52
Distribution Department	+8
Engineering Department	+3
President's Office	0
Production Department	-18
System Operations & Planning	+16
Support Services Department	-11
TOTAL NET Decrease	-60

Q. Why has the 2016 test year employee count decreased from the 2013 recorded average?

A. As discussed earlier in my testimony, the Company implemented a Shared Services model for all three Hawaiian Electric Companies. Shared Services standardizes processes among similar functions, reduces redundancies, and provides specialized support resulting in increased service quality through the delivery of consistent services that leverage technical expertise.

As previously discussed, there were reorganizations of the following departments and divisions: Customer Service Department, IT Division, and the Accounting Department. As a result of such reorganizations, the employees in these divisions/departments are not counted in the current actual or budgeted Hawai'i Electric Light employee count.

Retirement-Eligible Employees

Q. What impact do retirement-eligible employees have on the 2016 test year estimated employee count?

A. A total of 70 of the Company's employees may be eligible to retire in the five-year period 2016-2021 (see HELCO-1517). Of these eligible employees, 59 work in jobs that are highly skilled and require substantive training and experience in a utility company to ensure stability of the Company's services to its customers. Beginning in the 2016 test year, the Company must increase its entry level workforce to train replacements for future journey-level and other highly skilled retirements.

Q. Of the 70 employees eligible to retire in the five-year period beginning 2016, how many employees does the Company realistically expect to retire annually?

A. The actual retirements each year vary and are impacted by a number of factors such as the economy, anticipated changes to the pension plan through collective bargaining, family needs, and employee engagement. For example, the Company calculated the ratio of employees eligible to retire versus employees who actually retired over a five year period (2011-2015) and found the ratios varied from year to year:

Year	Eligible to Retire	Actually Retired	Ratio of Retirements to Eligible to Retire
2011	14	7	50%
2012	28	9	32%
2013	15	6	40%
2014	15	11	73%
2015	14	17	121%
2001-2015	86	50	58%

Source: HELCO-1518

As noted above, during this five-year period, the average ratio of retirements to those eligible to retire was 58%. Applying this ratio to the 70 employees eligible to retire reduces the anticipated retirements in the years 2016-2021 to a total of 41 (rounded) employees.

Q. Does the Company estimate a future reduction in employee count once new employees are trained and replace veteran employees who retire?

A. No. The Company estimates that the 2016 test year employee count of 319 is necessary and reasonable to safely and efficiently operate the Company and serve its customers, and the Company does not anticipate any further reduction in employee count once new employees are trained and replace veteran employees who retire. The Company expects that employees will continue to retire each year beyond 2021 and its need to continue to train and develop employees to replace highly skilled employees who retire will also continue.

Q. Are there any linemen eligible to retire in the five year period 2016 – 2021?

A. No.

Q. If not, please explain why the Company continues to hire for the lineman apprentice program.

A. The lineman position is a feeder position for higher level, and more technically difficult positions in the Distribution Department. These positions are filled by individuals who have demonstrated strong performance, skill, and knowledge as a Lineman, which is generally accomplished through many years as a Lineman at the journey level. Most linemen will be promoted to these higher level positions and eventually retire from these positions. These are reflected in HELCO-1517 as Working Foreman, Serviceman, Senior Inspector, Troubleman-Inspector, Assistant District Superintendent, Assistant Superintendent Construction & Maintenance, Construction Project Manager, and Technical Trainer.

Labor Cost Adjustment

Q. Should an employee vacancy rate be applied to the 2016 test year employee count?

A. No. Although the Company recognizes that it currently has vacant positions, the Company believes that it would be unreasonable and not in the customers' best interest to reduce the 2016 test year employee count based on a vacancy rate. The 2016 test year employee count of 319 represents the level of resources required to accomplish the expected work load to provide service to the Company's customers. However, in recognition of the difficulty to attain and maintain the employee count forecast, and if the Commission believes a vacancy rate should be applied to the employee count, the Company proposes no more than a 7.24% vacancy rate.

Q. How was the 7.24% vacancy rate determined?

A. This represents an average vacancy rate from 2011 to May 2016, a period of over five years. The vacancy rate was based on a percentage difference between the actual employee count and the employee count number to which the Company managed to (i.e., either a budgeted employee count number or number used in a rate case test year) every month to determine a monthly vacancy rate. The monthly vacancy rates were added and then divided by the number of months to derive an average vacancy rate. See HELCO-1519. The calculation is similar to the one agreed upon in the Settlement Agreement with the Consumer Advocate in the Hawai'i Electric Light 2010 test year rate case.[5] The proposed vacancy rate will effectively reduce the 2016 test year employee count from 319 to 296. Please see Mr. Paul Franklin's testimony (HELCO T-11) and HELCO-1142 for discussion and the calculation of the labor adjustment as a result of the 7.24% vacancy rate.

Q. Does the Company plan to implement any adjustment to the test year employee count?

A. Yes. As described previously, the Company will be making an adjustment to account for the General Manager position becoming vacant on July 11, 2016.[6] In addition, the Company plans to update its actual employee count to reflect positional changes that have occurred since May 31, 2016.

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[5] See Parties' Stipulated Settlement Letter, HELCO T-12, Attachment 1, page 2, filed on September 16, 2010 in Docket No. 2009-0164.

[6] Because this position is not being backfilled, the Company will be reducing its 2016 test year employee count to 318 at the next opportunity. See supra n.1.

Q. Should the Company attain an employee count closer to the test year estimate of 319 by year-end, does the Company expect an adjustment to the proposed labor cost adjustment?

A. Yes. The Company plans to continue to fill its vacant positions through the end of 2016. The Company intends to seek a labor cost adjustment in line with its actual vacancy rate in the 2016 test year.

EFFORTS TO ACHIEVE THE 2016 TEST YEAR EMPLOYEE COUNT

Q. The 2016 test year employee count is 319 employees. How does the Company expect to fill 26 (319–293=26) positions in the 2016 test year in addition to vacancies that occur due to normal attrition such as resignations and retirements?

A. While the actual employee count as of May 31, 2016 is 293, plans are in place to fill vacant positions budgeted for the test year 2016. At the time this testimony was developed, the Company's employee count as of May 31, 2016 was 293 (see HELCO-1510). Job offers for nine (9) positions were in place. Additionally, two employees were scheduled to retire in June and July, one employee is scheduled to transfer to Hawaiian Electric in July, and four employees left the company in June and July. Recruitment activities continue and additional job offers are in progress. Three of the positions filled were filled with internal candidates, creating a new vacancy in another position. Thus, the anticipated employee count by the time this testimony is filed is estimated at 298 positions, which is equivalent to 21 positions less than the 319 test year budgeted employee count. These 21 vacant positions are roughly equivalent to a labor cost adjustment rate of 6.6%.

Q. Explain the Company's recruitment and hiring policy.

A. The Company has an established recruitment practice that has been in place for many years. The Company is an equal employment opportunity employer and selects and promotes qualified individuals from within or hires candidates external to the Company. Positions below the level of Superintendent and Director are posted internally and at affiliated companies (Hawaiian Electric, Maui Electric, and Hawaiian Electric Industries) for five days. Where it is anticipated that the position cannot be filled with internal or affiliated resources, the position is advertised and posted for open recruitment externally. External posting occurs for one to two weeks, and sometimes longer for positions that are difficult to fill. All applicants, internal, affiliate, and external, apply on-line through the Company's website. Applicants are screened for qualifications and those qualified are scheduled for entry-level testing, as appropriate, and interviews. After the interview phase is complete, the hiring manager selects the desired candidate and the candidate references are checked. After approval is obtained to make a job offer, a written job offer is tendered to the selected candidate. After the job offer is accepted by the candidate, the candidate goes through post-offer/pre-employment testing and qualification including a drug-screen, physical and functional examination, background criminal check, and driving abstract for those required to drive company vehicles. After the post-offer/pre-employment phase is completed satisfactorily, the hire date is scheduled. If the candidate does not meet the post-offer/pre-employment requirements, the hiring manager re-evaluates the other candidates for suitability for

the vacant position or may restart the recruitment process. See HELCO-1520 for further details.

Q. What challenges does Hawai'i Electric Light face in recruiting qualified candidates for its job openings?

A. Many of the vacant positions at Hawai'i Electric Light require specialized experience and/or education that may not be available locally. A good example is a vacant position for a lineman. To be qualified as a lineman, the candidate must be a graduate of an approved lineman apprentice program and have experience working in electric transmission and distribution roles. In addition, at Hawai'i Electric Light, the Company requires linemen to be able to work in all areas of line work including overhead and underground construction and maintenance, be able to drive and operate commercial vehicles such as bucket trucks and digger derricks, and be able to climb poles as well as work from the bucket. These requirements make it very difficult to find qualified applicants ready to work in Hawai'i. Most applicants for lineman positions come from the mainland, which delays hire for several months. Similarly, in other trades and crafts roles, such as electricians and machinist mechanics, and technical roles such as planners and engineers, it is difficult to find qualified applicants readily available on Hawai'i Island.

Q. Please provide the average amount of days it takes to fill a position.

A. In the last three years the average amount of time to fill a position has increased. The table below shows the data from 2014 – 2016 (a/o 5/31/16). See HELCO-1515 for further details.

Year	No. of Vacancies Filled	Avg Number of Calendar Days to Fill Vacancy
2014	23	82
2015	26	108
2016 (a/o 5/31/16)	9	143
29 Month Average		111

Q. Why has the average number of days to fill a vacancy increased since 2014?

A. There is no single answer to explain the increase in the average days to fill a vacancy. This average has increased from 82 days in 2014 to 143 days in 2016. Several factors have impacted the increase in time to fill a vacancy. Staff turnover in the HR Division accounts for some of the delay in filling positions. In 2014, the HR Team Director voluntarily resigned in March, leaving a vacancy in the HR Division until the replacement position, HR Business Partner, was filled on June 30, 2014. In the midst of training the new employee, the Company was impacted by Tropical Storm Iselle, which caused major damage to company facilities and impacted a number of customers. During this period all training stopped for the new HR Business Partner employee while emergency response roles were assumed by the HR Division's staff. After recovery from Tropical Storm Iselle, the Company was impacted by an advancing lava flow, which resulted in another emergency response situation. These natural events delayed training of the new HR Business Partner staff member until well into 2015. This impacted recruitment activities, resulting in delays in filling vacant positions. At the end of 2015, this new HR Business Partner voluntarily left the company, leaving only one HR Business Partner to provide HR services to the company, including recruitment services. This resulted in delayed filling of vacant positions. The replacement position for the vacated position, HR

1 Generalist, was filled on June 20, 2016 and it is anticipated that the lag in filling
2 vacant positions, due to Human Resource staffing, will decrease for the remainder of
3 2016.
4 Additional reasons for the lag in filling vacant positions include the difficulty
5 in finding qualified candidates for technical and highly skilled positions, which was
6 described above.
7 Q. What steps or processes has the Company undertaken to shorten the time it takes to
8 fill a position?
9 A. In 2013, the Company implemented a new process to reduce the involvement of the
10 HR Division in the recruitment process and increase the responsibility of the hiring
11 manager. This improvement was initially expected to lead to reduced time to fill
12 positions. The HR Division retains the responsibility for initiating the job posting.
13 The hiring manager is responsible for reviewing the applicants to check for
14 qualifications, scheduling and holding interviews, making the selection, and working
15 with the HR Division on the job offer. By spreading the responsibility for
16 recruitment to the hiring manager, it should reduce delays in hiring because the HR
17 Division is no longer required to manage the whole process. In addition to this, the
18 Company requires all applicants, internal, affiliate, and external to apply on-line via
19 the Company's website. This reduces the time to open mailed resumes and
20 applications, make photo copies, and send them to the hiring manager. Applicant
21 qualifications can be reviewed by the hiring manager immediately through electronic
22 access. The HR Division continues to train and work with hiring supervisors on this

1 new process to ensure that the hiring process is applied consistently and in
2 conformance with all laws and regulations.
3 Q. Will other Company witnesses explain the decrease in employee count?
4 A. Yes. As previously discussed, various witnesses will discuss and compare their
5 respective department's 2015 recorded employee count to the 2016 test year
6 employee count. The witnesses will identify the current status in staffing and will
7 also discuss changes to staffing levels.
8 Q. Why is the 2016 test year employee count more representative of the labor resources
9 required to support the current workload as opposed to the most recent actual
10 employee count?
11 A. As explained by the witnesses, the Company requires these additional employees, or
12 their equivalent labor costs, to perform work the Company expects to complete in
13 2016 and beyond. Labor resources are required to operate and maintain the existing
14 power infrastructure, enhance the customer service experience, carry out new and
15 existing strategies and initiatives in support of providing safe and reliable clean
16 energy, and to ensure adequate knowledge transfer prior to anticipated retirements.
17 Q. Has the Company considered increased overtime instead of hiring additional
18 employees?
19 A. Yes. Where the anticipated labor demand exceeds labor supply by a small amount,
20 the Company has deferred hiring additional employees in favor of increased
21 overtime. However, excessive overtime over a long period of time can lead to
22 employee fatigue, increased safety risks, lower quality work, lower productivity,
23 increased turnover, and decreased employee engagement. These factors can lead to

1 employee loss through resignation in favor of other careers or opportunities or early
2 retirement. The additional positions will enable the Company to reduce its paid
3 overtime to non-exempt employees (bargaining unit and management employees).
4 In departments that have no or a lower proportion of non-exempt employees, such as
5 the Administration, Support Services, and Accounting Departments, there are
6 significant amounts of unpaid overtime by exempt employees (see HELCO-1522).
7 Q. Why is preventing employee loss critical to the Company?
8 A. The Company's workforce requires and consists of highly skilled and
9 knowledgeable employees. While a certain level of skill and knowledge are required
10 to successfully begin a job at the Company, most employees develop and enhance
11 their level of skill and knowledge (including their knowledge and understanding of
12 the Company's facilities, infrastructure, procedures/policies, and operations)
13 progressively over many years working for the Company. The early loss of an
14 employee can result in a temporary setback in the level of skill and knowledge
15 resulting in increased overtime, use of contract services, decreased service to
16 customers, and delayed response to repair and maintenance issues. A good example
17 of this was described above concerning the loss of HR Division personnel.
18 Q. Can the Company continue to use contractors and temporary help to complete its
19 work requirements?
20 A. When the work is specialized or non-recurring, the use of contractors and temporary
21 help can be a cost efficient temporary measure. In cases where it has been difficult
22 to fill positions due to lack of qualified candidates, the Company has supplemented
23 its workforce through the use of consultants, contractors and agency temps in

addition to increasing overtime for its existing staff. In the long term, however, the Company believes that hiring regular employees better serves its customers and the community through the provision of consistent, quality, reliable and affordable services, and the modernization of the utility infrastructure to support clean energy initiatives. In addition to performing their assigned position responsibilities, Company employees volunteer their personal time to community service projects across Hawai‘i Island. In 2015, Hawai‘i Electric Light employees contributed more than 2,300 volunteer hours to assist with 20 community service projects, such as fundraising for charitable organizations and collecting and providing toys for less fortunate families during the holiday season.

Q. Why would regular employees be more efficient and effective over the long term?

A. The advantages of having regular employees rather than consultants, contractors, or temporary workers are numerous. Regular employees gain and retain knowledge and skills specific to their position and the Company, knowing that they will be required to improve over time. Consultants, contractors, and temporary workers often have to be trained to understand basic knowledge and skills to perform the work at hand with no expectation of future continued work with the Company. Compared to regular employees, there is also often less commitment to retain and build on knowledge and skill, and less incentive for continued loyalty to perform work for the Company. Furthermore, consultants, contractors, and temporary workers are not under the direct supervision and control of the Company's management as they are not considered employees. This has impacts on the quality of work, productivity, and commitment to serve the Company's customers. Having

an efficient and effective permanent workforce lowers costs in the long run, which is a benefit to the Company and its customers.

HAWAI'I ELECTRIC LIGHT CUSTOMER SERVICE EXPENSE O&M SUMMARY

Q. What is Hawai'i Electric Light's estimate for customer service O&M expense for the 2016 test year?

A. The Company's 2016 test year estimate for customer service O&M expense is $1,235,000, as shown in HELCO-1503 and HELCO-1101.

Q. What items are included in Hawai'i Electric Light's customer service O&M expense?

A. Customer service O&M expense consists of those costs incurred for customer interactions and activities that enhance the value customers receive from their electric utility service. These expenses are recorded in the following accounts as defined in the National Association of Regulatory Commissioners ("NARUC") Uniform System of Accounts for Classes A and B Electric Utilities

Account No. 909- Supervision- Customer Service Expense

Account No. 910- Customer Assistance Expense

Account No. 911- Informational Advertising Expense

Account No. 912- Miscellaneous Customer Service Expense

Q. What was the basis for the 2016 test year estimate for customer service O&M expenses?

A. The 2016 test year estimate is based on the Operating Budget for 2016.

Q. Did Hawai'i Electric Light make adjustments to the 2016 Operating Budget amounts in arriving at the 2016 test year estimate?

A. Yes. Please see HELCO-1101 for the list of budget, ratemaking, and normalization adjustments that were made to arrive at the 2016 test year estimate.

Q. How does the 2016 customer service O&M test year estimate compare to the actual customer service O&M expenses for 2015?

A. The 2016 test year estimate of $1,235,000 is $245,000 lower than the 2015 recorded O&M expenses of $1,480,000. See HELCO-1503.

Q. What are the primary reasons for the decrease of $245,000 of O&M expense?

A. The major factor is a decrease due to a reduction in employee benefit costs due to a reduced number of employees.

Q. Who performs the work that is included in the customer service O&M expense accounts?

A. The bulk of the work is performed by the Administration Department. In the next section below, I will further discuss the organizational structure of the Administration Department and the supporting details of the Administration Department budget are included in HELCO-1506.

Q. What other process areas charge to the customer service O&M block of accounts?

A. The following departments also charge O&M expenses to the customer service NARUC block of accounts:

- Production Department - The functions and responsibilities of this department are described in Mr. Norman Uchida's testimony, HELCO T-7.

- Hawaiian Electric Customer Service Department - The functions and responsibilities of this department are described in Ms. Natalie Epenesa's testimony, HELCO T-9.
- Engineering Department - The functions and responsibilities of this department are described in Mr. Dave Okamura's testimony, HELCO T-18.

ADMINISTRATION DEPARTMENT O&M EXPENSE AND STAFFING

Q. Please summarize the Administration Departments' 2016 test year estimate for O&M expense.

A. The Administration Department's 2016 test year O&M expense estimate is $19,078,000 as presented in HELCO-1501. The estimate is based on the 2016 O&M expense budget of $19,648,000, then adjusted for budget, ratemaking, and normalization adjustments totaling ($570,000) as shown in HELCO-1501 and further detailed in HELCO-WP-1503.

Q. Describe the general areas of responsibility of the Administration Department.

A. The Administration Department is responsible for the Company's HR, risk management, and government, community and media relations functions, as described in this testimony.

Q. What items are included in the Administration Department's O&M expense?

A. The Administration Department's test year estimate for operation and maintenance labor and non-labor expenses include estimated O&M expense in the following NARUC account blocks:

B37-	Customer Services Expense
B38-B39 -	Administration & General O&M Expense

A description of these NARUC accounts is provided in HELCO-1506.

Q. How does the 2016 test year Administration Department O&M expense compare to actual 2015 recorded O&M expense?

A. The 2016 test year estimate is $6,624,000 higher than the 2015 recorded O&M expense of $12,454,000.

Q. What activities are driving the increases?

A. The primary factors for the increase are a result of the reset of pension costs to 2016 levels as well as the amortization of the pension tracker balances. Please see Mr. Liuone Faagai's testimony (HELCO T-12) for further details.

Q. What information is provided to explain the differences between the 2015 recorded amounts and 2016 Operating Budget amounts?

A. Detailed variance explanations are provided in HELCO-WP-1506 for the Administration Department O&M account blocks with variances between 2015 recorded and 2016 Operating Budget (before adjustment) amounts greater than 10% and $75,000.

Q. Please summarize the Administration Department's 2016 test year estimate for gross capital plant additions.

A. The Administration Department's estimate for gross capital plant additions for the 2016 test year is $3,900 and is for furniture and equipment to enhance employee health and safety. Please see HELCO-WP-1808 for details on the plant additions.

Q. What is the current employee count of the Administration Department, by RA/division?

1 A. The current employee count of the Administration Department, as of May 31, 2016
2 is:

Division	Count
Administrative	3
Human Resources	2
Government and Community Relations	2
Community Education	2
Communications & Media	1
Total Count	**10**

3 Q. What is the Administration Department's 2016 test year budgeted employee count?

4 A. The Administration Department's 2016 test year budgeted employee count is 11, but
5 the department currently has 10 employees, as of May 31, 2016. The Administration
6 Department expects to fill a vacant Administrator position in August 2016[7]. See
7 HELCO-1505 and HELCO-1505A for more details.

8 Q. Have there been any changes to the Administration Department since the 2013 test
9 year?

10 A. Yes, there have been several changes. On May 20, 2013, the Safety Division was
11 transferred to the Support Services Department. At the same time, a Community
12 Education Division was created in the Administration Department. Later in 2013, a
13 new division called Communications and Media was established. In 2014, a
14 Government and Community Relations Division was created.

15 Q. Why were these organizational changes made in the Administration Department?

[7] On June 20, 2016, the HR Generalist position was filled by the incumbent for the Claims Administrator position. This move created a new vacancy within the Administration Department. On August 1, 2016, the Claims Administrator position was filled by the incumbent for the Administrator position in the Administration Department, creating a new vacancy. The Administrator position is currently posted and is expected to be filled during August 2016.

A. Prior to 2013, communications and outreach to customers, community, and government officials were handled by various departments. Bringing these functions together, under the management of one department, was an important strategy to improve education to the community, communication to customers and others in the community, as well as provide timely and accurate information to government agencies and officials. This was effectively demonstrated during the Company's response to damage and the resulting power outages caused by Tropical Storm Iselle in 2014. At that time, the Company was able to provide timely and accurate information to the community, to customers, to government officials, and media sources that kept people informed on the status of power outages and restoration activities. This was accomplished through the coordinated efforts of the Administration Department, and heavily relied on the new divisions that were established.

As the market place continues to change, it is critical that the Company informs and educates its customers on various products and services that are available to help them manage their energy use. Similarly, it is critical that the Company informs and educates key stakeholders and policy makers on the various options and services that the Company provides. The primary responsibilities of the positions in the Government and Community Relations, Community Education, and the Communications and Media divisions are to identify critical issues and develop and implement action plans to address government and community concerns on Company issues.

1 Administrative Division

2 Q. What is the Administrative Division in the Administration Department responsible
3 for?

4 A. The Administrative Division provides the overall management for the
5 Administration Department. In addition, it is responsible for all risk management
6 activities of the Company including liability, property damage claims and legal
7 activities. The Administrative Division is responsible for all industrial relations
8 activities including contract negotiations, union-management relations, wellness
9 program activities, employee programs, employee investigations, grievances and
10 arbitrations, and related activities. Until April 2016, pension and post-retirement
11 benefits administration also fell under the Administrative Division (this function is
12 now handled by Hawaiian Electric under the Shared Services model).

13 Other Administrative Division work activities include efforts in assisting in
14 the development of organizational strategies, as well as work in support of the
15 Company's regulatory and compliance needs including, among other things,
16 addressing any applicable Commission regulatory conditions/requirements and
17 responding to information requests, internal and external audit information requests,
18 and addressing Sarbanes-Oxley requirements. Other work also includes forecasting
19 and budgeting activities, records management, managing internal and external
20 communication, planning and implementing wellness, recognition and other
21 employee programs, ordering office supplies and processing invoices.

22 Q. What is the 2016 test year O&M expense estimate for the Administrative Division?

A. The 2016 test year O&M expense estimate for these functions consists of $293,000 of labor expense and $769,000 of non-labor expense, totaling $1,062,000. This compares to 2015 recorded expenses of $921,000. See HELCO-1502.

Human Resources Division

Q. What is the HR Division responsible for?

A. The HR Division contributes to the success of the Company through its involvement in all facets of employment from designing job descriptions, recruitment, reward and recognition, compensation, performance development and appraisal systems, succession planning, employee development, and creating the right organization culture. All of these factors contribute toward the achievement of the Company's strategies and business plans. Work by the HR Division benefits customers by ensuring that the Company hires and maintains skilled and qualified individuals, which is necessary in order to maintain reliable service while providing excellent customer service and managing Company expenses.

The HR Division also provides development opportunities to current employees to continually challenge and increase their skill levels. For those employees interested in enhancing their workplace skills and career advancement, professional growth and development opportunities are available through programs designed by the HR Division. For example, the Company offers three apprenticeship programs designed to fill specialized jobs unique to the utility industry. For instance, the lineman position requires a specialized skill set that is not commonly found in Hawai'i. As these apprentices fulfill the requirements and

graduate from these programs, it will decrease the need to recruit from the mainland for difficult to fill journey-level trade positions such as Linemen, thereby decreasing the time to fill these jobs. In addition, the lineman provides the necessary qualifications to transfer or be promoted to other jobs within the Company, including Trouble Inspector, and Serviceman. As of May 31, 2016, there were eight apprentices for the lineman and one apprentice for the electrician (substation) craft programs.

Another important function of the HR Division is fulfilled by the HR Business Partner, who assists the Administration Department Manager in the union collective bargaining agreement negotiations, which will start prior to the existing October 31, 2018 contract expiration date.

The HR Division is also responsible for employee recruitment, which is integral to ensuring qualified workforce continuity. For further discussion on employee recruitment, please see HELCO-1520.

Q. What is the 2016 test year O&M expense for the HR Division?

A. The HR Division's 2016 test year O&M expense estimate consists of $238,000 of labor expense and $16,577,000 of non-labor expense, totaling $16,815,000. This compares to 2015 recorded expenses of $10,539,000. Most of this increase is attributed to higher pension, medical, dental, and vision benefit premium rates across the entire Company, which is charged to the HR Divisions' budget. For further discussion on the pension costs please refer to Mr. Liuone Faagai's testimony, HELCO T-12.

1 Government and Community Relations Division

2 Q. What is the Government and Community Relations Division responsible for?

3 A. The Government and Community Relations Division is responsible for developing,
4 implementing, and coordinating county government, community, and small business
5 relations programs for the Company, including identification of critical community
6 and political issues and concerns. This division also recommends actions designed
7 to address such issues and concerns and further Company goals and objectives. The
8 division also monitors Hawai'i County Council issues for the Company and
9 develops clear and credible strategies, programs and communications vital to the
10 Company's ongoing relationships with customers, county elected officials,
11 communities, and other audiences. In addition, the division establishes and
12 maintains contact with small businesses throughout Hawai'i Island by providing
13 education, energy conservation information, and other energy information.

14 Q. What is the 2016 test year O&M expense estimate for the Government and
15 Community Relations Division?

16 A. The 2016 test year O&M expense estimate for the Government and Community
17 Relations Division consists of $207,000 of labor expense and $136,000 of non-labor
18 expense, totaling $344,000. This compares to 2015 recorded expenses of $306,000.
19 See HELCO-1502 for more details.

20 Communications and Media Division

21 Q. What is the Communications and Media Division responsible for?

A. The Communications and Media Division works with management and takes the lead role in helping the Company prepare for and manage issues through communications planning, including technical writing and interpretation of Company issues and regulatory matters. This division develops clear, concise and credible communications vital to the Company's ongoing relationships with its employees, customers, legislators, regulators, and other audiences. This division serves as an important communications link between the Company's senior management and all other employees.

Q. What is the 2016 test year O&M expense estimate for the Communications and Media Division?

A. The 2016 test year O&M expense estimate for the Communications and Media Division consists of $81,000 of labor expense and $379,000 of non-labor expense, totaling $461,000. This compares to 2015 recorded expenses of $493,000. See HELCO-1502 for more details.

<u>Community Education Division</u>

Q. What is the Community Education Division responsible for?

A. The Community Education Division is responsible for developing, implementing, and coordinating community outreach programs for the Company, including identification of critical community issues and concerns and recommendation of actions designed to address such issues and concerns and further Company goals and objectives. The division also develops clear and credible strategies, programs and

communications vital to the Company's relationships with customers and communities.

Q. What is the 2016 test year O&M expense estimate for the Community Education Division?

A. The 2016 test year O&M expense estimate for the Community Education Division consists of $168,000 of labor expense and $229,000 of non-labor expense, totaling $397,000. This compares to 2015 recorded expenses of $193,000. See HELCO-1502 for more details.

Q. How do these divisions within the Administration Department contribute to the success of the Company?

A. These divisions contribute to the success of the Company in the following manner:

1. They attract, motivate, and retain qualified employees and match them to jobs for which they are best suited;
2. They educate and promote good relations with the Company's stakeholders and elected officials;
3. They protect Company assets;
4. They increase the business-related capabilities of the Company's workforce through investments in learning, succession planning, knowledge-sharing, and technology support;
5. They build and sustain a culture of accountability;
6. They educate the community in relevant matters such as electrical safety and job preparedness that will sustain the future;

7. They develop, strengthen and maintain positive working relationships with employees, customers, community organizations, government officials and agencies, and other key stakeholders;
8. They serve as key ambassadors who build customer trust and Company reputation by listening with compassion and being responsive to concerns; and
9. They demonstrate transparency by sharing information that is clear, accurate, timely, and valuable to internal and external audiences.

Q. To what account block do the Administration Department personnel charge their labor time?

A. The Administration Department personnel charge their time primarily to O&M expense in the administrative and general operations account block. The labor input sheet work papers supporting the Administration Department personnel are shown at HELCO-WP-1501.

COST CONTROL MEASURES OF THE ADMINISTRATION DEPARTMENT

Q. What cost control containment or efficiency measures have been undertaken by the Administration Department?

A. The following cost containment and efficiency measures have been undertaken by the Administration Department to control expenses. Details are available in HELCO-1504.

1. As discussed earlier in my testimony, the Administration Department has undertaken many initiatives to reduce the cost of recruitment and the lag in

filling vacant positions. For example, the Company began establishing applicant pools for entry level positions in 2011. This reduced the time to fill entry level positions because a test-qualified pool was established in advance of a job opening. When an entry level position is advertised, it is likely to result in hundreds of applications for consideration. Having a test-qualified pool established in advance of an actual job opening reduces the time spent to review applications for qualifications, administer testing, and select candidates for interview. The end result is faster filling of these positions without sacrificing the quality of new employees.

Another example of the Administration Department's efforts to reduce the cost of recruitment is in the area of facility rental. When a bargaining unit position is vacant, applicants for the position are tested for the minimum job standards. Testing for these positions often involves many people, sometimes hundreds. In order to efficiently test these large groups of applicants, the Company must utilize facilities conducive to employment testing, such as banquet rooms or conference facilities. These facilities can be costly to rent. To save costs, the Human Resources Division sought out and used low cost or free facilities to conduct employment testing, such as Hawai'i County West Hawai'i Civic Center, which was initially free, and the National Energy Laboratory of Hawai'i Authority Gateway Center. This reduced facility rental cost by up to $500 per day.

2. The Administration Department has the overall responsibility for the Company's risk management programs including automobile liability,

customer damage claims, and general liability claims. This position performs a multitude of risk management responsibilities, such as seeking recovery of vandalism to Company equipment or for broken poles due to vehicular accidents. Cost recovery for damage to Company equipment can be substantive and the recovered amounts are credited to the rate base, which ultimately results in lower costs for customers.

3. New customer claims programs were implemented resulting in increased customer satisfaction and reduced the number of small claims cases. In 2015, there were zero small claims cases filed against the Company for customer damage claim losses. If the Company had to hire an attorney to defend the Company in a small claims case it would cost an average of $2,500 per case. Actual legal fees may be higher depending on the complexity of the case.

4. Investing in employee training and development result in improved job performance and efficiencies. The Training and Development Administrator works closely with leadership to assess employee performance, recommend options, and enroll employees in professional development courses both inside and outside the company. The Company offers training facilitated by in-house trainers and it utilizes known discounts such as the Employer Training Fund. In some instances, this has reduced external training costs by as much as 50%.

5. An active Wellness Program reduces sick time and increases employee morale, engagement, and productivity. Through this program, the Company

provides a variety of opportunities for employees to participate in certain wellness activities, using a low-cost approach. The Company also recently made a pledge with the Blue Zones Project Hawai'i to become a Blue Zones approved worksite, the Company believes that participating in the Blue Zones Project Hawai'i will improve its employee's health and well-being, and ultimately mitigate or reduce any employee-related costs. See HELCO-1504 for further information on the Blue Zones Project Hawai'i.

6. Reaching customers with vital, time-sensitive information quickly is accomplished through social media. The Company posts information, and responds to inquiries from its customers on a variety of social media channels including Facebook, Twitter, YouTube, Pinterest, Tumblr, and Instagram. Social media supplements information available to customers on the Company's website (www.hawaiielectriclight.com), information in print media, such as the local newspapers, and radio. Social media provides real-time updates on outage information and provides an alternative for customers to get information and interact with the Company without having to call the Company's trouble desk.

Q. Have these measures resulted in cost reductions for the Company's Administration Department in the 2016 test year?

A. Yes. These cost control measures have reduced expenses in some areas and the savings were reallocated to new programs, activities, and projects within the Administration Department.

1 SUMMARY

2 Q. Please summarize your testimony.

3 A. Company Employee Count

4 The total Company 2016 test year employee count is 319. As noted above, the
5 Company budgets employee count to the minimum staffing level necessary to
6 operate and maintain the existing power infrastructure, design and build new
7 distribution, transmission, and generation facilities to meet Hawai'i Island's
8 generation needs, enhance the customer service experience, and carry out strategies
9 and initiatives in support of safe and reliable clean energy for the island of Hawai'i.
10 In doing so, the Company recognizes the critical importance of reducing the State of
11 Hawai'i's dependence on fossil fuels, ensuring property and equipment are properly
12 maintained in order to provide safe and reliable clean energy, and ensuring that it
13 operates in a financially sound manner. Therefore, the total Company 2016 test year
14 employee count of 319 is necessary to achieve the above objectives.

15 Administration Department Employee Count

16 The total number of employees in the Administration Department is currently 10, as
17 of May 31, 2016. The Administration Department's 2016 test year employee count
18 is 11 positions and the vacant Administrator position is expected to be filled in
19 August 2016.

20 Administration Department O&M

21 The Administration Department's 2016 test year estimate for labor O&M expenses
22 is $987,000 and non-labor O&M expenses is $18,091,000. The Administration

Department's 2016 test year estimate for total O&M expenses is $19,078,000 (see HELCO-1501).

Q. Does this conclude your testimony?

A. Yes it does.

Hawai'i Electric Light Company, Inc.

RHEA R. LEE-MOKU

EDUCATIONAL BACKGROUND AND EXPERIENCE

Business Address:	Hawai'i Electric Light Company, Inc. 54 Halekauila Street P. O. Box 1027 Hilo, HI 96721
Position:	Manager, Administration Administration Department
Education:	Bachelor of Business Administration Personnel & Industrial Relations University of Hawai'i, 1980
Experience:	HAWAI'I ELECTRIC LIGHT COMPANY, INC.

2000 - Present
Manager, Administration
Administration Department

1999 - 2000
Human Resources Administrator
Administration Department

1995 – 1999
Personnel Administrator
Administration Department

1993 - 1995
Personnel & Administrative Specialist
Administrative Department

1993 - 1993
Personnel & Administrative Aide
Administrative Department

Experience (cont'd):

HILO COAST PROCESSING COMPANY

1992 - 1993
Human Resources Manager

1990 - 1992
Safety & Training Director

1988 – 1990
Industrial Relations Associate

1987 – 1988
Personnel Specialist

1986 – 1987
Personnel Clerk

1986 - 1986
Personnel Clerk Typist

STATE OF HAWAI'I

1985 – 1986
Media Mobile Driver/Library Assistant
Hawaii Public Library

1985 - 1985
Library Technician V
Hawaii Public Library

1985 - 1985
Personnel Clerk
Department of Education

GECC FINANCIAL CORPORATION

1980 – 1984
Employee Relations Assistant
GECC Financial Corporation

BANK OF HAWAII

1980 – 1980
Personnel Receptionist

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Operation and Maintenance Expenses
($ Thousands)

	NARUC Block	Reference	L/NL	A 2016 Operating Budget	B Adjustments Budget	C (See HELCO-WP-1503) Adjustments Normalization	D Adjustments Ratemaking	E =sum(A to D) 2016 Test Year Estimate
1	Production	HELCO-1501 p.2	L	$ -	$ -	$ -	$ -	$ -
2	Production	HELCO-1501 p.5	NL	-	-	-	-	-
3			Subtotal					
4	Transmission	HELCO-1501 p.2	L	-	-	-	-	-
5	Transmission	HELCO-1501 p.5	NL	-	-	-	-	-
6			Subtotal	-	-	-	-	-
7	Distribution	HELCO-1501 p.3	L	-	-	-	-	-
8	Distribution	HELCO-1501 p.6	NL	-	-	-	-	-
9			Subtotal	-	-	-	-	-
10	Customer Accounts	HELCO-1501 p.3	L	-	-	-	-	-
11	Customer Accounts	HELCO-1501 p.6	NL	-	-	-	-	-
12			Subtotal	-	-	-	-	-
13	Customer Services	HELCO-1501 p.3	L	196	-	-	-	196
14	Customer Services	HELCO-1501 p.6	NL	475	(27)	-	-	449
15			Subtotal	671	(27)	-	-	644
16	A&G	HELCO-1501 p.4	L	792	-	-	-	792
17	A&G	HELCO-1501 p.7	NL	18,185	(695)	197	(45)	17,642
18			Subtotal	18,977	(695)	197	(45)	18,434
19	**Total Administrative Department**		**L**	**987**	-	-	-	**987**
20	**Total Administrative Department**		**NL**	**18,661**	**(722)**	**197**	**(45)**	**18,091**
21			**Grand Total**	**$ 19,648**	**$ (722)**	**$ 197**	**$ (45)**	**$ 19,078**

Notes:

- Totals may not add exactly due to rounding.
- See O&M expense aggregation schedule at HELCO-1101 which incorporates lines 3, 6, 9, 12, 15, and 18 above to arrive at the balances presented in the results of operation in the revenue requirement calculation. Revenue requirement calculation is presented in HELCO-2701.

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Labor Operation and Maintenance Expenses
($ Thousands)

	NARUC Block		A 2016 Operating Budget	B Adjustments Budget	C (See HELCO-WP-1503) Adjustments Normalization	D Adjustments Ratemaking	E =sum(A to D) 2016 Test Year Estimate
	Production Operation (B30)						
1	HNA	Admin-Administration	$ -	$ -	$ -	$ -	$ -
2	HNC	Communication & Media Division	-	-	-	-	-
3	HNE	Community Education Division	-	-	-	-	-
4	HNF	Fleet	-	-	-	-	-
5	HNG	Government & Community Relations	-	-	-	-	-
6	HNL	Land Section	-	-	-	-	-
7	HNP	Human Resources	-	-	-	-	-
8	HNS	Administration-Safety	-	-	-	-	-
9	Subtotal		-	-	-	-	-
	Production Maintenance (B31)						
10	HNA	Admin-Administration	-	-	-	-	-
11	HNC	Communication & Media Division	-	-	-	-	-
12	HNE	Community Education Division	-	-	-	-	-
13	HNF	Fleet	-	-	-	-	-
14	HNG	Government & Community Relations	-	-	-	-	-
15	HNL	Land Section	-	-	-	-	-
16	HNP	Human Resources	-	-	-	-	-
17	HNS	Administration-Safety	-	-	-	-	-
18	Subtotal		-	-	-	-	-
	Transmission Operation (B32)						
19	HNA	Admin-Administration	-	-	-	-	-
20	HNC	Communication & Media Division	-	-	-	-	-
21	HNE	Community Education Division	-	-	-	-	-
22	HNF	Fleet	-	-	-	-	-
23	HNG	Government & Community Relations	-	-	-	-	-
24	HNL	Land Section	-	-	-	-	-
25	HNP	Human Resources	-	-	-	-	-
26	HNS	Administration-Safety	-	-	-	-	-
27	Subtotal		-	-	-	-	-
	Transmission Maintenance (B33)						
28	HNA	Admin-Administration	-	-	-	-	-
29	HNC	Communication & Media Division	-	-	-	-	-
30	HNE	Community Education Division	-	-	-	-	-
31	HNF	Fleet	-	-	-	-	-
32	HNG	Government & Community Relations	-	-	-	-	-
33	HNL	Land Section	-	-	-	-	-
34	HNP	Human Resources	-	-	-	-	-
35	HNS	Administration-Safety	-	-	-	-	-
36	Subtotal		-	-	-	-	-

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Labor Operation and Maintenance Expenses
($ Thousands)

	NARUC Block		A 2016 Operating Budget	B Adjustments Budget	C (See HELCO-WP-1503) Adjustments Normalization	D Adjustments Ratemaking	E =sum(A to D) 2016 Test Year Estimate
	Distribution Operation (B34)						
37	HNA	Admin-Administration	-	-	-	-	-
38	HNC	Communication & Media Division	-	-	-	-	-
39	HNE	Community Education Division	-	-	-	-	-
40	HNF	Fleet	-	-	-	-	-
41	HNG	Government & Community Relations	-	-	-	-	-
42	HNL	Land Section	-	-	-	-	-
43	HNP	Human Resources	-	-	-	-	-
44	HNS	Administration-Safety	-	-	-	-	-
45	Subtotal		-	-	-	-	-
	Distribution Maintenance (B35)						
46	HNA	Admin-Administration	-	-	-	-	-
47	HNC	Communication & Media Division	-	-	-	-	-
48	HNE	Community Education Division	-	-	-	-	-
49	HNF	Fleet	-	-	-	-	-
50	HNG	Government & Community Relations	-	-	-	-	-
51	HNL	Land Section	-	-	-	-	-
52	HNP	Human Resources	-	-	-	-	-
53	HNS	Administration-Safety	-	-	-	-	-
54	Subtotal		-	-	-	-	-
	Customer Accounts (B36)						
55	HNA	Admin-Administration	-	-	-	-	-
56	HNC	Communication & Media Division	-	-	-	-	-
57	HNE	Community Education Division	-	-	-	-	-
58	HNF	Fleet	-	-	-	-	-
59	HNG	Government & Community Relations	-	-	-	-	-
60	HNL	Land Section	-	-	-	-	-
61	HNP	Human Resources	-	-	-	-	-
62	HNS	Administration-Safety	-	-	-	-	-
63	Subtotal		-	-	-	-	-
	Customer Service (B37)						
64	HNA	Admin-Administration	-	-	-	-	-
65	HNC	Communication & Media Division	28	-	-	-	28
66	HNE	Community Education Division	168	-	-	-	168
67	HNF	Fleet	-	-	-	-	-
68	HNG	Government & Community Relations	-	-	-	-	-
69	HNL	Land Section	-	-	-	-	-
70	HNP	Human Resources	-	-	-	-	-
71	HNS	Administration-Safety	-	-	-	-	-
72	Subtotal		196	-	-	-	196

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
					(See HELCO-WP-1503)		=sum(A to D)
			2016				2016
			Operating	Adjustments			Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
73	A&G (B38, B39)						
74	HNA	Admin-Administration	293	-	-	-	293
75	HNC	Communication & Media Division	53	-	-	-	53
76	HNE	Community Education Division	-	-	-	-	-
77	HNF	Fleet	-	-	-	-	-
78	HNG	Government & Community Relations	207	-	-	-	207
79	HNL	Land Section	-	-	-	-	-
80	HNP	Human Resources	238	-	-	-	238
81	HNS	Administration-Safety	-	-	-	-	-
82	Subtotal		792	-	-	-	792
	Grand Total						
83	**Administrative Department Labor Expense**		**$ 987**	**$ -**	**$ -**	**$ -**	**$ 987**

Notes:

- Totals may not add exactly due to rounding.
- Column A: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns B, C, D: HECO-WP-1503

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

	NARUC Block		A 2016 Operating Budget	B Adjustments Budget	C (See HELCO-WP-1503) Adjustments Normalization	D Adjustments Ratemaking	E =sum(A to D) 2016 Test Year Estimate
	Production Operation (B30)						
1	HNA	Admin-Administration	$ -				$ -
2	HNC	Communication & Media Division	-				-
3	HNE	Community Education Division	-				-
4	HNF	Fleet	-				-
5	HNG	Government & Community Relations	-				-
6	HNL	Land Section	-				-
7	HNP	Human Resources	-				-
8	HNS	Administration-Safety	-				-
9	Subtotal		-	-	-	-	-
	Production Maintenance (B31)						
10	HNA	Admin-Administration	-				-
11	HNC	Communication & Media Division	-				-
12	HNE	Community Education Division	-				-
13	HNF	Fleet	-				-
14	HNG	Government & Community Relations	-				-
15	HNL	Land Section	-				-
16	HNP	Human Resources	-				-
17	HNS	Administration-Safety	-				-
18	Subtotal		-	-	-	-	-
	Transmission Operation (B32)						
19	HNA	Admin-Administration	-				-
20	HNC	Communication & Media Division	-				-
21	HNE	Community Education Division	-				-
22	HNF	Fleet	-				-
23	HNG	Government & Community Relations	-				-
24	HNL	Land Section	-				-
25	HNP	Human Resources	-				-
26	HNS	Administration-Safety	-				-
27	Subtotal		-	-	-	-	-
	Transmission Maintenance (B33)						
28	HNA	Admin-Administration	-				-
29	HNC	Communication & Media Division	-				-
30	HNE	Community Education Division	-				-
31	HNF	Fleet	-				-
32	HNG	Government & Community Relations	-				-
33	HNL	Land Section	-				-
34	HNP	Human Resources	-				-
35	HNS	Administration-Safety	-				-
36	Subtotal		-	-	-	-	-

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
				(See HELCO-WP-1503)			=sum(A to D)
			2016				2016
			Operating	Adjustments			Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
	Distribution Operation (B34)						
37	HNA	Admin-Administration	-				-
38	HNC	Communication & Media Division	-				-
39	HNE	Community Education Division	-				-
40	HNF	Fleet	-				-
41	HNG	Government & Community Relations	-				-
42	HNL	Land Section	-				-
43	HNP	Human Resources	-				-
44	HNS	Administration-Safety	-				-
45	Subtotal		-	-	-	-	-
	Distribution Maintenance (B35)						
46	HNA	Admin-Administration	-				-
47	HNC	Communication & Media Division	-				-
48	HNE	Community Education Division	-				-
49	HNF	Fleet	-				-
50	HNG	Government & Community Relations	-				-
51	HNL	Land Section	-				-
52	HNP	Human Resources	-				-
53	HNS	Administration-Safety	-				-
54	Subtotal		-	-	-	-	-
	Customer Accounts (B36)						
55	HNA	Admin-Administration	-				-
56	HNC	Communication & Media Division	-				-
57	HNE	Community Education Division	-				-
58	HNF	Fleet	-				-
59	HNG	Government & Community Relations	-				-
60	HNL	Land Section	-				-
61	HNP	Human Resources	-				-
62	HNS	Administration-Safety	-				-
63	Subtotal		-	-	-	-	-
	Customer Service (B37)						
64	HNA	Admin-Administration	-				-
65	HNC	Communication & Media Division	220				220
66	HNE	Community Education Division	256	(27)			229
67	HNF	Fleet	-				-
68	HNG	Government & Community Relations	-				-
69	HNL	Land Section	-				-
70	HNP	Human Resources	-				-
71	HNS	Administration-Safety	-				-
72	Subtotal		475	(27)	-	-	449

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
					(See HELCO-WP-1503)		=sum(A to D)
			2016				2016
			Operating	Adjustments			Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
73	A&G (B38, B39)						
74	HNA	Admin-Administration	774	(5)			769
75	HNC	Communication & Media Division	160				160
76	HNE	Community Education Division	-				-
77	HNF	Fleet	-				-
78	HNG	Government & Community Relations	136				136
79	HNL	Land Section	-				-
80	HNP	Human Resources	17,115	(690)	197	(45)	16,577
81	HNS	Administration-Safety	-				-
82	Subtotal		18,185	(695)	197	(45)	17,642
	Grand Total						
83	**Administrative Department Labor Expense**		**$ 18,661**	**$ (722)**	**$ 197**	**$ (45)**	**$ 18,091**

Notes:

- Totals may not add exactly due to rounding.
- Column A: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns B, C, D: HECO-WP-1503

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Total Operation and Maintenance Expenses by Responsibility Area
($ Thousands)

	RA	Description	A 2015 Recorded	B 2016 Operating Budget	C (See HELCO-WP-1503) Adjustments Budget	D Normalization	E Ratemaking	F =sum(B to E) 2016 Test Year Estimate
1	HNA	Admin-Administration	$ 921	$ 1,066	$ (5)	$ -	$ -	$ 1,062
2	HNC	Communication & Media Division	493	461	-	-	-	461
3	HNE	Community Education Division	193	424	(27)	-	-	397
4	HNF	Fleet	-	-	-	-	-	-
5	HNG	Government & Community Relations	306	344	-	-	-	344
6	HNL	Land Section	3	-	-	-	-	-
7	HNP	Human Resources	10,539	17,354	(690)	197	(45)	16,815
8	HNS	Administration-Safety	0	-	-	-	-	-
9	**Grand Total Administrative Department**		**$ 12,454**	**$ 19,648**	**$ (722)**	**$ 197**	**$ (45)**	**$ 19,078**

Notes:
- Totals may not add exactly due to rounding.
- Columns A-E = HELCO-1502, p.2
- Columns A, B: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns C, D, E: HELCO-WP-1503

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administrative Department
Labor and Non-Labor Operation and Maintenance Expenses by Responsibility Area
($ Thousands)

	RA	Description	L/NL	A 2015 Recorded	B 2016 Operating Budget	C (See HELCO-WP-1503) Adjustments Budget	D Normalization	E Ratemaking	F =sum(B to E) 2016 Test Year Estimate
1	HNA	Admin-Administration	L	$ 260	$ 293	$ -	$ -	$ -	$ 293
2	HNC	Communication & Media Division	L	81	81	-	-	-	81
3	HNE	Community Education Division	L	64	168	-	-	-	168
4	HNF	Fleet	L	-	-	-	-	-	-
5	HNG	Government & Community Relations	L	200	207	-	-	-	207
6	HNL	Land Section	L	-	-	-	-	-	-
7	HNP	Human Resources	L	256	238	-	-	-	238
8	HNS	Administration-Safety	L	-	-	-	-	-	-
9	Subtotal Administrative Department Labor		L	861	987	-	-	-	987
10	HNA	Admin-Administration	NL	661	774	(5)		-	769
11	HNC	Communication & Media Division	NL	412	379			-	379
12	HNE	Community Education Division	NL	130	256	(27)		-	229
13	HNF	Fleet	NL	-	-			-	-
14	HNG	Government & Community Relations	NL	106	136			-	136
15	HNL	Land Section	NL	3	-			-	-
16	HNP	Human Resources	NL	10,282	17,115	(690)	197	(45)	16,577
17	HNS	Administration-Safety	NL	0	-	-	-	-	-
18	Subtotal Administrative Department Non-Labor		NL	11,593	18,661	(722)	197	(45)	18,091
19	**Grand Total Administrative Department**			**$ 12,454**	**$ 19,648**	**$ (722)**	**$ 197**	**$ (45)**	**$ 19,078**

Notes:
- Totals may not add exactly due to rounding.
- Columns A, B: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns C, D, E: HELCO-WP-1503

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Customer Service O&M Expense by NARUC Account
Labor and Non-Labor Expenses
($ Thousands)

			A	B	C	D	E	F	G	H	I	J	K
													=sum(G to J)
			Recorded						2016 Operating	Adjustments			2016 Test Year
Line	Acct	Account Description	2010	2011	2012	2013	2014	2015	Budget	Budget	Normalization	Ratemaking	Estimate
		Customer Service											
	909	SUPERVISION- CUST SERVICE EXP											
1		Labor	$ 113	$ 104	$ 88	$ 48	$ -	$ -	$ -	$ -	$ -	$ -	$ -
2		Non-Labor	279	219	325	231	87	103	-	-	-	-	-
3		Subtotal	391	323	413	279	87	103	-	-	-	-	-
	910	CUSTOMER ASSISTANCE EXPENSES											
4		Labor	632	670	687	747	650	530	372	(27)	-	-	345
5		Non-Labor	634	203	352	331	475	669	378	416	-	-	794
6		Subtotal	1,266	873	1,039	1,078	1,125	1,199	750	389	-	-	1,139
	911	INFORMATIONAL ADVERTISING EXP											
7		Labor	5	5	3	37	39	28	37	(3)	-	-	35
8		Non-Labor	94	100	110	112	103	148	66	(5)	-	-	61
9		Subtotal	99	104	114	149	141	176	104	(8)	-	-	96
	912	MISC CUSTOMER SERVICE EXPENSES											
10		Labor	27	-	40	3	-	-	-	-	-	-	-
11		Non-Labor	2	1	2	1	1	1	-	-	-	-	-
12		Subtotal	29	1	42	4	1	1	-	-	-	-	-
		Total Customer Service											
13		Labor	776	778	818	835	688	558	409	(30)	-	-	380
14		Non-Labor	1,009	523	789	675	666	922	444	411	-	-	855
15		**Total**	$ 1,785	$ 1,302	$ 1,607	$ 1,510	$ 1,355	$ 1,480	$ 854	$ 382	$ -	$ -	$ 1,235

Hawai'i Electric Light 2010 Test Year Rate Case - Final Decision and Order (Present rates)

	Customer Service	
16	**Labor**	758
17	**Non-labor**	649
18	**Total**	$ 1,407

Notes:
Totals may not add exactly due to rounding.
Columns A - G : HELCO-WP-101
Columns H - J: HELCO-1101
Line 456: See Exhibit 1A, pages 20, 25, and 30 of Hawai'i Electric Light's Revised Schedules Resulting from Decision and Order No. 30168, filed on February 21, 2012 in Docket No. 2009-0164. As shown on Exhibit 1A, page 20, an austerity adjustment of -$365,000 was not allocated to the NARUC Block of Accounts. On April 4, 2012, by Order No. 30301, the Commission approved Hawai'i Electric Light's revised results of operations, supporting schedules, and tariffs filed on February 21, 2012.

Cost Avoidance Measures

The Administration Department ("Administration") continuously strives to find ways to control costs, avoid costs and improve work processes. Administration has carefully managed its budget and evaluated alternative ways to continue providing excellent customer service to employees and customers. Administration's cost avoidance efforts impacting the 2016 test year consist of the measures described below.

Recruitment – Cost Avoidance
Candidate applicant pools for entry level positions are used to reduce the time to fill these positions. The Human Resources ("HR") Division of the Administration Department recruits for these positions and administers employment testing to identify a pool of candidates that are qualified for consideration when a job vacancy occurs. These pools are established on an as-needed basis and are used for multiple job vacancies as appropriate. This practice reduces the number of tests administered and the labor time spent reviewing applications.

Testing- Improved Work Process
Candidates for bargaining unit positions must pass one or more tests to be considered for the vacant position. The Company used to utilize four tests to determine if the candidate had sufficient skill and knowledge to be successful on the job, but it became evident that these tests were not good predictors of success, so the Company replaced two of these tests, the Differential Aptitude Test ("DAT") and the General Clerical Test ("GCT"), with tests that were developed specifically for the electric utility by the Edison Electric Institute ("EEI") in 2006. The DAT and the GCT were in use for decades prior to 2006. Although the EEI tests are more expensive than the DAT and GCT, they provide improved prediction of success in the entry-level utility jobs. In addition to changing the tests, the HR Division implemented a process to pre-screen applicants for positions to ensure only those with the requisite knowledge and experience were tested. This reduced the number of applicants tested for entry level positions, which also results in reduced testing costs and reduced time to administer the tests and complete the scoring of the tests.

When large candidate pools are tested, the Company takes advantage of low or no cost facilities to reduce the cost of testing. Instead of renting large halls or hotel ballrooms, the Company conducts employment testing at faclities including the Hawai'i County West Hawai'i Civic Center and the National Energy Laboratory of Hawai'i Authority Gateway Center.

Training- Cost Avoidance
As part of the efforts to better serve customers, continuing education and various training opportunities have been provided for Company employees. In the alignment of learning initiatives to support key business priorities and ensure that employees have the right skills and tools to perform at their best, the Company instituted a comprehensive training program, Gear Up, in 2013/2014, a Leadership Training Platform in 2015, and Change Management training in 2016.

When enrolling in outside courses, the Company is diligent in taking advantage of known discounts, when feasible. The Company participates in and uses the Employer Training Fund,

administered by the Workforce Development Division of the Department of Labor and Industrial Relations, for eligible courses offered through Hawaii Community College, Office of Continuing Education and the College of Continuing Education and Community Service.

Below is a breakdown of original costs vs. costs with discounts of outside courses enrolled by Company employees - 2014, 2015 and 2016 to date.

Year	Cost of the Training w/Discount	Original Cost of Class	Number of classes
2014	$7,887.36	$8,757.36	41
2015	$22,352.78	$29,126.78	166
2016 to date	$18,044.50	$26,273.00	165

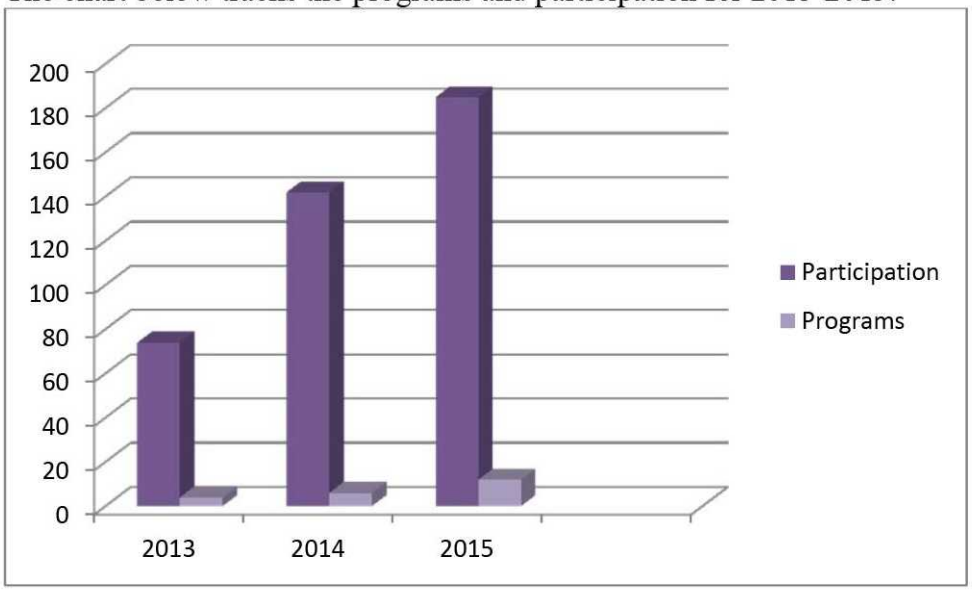
Wellness Programs - Cost Avoidance

Many companies are taking notice of the benefits wellness programs have on their employees. It reduces sick time, increases morale, and makes for more engaged and productive employees.

Hawai'i Electric Light has an active Wellness Program because it believes that employees are the best investment. Having healthy options such as access to on-site fitness classes, nutrition information sessions, personal training, on-site flu shots, health fairs etc., supports healthy behaviors and lifestyle choices. The takeaways for making healthy choices are:

- Reduced chronic disease
- Engaged, high performing employees
- Decrease in absenteeism, presenteeism and turnover rates
- Higher safety standards and lower workers compensation claims

The chart below tracks the programs and participation for 2013-2015.



The Company took a low cost approach and has managed the wellness program in-house. Instead of hiring an employee to manage the wellness program, these responsibilities were added to the Administrator position in Administration.

In 2015, Hawai'i Electric Light made a pledge with the Blue Zones Project Hawaii to become a Blue Zones approved Worksite. Worksite wellness activities are being developed and implemented in concert with the Blue Zones Project including:

- Leadership – Leaders at all levels will be role-models for well-being behaviors and creating an environment that supports the health of others;
- Purpose – Support employees in identifying and pursuing their own purpose inside the context of their work;
- Physical Environment – Empower employees to make healthy choices through the physical layout and worksite setting;
- Creation of Social Network – Incentives, communication and social events to help promote well-being;
- Policies and Benefits – HR policies are designed to encourage well-being; and
- Well-Being Solutions – Support employees' efforts to improve and sustain their health.

Employees participated in a 10 week Waking Moai challenge in 2016 that wrapped up on May 20, 2015. Seven teams with a total of 50 employees participated. The week five winners were featured in the Blue Zones Project Hawaii May Newsletter (see excerpt below).

> Blue Zones Project Hawaii
>
> East Hawaii May Community Update
>
> Posted by Blue Zones Project, Hawaii on May 18, 2016 4:16:18 PM
>
> **HELCO Walking Moai Week Five Winners**
>
> Hawaii Electric Light Company (HELCO) recently held a midway-point competition with its seven Walking Moai® teams. The competition challenged teams to reach Week Five with 100% participation. All 50 participants laced up their walking shoes in pursuit of prizes and bragging rights, but only one team took home the gold - "Team Watch Dis!" Congratulations and mahalo to Team Watch Dis for your dedication and participation. HELCO has one more competition coming up at Week 10, so stay tuned to find out who will be the final winning team!

Additional wellness activities held in 2016 include:

- Team participation in the P.A.R.E.N.T.S. Kick Child Abuse Out of Hawai'i "Annual Kickball Tournament" in January 2016. The Hawai'i Electric Light team came in second place in this tournament.
- The American Heart Association annual Heart Walk in March 2016. 61 employees participated in this event, which included a walk and health fair.

- The annual Business Canoe Regatta, held at Hilo Bay in April 2016. 29 employees participated in this team competition event.
- The American Cancer Society annual Relay For Life event in July 2016. Over 30 participants walked during this event and participated in various wellness activities during the night such as Zumba and line dancing.

Customer Claims Program – Cost Avoidance
In recent years, the customer claims program process was improved to include frequent and timely follow up with the customer. A thorough technical investigation is conducted for each customer claim and a determination is made based on the Tariff (Rule 16). The customer is provided with information on the findings when informed of the determination. This has resulted in a significant reduction of small claims cases filed against the Company for customer damage claim losses, which in turn reduces legal fees to defend the Company. In 2015 and 2016 to-date, there have been no small claims cases for customer damage claims.

Cost Recovery
Administration aggressively seeks to recover damages to its equipment from other parties. For example, when another party hits a Company pole, causing damage to the pole and attachments, cost to repair the pole and attachments are billed back to the other party after applying depreciation. Recovery for these damages is credited to the ratebase and this lowers the rates for customers.

Process Improvement
Social media was added to the customer communication process to reach customers with vital, time-sensitive information quickly and concisely. The Company launched its Facebook account in February 2013 and in March 2013 added a Twitter account. At about the same time, the Company began actively posting to YouTube. These accounts were created to engage in conversations with customers who were already using these platforms as a form of communication. The main goal of the Company's Twitter account was to proactively share outage notifications with customers. In August 2014, the Company actively began communicating outage updates when Tropical Storm Iselle impacted Hawai'i Island. Customers who were having difficulty reaching the trouble desk due to the volume of calls were able to get updates and communicate with the Company through Twitter. At the same time, the Company activated its Instagram account which helped to convey the extent of damage and the Company's efforts to restore power to its customers. In 2015, the Company added Pinterest and Tumblr accounts to reach more of the customer base and get information out in a timely manner.

The following example of a social media post about the Hilo Electric Vehicle DC Fast Charger dedication demonstrates the level of interest and participation from customers.

Hawai'i Electric Light
Hilo Electric Vehicle DC Fast Charger Dedication

Date	Social Media Channel	Likes
5/24/16	Facebook	101
5/24/16	Instagram	48

- This was the first livestream video for a Hawai'i Electric Light event. The live video did very well on Facebook, and received **103 reactions, 10 shares, 5 positive comments,** and **reached 7,931** with **1,319 views**.
- We did post to our other channels to promote and direct people to our livestream video.
- The Instagram post we pushed out received **48 likes**.

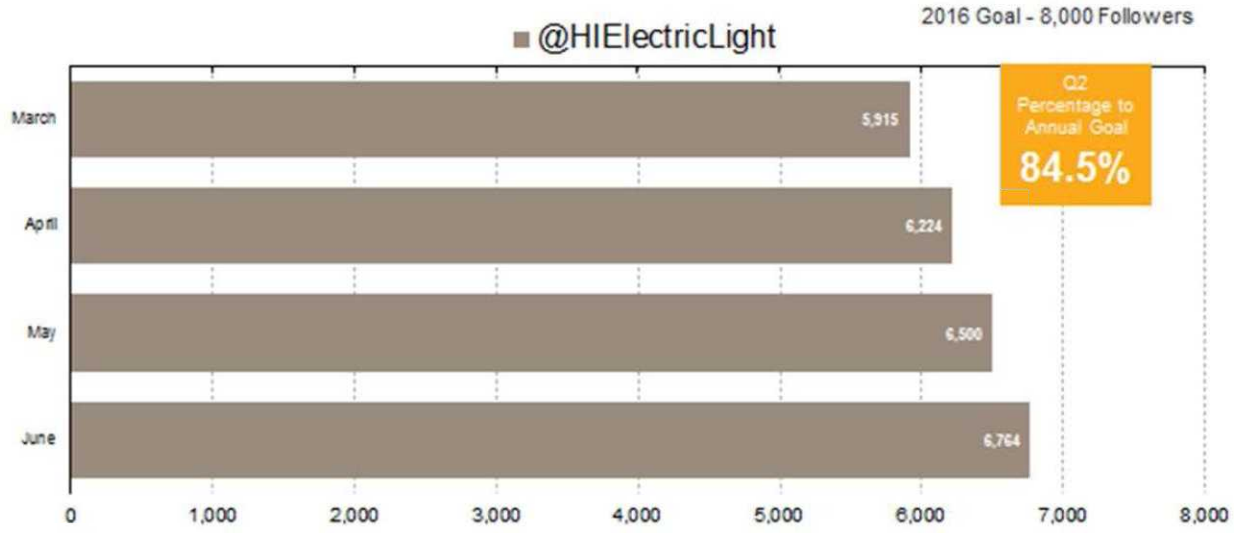
Hawaiian Electric
Maui Electric
Hawai'i Electric Light

7

Confidential
Social Media Report – Q2 2016

Twitter is one of the most active social media channels for Hawai'i Electric Light and in 2016 the Company continued to build the number of followers. In comparison, the Hawai'i Tribune-Herald, the daily newspaper for East Hawai'i Island, has about 19,000 readers.

Twitter Follower Percentage to Goal



- @HIElectricLight increased in its percentage to annual goal from 73% in Q1 to 84.5% in Q2.
- If this follower rate continues, the annual follower goal will be met.

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

32

Confidential
Social Media Report – Q2 2016

Adding social media to the communication strategy has increased reach to customers and provided additional opportunities for two-way communication.

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Administration Department
Staffing as of May 31, 2016

		A	B	C =B-A	D	E =D-B	F	G	H =F+G	I =H-B	J =H-A
		12/31/15 Recorded Headcount	5/31/16 Recorded Headcount	Difference	5/31/16 Budgeted Headcount	Vacancies as of 5/31/16	12/31/16 Budgeted Headcount	Adjustments to 12/31/16 Budgeted Headcount	12/31/16 Adjusted Headcount	Positions to be filled between 5/31/16-12/31/16	Total Positions filled in 2016
1	HNA	3	3	0	3	0	3	0	3	0	0
2	HNC	1	1	0	1	0	1	0	1	0	0
3	HNE	1	2	1	2	0	2	0	2	0	1
4	HNG	2	2	0	2	0	2	0	2	0	0
5	HNP	3	2	-1	3	1	3	0	3	1	0
6	TOTAL	10	10	0	11	1	11	0	11	1	1

Notes:

- HNA- Administration
- HNC- Communications and Media
- HNE- Community Education
- HNG- Government and Community Relations
- HNP- Human Resources

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
President's Office
Staffing as of May 31, 2016

		A	B	C =B-A	D	E =D-B	F	G	H =F+G	I =H-B	J =H-A
		12/31/15 Recorded Headcount	5/31/16 Recorded Headcount	Difference	5/31/16 Budgeted Headcount	Vacancies as of 5/31/16	12/31/16 Budgeted Headcount	Adjustments to 12/31/16 Budgeted Headcount	12/31/16 Adjusted Headcount	Positions to be filled between 5/31/16-12/31/16	Total Positions filled in 2016
1	H9PD	3	3	0	3	0	3	0	3	0	0

Notes:

- H9PD- President's Office

ADMINISTRATION DEPARTMENT AND PRESIDENT'S OFFICE ORGANIZATION AND STAFFING

As shown in HELCO-1505, page 1, the Administration Department consists of five divisions or responsibility areas ("RA"):

- HNA- Administration;
- HNC- Communications and Media;
- HNE- Community Education;
- HNG- Government and Community Relations; and
- HNP- Human Resources

As shown in HELCO-1505, page 2, the President's Office contains only one RA (H9PD).

The major changes to the Administration Department organization since August 16, 2012[1] include:

- Transfer of the Safety Division to the Support Services Department in 2013.
- Addition of the Educational Services Administrator and Administrative Aide positions following the realignment of the Energy Services Department in 2013. The Administrative Aide position was vacated later that year and was eliminated. The Educational Services Administrator position was vacated in 2015 and was eliminated.
- Addition of the Senior Communications Consultant position in 2013.
- Addition of the Business and Community Consultant position in 2014.
- Addition of the Director, Government, Community and Media Relations position in 2014.
- Addition of the Community Consultant (East Hawai'i) position in 2015.
- Addition of the Community Consultant (West Hawai'i) position in 2016.

The major changes to the President's Office organization since August 16, 2012 include:

- Elimination of the Rate Case Division in 2014.
- Addition of the General Manager, Hawai'i Island position in 2015.

Administration Department Staffing

As shown in HELCO-1505, page 1, the staffing level for the Administration Department has remained at 10 from December 31, 2015 to May 31, 2016. The position changes within the Administration Department were distributed as shown in the table below.

[1] August 16, 2012 was the filing date for the Hawai'i Electric Light 2013 Test Year Rate Case, which was withdrawn on March 22, 2013.

	12/31/2015 Recorded	5/31/2016 Recorded	Difference
HNA- Administration;	3	3	0
HNC- Comm and Media;	1	1	0
HNE- Community Education;	1	2	1
HNG- Govt and Com Relations	2	2	0
HNP- Human Resources	3	2	-1
TOTAL	10	10	0

As of May 31, 2016, the Administration Department has one vacancy based on a 2016 year end estimated employee count of 11 as shown in the table below.

	5/31/2016 Recorded	12/31/2016 Estimate	Difference
HNA- Administration;	3	3	0
HNC- Comm and Media;	1	1	0
HNE- Community Education;	2	2	0
HNG- Govt and Com Relations	2	2	0
HNP- Human Resources	2	3	1
TOTAL	10	11	1

Included in HELCO-WP-1505 is the following additional information:

Position expected to be filled before December 31, 2016

- Responsibilities of the vacant position
- Reason the vacant position is required
- Manner in which the duties are being accomplished (prior to filling the position)
- Status of hiring
- Expected date the vacant position will be filled
- Cost category allocation for vacant position

The reasons for the Administration Department's staffing level remaining the same between 12/31/15 to 5/31/16 are summarized in the table below.

Reason for Increased/Decreased Staffing	Number of position changes from 12/31/2015 to 5/31/2016
HNE- Community Education- Increase of one position was due to the need to increase community outreach and educational services to the west Hawai'i community.	1
HNP- Human Resources- Decrease of one position due to a voluntary resignation by an HR Business Partner in late December 2015. The position was re-evaluated in 2016, resulting in the position being eliminated and replaced by an HR Generalist position with narrowed responsibilities and increased focus on recruitment, employee investigations, and transactional HR work,	-1
Net Total	0

The reason for the increase to the Administration Department's staffing level by one position is summarized in the table below.[2]

Reason for Increased Staffing	Number of position changes from 5/31/2016 to 12/31/2016
HNP- Human Resources- Increase of one position to fill the vacant HR Generalist position (see above)	1
Total	1

President's Office Staffing

There have been no changes in employee count from 12/31/15 to 5/31/16.[3]

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[2] On June 20, 2016, the HR Generalist position was filled by the incumbent for the Claims Administrator position. This move created a new vacancy within the Administration Department. On August 1, 2016, the Claims Administrator position was filled by the incumbent for the Administrator position in the Administration Department, creating a new vacancy. The Administrator position is currently posted and is expected to be filled by August 2016.

[3] On July 11, 2016, the General Manager, Hawai'i Island position was vacated when the incumbent transferred to Hawaiian Electric Company, Inc. ("Hawaiian Electric") on an interim basis. The President's Office does not plan to backfill this vacancy in 2016 and projects its staffing level will remain at two (2) positions through December 31, 2016. Therefore, the Company will be adjusting its 2016 test year employee count to 318 positions and will be removing the associated O&M labor and on-costs expenses for the General Manager position from its 2016 test year revenue requirements at the next opportunity.

HAWAI'I ELECTRIC LIGHT COMPANY
2016 TEST YEAR ESTIMATE

ADMINISTRATION DEPARTMENT O&M BUDGET DETAIL

The Administration Department's operation and maintenance ("O&M") expense for labor was prepared based on staffing levels needed to meet the work demands for the 2016 test year; and non-labor was prepared using a variety of methods, including: historical averaging, historical trending, and management experience. The estimates' supporting documentations are provided in HELCO T-15 work papers accompanying this testimony and its exhibits.

Customer Service (B37)

Administration Department's 2016 test year estimate for its share of customer service expense is $644,000 as shown on HELCO-1501.

Customer service expense includes labor and non-labor costs associated with education and outreach in the community and within the Company.

Administration Department's overall customer service expense is estimated to increase by $52,000, from $592,000 in 2015 to $644,000 in 2016. The 2016 test year estimate increase for customer service expense is primarily attributable to Company realignment and increased efforts to educate and serve the community.

The largest component of the Administration Department's increased customer service expense is associated with increased efforts to improve service through outreach and education. See HELCO-WP-1502.

Customer Service Expense	**2016 TY Estimate ($000s)**
HNA- Administration	
HNC- Communications and Media	247
HNE- Community Education	397
HNG- Government and Community Relations	
HNP- Human Resources	
Total Customer Service Expense	644

Administrative and General Expense (B38-B39)

Administration Department's 2016 test year estimate for its share of administrative and general expense is $18,434,000 as shown on HELCO-1501.

Administrative and general expense includes labor and non-labor costs for compensation, office supplies, cost of insurance to protect the utility against losses and damages, and recoveries from insurance companies as discussed in in Mr. Paul Franklin's testimony, HELCO T-11.

Administration Department's overall administrative and general expense is estimated to increase by $6,614,000, from $11,820,000 in 2015 to $18,434,000 in 2016. The 2016 test year estimate increase for administrative and general expense is primarily attributable to the reset of the pension tracker as well as the amortization of the pension tracker balance.

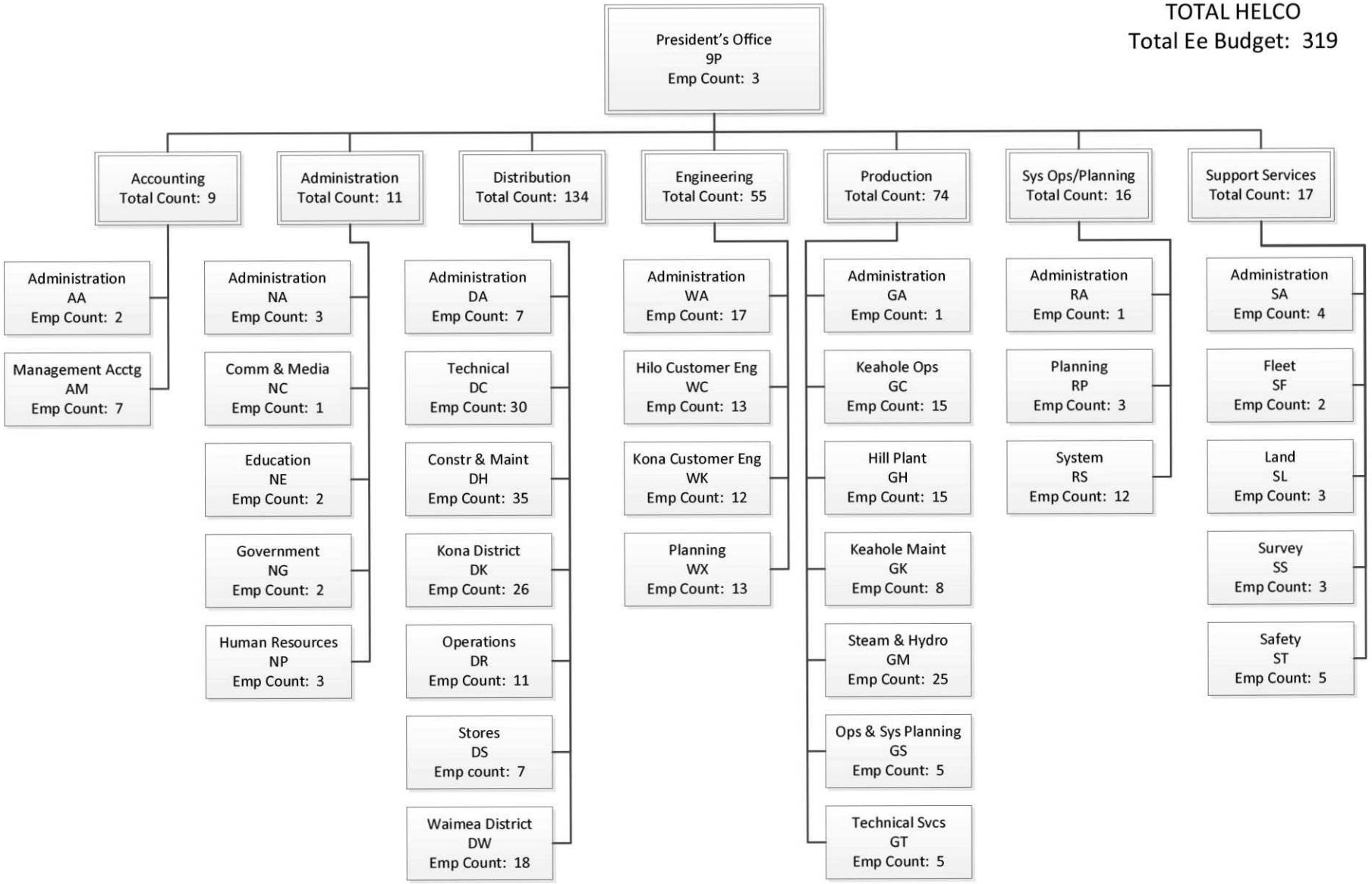
The largest component of the Administration Department's increased administrative and general expense is associated with pension costs. See HELCO-WP-1502.

Administrative and General Expense	**2016 TY Estimate ($000s)**
HNA- Administration	1,062
HNC- Communications and Media	213
HNE- Community Education	
HNG- Government and Community Relations	344
HNP- Human Resources	16,815
Total Administrative and General Expense	18,434

Not Used

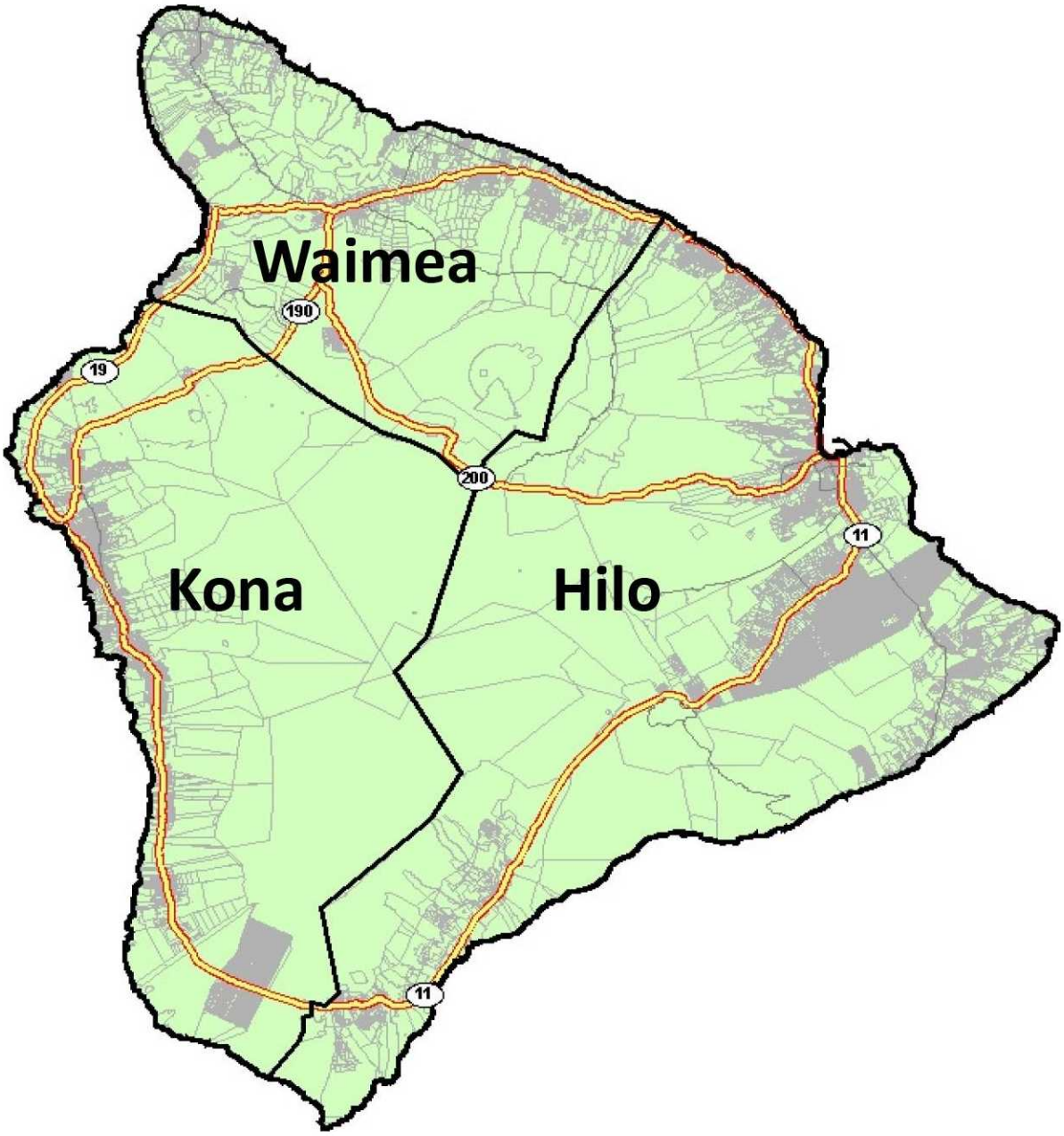
Hawai'i Electric Light Company, Inc.

2016 TEST YEAR ESTIMATE
TOTAL HELCO
Total Ee Budget: 319



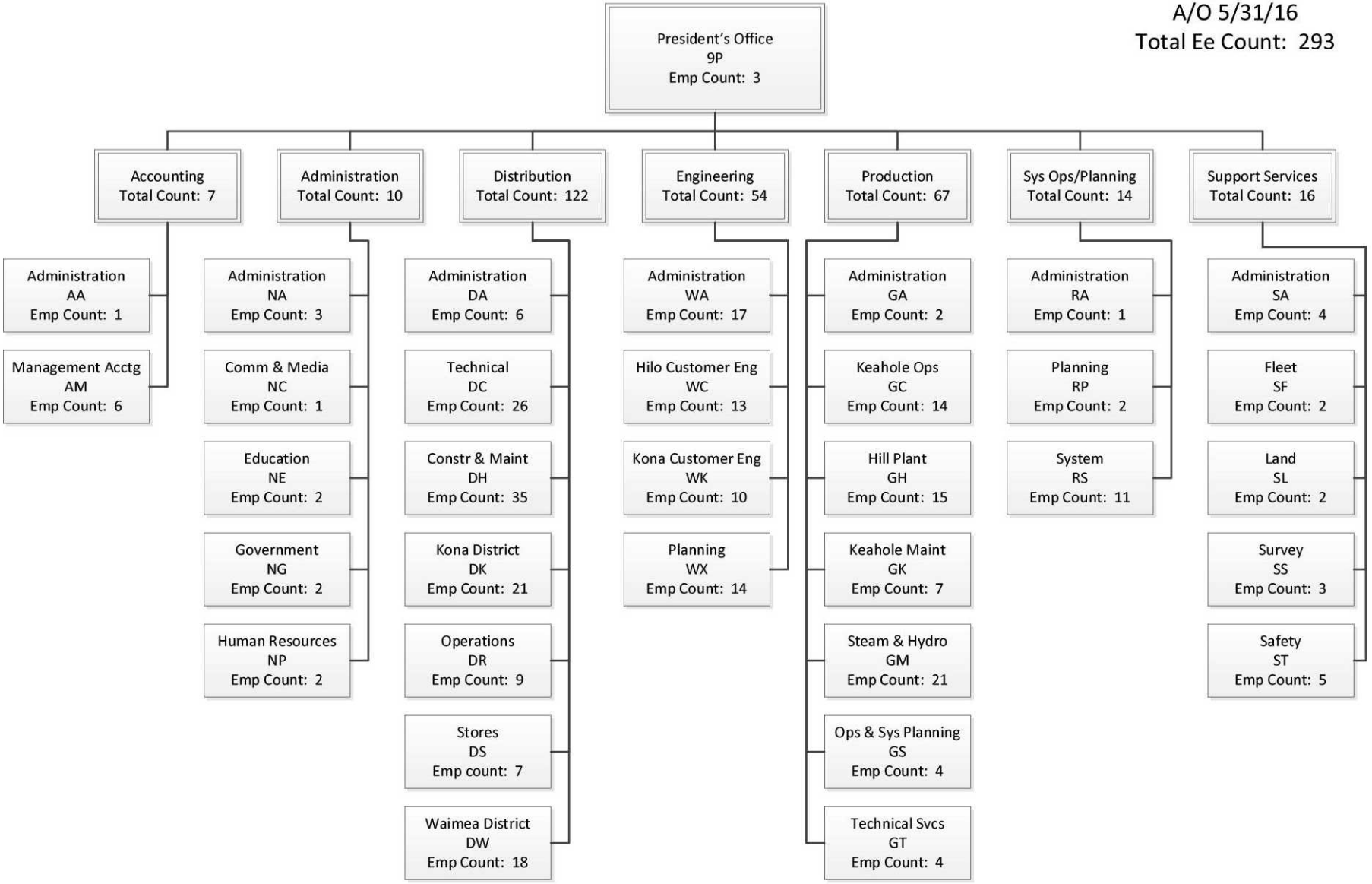
Hawaii Electric Light Company

District Boundaries

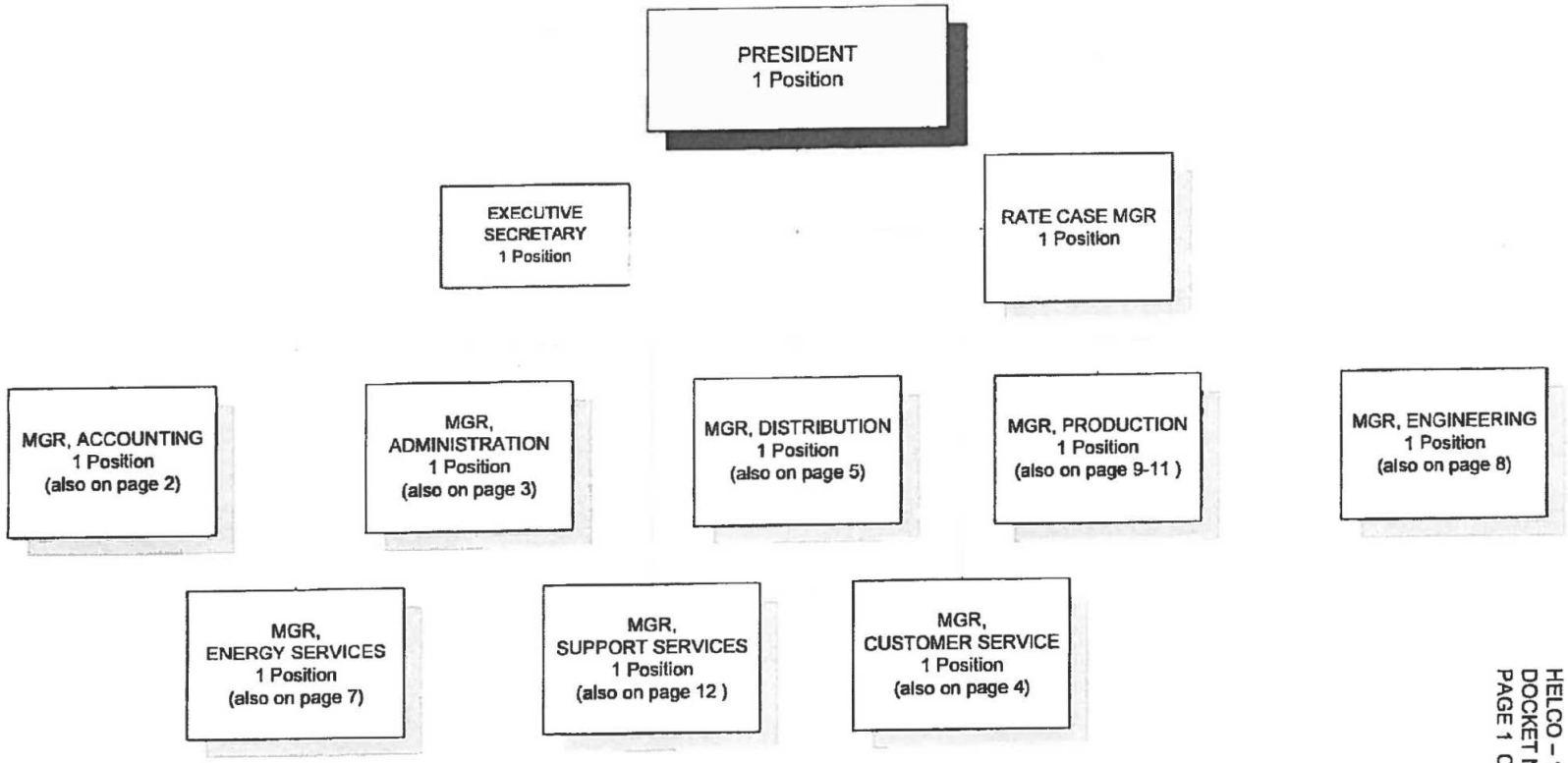


Hawai'i Electric Light Company, Inc.

TOTAL HELCO
A/O 5/31/16
Total Ee Count: 293



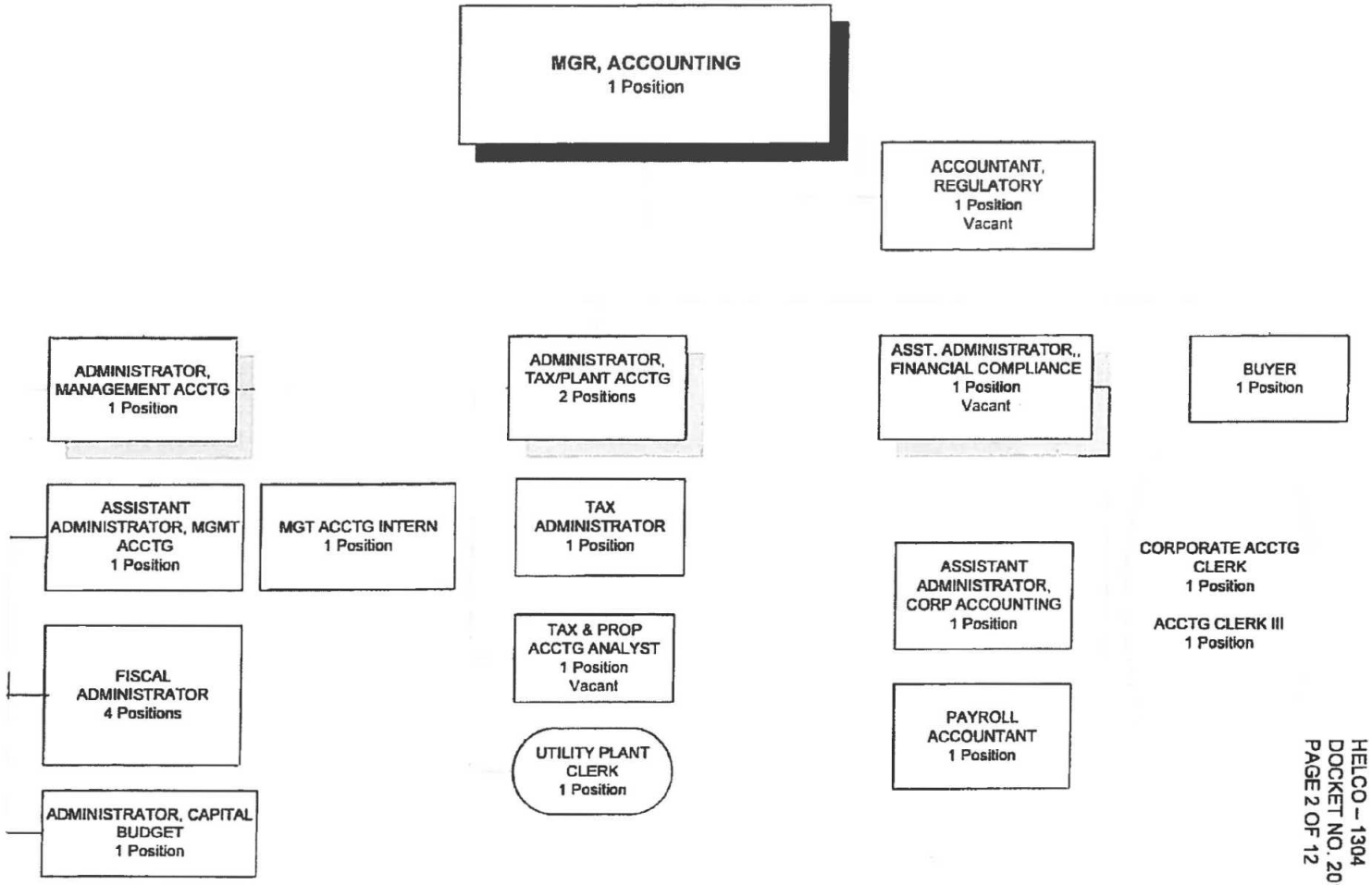
HAWAII ELECTRIC LIGHT COMPANY, INC.



As of June 30, 2012

ACCOUNTING

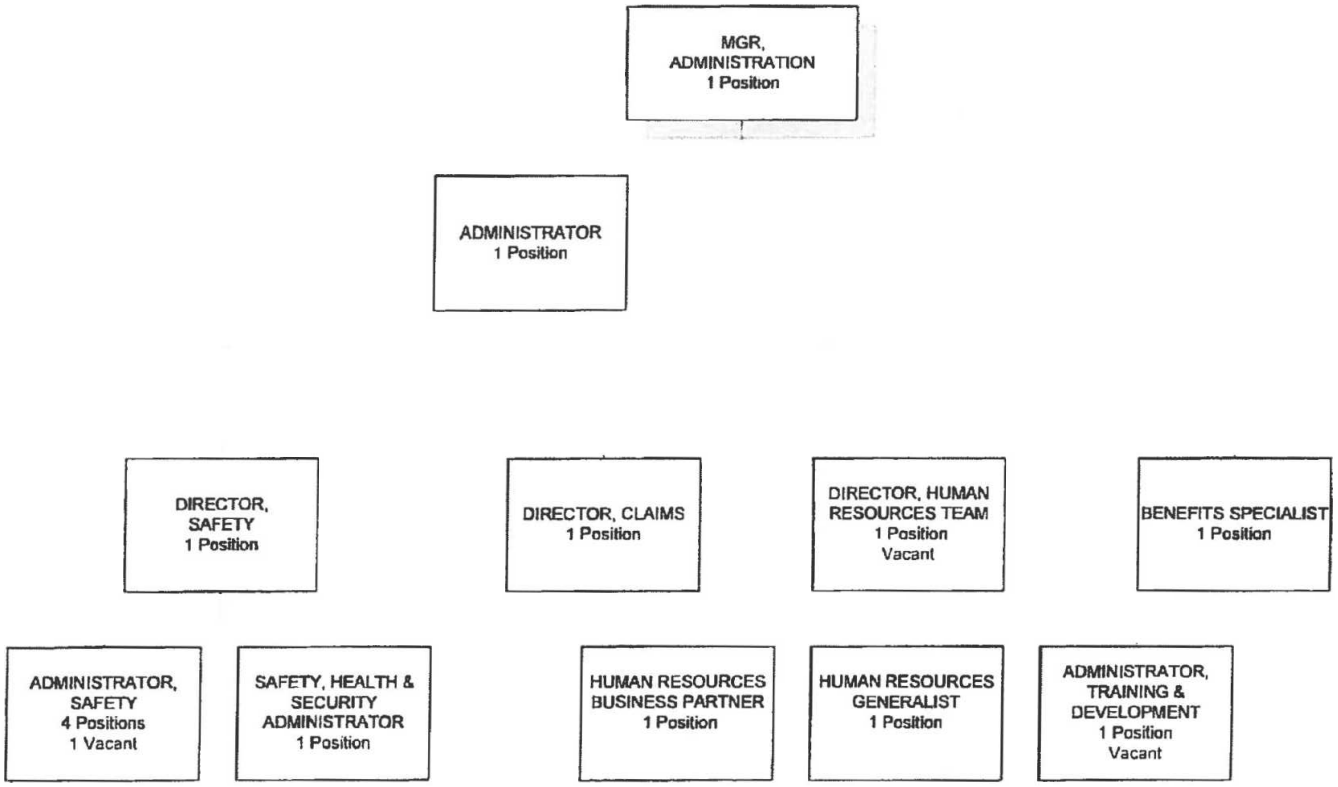
As of 06/30/12



HELCO – 1304
DOCKET NO. 2012-0099
PAGE 2 OF 12

ADMINISTRATION

As of 06/30/12



As of 06/30/12

CUSTOMER SERVICES

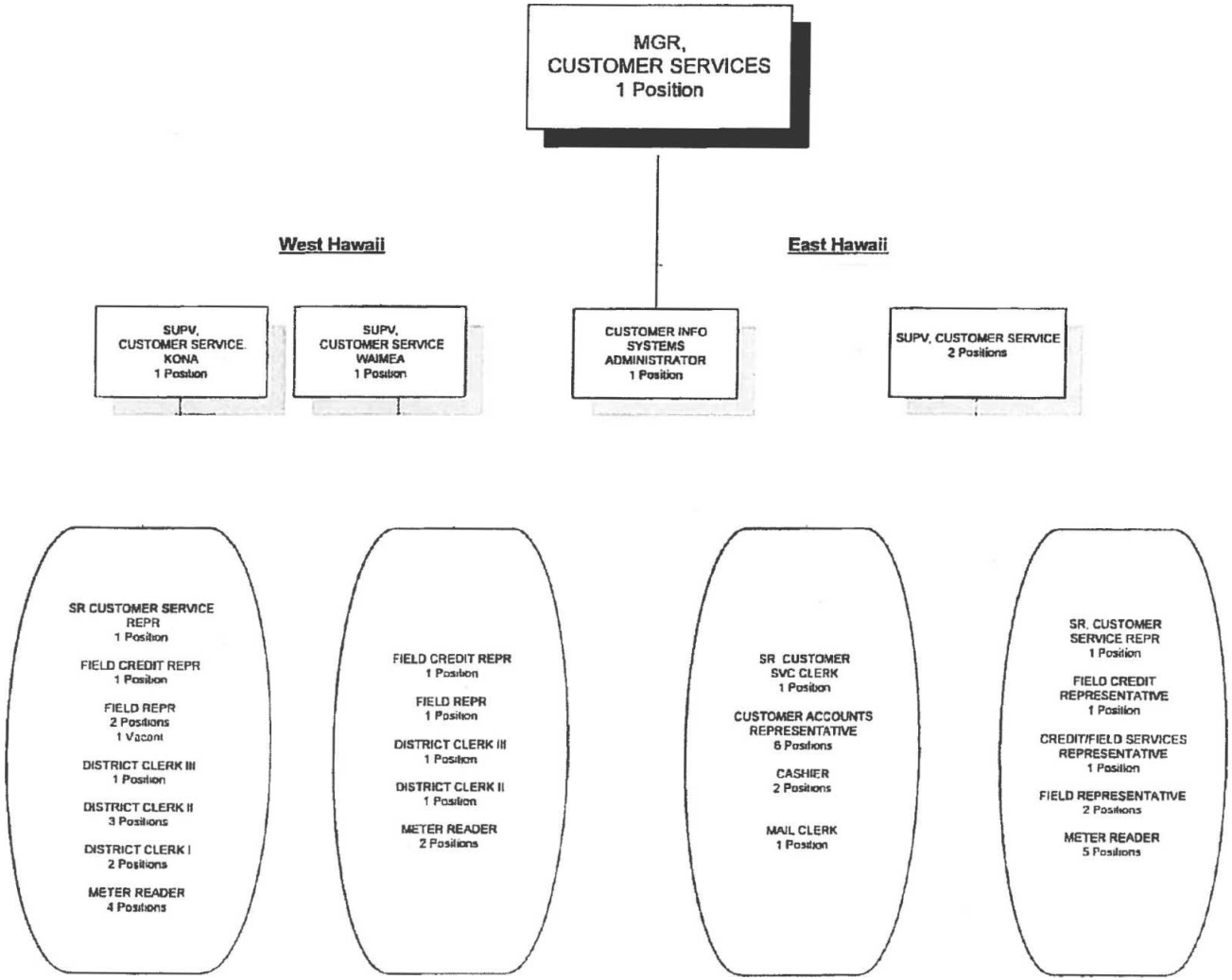
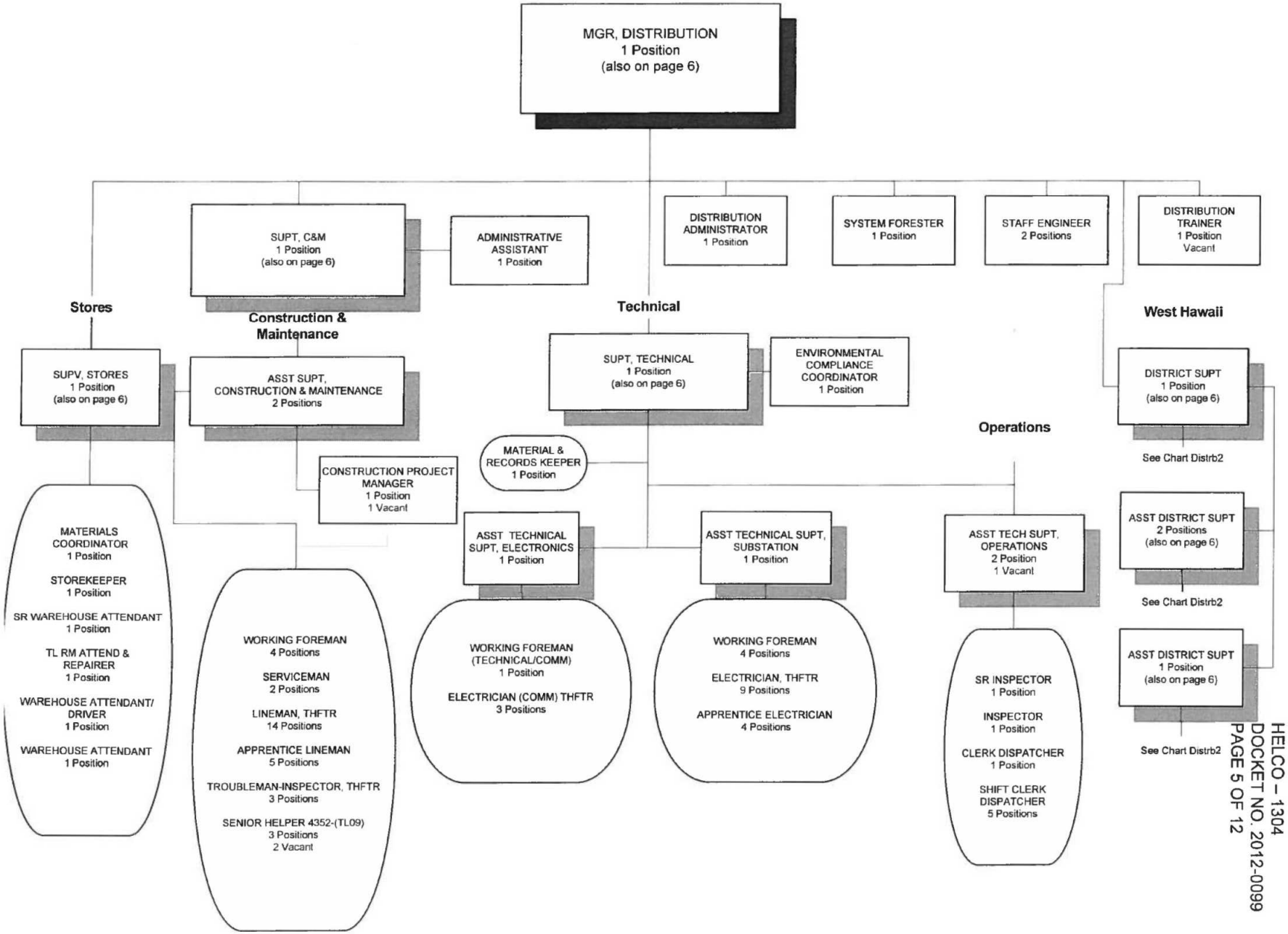


Chart Distrb 1

DISTRIBUTION

As of 06/30/12

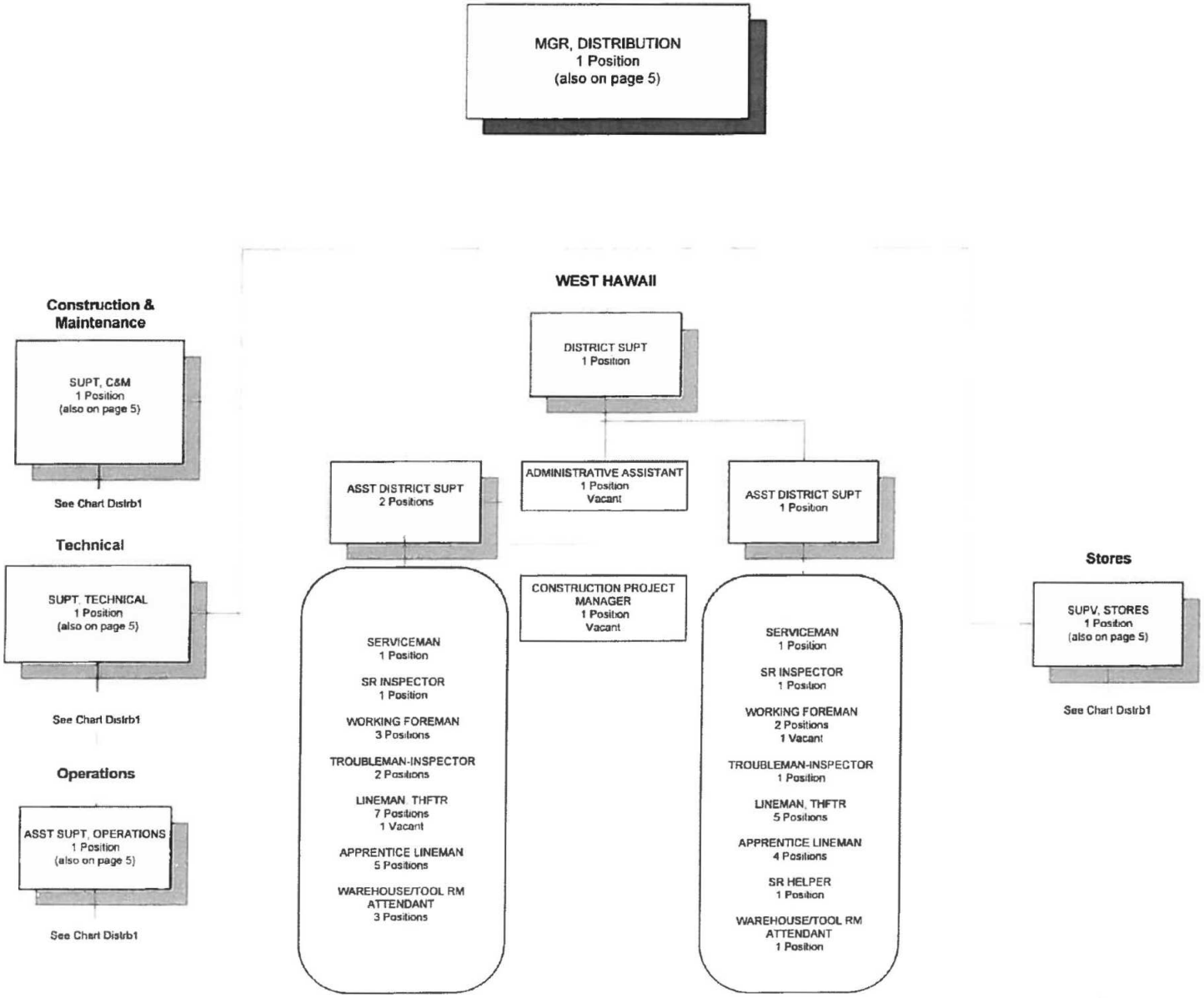


HELCO – 1304
DOCKET NO. 2012-0099
PAGE 5 OF 12

HELCO-1511
DOCKET NO. 2015-0170
Page 5 of 12

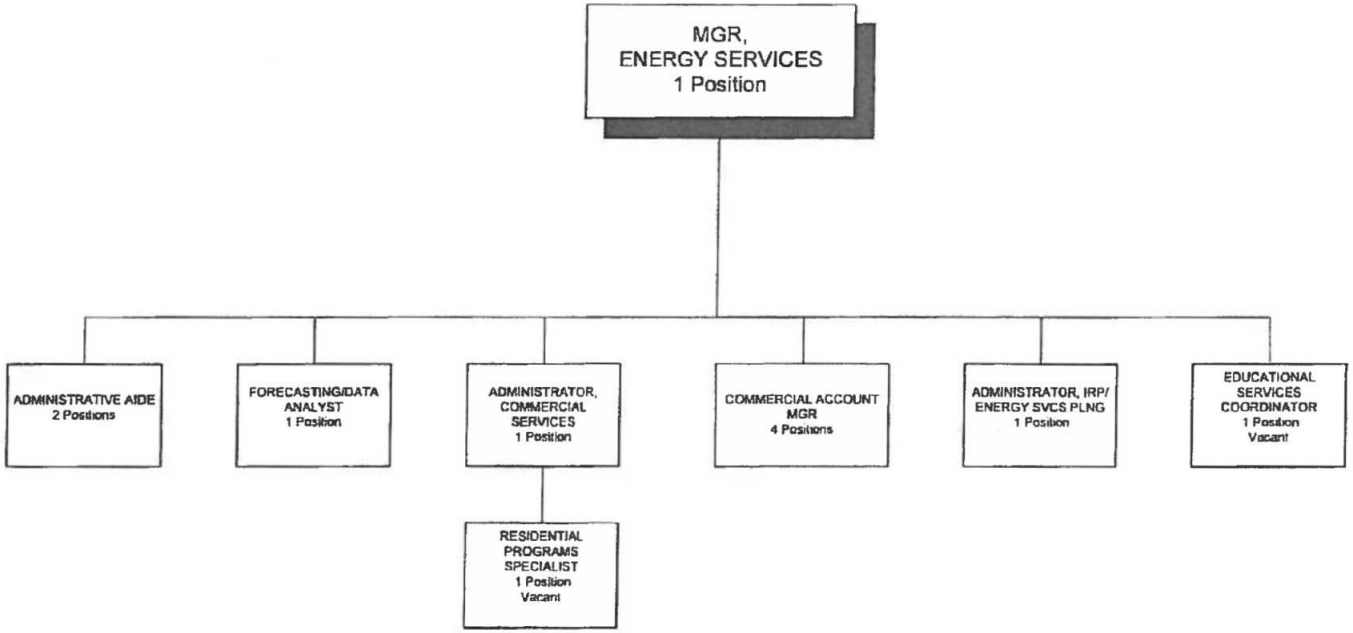
DISTRIBUTION

As of 06/30/12



As of 06/30/12

ENERGY SERVICES



ENGINEERING

As of 06/30/12

MGR, ENGINEERING
1 Position

ADMINISTRATOR
1 Position

PLANNING ENGINEER
2 Positions
1 Vacant

CUSTOMER ENGINEERING, KONA

SUPV CUSTOMER AND SYSTEM ENGINEERING (WEST HAWAII)
1 Position

SR CUSTOMER PLANNER
2 Positions

CUSTOMER PLANNER
2 Positions
2 Vacant

DESIGN PLANNER
1 Position

JR CUSTOMER PLANNER
2 Positions
1 Vacant

PLANNER AIDE
2 Positions

CUSTOMER DESIGNER (KONA)
1 Position

WAIMEA ENGINEERING - WW

CUSTOMER PLANNER
1 Position

PLANNING

SUPERVISING ENGINEER
1 Position

ELECTRICAL ENGINEER
6 Positions

ENGINEERING/DRAFTING TECHNICIAN
1 Position

DRAFTING TECHNICIAN III
1 Position

DRAFTING TECHNICIAN II
1 Position

DESIGNER II
(feeder group to Electrical Engineer)

ADMINISTRATION

ADMINISTRATOR ENGINEERING
1 Position

EAST HAWAII

SR COORDINATOR
1 Position

JOINT POLE COORDINATOR
1 Position

SSPP ACCTS CLERK
1 Position

ENGINEERING CLERK
1 Position

CLERK TYPIST III
3 Positions

RECEPTIONIST/CLERK TYPIST
1 Position

WEST HAWAII

ENGINEERING CLERK
1 Position

CLERK TYPIST III
2 Positions

CUSTOMER ENGINEERING, HILO

SUPV, CUSTOMER ENGINEERING (HILO)
1 Position

CUSTOMER DESIGNER (HILO)
2 Positions

SR CUSTOMER PLANNER
3 Positions

CUSTOMER PLANNER
1 Position
Vacant

DESIGN PLANNER
2 Positions

JR CUSTOMER PLANNER
3 Positions

PLANNER AIDE
1 Position

HELCO – 1304
DOCKET NO. 2012-0099
PAGE 8 OF 12

Chart Prod 1

PRODUCTION

As of 06/30/12

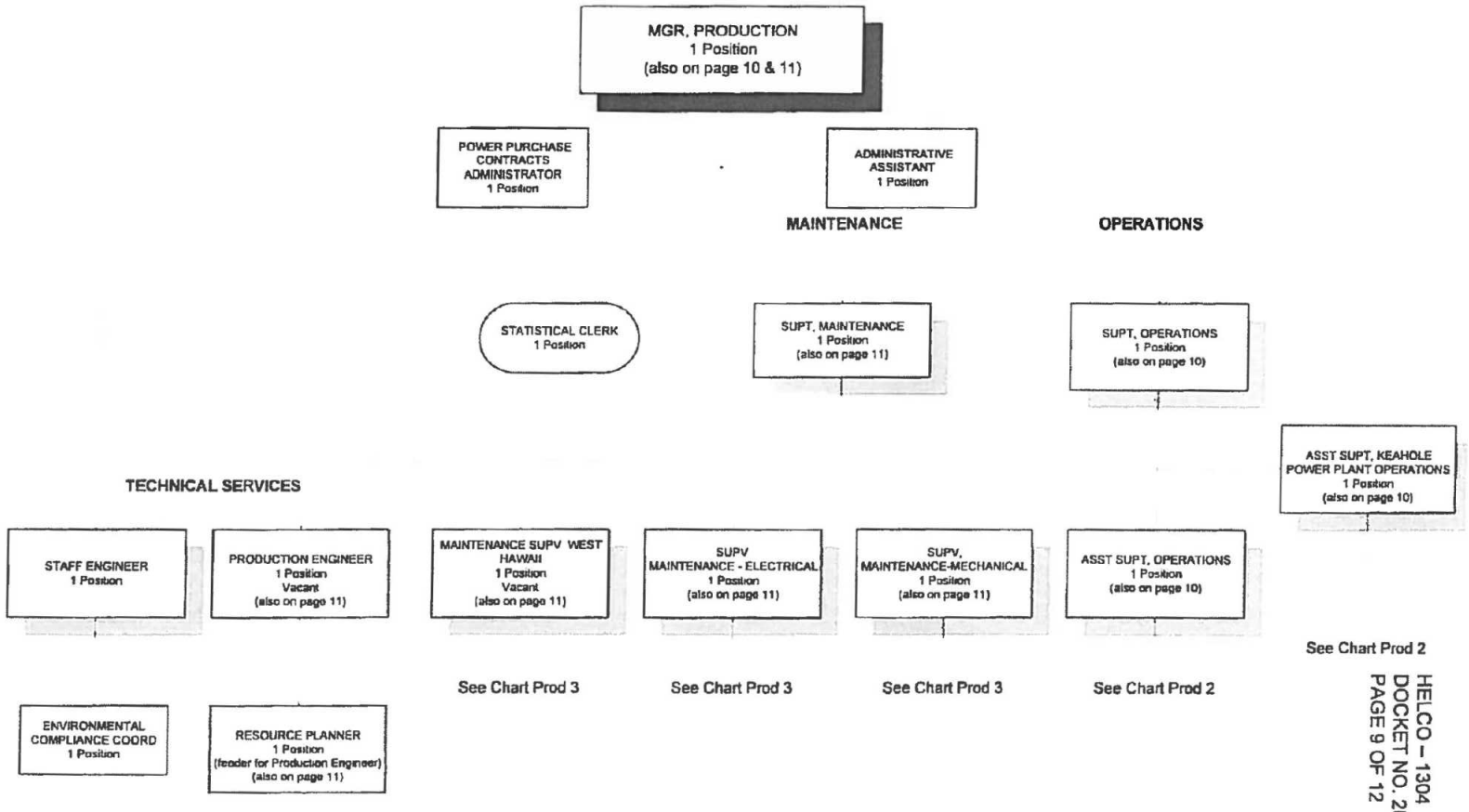


Chart Prod 2

PRODUCTION

As of 06/30/12

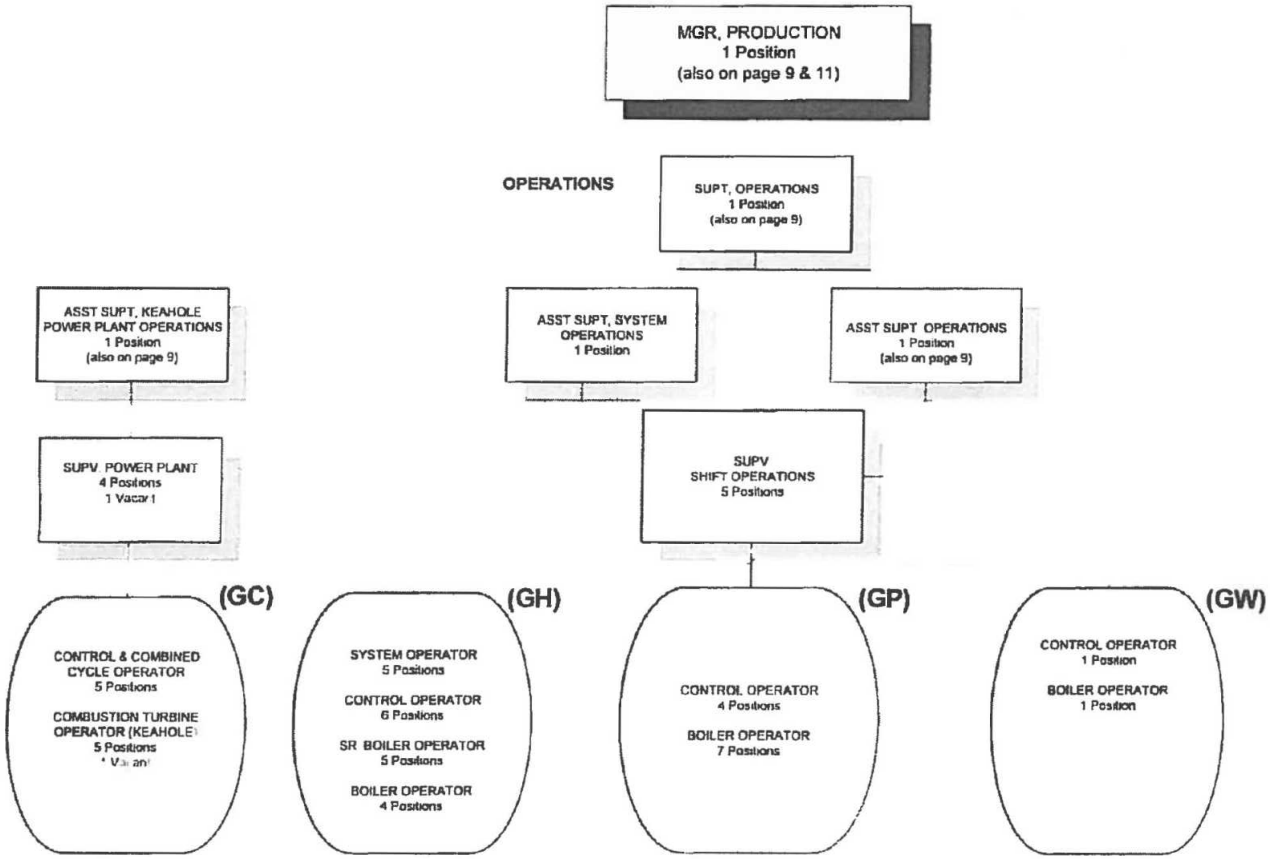
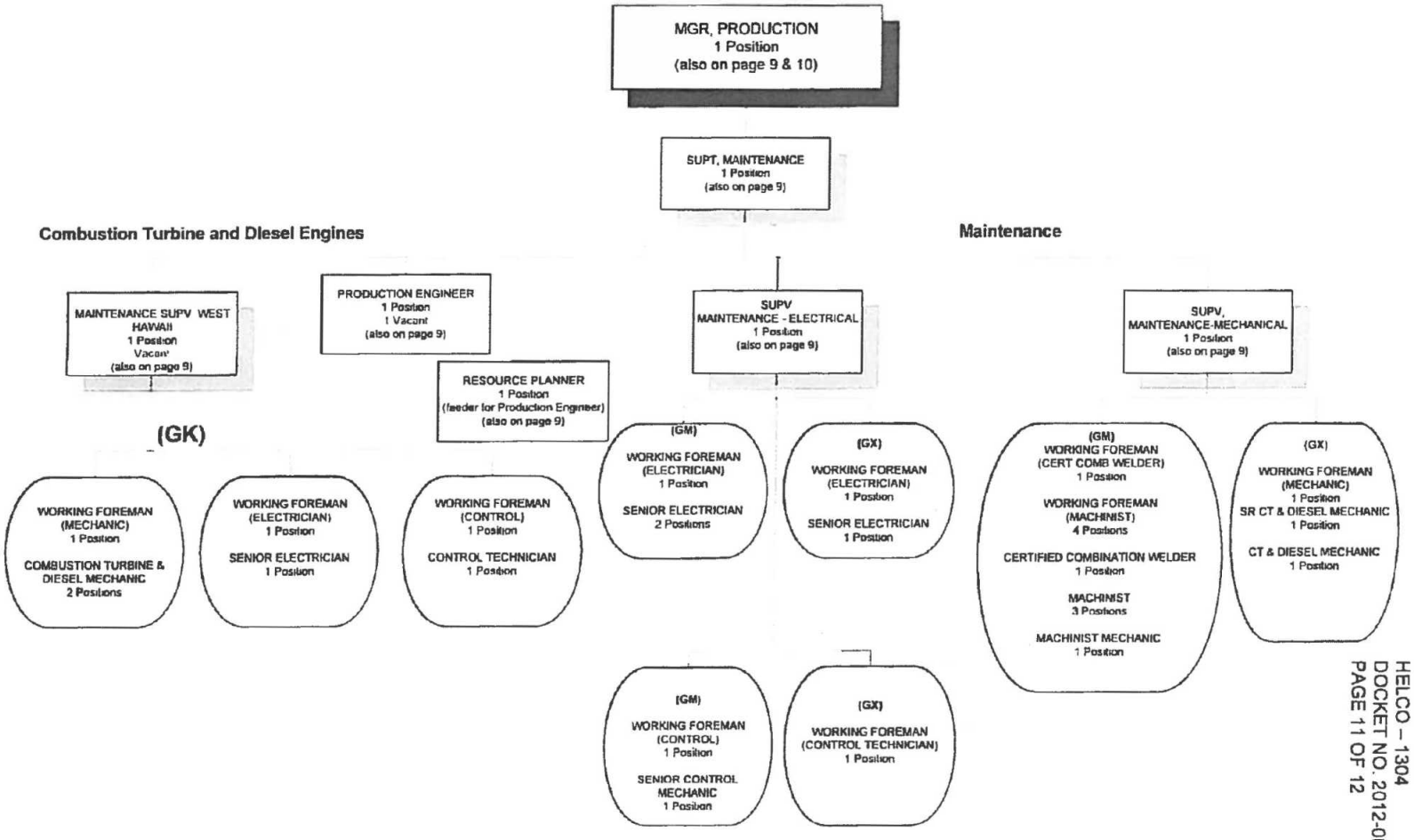


Chart Prod 3

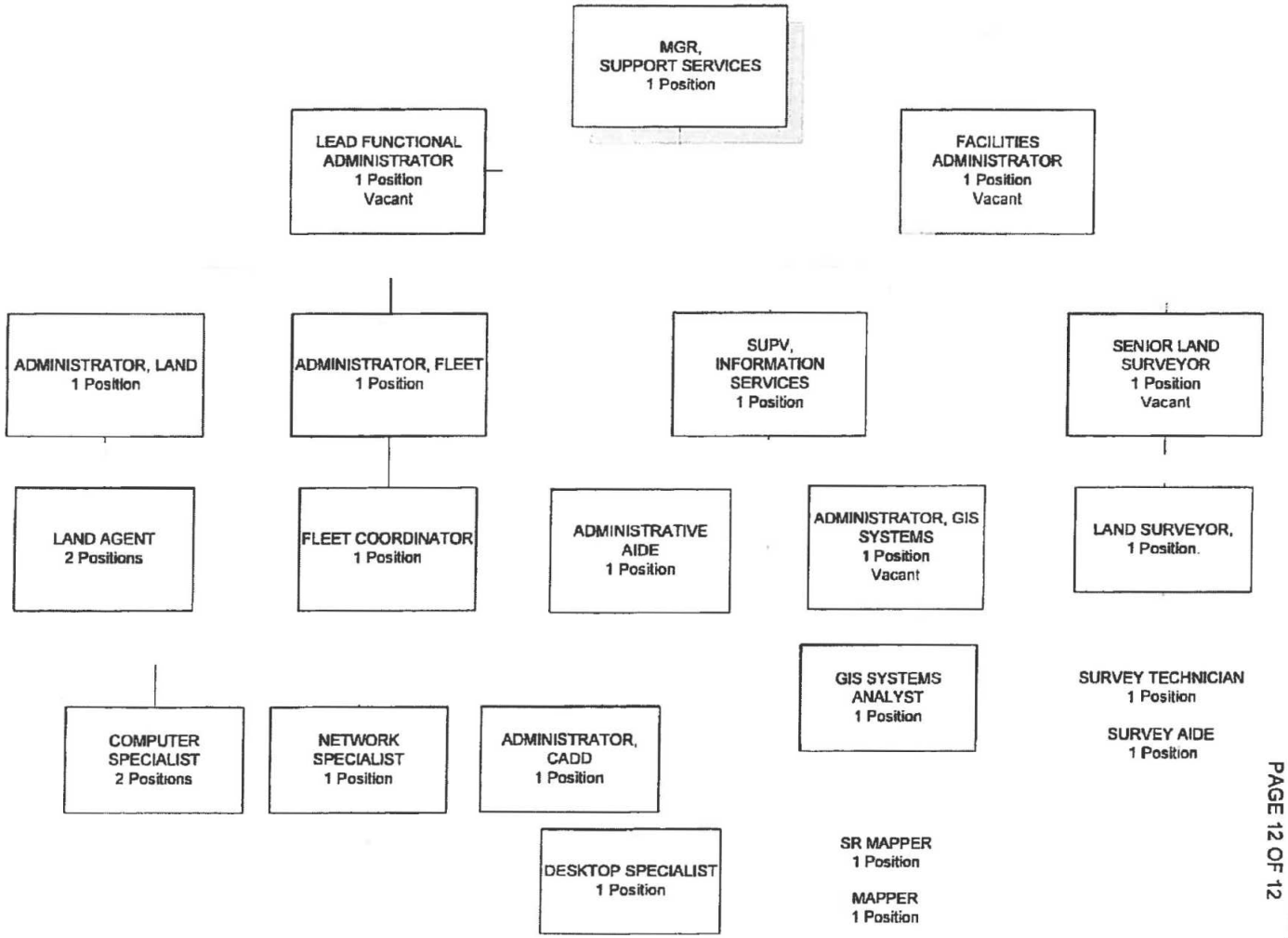
PRODUCTION

As of 06/30/12



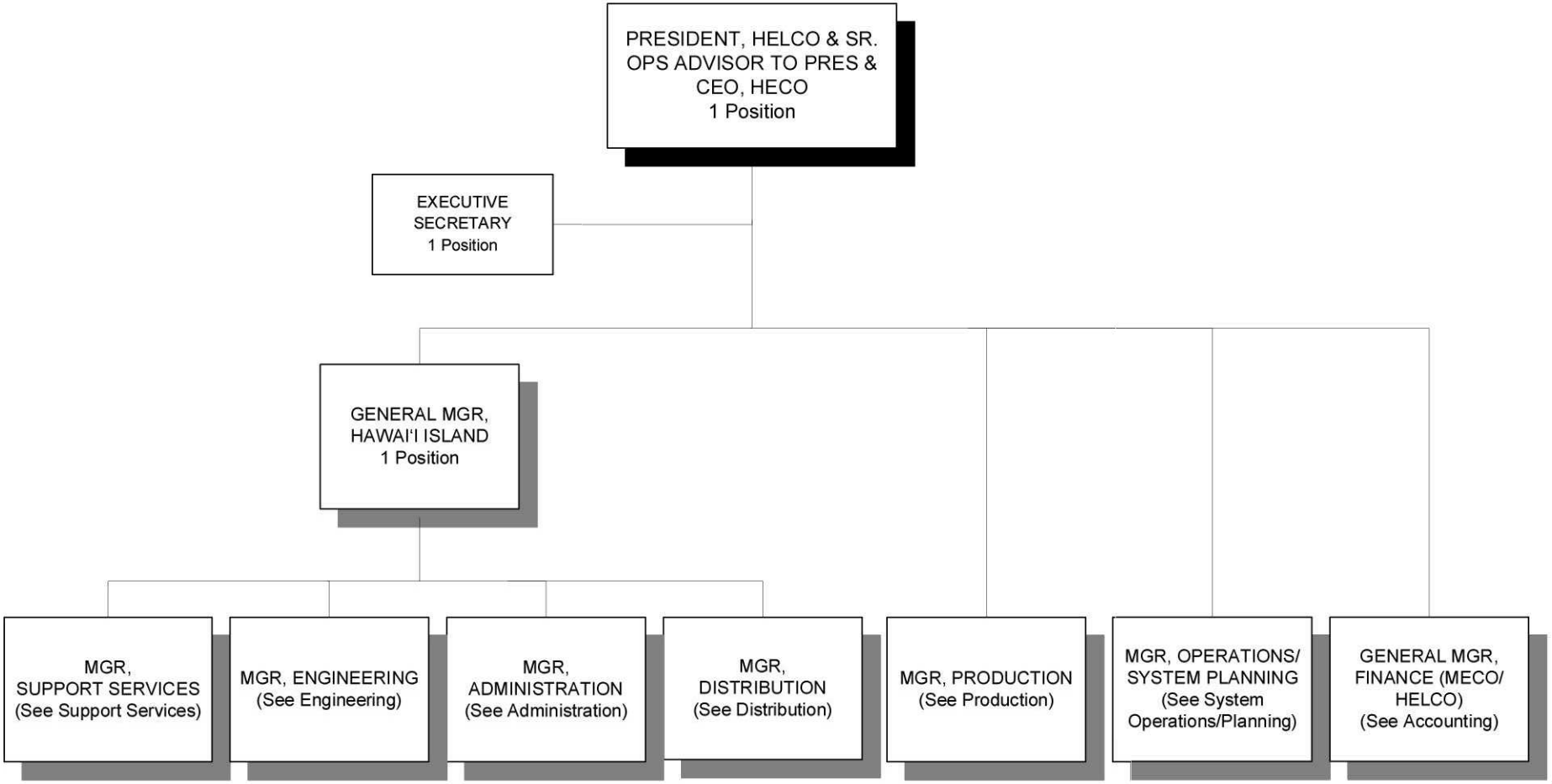
As of 06/30/12

SUPPORT SERVICES



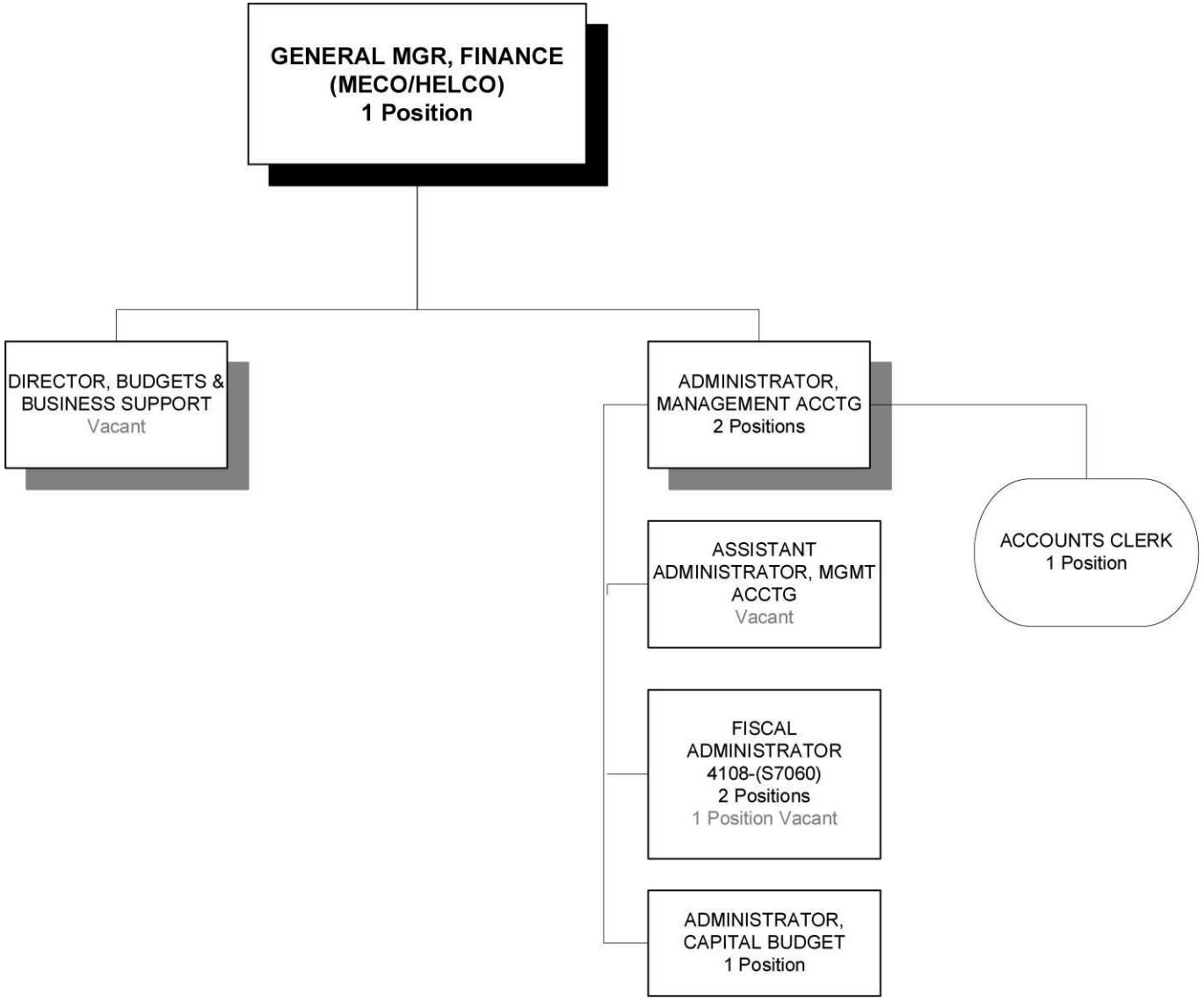
a/o 5/31/16

HAWAII ELECTRIC LIGHT COMPANY, INC.
President's Office (9P)



As of May 31, 2016

ACCOUNTING



ADMINISTRATION

As of May 31, 2016

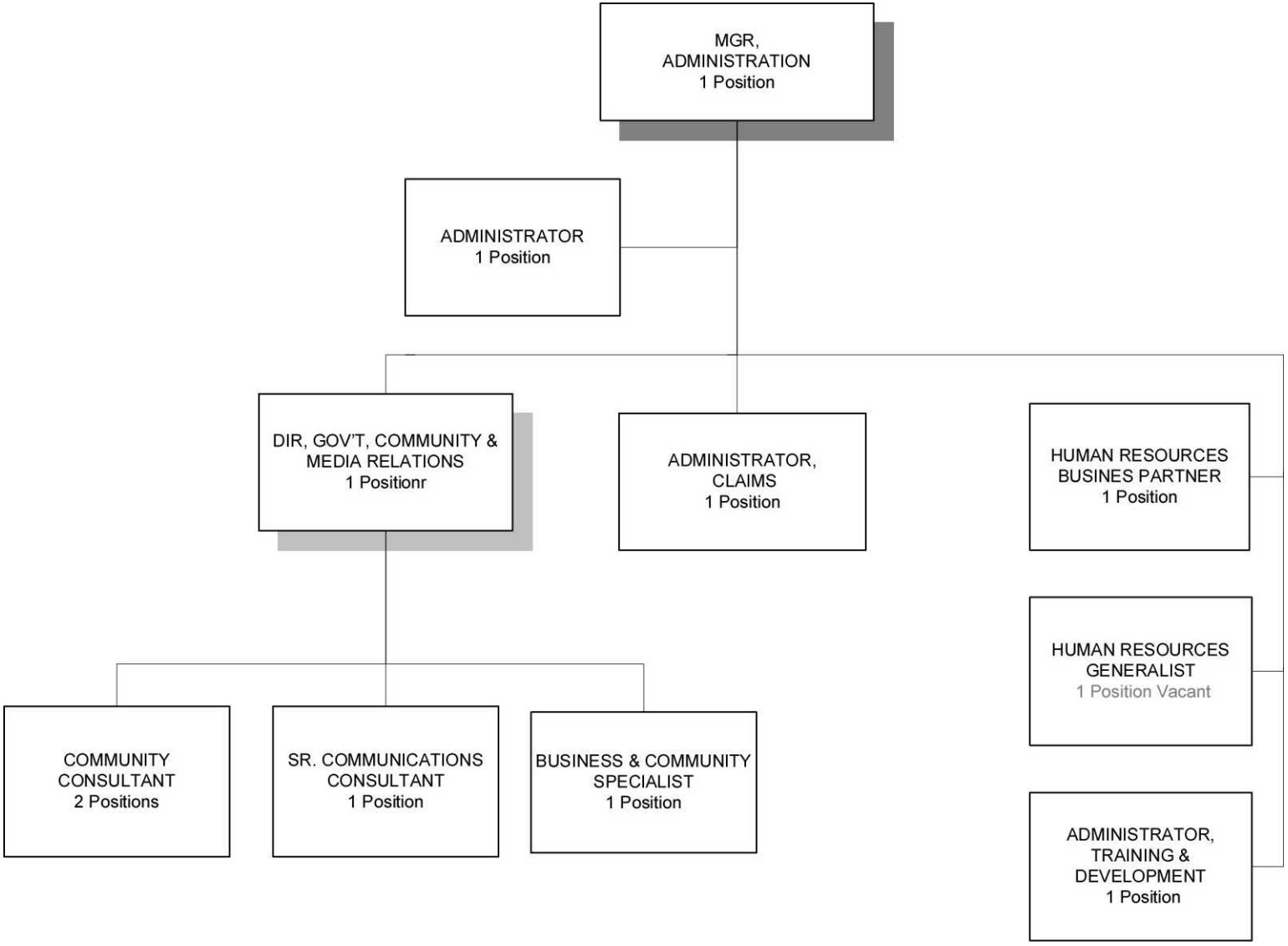


Chart Distrb 1

DISTRIBUTION

As of May 31, 2016

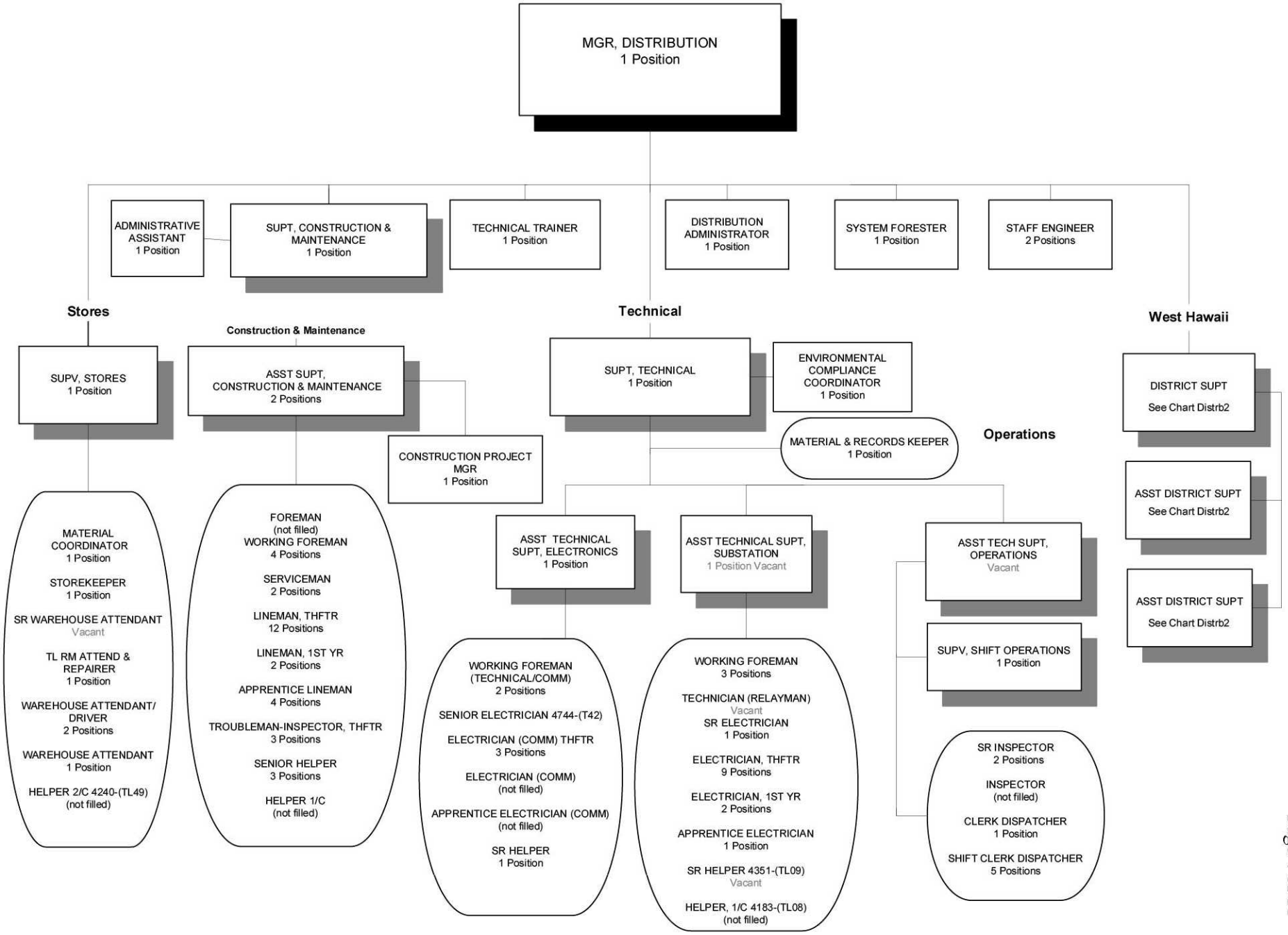
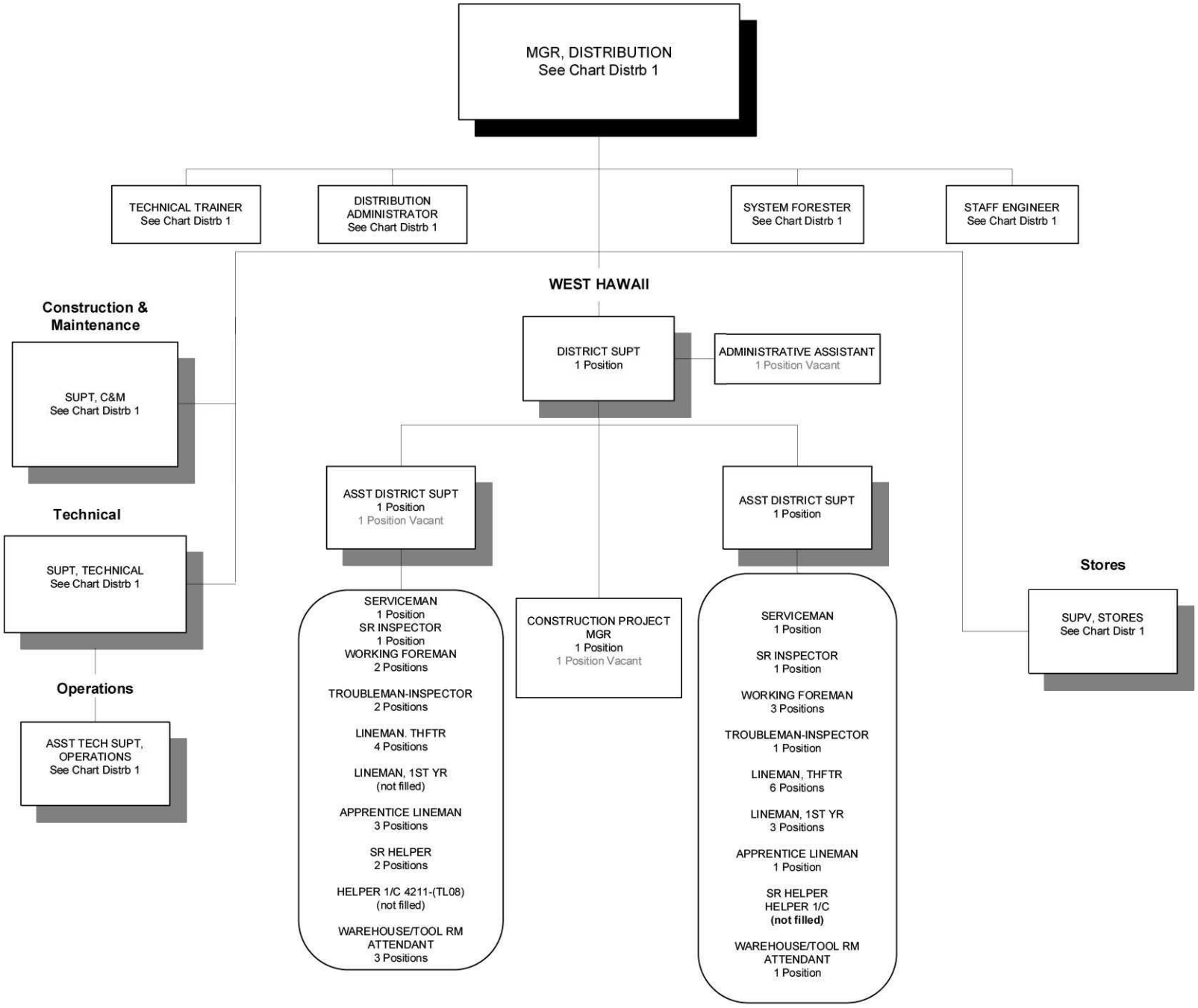


Chart Distrb 2

DISTRIBUTION

As of May 31, 2016



As of May 31, 2016

ENGINEERING

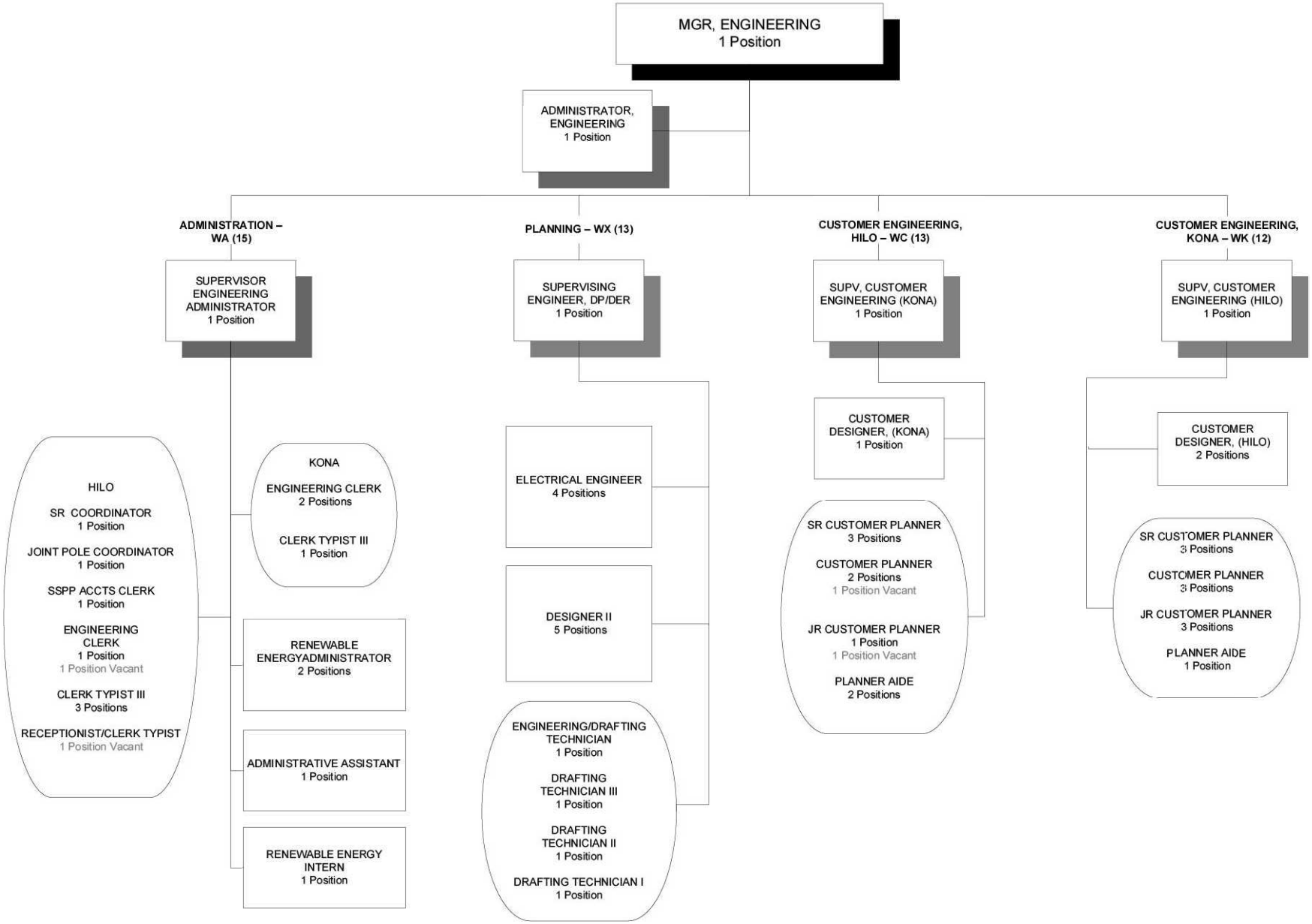


Chart Prod 1

PRODUCTION

As of May 31, 2016

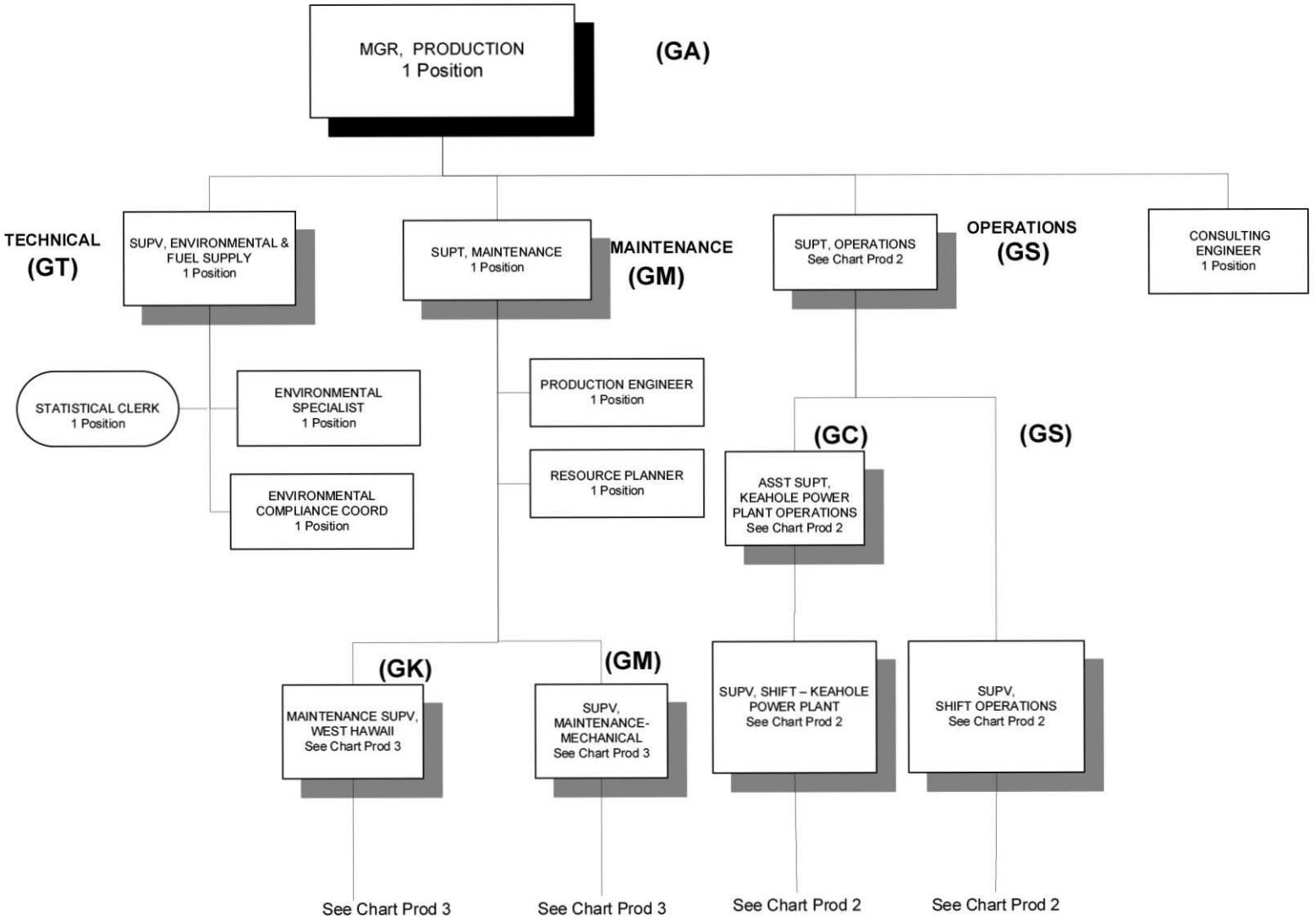


Chart Prod 2

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As of May 31, 2016

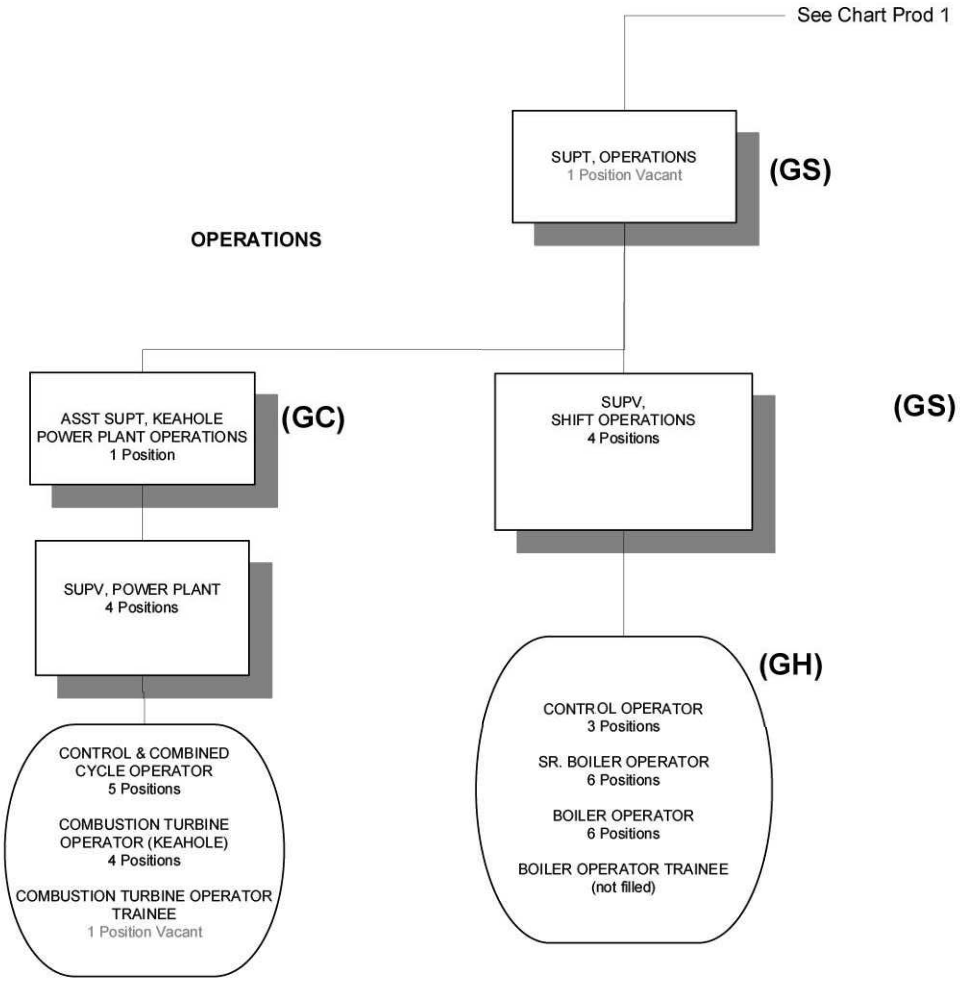
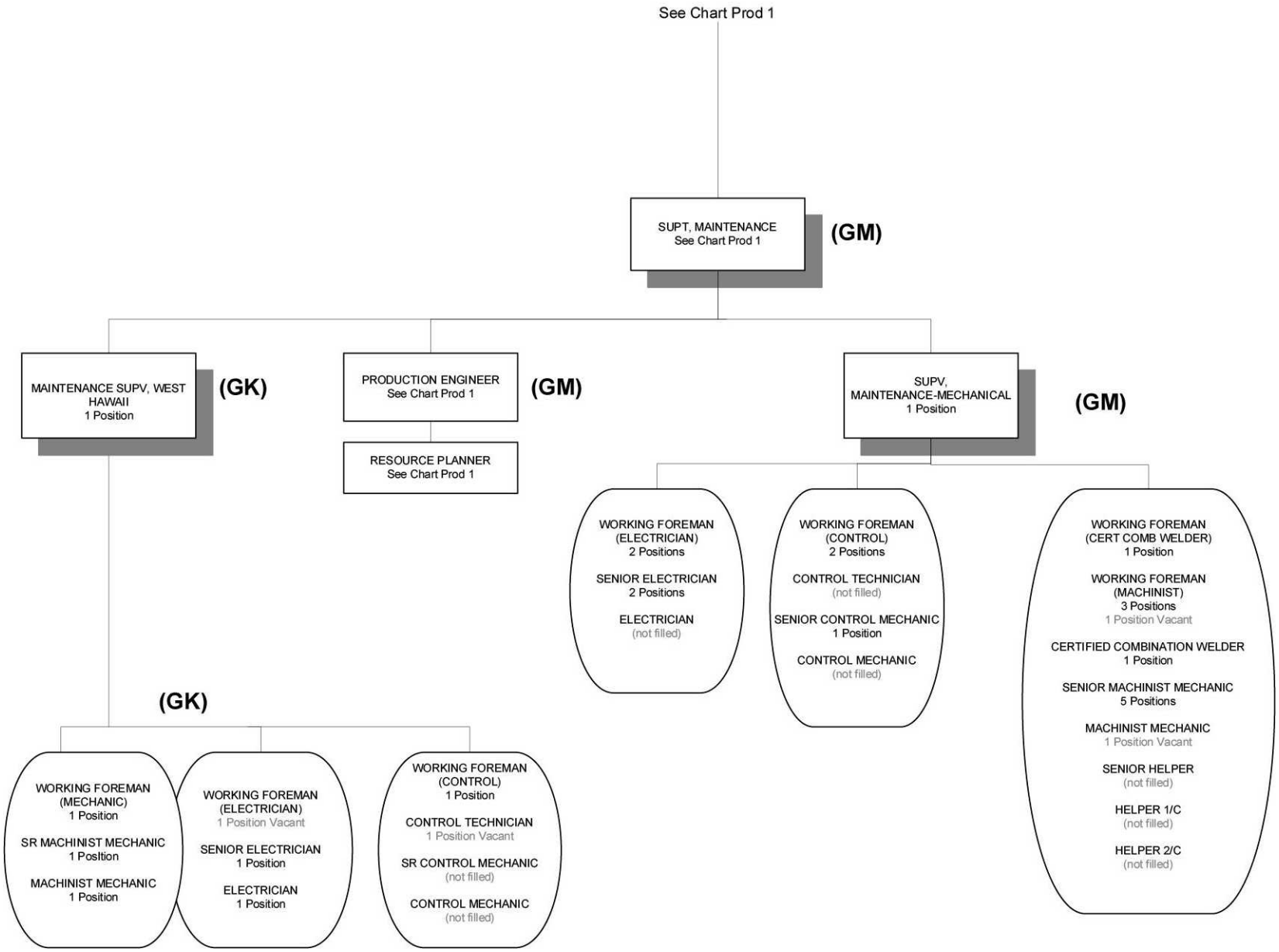


Chart Prod 3

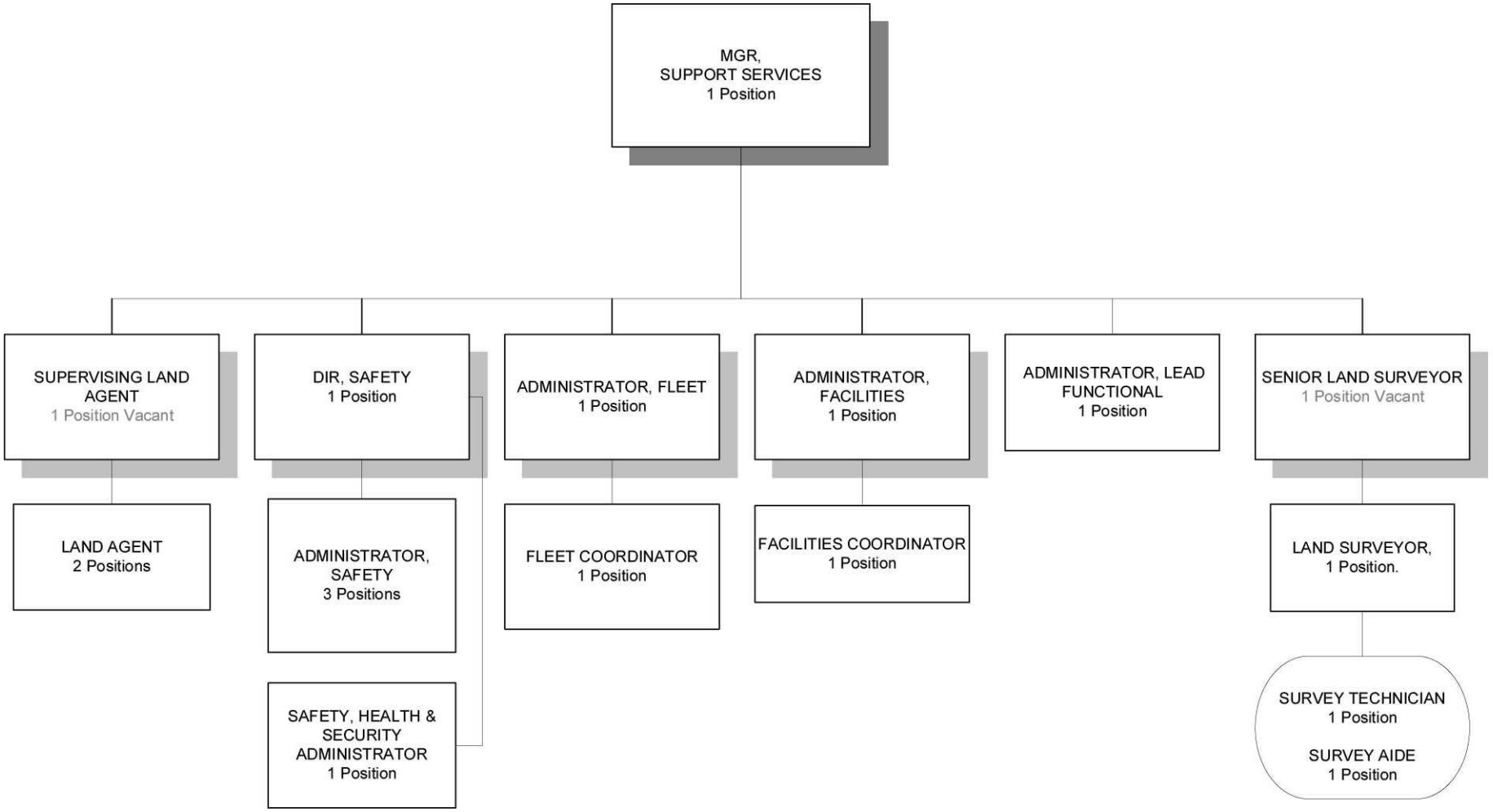
PRODUCTION

As of May 31, 2016



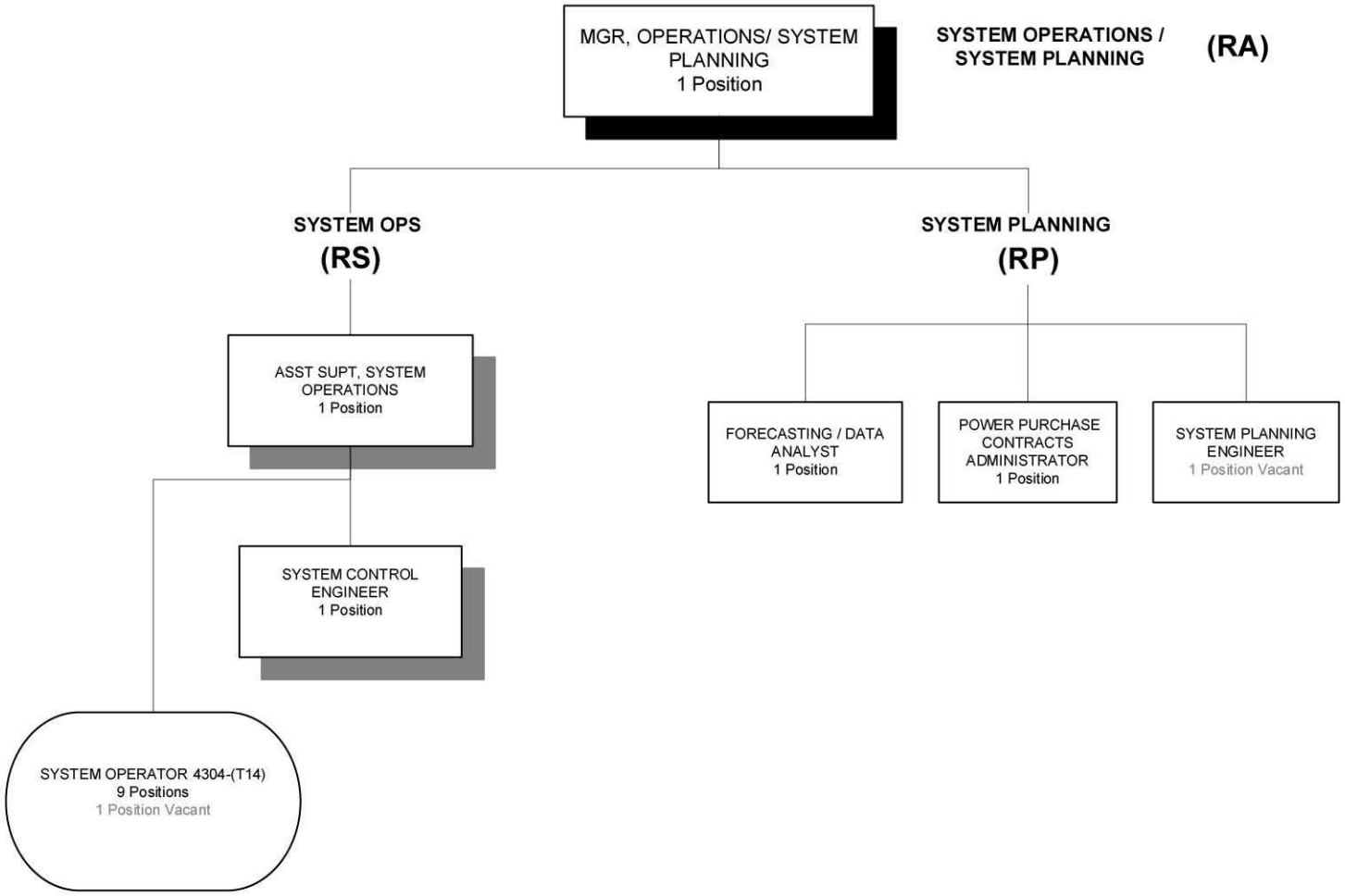
SUPPORT SERVICES

As of May 31, 2016



SYSTEM OPERATIONS/ SYSTEM PLANNING

As of May 31, 2016



Hawai'i Electric Light Company, Inc.
2016 Test Year
2016 Recorded Headcount

Dept	RA	Recorded 12/31/2015	1/31/2016	2/29/2016	3/31/2016	4/30/2016	5/31/2016	2016 Average Recorded Count
Administration	HNA	3	3	3	3	3	3	3.00
Administration	HNC	1	1	1	1	1	1	1.00
Administration	HNE	1	1	1	1	2	2	1.33
Administration	HNG	2	2	2	2	2	2	2.00
Administration	HNP	3	2	2	2	2	2	2.17
Administration		**10**	**9**	**9**	**9**	**10**	**10**	**9.50**
Distribution	HDA	6	6	6	6	6	6	6.00
Distribution	HDC	26	26	26	26	26	26	26.00
Distribution	HDH	33	33	33	35	35	35	34.00
Distribution	HDK	22	22	22	22	21	21	21.67
Distribution	HDR	10	10	9	9	9	9	9.33
Distribution	HDS	8	7	7	7	7	7	7.17
Distribution	HDW	18	18	18	18	18	18	18.00
Distribution		**123**	**122**	**121**	**123**	**122**	**122**	**122.17**
Engineering	HWA	17	17	17	17	17	17	17.00
Engineering	HWC	13	13	12	12	13	13	12.67
Engineering	HWK	10	10	10	10	10	10	10.00
Engineering	HWW	1	1	1	1	0	0	0.67
Engineering	HWX	13	13	14	14	14	14	13.67
Engineering		**54**	**54**	**54**	**54**	**54**	**54**	**54.00**
Accounting	HAA	1	1	1	1	1	1	1.00
Accounting	HAM	6	6	7	7	6	6	6.33
Accounting		**7**	**7**	**8**	**8**	**7**	**7**	**7.33**
President's Office	**H9P**	**3**	**3**	**3**	**3**	**3**	**3**	**3.00**
Production	HGA	1	2	2	2	2	2	1.83
Production	HGC	15	15	14	14	14	14	14.33
Production	HGH	21	14	14	15	15	15	15.67
Production	HGK	8	7	7	7	7	7	7.17
Production	HGM	22	21	21	21	21	21	21.17
Production	HGS	11	5	4	4	4	4	5.33
Production	HGT	5	4	4	4	4	4	4.17
Production		**83**	**68**	**66**	**67**	**67**	**67**	**69.67**
Support Services	HSA	4	4	4	4	4	4	4.00
Support Services	HSF	2	2	2	2	2	2	2.00
Support Services	HSL	3	3	3	2	2	2	2.50
Support Services	HSS	3	3	3	3	3	3	3.00
Support Services	HST	3	3	5	5	5	5	4.33
Support Services		**15**	**15**	**17**	**16**	**16**	**16**	**15.83**
Sys Operation/Planning	HRA	0	1	1	1	1	1	0.83
Sys Operation/Planning	HRS	0	11	11	11	11	11	9.17
Sys Operation/Planning	HRP	0	2	2	2	2	2	1.67
Sys Operation/Planning		**0**	**14**	**14**	**14**	**14**	**14**	**11.67**
Totals		**295**	**292**	**292**	**294**	**293**	**293**	**293.17**

Notes:
1. Above includes Company temps but excludes agency temps.
2. Sub-totals and totals are calculated using a 6-month averaging formula.

Hawai'i Electric Light Company, Inc.
2016 Test Year
2016 Recorded and Budgeted Headcount

Dept	RA	Actual 12/31/2015	Actual 1/31/2016	Actual 2/29/2016	Actual 3/31/2016	Actual 4/30/2016	Actual 5/31/2016	Budgeted 6/30/2016	Budgeted 7/31/2016	Budgeted 8/31/2016	Budgeted 9/30/2016	Budgeted 10/31/2016	Budgeted 11/30/2016	Budgeted 12/31/2016	2016 TY Avg EE Count
Administration	HNA	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Administration	HNC	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Administration	HNE	1	1	1	1	2	2	2	2	2	2	2	2	2	2
Administration	HNG	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Administration	HNP	3	2	2	2	2	2	3	3	3	3	3	3	3	3
Administration		**10**	**9**	**9**	**9**	**10**	**10**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**10**
Distribution	HDA	6	6	6	6	6	6	7	7	7	7	7	7	7	7
Distribution	HDC	26	26	26	26	26	26	30	30	30	30	30	30	30	28
Distribution	HDH	33	33	33	35	35	35	35	35	35	35	35	35	35	35
Distribution	HDK	22	22	22	22	21	21	26	26	26	26	26	26	26	24
Distribution	HDR	10	10	9	9	9	9	11	11	11	11	11	11	11	10
Distribution	HDS	8	7	7	7	7	7	7	7	7	7	7	7	7	7
Distribution	HDW	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Distribution		**123**	**122**	**121**	**123**	**122**	**122**	**134**	**134**	**134**	**134**	**134**	**134**	**134**	**129**
Engineering	HWA	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Engineering	HWC	13	13	12	12	13	13	13	13	13	13	13	13	13	13
Engineering	HWK	10	10	10	10	10	10	12	12	12	12	12	12	12	11
Engineering	HWW	1	1	1	1	0	0	0	0	0	0	0	0	0	0
Engineering	HWX	13	13	14	14	14	14	13	13	13	13	13	13	13	13
Engineering		**54**	**54**	**54**	**54**	**54**	**54**	**55**	**55**	**55**	**55**	**55**	**55**	**55**	**55**
Accounting	HAA	1	1	1	1	1	1	2	2	2	2	2	2	2	2
Accounting	HAM	6	6	7	7	6	6	7	7	7	7	7	7	7	7
Accounting		**7**	**7**	**8**	**8**	**7**	**7**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**8**
President's Office	H9P	3	3	3	3	3	3	3	3	3	3	3	3	3	3
President's Office		**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Production	HGA	1	2	2	2	2	2	1	1	1	1	1	1	1	1
Production	HGC	15	15	14	14	14	14	15	15	15	15	15	15	15	15
Production	HGH	21	14	14	15	15	15	15	15	15	15	15	15	15	15
Production	HGK	8	7	7	7	7	7	8	8	8	8	8	8	8	8
Production	HGM	22	21	21	21	21	21	25	25	25	25	25	25	25	23
Production	HGS	11	5	4	4	4	4	5	5	5	5	5	5	5	5
Production	HGT	5	4	4	4	4	4	5	5	5	5	5	5	5	5
Production		**83**	**68**	**66**	**67**	**67**	**67**	**74**	**74**	**74**	**74**	**74**	**74**	**74**	**72**
Support Services	HSA	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Support Services	HSF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Support Services	HSL	3	3	3	2	2	2	3	3	3	3	3	3	3	3
Support Services	HSS	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HST	3	3	5	5	5	5	5	5	5	5	5	5	5	5
Support Services		**15**	**15**	**17**	**16**	**16**	**16**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**16**
Sys Operation/Planning	HRA	0	1	1	1	1	1	1	1	1	1	1	1	1	1
Sys Operation/Planning	HRS	0	11	11	11	11	11	12	12	12	12	12	12	12	11
Sys Operation/Planning	HRP	0	2	2	2	2	2	3	3	3	3	3	3	3	2
Sys Operation/Planning		**0**	**14**	**14**	**14**	**14**	**14**	**16**	**16**	**16**	**16**	**16**	**16**	**16**	**14**
Totals		**295**	**292**	**292**	**294**	**293**	**293**	**319**	**319**	**319**	**319**	**319**	**319**	**319**	**307**

Notes:
Above includes Company temps but excludes agency temps.

DEFINITIONS FOR EMPLOYEE COUNT

Employee

The Company defines an employee as a person hired to perform work under the direction and control of Company officials, and who performs work specifically defined by an official position description (for non-bargaining unit employees) or a job description (for bargaining unit employees). All positions in the Company are classified as either bargaining unit positions or management positions. Bargaining unit employees are represented by a Union (IBEW Local 1260) and the terms of employment of bargaining unit employees are contained in the Collective Bargaining Agreement ("CBA") between the Company and the Union. Management positions include executive, professional, supervisory, and other positions above the rank of foreman.

An employee may be hired in the category of "probationary," "regular," or "temporary." In the event a vacant position is not filled, contract services are an acceptable alternative to filling the vacant position; however, contract service employees are not counted or considered as employees of the Company. Additionally, an employee is classified as "exempt" or "non-exempt" and this classification designates whether an employee is eligible for overtime wages.

Details regarding these categories and classification of employees are discussed further below.

Probationary, Regular, or Temporary Employees

When an employee is hired into a position covered by the CBA and there is no identified end date to the position, the Company classifies the newly hired employee as a probationary employee for the first six months of employment. A probationary employee is subject to job evaluation and termination without notice during the six-month probationary period. When a probationary employee satisfactorily completes the probationary period, the employee is classified as a regular employee.

A management employee is an employee that is hired into a position with no identified end date and is not covered by the CBA. Management employees, except temporary management employees, are classified as regular employees.

A temporary employee is hired for a position with a specified start and end date or until the completion of a specific program or project. Temporary employees may be covered by the CBA or may be management employees.

Exempt and Non-Exempt Employees

When a position is established, it is analyzed for its application to the Wage and Hour Law (State of Hawai'i Law) and the Fair Labor Standards Act. In its simplest form, the term "non-exempt" means the position is not exempt from these laws and therefore payment of overtime wages at straight time plus one-half is required by law after working 40 hours in a work week. Certain

management positions are classified as non-exempt and earn overtime pay at the rate of straight time plus one-half after working 40 hours in a work week as required by law. All bargaining unit positions are classified as non-exempt; however earnings and payment of overtime wages are defined by the CBA and is above the minimum required by law.

The remaining positions, which are all other management positions, are classified as "exempt" and therefore, earnings and payment of overtime wages are not required by law. On average, exempt Hawai'i Electric Light employees work 11% of the total hours worked without additional compensation. These are the hours worked above 40 hours per work week for which no payment is made (see HELCO-1522 Overtime Hours). Certain front-line supervisors of non-exempt employees are paid for work beyond 40 hours per week under certain circumstances at the straight time hourly rate plus one-half time. They are primarily supervisors in the Engineering, Distribution, and Production Departments who are required to supervise bargaining unit employees and work alongside these employees beyond the normal 40 hour work week. This can occur during emergency repairs and response, or during scheduled overtime. When a supervisor is required to do this work and has already physically worked 40 hours in a work week, the supervisor may be paid additional straight time plus one-half pay for each additional hour he/she supervised. Additional pay is not awarded to these supervisors when work performed in excess of 40 hours in a work week is for other reasons, such as developing programs, completing reports, and other such work.

In special circumstances, management employees may receive extra compensation at either the straight time hourly rate after working 40 hours per week, or at the straight time hourly rate plus one half time after working 40 hours per week when assigned to special project work, or when responding to emergencies.

Full-Time Versus Part-Time Employees

Employees are classified as either full-time employees or part-time employees. Any employee scheduled to work 40 hours or more per week is classified as a full-time employee. Any employee scheduled to work less than 40 hours per week is classified as a part-time employee. The Company does not currently employ part-time employees as there is no need for this classification of worker.

Contract Services

The Company defines contract services as services obtained from another company, independent contractor, or non-employee individuals to fill an urgent need due to unfilled positions, emergency response, and work beyond the capacity, ability, and/or expertise of the Company's current employee base. When the Company is unable to fill a vacant position that is urgently needed, it will utilize contract services on a temporary basis (also referred to as "temporary agency worker") to fill the vacancy. This does not increase the Company's employee count since contract services workers are not classified as employees of the Company. In some

instances, contract services can be more economically feasible instead of expanding the Company's employee count. Contract services are recorded as non-labor costs.

Hawai'i Electric Light Company, Inc.
2016 Test Year
2014 Days To Fill

JVR	Position	Approved	Offer Acceptance	Days to Fill
H2013-49	ADMINISTRATOR, MANAGEMENT ACCTG	12/03/2013	01/17/2014	45
H2013-40	CUSTOMER INFO SYSTEMS ADMINISTRATOR	10/17/2013	02/10/2014	116
H2013-39	CUSTOMER SERVICE ANALYST	10/20/2013	02/12/2014	115
H2013-41	LINEMAN, THEREAFTER	10/17/2013	02/13/2014	119
H2013-34	COMBUSTION TURBINE & DIESEL MECHANIC	09/09/2013	03/31/2014	203
H2014-04	FISCAL ADMINISTRATOR	01/27/2014	04/10/2014	73
H2014-06	HUMAN RESOURCES BUSINESS PARTNER	02/21/2014	05/30/2014	98
H2014-07	ASST SUPT, KEAHOLE POWER PLANT OPTNS	03/26/2014	06/09/2014	75
H2014-14	DISTRICT SUPERINTENDENT	04/08/2014	06/09/2014	62
H2014-17	SENIOR HELPER	06/03/2014	07/15/2014	42
H2014-17	SENIOR HELPER	06/03/2014	07/15/2014	42
H2014-12	DESIGNER II	04/08/2014	07/16/2014	99
H2014-13	SUPERINTENDENT, CONSTR & MTCE	04/08/2014	07/31/2014	114
H2014-37	SENIOR HELPER	09/29/2014	10/08/2014	9
H2014-38	CLERK TYPIST III	09/29/2014	10/09/2014	10
H2014-32	ASST SUPT, CONSTRUCTION & MAINT	09/04/2014	10/23/2014	49
H2014-50	SENIOR HELPER	11/17/2014	12/05/2014	18
H2014-26	SENIOR HELPER	07/11/2014	12/08/2014	150
H2014-46	WAREHOUSE ATTENDANT	11/05/2014	12/08/2014	33
H2014-31	COMBUSTION TURBINE OPERATOR TRAINEE	07/24/2014	12/20/2014	149
H2014-27	CONSTRUCTION PROJECT MGR	07/12/2014	12/26/2014	167
H2014-49	STATISTICAL CLERK	11/11/2014	12/26/2014	45
H2014-45	CONSTRUCTION PROJECT MGR	11/04/2014	12/31/2014	57
			AVG	**82**

OUTLIER - EXCLUDED FROM METRIC (SEE COMMENTS)

JVR	Position	Approved	Offer Acceptance	Days To Fill	Comments
H2014-11	DIR, GOV'T, COMMUNITY & MEDIA RELATIONS	03/29/2014	04/11/2014	13	No Recruitment - Appointed
H2014-05	METER READER	02/20/2014	12/15/2014	298	Vacancy reposted three times

Hawai'i Electric Light Company, Inc.
2016 Test Year
2015 Days To Fill

JVR	Position	Approved	Offer Acceptance	Days to Fill
H2014-51	LEAD CUSTOMER ASSISTANCE REPRESENTATIVE	11/19/2014	1/19/2015	61
H2014-16	ADMINISTRATOR, LEAD FUNCTIONAL	6/3/2014	1/28/2015	239
H2014-21	SUPV, SHIFT - KEAHOLE POWER PLANT	6/17/2014	2/13/2015	241
H2015-06	ASST SUPT, CONSTRUCTION & MAINT	1/14/2015	2/19/2015	36
H2015-03	WORKING FOREMAN-WAIMEA	1/13/2015	3/2/2015	48
H2015-05	WORKING FOREMAN-C&M	1/14/2015	3/4/2015	49
H2014-52	ADMINISTRATOR, SAFETY	11/24/2014	3/12/2015	108
H2015-02	ADMINISTRATOR, CLAIMS	1/9/2015	3/13/2015	63
H2015-18	CONSTRUCTION PROJECT MGR	2/21/2015	3/17/2015	24
H2014-47	WAREHOUSE ATTENDANT	11/5/2014	4/14/2015	160
H2015-17	COMBUSTION TURBINE OPERATOR TRAINEE	2/19/2015	4/30/2015	70
H2015-23	COMBUSTION TURBINE OPERATOR TRAINEE	3/16/2015	5/2/2015	47
H2014-54	ELECTRICIAN	12/22/2014	5/19/2015	148
H2015-20	SENIOR HELPER	3/6/2015	5/27/2015	82
H2015-26	FACILITIES COORDINATOR	4/1/2015	6/30/2015	90
H2015-27	ENVIRONMENTAL COMPLIANCE COORD	4/7/2015	7/2/2015	86
H2015-28	SENIOR INSPECTOR	4/7/2015	7/22/2015	106
H2015-25	SENIOR HELPER	3/18/2015	8/18/2015	153
H2015-31	SENIOR HELPER	4/22/2015	8/22/2015	122
H2015-14	JUNIOR CUSTOMER PLANNER	2/18/2015	9/15/2015	209
H2015-42	DISTRIBUTION ADMINISTRATOR	7/22/2015	9/28/2015	68
H2015-32	DESIGNER II	4/28/2015	10/3/2015	158
H2015-33	DESIGNER II	4/28/2015	10/12/2015	167
H2015-51	RECEPTIONIST/CLERK TYPIST	10/1/2015	11/6/2015	36
H2015-34	SUPV, SHIFT OPERATIONS	5/13/2015	11/12/2015	183
H2015-57	SENIOR HELPER	11/16/2015	12/30/2015	44
			AVG	**108**

OUTLIER - EXCLUDED FROM METRIC (SEE COMMENTS)

JVR	Position	Created	Offer Acceptance	Days to Fill	Comments
H2014-08	SUPV, ENVIRONMENTAL & FUEL SUPPLY	3/26/2014	2/10/2015	321	Vacancy posted three times, Offered position twice before filling
H2015-04	WORKING FOREMAN-KONA	1/14/2015	7/31/2015	198	Offer declined and vacancy reposted twice
H2014-01	SENIOR HELPER (COMMUNICATIONS ELECTRICIAN)	1/14/2014	8/17/2015	580	Vacancy posted three times, Offered position twice before filling
H2015-13	CUSTOMER DESIGNER (KONA)	2/10/2015	8/18/2015	189	Historically difficult to fill position, vacancy reposted after expanded search

Hawai'i Electric Light Company, Inc.
2016 Test Year
2016 Days To Fill

JVR	Position	Created	Offer Acceptance	Days to Fill
H2015-35	BOILER OPERATOR TRAINEE	5/26/2015	1/14/2016	233
H2015-54	COMMUNITY CONSULTANT	11/6/2015	2/26/2016	112
H2016-17	BOILER OPERATOR	5/2/2016	5/9/2016	7
H2015-53	MACHINIST MECHANIC	10/21/2015	5/12/2016	204
H2015-52	MACHINIST MECHANIC	10/20/2015	5/13/2016	206
H2016-15	RENEWABLE ENERGY INTERN	3/5/2016	5/14/2016	70
H2015-48	SENIOR HELPER	8/20/2015	5/16/2016	270
H2016-08	BUSTION TURBINE OPERATOR TRA	2/29/2016	5/17/2016	78
H2016-06	FISCAL ADMINISTRATOR	2/19/2016	6/3/2016	105
			AVG	**143**

OUTLIER - EXCLUDED FROM METRIC (SEE COMMENTS)

JVR	Position	Created	Offer Acceptance	Days to Fill	Comments
H2016-28	HR GENERALIST, TEMP	4/12/2012	4/19/2012	7	APPOINTED - NO ACTUAL RECRUITMENT

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2010 - 2015

Dept	RA	2010	2011	2012	2013	2014	2015	TY Avg 2016 *
Administration	HNA	4	4	4	3	3	3	3
Administration	HNC	0	0	0	1	1	1	1
Administration	HNE	0	0	0	1	1	1	2
Administration	HNF	2	0	0	0	0	0	0
Administration	HNG	0	0	0	0	1	2	2
Administration	HNP	3	3	3	3	3	3	3
Administration	HNL	2	0	0	0	0	0	0
Administration	HNS	5	5	5	3	0	0	0
Administration		**16**	**12**	**12**	**11**	**9**	**10**	**10**
Customer Service	HCA	2	2	2	2	3	2	0
Customer Service	HCH	9	9	10	11	11	7	0
Customer Service	HCR	11	11	11	12	11	6	0
Customer Service	HCK	12	12	14	15	15	9	0
Customer Service	HCS	0	0	0	3	5	3	0
Customer Service	HCW	6	6	7	8	8	4	0
Customer Service		**40**	**39**	**44**	**50**	**52**	**32**	**0**
Distribution	HDA	5	5	5	6	6	5	7
Distribution	HDH	33	34	34	35	34	34	28
Distribution	HDK	21	22	24	25	25	23	35
Distribution	HDR	10	9	9	10	10	10	24
Distribution	HDS	7	7	7	7	7	8	10
Distribution	HDC	24	26	26	26	26	25	7
Distribution	HDW	15	16	16	17	17	17	18
Distribution		**114**	**117**	**121**	**125**	**124**	**122**	**129**
Engineering	HWA	9	9	10	12	14	16	17
Engineering	HWC	11	11	12	12	13	13	13
Engineering	HWE	0	0	2	3	0	0	0
Engineering	HWI	7	0	0	0	0	0	0
Engineering	HWK	14	12	11	14	13	9	11
Engineering	HWX	9	9	10	10	11	11	13
Engineering	HWS	3	0	0	0	0	0	0
Engineering	HWW	1	1	1	1	1	1	0
Engineering		**54**	**42**	**46**	**50**	**52**	**50**	**55**
Accounting	HAA	5	1	1	1	1	1	2
Accounting	HAC	5	5	5	6	3	0	0
Accounting	HAM	3	7	8	8	7	7	7
Accounting	HAP	4	4	4	5	3	0	0
Accounting	HAB	1	1	1	0	0	0	0
Accounting		**17**	**18**	**19**	**20**	**14**	**8**	**8**
Operating Group	HOA	2	1	1	0	0	0	0
Operating Group		**2**	**1**	**1**	**0**	**0**	**0**	**0**
President's Office	H9P	2	2	2	2	2	2	3
	H9R	0	0	1	1	1	0	0
President's Office		**2**	**2**	**3**	**3**	**3**	**2**	**3**

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2010 - 2015

Dept	RA	2010	2011	2012	2013	2014	2015	TY Avg 2016 *
Production	HGA	13	13	13	14	3	2	1
Production	HGX	6	7	7	6	6	3	0
Production	HGH	18	18	20	21	20	22	15
Production	HGK	7	7	6	6	8	8	8
Production	HGC	13	13	14	14	13	14	15
Production	HGP	11	12	10	10	9	1	0
Production	HGM	16	16	17	16	19	20	23
Production	HGS	0	0	0	0	9	9	5
Production	HGT	4	4	4	4	5	5	5
Production	HGW	5	3	2	0	0	0	0
Production		**94**	**93**	**93**	**91**	**92**	**84**	**72**
Energy Services	HEA	1	1	1	1	0	0	0
Energy Services	HEB	4	4	4	2	0	0	0
Energy Services	HES	5	5	5	2	0	0	0
Energy Services	HEE	1	1	1	0	0	0	0
Energy Services		**11**	**11**	**11**	**5**	**0**	**0**	**0**
Support Services	HSA	0	1	2	3	3	3	4
Support Services	HSF	0	2	2	2	2	2	2
Support Services	HSI	2	10	10	11	10	2	0
Support Services	HSL	0	2	3	3	3	3	3
Support Services	HSS	1	3	3	3	3	3	3
Support Services	HST	0	0	0	2	5	5	5
Support Services		**4**	**19**	**20**	**24**	**26**	**18**	**16**
Sys Operations	HRA	0	0	0	0	0	0	1
Sys Operations	HRS	0	0	0	0	0	0	11
Sys Operations	HRP	0	0	0	0	0	0	2
Sys Operations								**14**
Totals		**353**	**355**	**369**	**379**	**372**	**325**	**307**

Reference:
* Please see HELCO-1513 for the 2016 TY average employee count calculation.

Notes:
1. Above includes Company temps but excludes agency temps.
2. Sub-totals and totals are calculated using a 13-month averaging formula.
3. The Support Services Department was created October 2010
4. The System Ops & Planning Department was created January 2016
5. The Energy Services Department was eliminated May 2013
6. The Customer Services Department was transferred to Hawaiian Electric October 2015

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2015

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	2015
Administration	HNA	2	2	2	2	3	3	3	3	3	3	3	3	3	3
Administration	HNC	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Administration	HNE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Administration	HNF														
Administration	HNG	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Administration	HNP	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Administration	HNL														
Administration	HNS														
Administration		**9**	**9**	**9**	**9**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**	**10**
Customer Service	HCA	3	3	3	3	3	3	3	3	1	1	1	1	0	2
Customer Service	HCH	11	12	12	12	12	12	12	11	0	0	0	0	0	7
Customer Service	HCR	10	10	10	10	10	10	10	9	0	0	0	0	0	6
Customer Service	HCK	15	15	15	15	15	15	15	14	0	0	0	0	0	9
Customer Service	HCS	5	5	5	5	5	5	5	5	1	1	0	0	0	3
Customer Service	HCW	7	6	6	7	6	6	5	5	0	0	0	0	0	4
Customer Service		**51**	**51**	**51**	**52**	**51**	**51**	**50**	**47**	**2**	**2**	**1**	**1**	**0**	**32**
Distribution	HDA	5	5	5	5	5	5	5	5	5	5	6	6	6	5
Distribution	HDH	33	34	33	33	34	34	34	34	34	34	33	33	33	34
Distribution	HDK	24	24	24	23	22	22	22	22	21	23	22	22	22	23
Distribution	HDR	10	9	9	10	10	10	10	10	11	11	11	10	10	10
Distribution	HDS	8	7	7	7	7	8	8	8	8	8	8	8	8	8
Distribution	HDC	25	25	25	25	25	25	25	25	25	26	26	26	26	25
Distribution	HDW	18	17	17	17	17	17	17	17	17	17	18	18	18	17
Distribution		**123**	**121**	**120**	**120**	**120**	**121**	**121**	**121**	**121**	**124**	**124**	**123**	**123**	**122**
Engineering	HWA	14	17	16	16	16	16	16	17	17	17	16	17	17	16
Engineering	HWC	13	12	12	12	12	12	12	13	13	13	13	13	13	13
Engineering	HWE														
Engineering	HWI														
Engineering	HWK	13	10	10	9	8	8	8	8	8	8	9	10	10	9
Engineering	HWX	11	11	11	11	11	11	11	11	11	11	11	13	13	11
Engineering	HWS														
Engineering	HWW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Engineering		**52**	**51**	**50**	**49**	**48**	**48**	**48**	**50**	**50**	**50**	**50**	**54**	**54**	**50**
Accounting	HAA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Accounting	HAC	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Accounting	HAM	7	7	7	7	7	7	8	8	6	6	6	6	6	7
Accounting	HAP														
Accounting	HAB														
Accounting		**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**7**	**7**	**7**	**7**	**7**	**8**
President's Office	H9P	2	2	2	2	2	2	2	2	2	2	2	2	3	2
	H9R														
President's Office		**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**2**
Production	HGA	2	2	2	2	2	2	2	2	1	1	1	1	1	2
Production	HGX	6	6	6	5	5	5	0	0	0	0	0	0	0	3
Production	HGH	19	24	24	23	23	23	23	23	22	22	22	21	21	22
Production	HGK	8	8	8	8	8	9	9	8	8	8	8	9	8	8
Production	HGC	12	13	12	13	13	14	15	15	15	15	15	15	15	14
Production	HGP	9	2	2	2	2	1	0	0	0	0	0	0	0	1
Production	HGM	19	17	17	17	16	16	21	22	22	22	22	21	22	20
Production	HGS	10	9	9	9	9	9	8	9	9	9	10	11	11	9
Production	HGT	4	5	4	4	5	5	5	5	6	6	6	6	5	5
Production	HGW														
Production		**89**	**86**	**84**	**83**	**83**	**84**	**83**	**84**	**83**	**83**	**84**	**84**	**83**	**84**

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	2015
Energy Services	HEA														
Energy Services	HEB														
Energy Services	HES														
Energy Services	HEE														
Energy Services		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Support Services	HSA	2	2	3	3	3	3	3	3	4	4	4	4	4	3
Support Services	HSF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Support Services	HSI	10	10	0	0	0	0	0	0	0	0	0	0	0	2
Support Services	HSL	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HSS	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HST	5	5	5	5	6	6	6	6	6	4	3	3	3	5
Support Services		**25**	**25**	**16**	**16**	**17**	**17**	**17**	**17**	**18**	**16**	**15**	**15**	**15**	**18**
Sys Operations	HRA														
Sys Operations	HRS														
Sys Operations	HRP														
Sys Operations		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Totals		**360**	**354**	**341**	**340**	**340**	**342**	**340**	**340**	**293**	**294**	**293**	**296**	**295**	**325**

Notes:

1. Above includes Company temps but excludes agency temps.
2. Sub-totals and totals are calculated using a 13-month averaging formula.
3. The Support Services Department was created October 2010
4. The System Ops & Planning Department was created January 2016
5. The Energy Services Department was eliminated May 2013
6. The Customer Services Department was transferred to Hawaiian Electric October 2015

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2014

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	2014
Administration	HNA	3	3	3	3	3	3	3	3	3	3	2	2	2	3
Administration	HNC	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Administration	HNE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Administration	HNF														
Administration	HNG	0	0	0	0	2	2	2	2	2	2	2	2	2	1
Administration	HNP	3	3	3	2	2	2	3	3	3	3	3	3	3	3
Administration	HNL														
Administration	HNS														
Administration		**8**	**8**	**8**	**7**	**9**	**9**	**10**	**10**	**10**	**10**	**9**	**9**	**9**	**9**
Customer Service	HCA	1	1	3	3	3	3	3	3	3	3	3	3	3	3
Customer Service	HCH	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Customer Service	HCR	12	12	12	12	11	11	11	11	11	11	10	10	10	11
Customer Service	HCK	15	15	15	15	15	14	14	14	14	14	14	15	15	15
Customer Service	HCS	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Customer Service	HCW	8	8	8	8	8	8	8	7	7	7	7	7	7	8
Customer Service		**52**	**52**	**54**	**54**	**53**	**52**	**52**	**51**	**51**	**51**	**50**	**51**	**51**	**52**
Distribution	HDA	6	6	6	6	6	6	5	5	5	5	5	6	5	6
Distribution	HDH	35	35	35	34	34	34	34	33	33	33	33	33	33	34
Distribution	HDK	25	25	25	26	26	23	23	23	25	25	25	25	24	25
Distribution	HDR	10	10	10	10	10	10	10	10	10	10	9	9	10	10
Distribution	HDS	7	7	7	7	7	7	7	7	7	7	7	7	8	7
Distribution	HDC	26	26	26	26	26	26	26	26	26	26	26	25	25	26
Distribution	HDW	17	17	17	17	17	17	17	17	17	17	17	17	18	17
Distribution		**126**	**126**	**126**	**126**	**126**	**123**	**122**	**121**	**123**	**123**	**122**	**122**	**123**	**124**
Engineering	HWA	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Engineering	HWC	12	13	13	13	13	13	13	13	13	13	13	13	13	13
Engineering	HWE														
Engineering	HWI														
Engineering	HWK	14	14	14	14	14	13	13	13	13	12	13	13	13	13
Engineering	HWX	11	11	11	11	10	10	10	11	11	11	11	11	11	11
Engineering	HWS														
Engineering	HWW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Engineering		**52**	**53**	**53**	**53**	**52**	**51**	**51**	**52**	**52**	**51**	**52**	**52**	**52**	**52**
Accounting	HAA	2	2	2	2	2	1	1	1	1	1	1	1	1	1
Accounting	HAC	5	4	4	4	4	4	4	3	3	1	1	1	1	3
Accounting	HAM	6	6	5	5	6	7	7	8	8	8	8	8	7	7
Accounting	HAP	5	5	5	5	4	4	4	3	2	0	0	0	0	3
Accounting	HAB														
Accounting		**18**	**17**	**16**	**16**	**16**	**16**	**16**	**15**	**14**	**10**	**10**	**10**	**9**	**14**
President's Office	H9P	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	H9R	1	1	1	1	1	1	1	1	1	1	1	1	0	1
President's Office		**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**2**	**3**
Production	HGA	12	3	3	2	2	2	2	2	2	2	2	2	2	3
Production	HGX	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Production	HGH	21	21	21	20	20	20	20	20	20	20	20	20	19	20
Production	HGK	6	7	7	7	7	8	8	8	8	8	8	8	8	8
Production	HGC	14	14	14	14	14	14	14	12	12	12	12	12	12	13
Production	HGP	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Production	HGM	16	19	19	19	19	19	19	19	19	19	19	19	19	19
Production	HGS	3	10	10	10	10	10	10	10	10	10	10	10	10	9
Production	HGT	5	4	4	6	6	5	5	5	5	5	5	5	4	5
Production	HGW														
Production		**92**	**93**	**93**	**93**	**93**	**93**	**93**	**91**	**91**	**91**	**91**	**91**	**89**	**92**

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	2014
Energy Services	HEA														
Energy Services	HEB														
Energy Services	HES														
Energy Services	HEE														
Energy Services		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Support Services	HSA	4	4	4	4	3	3	3	3	3	3	2	2	2	3
Support Services	HSF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Support Services	HSI	11	10	10	10	10	10	10	10	10	10	10	10	10	10
Support Services	HSL	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HSS	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HST	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Support Services		**28**	**27**	**27**	**27**	**26**	**26**	**26**	**26**	**26**	**26**	**25**	**25**	**25**	**26**
Sys Operations	HRA														
Sys Operations	HRS														
Sys Operations	HRP														
Sys Operations		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Totals		**379**	**379**	**380**	**379**	**378**	**373**	**373**	**369**	**370**	**365**	**362**	**363**	**360**	**372**

Notes:

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3. The Support Services Department was created October 2010
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5. The Energy Services Department was eliminated May 2013
6. The Customer Services Department was transferred to Hawaiian Electric October 2015

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2013

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	2013
Administration	HNA	3	3	3	3	3	3	3	4	3	3	3	3	3	3
Administration	HNC	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Administration	HNE	0	0	0	0	0	0	1	1	1	1	1	1	1	1
Administration	HNF														
Administration	HNG														
Administration	HNP	4	4	4	4	4	4	3	3	3	3	3	3	3	3
Administration	HNL														
Administration	HNS	5	5	5	5	5	5	5	5	0	0	0	0	0	3
Administration		**12**	**12**	**12**	**12**	**12**	**12**	**13**	**14**	**8**	**8**	**8**	**8**	**8**	**11**
Customer Service	HCA	2	2	2	2	2	2	2	1	1	1	1	1	1	2
Customer Service	HCH	11	11	11	11	11	10	10	10	10	10	11	11	11	11
Customer Service	HCR	12	12	12	11	11	12	12	12	12	12	12	12	12	12
Customer Service	HCK	16	15	15	15	15	15	15	15	15	15	15	15	15	15
Customer Service	HCS	0	0	0	0	0	0	5	5	5	5	5	5	5	3
Customer Service	HCW	8	8	7	7	7	8	8	8	8	8	8	8	8	8
Customer Service		**49**	**48**	**47**	**46**	**46**	**47**	**52**	**51**	**51**	**51**	**52**	**52**	**52**	**50**
Distribution	HDA	5	5	5	6	6	6	6	6	6	6	6	6	6	6
Distribution	HDH	37	35	35	35	35	35	34	34	34	35	35	35	35	35
Distribution	HDK	27	26	26	26	25	25	24	24	24	23	24	24	25	25
Distribution	HDR	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Distribution	HDS	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Distribution	HDC	26	25	25	25	26	26	25	25	25	26	26	26	26	26
Distribution	HDW	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Distribution		**129**	**125**	**125**	**126**	**126**	**126**	**123**	**123**	**123**	**124**	**125**	**125**	**126**	**125**
Engineering	HWA	11	11	11	11	11	11	11	11	12	12	12	12	14	12
Engineering	HWC	12	12	12	11	11	12	12	12	12	12	12	12	12	12
Engineering	HWE	2	2	2	2	2	3	6	6	2	2	2	2	0	3
Engineering	HWI														
Engineering	HWK	13	14	14	14	14	14	13	13	13	13	14	14	14	14
Engineering	HWX	8	9	9	10	9	8	8	8	11	12	12	12	11	10
Engineering	HWS														
Engineering	HWW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Engineering		**47**	**49**	**49**	**49**	**48**	**49**	**51**	**51**	**51**	**52**	**53**	**53**	**52**	**50**
Accounting	HAA	1	1	1	1	1	1	1	1	1	1	1	2	2	1
Accounting	HAC	6	6	6	6	6	6	6	6	6	6	5	5	5	6
Accounting	HAM	8	8	8	8	8	8	8	8	8	8	8	7	6	8
Accounting	HAP	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Accounting	HAB														
Accounting		**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**19**	**19**	**18**	**20**
Operating Group	HOA	1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
Operating Group		**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
President's Office	H9P	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	H9R	1	1	1	1	1	1	1	1	1	1	1	1	1	1
President's Office		**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Production	HGA	13	13	14	14	14	14	14	14	14	14	14	12	12	14
Production	HGX	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Production	HGH	21	20	20	20	20	20	21	21	21	21	21	21	21	21
Production	HGK	7	7	7	7	7	7	6	6	6	6	6	6	6	6
Production	HGC	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Production	HGP	10	11	11	11	11	11	10	10	10	9	9	9	9	10
Production	HGM	17	17	17	17	17	16	16	16	16	16	16	16	16	16
Production	HGS	0	0	0	0	0	0	0	0	0	0	0	2	3	0
Production	HGT	3	3	3	3	3	4	4	4	5	5	5	5	5	4
Production	HGW														
Production		**91**	**91**	**92**	**92**	**92**	**92**	**91**	**91**	**92**	**91**	**91**	**91**	**92**	**91**

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	2013
Energy Services	HEA	1	1	1	1	1	1	1	0	0	0	0	0	0	1
Energy Services	HEB	4	4	4	4	4	4	0	0	0	0	0	0	0	2
Energy Services	HES	5	5	5	5	5	5	0	0	0	0	0	0	0	2
Energy Services	HEE	1	1	1	1	1	1	0	0	0	0	0	0	0	0
Energy Services		**11**	**11**	**11**	**11**	**11**	**11**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
Support Services	HSA	3	3	3	3	3	3	3	3	3	3	4	4	4	3
Support Services	HSF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Support Services	HSI	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Support Services	HSL	3	3	3	3	3	3	3	2	2	2	3	3	3	3
Support Services	HSS	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HST	0	0	0	0	0	0	0	0	5	5	5	5	5	2
Support Services		**22**	**22**	**22**	**22**	**22**	**22**	**22**	**21**	**26**	**26**	**28**	**28**	**28**	**24**
Sys Operations	HRA														
Sys Operations	HRS														
Sys Operations	HRP														
Sys Operations		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Totals		**385**	**381**	**381**	**381**	**380**	**382**	**376**	**374**	**374**	**375**	**379**	**379**	**379**	**379**

Notes:

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Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2012

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
Administration	HNA	4	4	4	4	4	4	4	4	3	3	3	3	3	4
Administration	HNC														
Administration	HNE														
Administration	HNF														
Administration	HNG														
Administration	HNP	3	3	3	3	3	3	3	3	3	3	3	4	4	3
Administration	HNL														
Administration	HNS	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Administration		**12**	**12**	**12**	**12**	**12**	**12**	**12**	**12**	**11**	**11**	**11**	**12**	**12**	**12**
Customer Service	HCA	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Customer Service	HCH	10	10	10	10	10	10	10	10	10	10	10	9	11	10
Customer Service	HCR	10	10	10	10	10	11	12	11	11	11	11	12	12	11
Customer Service	HCK	14	14	13	14	14	14	14	14	14	14	14	14	16	14
Customer Service	HCS														
Customer Service	HCW	6	6	6	6	7	7	7	7	7	8	8	8	8	7
Customer Service		**42**	**42**	**41**	**42**	**43**	**44**	**45**	**44**	**44**	**45**	**45**	**45**	**49**	**44**
Distribution	HDA	5	5	5	5	5	4	5	5	5	5	5	5	5	5
Distribution	HDH	33	33	32	32	32	33	33	34	35	35	36	33	37	34
Distribution	HDK	22	21	24	24	24	24	24	24	23	25	25	24	27	24
Distribution	HDR	9	9	9	9	9	9	9	9	9	9	8	10	10	9
Distribution	HDS	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Distribution	HDC	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Distribution	HDW	16	16	16	17	17	16	16	16	16	16	16	17	17	16
Distribution		**118**	**117**	**119**	**120**	**120**	**119**	**120**	**121**	**121**	**123**	**123**	**122**	**129**	**121**
Engineering	HWA	10	10	10	10	10	10	10	10	9	9	9	9	11	10
Engineering	HWC	11	11	12	12	12	12	12	12	12	12	12	12	12	12
Engineering	HWE						1	1	2	2	2	2	2	2	2
Engineering	HWI														
Engineering	HWK	10	10	10	12	12	12	11	12	12	11	12	12	13	11
Engineering	HWX	10	10	10	10	10	11	10	10	10	10	10	9	8	10
Engineering	HWS														
Engineering	HWW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Engineering		**42**	**42**	**43**	**45**	**45**	**47**	**45**	**47**	**46**	**45**	**46**	**45**	**47**	**46**
Accounting	HAA	1	1	1	1	1	1	1	2	2	2	2	2	1	1
Accounting	HAC	5	5	5	5	5	5	5	5	5	5	5	5	6	5
Accounting	HAM	8	8	8	8	8	8	8	8	7	7	7	8	8	8
Accounting	HAP	4	4	4	4	4	4	4	5	5	5	5	5	5	4
Accounting	HAB	1	1	1	1	1	1	1	0	0	0	0	0	0	1
Accounting		**19**	**19**	**19**	**19**	**19**	**19**	**19**	**20**	**19**	**19**	**19**	**20**	**20**	**19**
Operating Group	HOA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Operating Group		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
President's Office	H9P	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	H9R	1	1	1	1	1	1	1	1	1	1	1	1	1	1
President's Office		**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**
Production	HGA	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Production	HGX	7	7	7	7	7	7	7	7	7	7	7	6	6	7
Production	HGH	20	20	20	20	19	19	19	19	19	20	20	21	21	20
Production	HGK	7	7	7	7	6	6	6	6	6	6	6	7	7	6
Production	HGC	13	13	14	14	14	14	14	14	14	14	14	14	14	14
Production	HGP	8	8	10	10	10	10	11	12	12	11	11	11	10	10
Production	HGM	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Production	HGS														
Production	HGT	4	4	4	4	4	4	4	3	3	3	3	3	3	4
Production	HGW	4	4	2	2	2	3	2	1	1	1	1	0	0	2
Production		**93**	**93**	**94**	**94**	**92**	**93**	**93**	**92**	**92**	**92**	**92**	**92**	**91**	**93**

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	2012
Energy Services	HEA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Energy Services	HEB	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Energy Services	HES	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Energy Services	HEE	1	1	1	1	1	0	0	0	0	0	0	1	1	1
Energy Services		**11**	**11**	**11**	**11**	**11**	**10**	**10**	**10**	**10**	**10**	**10**	**11**	**11**	**11**
Support Services	HSA	1	1	1	1	1	1	1	1	3	3	3	3	3	2
Support Services	HSF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Support Services	HSI	10	10	10	10	10	10	10	10	10	10	11	11	11	10
Support Services	HSL	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Support Services	HSS	4	4	4	4	4	3	3	3	3	3	3	3	3	3
Support Services	HST														
Support Services		**20**	**20**	**20**	**20**	**20**	**19**	**19**	**19**	**21**	**21**	**22**	**22**	**22**	**20**
Sys Operations	HRA														
Sys Operations	HRS														
Sys Operations	HRP														
Sys Operations		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Totals		**361**	**360**	**363**	**367**	**366**	**367**	**367**	**369**	**368**	**370**	**372**	**373**	**385**	**369**

Notes:

1. Above includes Company temps but excludes agency temps.
2. Sub-totals and totals are calculated using a 13-month averaging formula.
3. The Support Services Department was created October 2010
4. The System Ops & Planning Department was created January 2016
5. The Energy Services Department was eliminated May 2013
6. The Customer Services Department was transferred to Hawaiian Electric October 2015

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2011

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	2011
Administration	HNA	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Administration	HNC														
Administration	HNE														
Administration	HNF														
Administration	HNG														
Administration	HNP	3	3	3	3	3	3	3	4	4	4	4	4	3	3
Administration	HNL														
Administration	HNS	5	5	4	4	4	4	5	5	5	5	5	5	5	5
Administration		**12**	**12**	**11**	**11**	**11**	**11**	**12**	**13**	**13**	**13**	**13**	**13**	**12**	**12**
Customer Service	HCA	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Customer Service	HCH	8	8	8	8	8	8	8	8	8	10	10	10	10	9
Customer Service	HCR	10	11	11	11	11	11	10	10	10	11	11	10	10	11
Customer Service	HCK	11	11	12	12	12	11	11	12	12	12	14	14	14	12
Customer Service	HCS														
Customer Service	HCW	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Customer Service		**37**	**38**	**39**	**39**	**39**	**38**	**37**	**38**	**38**	**41**	**43**	**42**	**42**	**39**
Distribution	HDA	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Distribution	HDH	33	34	34	34	34	35	35	35	35	34	33	33	33	34
Distribution	HDK	22	22	21	21	20	19	22	22	23	22	22	22	22	22
Distribution	HDR	9	9	9	9	9	9	9	9	8	9	9	9	9	9
Distribution	HDS	7	7	7	6	6	6	6	6	7	7	7	7	7	7
Distribution	HDC	24	26	26	26	26	26	25	25	25	27	26	26	26	26
Distribution	HDW	15	15	15	15	15	15	16	16	16	16	16	16	16	16
Distribution		**115**	**118**	**117**	**116**	**115**	**115**	**118**	**118**	**119**	**120**	**118**	**118**	**118**	**117**
Engineering	HWA	9	9	9	9	9	9	9	9	9	10	9	9	10	9
Engineering	HWC	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Engineering	HWE														
Engineering	HWI														
Engineering	HWK	13	13	13	13	13	12	12	12	11	11	10	10	10	12
Engineering	HWX	9	9	9	9	9	9	9	9	9	9	9	10	10	9
Engineering	HWS														
Engineering	HWW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Engineering		**43**	**43**	**43**	**43**	**43**	**42**	**42**	**42**	**41**	**42**	**40**	**41**	**42**	**42**
Accounting	HAA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Accounting	HAC	5	5	5	5	5	5	5	6	6	6	6	6	5	5
Accounting	HAM	6	6	6	6	6	6	6	6	7	8	8	8	8	7
Accounting	HAP	4	4	4	4	4	4	4	5	5	5	5	5	4	4
Accounting	HAB	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Accounting		**17**	**17**	**17**	**17**	**17**	**17**	**17**	**19**	**20**	**21**	**21**	**21**	**19**	**18**
Operating Group	HOA	2	2	2	2	2	2	1	1	1	1	1	1	1	1
Operating Group		**2**	**2**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**
President's Office	H9P	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	H9R	0	0	0	0	0	0	0	0	0	0	0	0	1	0
President's Office		**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**2**
Production	HGA	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Production	HGX	6	6	6	7	7	7	7	7	7	7	7	7	7	7
Production	HGH	17	17	17	17	17	17	17	18	18	18	18	18	20	18
Production	HGK	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Production	HGC	12	13	13	13	14	14	14	14	14	14	13	13	13	13
Production	HGP	13	13	13	12	12	12	13	13	12	11	11	11	8	12
Production	HGM	16	16	16	16	16	16	16	16	16	16	17	17	17	16
Production	HGS														
Production	HGT	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Production	HGW	2	2	2	4	4	4	3	2	1	1	4	4	4	3
Production		**90**	**91**	**91**	**93**	**94**	**94**	**94**	**94**	**92**	**91**	**94**	**94**	**93**	**93**

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	Jul-11	Aug-11	Sep-11	Oct-11	Nov-11	Dec-11	2011
Energy Services	HEA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Energy Services	HEB	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Energy Services	HES	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Energy Services	HEE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Energy Services		**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Support Services	HSA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Support Services	HSF	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Support Services	HSI	9	9	9	9	10	10	10	10	10	10	10	10	10	10
Support Services	HSL	2	2	2	2	2	2	2	3	3	3	3	3	3	2
Support Services	HSS	3	3	3	3	3	3	3	3	3	4	5	4	4	3
Support Services	HST														
Support Services		**17**	**17**	**17**	**17**	**18**	**18**	**18**	**19**	**19**	**20**	**21**	**20**	**20**	**19**
Sys Operations	HRA														
Sys Operations	HRS														
Sys Operations	HRP														
Sys Operations		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Totals		**346**	**351**	**350**	**351**	**352**	**350**	**352**	**357**	**356**	**362**	**364**	**363**	**361**	**355**

Notes:

1. Above includes Company temps but excludes agency temps.
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3. The Support Services Department was created October 2010
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5. The Energy Services Department was eliminated May 2013
6. The Customer Services Department was transferred to Hawaiian Electric October 2015

Hawai'i Electric Light Company, Inc.
2016 Test Year
Average Employee Count 2010

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2010
Administration	HNA	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Administration	HNC														
Administration	HNE														
Administration	HNF	2	2	2	2	2	2	2	2	2	2	0	0	0	2
Administration	HNG														
Administration	HNP	3	2	2	3	3	3	4	4	4	3	3	3	3	3
Administration	HNL	3	3	3	3	3	3	3	3	3	3	0	0	0	2
Administration	HNS	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Administration		**17**	**16**	**16**	**17**	**17**	**17**	**18**	**18**	**18**	**17**	**12**	**12**	**12**	**16**
Customer Service	HCA	2	2	2	2	2	2	3	3	3	3	2	2	2	2
Customer Service	HCH	9	9	9	9	9	9	9	9	9	9	8	8	8	9
Customer Service	HCR	11	11	11	10	11	11	11	11	11	11	10	10	10	11
Customer Service	HCK	11	12	12	12	12	12	13	12	12	12	11	11	11	12
Customer Service	HCS														
Customer Service	HCW	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Customer Service		**39**	**40**	**40**	**39**	**40**	**40**	**42**	**41**	**41**	**41**	**37**	**37**	**37**	**40**
Distribution	HDA	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Distribution	HDH	34	34	34	33	33	33	33	33	33	32	31	31	33	33
Distribution	HDK	20	19	20	20	20	19	20	20	21	22	22	22	22	21
Distribution	HDR	10	10	10	9	10	10	10	10	10	9	9	9	9	10
Distribution	HDS	6	6	6	7	7	7	7	7	7	7	7	7	7	7
Distribution	HDC	24	24	24	24	24	24	25	25	25	25	24	24	24	24
Distribution	HDW	14	14	14	14	14	15	15	15	15	15	15	15	15	15
Distribution		**113**	**112**	**113**	**112**	**113**	**113**	**115**	**115**	**116**	**115**	**113**	**113**	**115**	**114**
Engineering	HWA	10	10	10	10	9	9	8	8	8	8	8	9	9	9
Engineering	HWC	12	11	11	11	11	11	11	11	11	11	11	11	11	11
Engineering	HWE														
Engineering	HWI	8	8	9	9	9	9	9	9	9	9	0	0	0	7
Engineering	HWK	14	14	14	14	14	14	14	14	14	14	14	13	13	14
Engineering	HWX	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Engineering	HWS	4	4	4	4	4	4	4	4	4	4	1	1	0	3
Engineering	HWW	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Engineering		**58**	**57**	**58**	**58**	**57**	**57**	**56**	**56**	**56**	**56**	**44**	**44**	**43**	**54**
Accounting	HAA	6	6	6	6	6	6	6	6	5	5	5	1	1	5
Accounting	HAC	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Accounting	HAM	2	2	2	2	2	2	2	2	2	2	2	6	6	3
Accounting	HAP	4	4	4	4	3	3	3	3	4	4	4	4	4	4
Accounting	HAB	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Accounting		**18**	**18**	**18**	**18**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**	**17**
Operating Group	HOA	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Operating Group		**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
President's Office	H9P	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	H9R														
President's Office		**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Production	HGA	13	13	13	13	13	12	12	12	12	13	13	13	13	13
Production	HGX	7	6	6	6	6	6	6	6	6	6	6	6	6	6
Production	HGH	20	20	20	19	19	19	19	19	17	17	17	17	17	18
Production	HGK	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Production	HGC	14	13	12	12	12	12	14	15	15	14	13	13	12	13
Production	HGP	10	10	10	10	9	10	9	11	12	12	12	12	13	11
Production	HGM	17	17	16	16	16	17	17	17	16	16	16	16	16	16
Production	HGS														
Production	HGT	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Production	HGW	7	7	7	7	7	6	6	3	3	3	5	3	2	5
Production		**99**	**97**	**95**	**94**	**93**	**93**	**94**	**94**	**92**	**92**	**93**	**91**	**90**	**94**
Energy Services	HEA	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Energy Services	HEB	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Energy Services	HES	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Energy Services	HEE	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Energy Services		**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Support Services	HSA	0	0	0	0	0	0	0	0	0	0	1	1	1	0

		Recorded Employee Count													Avg Ee Count
Dept	RA	Dec-09	Jan-10	Feb-10	Mar-10	Apr-10	May-10	Jun-10	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	2010
Support Services	HSF	0	0	0	0	0	0	0	0	0	0	2	2	2	0
Support Services	HSI	0	0	0	0	0	0	0	0	0	0	9	9	9	2
Support Services	HSL	0	0	0	0	0	0	0	0	0	0	2	2	2	0
Support Services	HSS	0	0	0	0	0	0	0	0	0	0	3	3	3	1
Support Services	HST														
Support Services		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**17**	**17**	**17**	**4**
Sys Operations	HRA														
Sys Operations	HRS														
Sys Operations	HRP														
Sys Operations		**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Totals		**359**	**355**	**355**	**353**	**352**	**352**	**357**	**356**	**355**	**353**	**348**	**346**	**346**	**353**

Notes:

1. Above includes Company temps but excludes agency temps.
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Hawai'i Electric Light Company, Inc.
2016 Test Year
Employees Eligible to Retire During Years 2016 - 2021

Department	RA	Position Title	Employee Count	(B)argaining or (M)erit	Highly Skilled
ADMINISTRATION	NA	MGR, ADMINISTRATION	1	M	1
		Total Administration	**1**		**1**
DISTRIBUTION	DW	ASSISTANT DISTRICT SUPT	1	M	1
DISTRIBUTION	DH	ASST SUPT, CONSTRUCTION & MAINT	1	M	1
DISTRIBUTION	DR	CLERK DISPATCHER	1	B	
DISTRIBUTION	DK	CONSTRUCTION PROJECT MGR	1	M	1
DISTRIBUTION	DH	CONSTRUCTION PROJECT MGR	1	M	1
DISTRIBUTION	DC	ELECTRICIAN, THEREAFTER	2	B	2
DISTRIBUTION	DC	MATERIAL & RECORDS KEEPER	1	B	
DISTRIBUTION	DA	MGR, DISTRIBUTION	1	M	1
DISTRIBUTION	DW	SENIOR INSPECTOR	1	B	1
DISTRIBUTION	DH	SERVICEMAN	2	B	2
DISTRIBUTION	DK	SR INSPECTOR	1	B	1
DISTRIBUTION	DA	STAFF ENGINEER	1	M	1
DISTRIBUTION	DS	STOREKEEPER	1	B	
DISTRIBUTION	DH	SUPERINTENDENT, CONSTR & MTCE	1	M	1
DISTRIBUTION	DC	SUPERINTENDENT, TECHNICAL	1	M	1
DISTRIBUTION	DA	SYSTEM FORESTER	1	M	1
DISTRIBUTION	DA	TECHNICAL TRAINER	1	M	1
DISTRIBUTION	DS	TOOL ROOM ATTENDANT & REPAIRER	1	B	
DISTRIBUTION	DH	TROUBLEMAN-INSPECTOR, THEREAFTER	1	B	1
DISTRIBUTION	DH	WORKING FOREMAN-C&M	2	B	2
DISTRIBUTION	DK	WORKING FOREMAN-KONA	1	B	1
DISTRIBUTION	DC	WORKING FOREMAN-TECHNICAL/COMM	2	B	2
DISTRIBUTION	DC	WORKING FOREMAN-TECHNICAL/SUBSTATION	1	B	1
DISTRIBUTION	DW	WORKING FOREMAN-WAIMEA	1	B	1
		Total Distribution	**28**		**24**
ENGINEERING	WC	CUSTOMER PLANNER	1	B	1
ENGINEERING	WX	DRAFTING TECHNICIAN III	1	B	1
ENGINEERING	WX	ENGINEERING/DRAFTING TECHN	1	B	1
ENGINEERING	WA	JOINT POLE COORDINATOR	1	B	
ENGINEERING	WK	PLANNER AIDE	1	B	
ENGINEERING	WC	SENIOR CUSTOMER PLANNER	3	B	3
ENGINEERING	WK	SENIOR CUSTOMER PLANNER	1	B	1
ENGINEERING	WX	SR SUPERVISING ENGINEER, SUBSTN & COMM	1	M	1
ENGINEERING	WC	SUPV, CUSTOMER ENGR (HILO)	1	M	1
ENGINEERING	WA	SUPV, ENGINEERING ADMINISTRATION	1	M	1
		Total Engineering	**12**		**10**
PRESIDENTS OFFICE	9P	PRESIDENT, HELCO & SR OPS ADVISOR TO PRE	1	E	1
		Total President's Office	**1**		**1**

Department	RA	Position Title	Employee Count	(B)argaining or (M)erit	Highly Skilled
PRODUCTION	GA	CONSULTING ENGINEER	1	M	1
PRODUCTION	GK	MAINTENANCE SUPV, WEST HAWAII	1	M	1
PRODUCTION	GA	MGR, PRODUCTION	1	M	1
PRODUCTION	GM	SENIOR CONTROL MECHANIC	1	B	1
PRODUCTION	GK	SENIOR ELECTRICIAN	1	B	1
PRODUCTION	GM	SENIOR MACHINIST MECHANIC	1	B	1
PRODUCTION	GK	SR MACHINIST MECHANIC	1	B	1
PRODUCTION	GM	SUPT, MAINTENANCE	1	M	1
PRODUCTION	GM	SUPV, MAINTENANCE - MECHANICAL	1	M	1
PRODUCTION	GC	SUPV, SHIFT - KEAHOLE POWER PLANT	1	M	1
PRODUCTION	GS	SUPV, SHIFT OPERATIONS	4	M	4
PRODUCTION	GM	WORKING FOREMAN (CONTROL TECHNICIAN)	2	B	2
PRODUCTION	GM	WORKING FOREMAN (ELECTRICIAN)	1	B	1
PRODUCTION	GM	WORKING FOREMAN (MACHINIST MECHANIC)	1	B	1
		Total Production	**18**		**18**
SUPPORT SERVICES	ST	DIR, SAFETY	1	M	1
SUPPORT SERVICES	SF	ADMINISTRATOR, FLEET	1	M	1
SUPPORT SERVICES	SA	MGR, SUPPORT SERVICES	1	M	1
		Total Support Services	**3**		**3**
SYS OPERATION/ PLANNING	RP	FORECASTING/DATA ANALYST	1	M	
SYS OPERATION/ PLANNING	RA	MGR, OPERATIONS & SYSTEM PLANNING	1	M	1
SYS OPERATION/ PLANNING	RP	POWER PURCHASE CONTRACTS ADMINISTRATOR	1	M	1
SYS OPERATION/ PLANNING	RS	SYSTEM OPERATOR	4	B	
		Total Sys Ops/Planning	**7**		**2**
		GRAND TOTAL	**70**		**59**

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements

Department	2011		2012		2013		2014		2015		Total	
	Eligible	Actual	Eligible	Actual	Eligible	Actual	Eligible	Actual	Eligible	Actual	Eligible	Actual
Accounting	0	0	3	1	2	0	0	2	1	0	6	3
Administration	2	1	0	0	0	1	1	0	0	0	3	2
Customer Service	1	0	3	1	2	1	4	2	3	4	13	8
Distribution	4	3	4	2	2	2	5	3	1	2	16	12
Energy Services	0	0	1	0	1	1					2	1
Engineering	2	1	4	3	3	0	1	1	1	2	11	7
President's Office	0	0	0	0	0	0	1	1	1	0	2	1
Production	4	2	10	1	4	0	2	2	6	7	26	12
System Ops & Planning	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Support Services	1	0	3	1	1	1	1	0	1	2	7	4
TOTAL	**14**	**7**	**28**	**9**	**15**	**6**	**15**	**11**	**14**	**17**	**86**	**50**
RETIREMENT RATIO	**50%**		**32%**		**40%**		**73%**		**121%**		**58%**	

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Accounting Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Buyer	MGMT	Professional	2012	2012
Corprate Accounting Clerk	BU	Trades & Crafts	2012	2014
Tax/Plant Accounting Administrator	MGMT	Professional	2013	2014
Asst Admin-Mgmt Acct	MGMT	Professional	2015	2016
Tax & Plant Acct, Analyst	MGMT	Professional	2013	
Utility Plant Clerk	BU	Office & Clerical	2012	

	Eligible Retirements	Actual Retirements
2011	0	0
2012	3	1
2013	2	0
2014	0	2
2015	1	0
Total	**6**	**3**

Highly Skilled	4
Ratio of Retirements to Eligible	50.00%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Administration Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Safety Administrator	MGMT	Professional	2011	2011
HR Administrator	MGMT	Professional	2011	2013
MGR, Administration	MGMT	Management	2014	

	Eligible Retirements	Actual Retirements
2011	2	1
2012	0	0
2013	0	1
2014	1	0
2015	0	0
Total	**3**	**2**

Highly Skilled	3
Ratio of Retirements to Eligible	66.67%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Customer Service Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Senior Customer Service Rep	BU	Office & Clerical	2011	2015
Customer Accounts Rep	BU	Office & Clerical	2012	2012
Credit/Field Services Rep	BU	Office & Clerical	2012	2015
District Clerk III	BU	Office & Clerical	2012	2013
District Clerk III	BU	Office & Clerical	2013	2014
Field Credit Representative	BU	Office & Clerical	2013	2015
Cashier	BU	Office & Clerical	2014	
Senior Customer Service Clk	BU	Office & Clerical	2014	
Field Representative	BU	Office & Clerical	2014	
Meter Reader	BU	Office & Clerical	2014	2014
Lead Customer Assistance Rep	BU	Office & Clerical	2015	2015
District Clerk II	BU	Office & Clerical	2015	
District Clerk II	BU	Office & Clerical	2015	

	Eligible Retirements	Actual Retirements
2011	1	0
2012	3	1
2013	2	1
2014	4	2
2015	3	4
Total	**13**	**8**

Highly Skilled	4
Ratio of Retirements to Eligible	61.54%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Distribution Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Asst Tech Supt Operations	MGMT	Supervisory	2011	2011
Asst District Supt	MGMT	Supervisory	2011	2011
Working Foreman (C&M)	BU	Trades & Craft	2011	2011
Lineman, Thereafter	BU	Trades & Craft	2011	2012
Serviceman	BU	Trades & Craft	2012	2013
District Superintendent	MGMT	Supervisory	2012	2013
Administrative Assistant	BU	Office &	2012	2012
Storekeeper	BU	Office &	2012	
Serviceman	BU	Trades & Craft	2013	
Shift Clerk Dispatcher	BU	Office &	2013	2014
Distribution Manager	MGMT	Manager	2014	2014
Asst Supt C&M	MGMT	Supervisory	2014	2015
Working Foreman (C&M)	BU	Trades & Craft	2014	
Senior Warehouse Attendant	BU	Operatives	2014	2015
Warehouse/Toolroom Attendant	BU	Operatives	2014	2014
Clerk Dispatcher	BU	Office & Clerical	2015	

	Eligible Retirements	Actual Retirements
2011	4	3
2012	4	2
2013	2	2
2014	5	3
2015	1	2
Total	**16**	**12**

Highly Skilled	10
Ratio of Retirements to Eligible	75.00%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Energy Services

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
MGR, Energy Serv	MGMT	Management	2013	2013
Commerical Acct Mg	MGMT	Professional	2012	

	Eligible Retirements	Actual Retirements
2011	0	0
2012	1	0
2013	1	1
Total	**2**	**1**

Highly Skilled	2
Ratio of Retirements to Eligible	50.00%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Engineering Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Planner Aid	BU	Technical	2011	
Design Planner	BU	Technical	2011	2011
Sspp Accts Clerk	BU	Office &	2012	2012
Sr. Customer Planner	BU	Technical	2012	2015
Supervising Engineer	MGMT	Supervisory	2012	2012
Supervisor, Customer Engineering	MGMT	Supervisory	2012	2012
Joint Pole Coordinator	BU	Office &	2013	
Sr. Coordinator	BU	Office &	2013	2016
Customer Designer (Hilo)	MGMT	Professional	2013	2015
Customer Designer (Kona)	MGMT	Professional	2014	2014
Sr. Customer Planner	BU	Technical	2015	

	Eligible Retirements	Actual Retirements
2011	2	1
2012	4	3
2013	3	0
2014	1	1
2015	1	2
Total	**11**	**7**

Highly Skilled	7
Ratio of Retirements to Eligible	63.64%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
President's Office

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
President	MGMT	Executive	2015	
Rate Case Manager	MGMT	Manager	2014	2014

	Eligible Retirements	Actual Retirements
2011	0	0
2012	0	0
2013	0	0
2014	1	1
2015	1	0
Total	**2**	**1**

Highly Skilled	2
Ratio of Retirements to Eligible	50.00%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Production Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Manager, Production	MGMT	Supervisory	2011	
System Operator	BU	Operative	2011	2011
System Operator	BU	Operative	2011	2011
System Operator	BU	Operative	2011	2015
Maintenance Superintendent	MGMT	Supervisory	2012	
Shift Operations Supervisor	MGMT	Supervisory	2012	
Shift Operations Supervisor	MGMT	Supervisory	2012	
Control & Combined Cycle Op	BU	Operative	2012	2016
Power Plant Supervisor	MGMT	Supervisory	2012	2012
Control Operator	BU	Operative	2012	2014
System Operator	BU	Operative	2012	
Working Foreman (Elec)	BU	Trades &	2012	2015
Working Foreman (Controls)	BU	Trades &	2012	
Working Foreman (Machinist)	BU	Trades &	2012	2016
Statistical Clerk	BU	Office &	2013	2015
Shift Operations Supervisor	MGMT	Supervisory	2013	2015
Superintendent, Operations	MGMT	Supervisory	2013	2016
Senior Electrician	BU	Trades &	2013	2015
Supv, Environmental & Fuel	MGMT	Supervisory	2014	2014
Control Operator	BU	Operative	2014	
Shift Operations Supervisor	MGMT	Supervisory	2015	2016
Shift Supervisor - Keahole Power	MGMT	Supervisory	2015	2015
System Operator	BU	Operative	2015	2015
Control Technicial	BU	Operative	2015	2016
Working Foreman (Elec)	BU	Trades &	2015	
Working Foreman (Machinist)	BU	Trades &	2015	

	Eligible Retirements	Actual Retirements
2011	4	2
2012	10	1
2013	4	0
2014	2	2
2015	6	7
Total	**26**	**12**

Highly Skilled	22
Ratio of Retirements to Eligible	46.15%

Hawai'i Electric Light Company, Inc.
2016 Test Year
Actual Retirements Vs. Eligible Retirements
Support Services Department

Position	BU/ MGMT	Job Group	Eligible Retirement Year	Actual Retirement Year
Support Services Manager	MGMT	Manager	2011	
Land Administrator	MGMT	Supervisory	2012	2016
Land Agent	MGMT	Professional	2012	2013
Senior Land Surveyor	MGMT	Supervisory	2012	2012
Safety Director	MGMT	Supervisory	2013	2015
Senior Mapper	BU	Technical	2014	
Safety Administrator	MGMT	Professional	2015	2015

	Eligible Retirements	Actual Retirements
2011	1	0
2012	3	1
2013	1	1
2014	1	0
2015	1	2
Total	7	4

Highly Skilled	5
Ratio of Retirements to Eligible	57.14%

HAWAII ELECTRIC LIGHT
2016 TEST YEAR
AVERAGE VACANCY RATE

Sum of monthly vacancy rates JAN 2011-May 2016	-470.57685203670400%
Divide by number of months in period	65
2016 TY Average vacancy rate	-7.24%

HAWAII ELECTRIC LIGHT
2016 TEST YEAR
MONTHLY VACANCY RATES

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	-7.9%	-8.1%	-7.9%	-7.6%	-8.1%	-7.6%	-6.3%	-6.6%	-5.0%	-4.5%	-4.7%	-5.2%
2012	-8.2%	-7.4%	-6.4%	-6.6%	-6.4%	-6.4%	-5.9%	-6.1%	-5.6%	-5.1%	-4.8%	-1.8%
2013	-3.5%	-3.5%	-3.5%	-3.8%	-3.3%	-4.8%	-5.3%	-5.3%	-5.1%	-4.1%	-4.1%	-4.1%
2014	-6.2%	-5.9%	-6.2%	-6.4%	-7.7%	-7.9%	-9.1%	-8.9%	-7.6%	-8.4%	-8.4%	-8.9%
2015	-9.7%	-10.7%	-11.2%	-11.7%	-11.2%	-11.7%	-11.7%	-12.3%	-12.0%	-12.3%	-11.4%	-11.7%
2016	-8.5%	-8.5%	-7.8%	-8.2%	-8.2%							

Jan 2011-May 2016 Total: -470.6%

HAWAII ELECTRIC LIGHT CO.
2016 TEST YEAR
MONTHLY EMPLOYEE COUNTS

Line #		A Jan	B Feb	C Mar	D Apr	E May	F Jun	G Jul	H Aug	I Sep	J Oct	K Nov	L Dec
1	**2011**												
2	**ACTUAL**	351	350	351	352	350	352	357	356	362	364	363	361
3	**BUDGET**	381	381	381	381	381	381	381	381	381	381	381	381
4	**2012**												
5	**ACTUAL**	360	363	367	366	367	367	369	368	370	372	373	385
6	**BUDGET**	392	392	392	392	392	392	392	392	392	392	392	392
7	**2013**												
8	**ACTUAL**	381	381	381	380	382	376	374	374	375	379	379	379
9	**BUDGET**	395	395	395	395	395	395	395	395	395	395	395	395
10	**2014**												
11	**ACTUAL**	379	380	379	378	373	373	369	370	365	362	363	360
12	**BUDGET**	404	404	404	404	404	405	406	406	395	395	395	395
13	**2015**												
14	**ACTUAL**	354	341	340	340	342	340	340	293	294	293	296	295
15	**BUDGET**	392	382	383	385	385	385	385	334	334	334	334	334
16	**2016**												
17	**ACTUAL**	292	292	294	293	293							
18	**BUDGET**	319	319	319	319	319							

EXPLANATION OF BUDGETED EMPLOYEE COUNT USED TO COMPUTE AVERAGE VACANCY RATE

#	Time Period	Comments	Reference
1	Sep-14	Budgeted employee count reduced by 11 positions due to consolidation of corporate accounting, plant and tax accounting, and regulatory accounting functions at Hawaiian Electric	HELCO-1519, pg 3, line 12, column I
2	Feb-15	Budgeted employee count reduced by 10 positions due to consolidation of information technology functions at Hawaiian Electric	HELCO-1519, pg 3, line 15, column B
3	Aug-15	Budgeted employee count reduced by 51 positions due to consolidation of customer service functions at Hawaiian Electric	HELCO-1519, pg 3, line 15, column H

RECRUITMENT AND TRAINING

In most cases, the Company first looks for qualified applicants from within the Company to fill vacancies. If there are no qualified applicants found internally, then the Company looks for applicants externally.

Internal Recruitment

The department that is hiring advises the Human Resources division of the Administration Department of a need to fill a vacancy, and a job vacancy is created. Approval to post the position is obtained, and the job posting notice is e-mailed to all employees, including affiliated companies Hawaiian Electric Company, Inc. and Maui Electric Company, Ltd, as well as posted on internal bulletin boards for five days. This provides employees with immediate notification of job availability and provides employees the first opportunity to apply for and be considered for job vacancies. While it is the Company's preference to fill positions internally, in certain cases it will seek applicants externally at the same time as the internal job posting is sent out. Additionally, bargaining unit job vacancies are normally filled using the process of job bidding rights.

Process to Fill Vacancies Externally

When qualified applicants are not available internally, the Company extends its search into the community and sometimes to the mainland. For certain hard to fill positions, external recruitment is performed concurrently with internal recruitment. For example, it is a rare occasion when the Company is able to find a qualified applicant from within for an electrical engineer position. Therefore, recruitment for these kinds of positions is conducted concurrently both internally and externally. The Company makes every effort to fill its job vacancies with the best qualified candidate.

External sources used to recruit candidates include partnering with linkage agencies, such as the Workforce Development Division (of the State of Hawai'i Department of Labor & Industrial Relations), the University of Hawai'i at Hilo and the Hawai'i Community College, to recruit potential employees who meet the minimum requirements of the vacant position. The Company also advertises its vacancies in the Hawai'i Tribune-Herald, West Hawaii Today, and Craigslist. Additional advertising is placed in other publications and internet sites such as Linkedin and Monster.com.

Selection Process for Entry Level Positions

For entry level positions, pre-employment testing is usually required. The test results help the Company screen and evaluate applicants with potential to succeed in the job and advance through the line of progression. After applicants are test-qualified for an entry level position, the hiring supervisors, along with the Human Resources staff, review the applications for the required experience, knowledge, and skill. A job skills knowledge test is required for some positions.

Applicants are then selected for interview. A selection is made following the interview process and then Human Resources conducts background checks. A conditional job offer is made when final approval from Human Resources is obtained. After a job offer is accepted, the candidate undergoes post-offer/ pre-employment testing and background checking, such as a screen for illegal drug use, criminal conviction record check, a functional capacity evaluation, and a physical examination.

Apprenticeship Training Program

In order to address recruitment challenges in filling specialized utility positions, such as lineman, the Company has an apprenticeship program that is designed to teach the skills and knowledge needed to fill specialized utility positions. Hawai'i Electric Light's apprenticeship program currently includes three vocations: lineman, electrician, and electrician (communications). These programs are well-established and have been in place for decades. Hawai'i Electric Light is also in the process of establishing several new apprenticeship programs to cover the vocations of planner, power plant mechanic, power plant control mechanic, and power plant electrician.

As of May 31, 2016 there are nine employees participating in Hawai'i Electric Light's apprenticeship program. Four of these apprentices will be completing their training very soon. These include eight apprentice linemen and one apprentice electrician. In the last three years, 13 apprentices graduated from the Company's apprenticeship program, filling journey level positions in the Distribution Department.

While the Company employs a large number of apprentices, it has also attempted to fill vacant journey level positions with qualified linemen from other utility companies. In addition to being a graduate of a certified apprenticeship program, the lineman position requires a specialized skill set which is sometimes not readily available in Hawai'i. In the last 10 years, the Company hired 11 linemen who have the qualifications at the journey level. Of these hires, only one lineman remains at Hawai'i Electric Light today, which reflects a retention rate of less than 10%. Conversely, in the last 10 years, the Company has hired 48 lineman apprentices. Of these, 42 lineman apprentices graduated and became journey level linemen. Currently, 38 of these graduates are working at Hawai'i Electric Light, which reflects a retention rate of 79% of those hired into the apprentice program and 90% retention rate of those who graduated from the apprentice program.

Training employees through the Company's apprenticeship programs is a proven, effective source for filling journey level positions and due to the relatively high retention rate of apprenticeship program graduates, the Company believes that the expense and resources put into the apprenticeship programs are worthwhile.

As an alternative to the apprentice program, the Company attempts to recruit journey workers who have already graduated from an approved apprenticeship program on the mainland.

However, the Company found that after the attraction of working in a tropical setting wore off, many of these workers returned back to the mainland. One journey worker was even employed for only a couple of hours before resigning. Another challenge the Company currently faces is the competition from other companies offering higher wages and better benefits in a lower-cost area.

Learning and Growth

The Company's learning and growth training programs prepare employees for promotional opportunities. The Company has internal on-the-job training programs to ensure that employee knowledge and skill level requirements for jobs are preserved. A good example is the power plant operator training program. This program includes hands-on training on the safe and efficient operation of Hawai'i Electric Light's generators. This training program prepares employees to assume positions of higher responsibility and greater skill through the line-of-progression.

The Companies implemented the Gear Up program in 2013, which was developed through focus groups and an internal Learning Design Council and identified three development components: Leadership, Service Culture and Change Acceleration. These three areas of focus continue to serve our needs. The content of this framework has evolved over time and the Company continues to offer leadership development programs to develop strong and effective leaders.

With the belief that strong leaders build strong teams and strong teams serve the Company's customers efficiently and effectively, a Manager Cohort program was implemented in 2015. The cohorts were established on a tri-company basis (Hawai'i Electric Light, Maui Electric, and Hawaiian Electric) and included all department managers. These cohorts were designed on a platform of team development, leadership and communication skills.

Service Culture initiatives which include adapting the performance management system will be supported by formal leadership training classes in the 2016 test year. Change Management skills for leaders and the 2016 test year implementation of a formal change management process supports our transformation goals.

The Company continues to analyze development needs for leaders and employees as the organization adapts to changes to the electric industry.

Line of Progression

The line-of-progression for bargaining unit employees is an established schedule of related jobs with increasing skill, knowledge, and responsibility. An employee normally begins at the bottom of the line-of-progression and works his or her way up to higher positions in the line as they are trained, meet the standards for the next level, and vacancies occur. As an employee is promoted

to a higher position in the line-of-progression, his or her former position is generally filled at the lowest level with either an internal or external applicant.

Other Initiatives

The Company has undertaken other initiatives to ensure a ready supply of qualified applicants for vacant positions. One initiative is a program which includes an assessment to identify key positions within the Company that carry risk if a successor is not trained and ready to fill the position when vacant. Positions are ranked and prioritized for succession planning according to the five criteria, including safety, financial and operational, incumbent vacancy, bench strength, and development plan for knowledge transfer. Positions identified as critical are selected for succession planning using the Company's Talent Assessment and Development program, or "TAD."

The TAD program is a four-step process that first identifies potential candidates for key positions, create candidate development plans, implement development plans, and then review and track candidates' progress. This program was last completed in 2013. The TAD program is undergoing a review and modification process in 2016. Once the program is updated, the Company plans to implement this program in light of the potential retirements of highly skilled individuals in the 2016-2021 time frame. As HELCO-1517 shows, 59 employees that are eligible to retire in the years 2016 through 2021 are incumbents in highly skilled positions. This is about 18.5% of the 2016 test year employee count.

Hawai'i Electric Light Company, Inc.
2016 Test Year
End of Year Employee Count 2010 - 2015

A	B	C	D	E	F	G	H	I	J = I - H
Department	2010 Recorded EOY	2011 Recorded EOY	2012 Recorded EOY	2013 Recorded EOY	2014 Recorded EOY	2015 Recorded EOY	5/31/16 Recorded YTD	2016 TY Budgeted	2016 TY Vacant Positions
President's Office									
President's Office	2	2	2	2	2	3	3	3	0
Rate Case Division		1	1	1	Division eliminated				
Subtotal	**2**	**3**	**3**	**3**	**2**	**3**	**3**	**3**	**0**
Accounting									
Administration	5	1	1	2	1	1	1	2	1
Purchasing	1	1	Purchasing function transferred to Hawaiian Electric					0	0
Corporate Accounting	5	5	6	5	1	Division transf to Haw. Elec.		0	0
Management Accounting	2	8	8	6	7	6	6	7	1
Plant Accounting	4	4	5	5	Division transferred to Hawaiian Electric			0	0
Subtotal	**17**	**19**	**20**	**18**	**9**	**7**	**7**	**9**	**2**
Administration									
Administration	4	4	3	3	2	3	3	3	0
Community & Media	2013 elimination of the Energy Services Deprtment - 2 ees moved to Administration			1	1	1	1	1	0
Community Education				1	1	1	2	2	0
Government & Community Relations	New Division; positions filled in April 2014				2	2	2	2	0
Human Resourses	3	3	4	3	3	3	2	3	1
Safety	5	5	5	Division moved to Support Services				0	0
Subtotal	**12**	**12**	**12**	**8**	**9**	**10**	**10**	**11**	**1**
	Note: 2 positions eliminated in 2013 (Benefits Specialist and HR Generalist) due to Shared Services implementation								
Customer Service									
Administration	2	2	2	1	3	August 2015 Customer Service Department consolidated and transferred to Hawaiian Electric			
Hilo Customer Service	8	10	11	11	11				
Kona	11	14	16	15	15				
Hilo Field Service	10	10	12	12	10				
Commerical Services	2013 elimination of the Energy Services Deprtment - 5 ees moved to Customer Service			5	5				
Waimea	6	6	8	8	7				
Subtotal	**37**	**42**	**49**	**52**	**51**				
Distribution									
Administration	5	5	5	6	5	6	6	7	1
Technical	24	26	26	26	25	26	26	30	4
Consturction & Maintenance	33	33	37	35	33	33	35	35	0
Kona	22	22	27	25	24	22	21	26	5
Operations	9	9	10	10	10	10	9	11	2
Stores	7	7	7	7	8	8	7	7	0
Waimea	15	16	17	17	18	18	18	18	0
Subtotal	**115**	**118**	**129**	**126**	**123**	**123**	**122**	**134**	**12**
Energy Services									
Administative- Manager	1	1	1	Department eliminated May 2013 - 2 ees transferred to Administration; 5 ees transferred to Customer Service; 3 ees transferred to Engineering					
Administrative - Support	4	4	4						
Education Services	1	1	1						
Commerical Services	5	5	5						
Subtotal	**11**	**11**	**11**						
Engineering									
Administration	9	10	11	14	14	17	17	17	0
Customer Engineering	11	11	12	12	13	13	13	13	0
Energy Planning			2						0
Kona	13	10	13	14	13	10	10	12	2
Waimea Engineering	1	1	1	1	1	1	Postion transferred to Kona due to closing of the Waimea Office in April 2016	0	0
Planning	9	10	8	11	11	13	14	13	-1
Subtotal	**43**	**42**	**47**	**52**	**52**	**54**	**54**	**55**	**1**
Operating Group									
Administrator	2	1	1	Department eliminated in 2013					
Subtotal	**2**	**1**	**1**						

End of Year Employee Count 2010 - 2015

A	B	C	D	E	F	G	H	I	J = I - H
Department	2010 Recorded EOY	2011 Recorded EOY	2012 Recorded EOY	2013 Recorded EOY	2014 Recorded EOY	2015 Recorded EOY	5/31/16 Recorded YTD	2016 TY Budgeted	2016 TY Vacant Positions
Production									
Administration	13	13	13	12	2	1	2	1	-1
Keahole, Operations	12	13	14	14	12	15	14	15	1
Hill Plant	17	20	21	21	19	21	15	15	0
Keahole, Maintenance	7	7	7	6	8	8	7	8	1
Steam & Hydro	16	17	17	16	19	22	21	25	4
Puna	13	8	10	9	9	Puna Plant in Stand-by Mode		0	0
Operations & System Planning	New division established in 2013			3	10	11	4	5	1
Technical Services	4	4	3	5	4	5	4	5	1
Waiakea	2	4	Shipman Plant Stand-by in 2012 and then retired in 2015						0
Combustion Turbine & Diesel	6	7	6	6	6	CT&D consolidated with S&H			0
Subtotal	**90**	**93**	**91**	**92**	**89**	**83**	**67**	**74**	**7**
	Note: 14 employees transferred to System Ops/Plng Dept on 1/4/16: 9 from GH, 5 from GS								
Support Services									
Administration	1	1	3	4	2	4	4	4	0
Fleet	2	2	2	2	2	2	2	2	0
Information Services	9	10	11	11	10	February 2015 IT department reorg - ees transferred to Hawaiian Electric		0	0
Land	2	3	3	3	3	3	2	3	1
Survey	3	4	3	3	3	3	3	3	0
Safety & Security	August 2013 Safety transferred to Support Service Department			5	5	3	5	5	0
Subtotal	**17**	**20**	**22**	**28**	**25**	**15**	**16**	**17**	**1**
Systems Operations/Planning									
Administration	Systems Operations/Planning Department Established January 2016						1	1	0
Planning							2	3	1
System							11	12	1
Subtotal							**14**	**16**	**2**
Total	**346**	**361**	**385**	**379**	**360**	**295**	**293**	**319**	**26**

Source: DARS 636 and Workforce Staffing Report
Source: 2016 Budgeted UI Planner Counts from Budgets

Hawaii Electric Light Company, Inc.
2016 Test Year
Paid Overtime Hours by Department

	As of 5/22/2016		2015		2014		2013	
	Paid OT Hrs	**Total Regular Hrs**	**Paid OT Hrs**	**Total Regular Hrs**	**Paid OT Hrs**	**Total Regular Hrs**	**Paid OT Hrs**	**Total Regular Hrs**
Accounting	5	6,616	76	17,274	839	30,149	201	41,107
Administration	0	8,305	264	19,974	747	18,565	580	21,798
Customer Service	0	0	5,443	64,811	11,992	106,244	12,560	102,396
Distribution	16,841	105,226	56,279	249,937	57,292	254,907	59,017	259,427
Energy Services	0	0	0	0	0	0	34	11,579
Engineering	1,396	47,403	3,349	103,659	4,826	107,017	3,228	103,784
President's Office	63	2,505	218	4,635	227	6,288	235	6,356
Production	7,990	59,677	30,343	171,534	27,365	190,102	29,446	188,092
Sys Op/Planning	1,499	10,917	0	0	0	0	0	0
Support Services	165	13,316	613	36,002	2,360	54,546	391	49,666
Total	**27,959**	**253,964**	**96,583**	**667,826**	**105,649**	**767,818**	**105,691**	**784,205**

Notes:
1. Total Regular Hours = all regular hours worked by bargaining unit and management employees
2. Paid OT Hours = all hours worked beyond regular hours that were compensated (paid)

Source: HWR82CA - Payroll Recap Report

Hawaii Electric Light Company, Inc.
2016 Test Year
Unpaid Overtime Hours by Department

	As of 5/22/2016		2015		2014		2013	
	Unpaid OT Hours Worked	**Total Regular Exempt Hours**	**Unpaid OT Hours Worked**	**Total Regular Exempt Hours**	**Unpaid OT Hours Worked**	**Total Regular Exempt Hours**	**Unpaid OT Hours Worked**	**Total Regular Exempt Hours**
Accounting	784	4,913	1,343	13,298	2,892	22,762	3,204	28,658
Administration	750	7,106	2,212	17,334	2,825	16,315	2,603	17,522
Customer Service	0	0	2,098	11,158	3,547	19,481	2,568	14,706
Distribution	2,328	14,985	4,973	34,559	4,277	35,419	4,999	36,500
Energy Services	0	0	0	0	0	0	1,470	8,270
Engineering	1,382	15,321	2,504	29,445	2,030	28,805	2,149	29,324
President's Office	452	1,557	672	1,918	841	3,684	876	3,518
Production	424	8,031	2,130	27,886	3,067	30,640	2,759	26,056
Sys Op/Planning	530	3,690	0	0	0	0	0	0
Support Services	523	8,511	1,663	23,448	1,573	29,294	2,080	24,720
Total	**7,173**	**64,113**	**17,593**	**159,045**	**21,052**	**186,399**	**22,708**	**189,272**
EFT Unpaid Overtime	4		9		11		12	

Notes:
1. EFT = Equivalent Full Time
2. EFT unpaid overtime calculation assumes 1900 hours worked per full time employee
3. Unpaid OT Hours Worked = hours worked beyond regular hours without compensation by exempt employees
4. Total Regular Exempt Hours = regular hours worked by exempt employees

Hawaii Electric Light Company, Inc.
2016 Test Year
Percent Overtime Paid

	As of 5/22/2016	2015	2014	2013
Accounting	0.08%	0.44%	2.78%	0.49%
Administration	0.00%	1.32%	4.02%	2.66%
Customer Service	0.00%	8.40%	11.29%	12.27%
Distribution	16.00%	22.52%	22.48%	22.75%
Energy Services	N/A	N/A	N/A	0.29%
Engineering	2.94%	3.23%	4.51%	3.11%
President's Office	2.52%	4.69%	3.61%	3.69%
Production	13.39%	17.69%	14.39%	15.66%
Sys Op/Planning	13.73%	N/A	N/A	N/A
Support Services	1.24%	1.70%	4.33%	0.79%
Total	**11%**	**14%**	**14%**	**13%**

Notes:

1. % Overtime Paid = Paid Overtime Hours/Total Regular Hours

Hawaii Electric Light Company, Inc.
2016 Test Year
Percent Overtime Unpaid

	As of 5/22/2016	2015	2014	2013
Accounting	16%	10%	13%	11%
Administration	11%	13%	17%	15%
Customer Service	N/A	19%	18%	17%
Distribution	16%	14%	12%	14%
Energy Services	N/A	N/A	N/A	18%
Engineering	9%	9%	7%	7%
President's Office	29%	35%	23%	25%
Production	5%	8%	10%	11%
Sys Op/Planning	14%	N/A	N/A	N/A
Support Services	6%	7%	5%	N/A
Total	**11%**	**11%**	**11%**	**12%**

Notes:

1. % unpaid overtime = # regular hours worked by exempt employees/ # unpaid overtime hours worked

TESTIMONY OF
MICHELLE KOYANAGI

DIRECTOR, PROPERTY ACCOUNTING
HAWAIIAN ELECTRIC COMPANY, INC.

Subject: Depreciation Expense
Accumulated Depreciation

EXECUTIVE SUMMARY

Depreciation and Amortization Expense / Accumulated Depreciation

- The 2016 test year depreciation and amortization expense is based on the depreciable and amortizable plant balances at January 1, 2016 and the current depreciation rates and methods.
- The depreciation rates and methods were approved by the Commission in its *Decision and Order* for the Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light" or "Company") 2008 Book Depreciation Study, issued June 3, 2011, Docket No. 2009-0321 ("Depreciation D&O"). The depreciation rates and methods became effective on April 9, 2012 with the Commission's *Order No 30301*, which approved Hawai'i Electric Light's final rates in its 2010 test year rate case, Docket No. 2009-0164.
- The Depreciation D&O prescribed the reporting of specific details of the net salvage component of the Company's regulatory liabilities, which is included in this testimony.
- Depreciation and amortization computations for this rate case represent a fair allocation of the costs of utility plant assets to Hawai'i Electric Light's customers.
- Pursuant to the Depreciation D&O, the next book depreciation study will be filed with the Commission no later than December 31, 2016.

TABLE OF CONTENTS

INTRODUCTION 1

DEPRECIATION & AMORTIZATION EXPENSE 2

ACCUMULATED DEPRECIATION 9

SUMMARY 11

INTRODUCTION

Q. Please state your name and business address.

A. My name is Michelle Koyanagi and my business address is 900 Richards Street, Honolulu, Hawai'i.

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

A. I am the Director of Property Accounting for Hawaiian Electric Company, Inc. ("Hawaiian Electric"). HELCO-1600 provides my educational background and work experience.

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

A. I am responsible for presenting Hawai'i Electric Light's 2016 test year estimates for:

1) depreciation and amortization expense, and
2) accumulated depreciation.

Q. What items will you cover in your testimony?

A. My testimony will address two items. First, I will discuss depreciation and amortization expense, which is an operating expense deducted from operating income in the calculation of net operating income for the test year. Second, I will discuss accumulated depreciation, which is the cumulative total of depreciation and amortization recorded with adjustments for retired assets. Accumulated depreciation is deducted from the original cost of plant-in-service to determine the remaining depreciable plant-in-service amount included in rate base.

1 DEPRECIATION & AMORTIZATION EXPENSE

2 Q. What is the Company's 2016 test year estimate for depreciation and amortization
3 expense using depreciation and amortization rates currently in effect?

4 A. The 2016 test year estimate for depreciation and amortization expense, using
5 existing Commission-approved depreciation and amortization rates ("existing
6 depreciation and amortization rates"), is $37,773,000, as shown in HELCO-1601,
7 line 6.

8 Q. How was the test year 2016 depreciation and amortization expense calculated?

9 A. The 2016 test year depreciation and amortization expense is calculated by
10 determining the test year depreciation and amortization accrual using depreciation
11 and amortization rates currently in effect and adjusting for the following items:

12 1) Vehicle depreciation,
13 2) Amortization of Contributions in Aid of Construction ("CIAC"),
14 3) Amortization of Federal Investment Tax Credit ("ITC") and
15 4) Amortization of the net regulatory assets and liabilities related to Accounting
16 Standards Codification ("ASC") 740, Income Taxes (formerly Statement of
17 Financial Accounting Standards ("SFAS") No. 109, Accounting for Income
18 Taxes).

19 These adjustments are shown in HELCO-1601, lines 2-5. Thus, the $37,773,000
20 amount (HELCO-1601, line 6) represents the 2016 test year estimate for
21 depreciation and amortization expense, which is based on depreciation and

amortization rates currently in effect, as adjusted by the four adjustments referenced above.

Q. What depreciation and amortization rates are currently in effect?

A. The depreciation and amortization rates currently in effect are from Hawai'i Electric Light's 2008 Book Depreciation Study, which rates were approved by the Commission in its *Decision and Order* issued June 3, 2011 in Docket No. 2009-0321 ("Depreciation D&O"). These depreciation and amortization rates became effective on April 9, 2012 with the Commission's *Order No 30301*, which approved Hawai'i Electric Light's final rates in its 2010 test year rate case, Docket No. 2009-0164. The rates were first implemented when temporary rates were approved by the Commission in Docket No. 2009-0321 for the period January 14, 2011 through April 8, 2012 when it issued its *Order Approving the Joint Motion for Approval of Stipulation of the Division of Consumer Advocacy and Hawai'i Electric Light Company, Inc. and Stipulation* on October 13, 2010. The temporary rates became effective on January 14, 2011, after the Commission issued its *Order Approving Revised Schedules and Tariff Sheets* on January 7, 2011, approving the implementation of Hawai'i Electric Light's interim rates in its 2010 test year rate case, Docket No. 2009-0164.

Q. What is the basis of the current depreciation and amortization rates?

A. Hawai'i Electric Light's 2016 test year depreciation and amortization accrual is calculated using depreciation and amortization rates based on the estimated useful lives of assets and computed utilizing the straight line remaining life method, and

amortization rates based on the use of vintage amortization accounting for selected plant accounts. For more information on how the depreciation and amortization rates were derived, please refer to the direct testimony of Mr. C. Richard Clarke (HELCO T-2) in the 2008 Book Depreciation Study, Docket No. 2009-0321. Mr. C. Richard Clarke was engaged by the Company as a consultant to conduct the Company's 2008 Book Depreciation Study.

Q. How were the current depreciation and amortization rates applied in computing the 2016 test year depreciation and amortization accrual?

A. The plant account balances as of January 1, 2016, that are subject to depreciation and vintage amortization accounting were separately identified. A depreciation or amortization rate was applied to each plant account's depreciable or amortizable balance, respectively, to derive each plant account's depreciation or amortization accrual for 2016. See HELCO-WP-1602.

The 2016 book depreciation and amortization accrual by plant account were summarized by functional account group and totaled to the 2016 test year depreciation and amortization accrual of $42,106,000. See HELCO-WP-1601.

Q. What are "functional account groups"?

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

1) Production;

2) Transmission;

3) Distribution;

4) General (excluding Leasehold Improvements); and

5) Vehicles.

Q. How does the 2016 test year depreciation and amortization accrual compare with the actual amounts recorded in previous years?

A. As shown in HELCO-1605, the 2016 test year depreciation and amortization accrual as a percentage of plant is similar to that shown for previous years (2011 to 2015). Although the depreciation and amortization accrual for the test year 2016 using the current depreciation and amortization rates is higher than in previous years, the depreciable and amortizable plant balance is also higher resulting in the comparable percentage.

Q. What is vintage amortization accounting?

A. Vintage amortization accounting allocates the total cost of an asset over future periods using a systematic process, rather than applying calculated depreciation rates. Vintage amortization accounting simplifies the accounting process by eliminating the need for individual tracking of high volume and small asset value items (e.g., small tools, office furniture and stores equipment). The use of vintage amortization accounting for selected plant accounts results in a reduction in recordkeeping and administrative activity for the Company.

Q. What is the "net unrecovered amortization" adjustment that is applied to the amortization expense accrual calculation on HELCO-WP-1601?

A. The "net unrecovered amortization" amount represents the amortization of any under- or over-accrual of depreciation for assets which are subject to vintage amortization accounting, including those assets that were retired from the Company's books for vintage amortization. For 2016, the $26,000 additional amortization expense relates to the amortization of the under-accrual of depreciation for assets that were retired from the Company's books upon implementation of vintage amortization accounting in the Company's 2008 Book Depreciation Study (Docket No. 2009-0321).

In the Company's 2008 Book Depreciation Study, the Company converted several plant asset accounts (miscellaneous power plant equipment accounts - plant account numbers 316.0, 335.0 and 346.0 and certain general plant accounts - plant account numbers 391.1 to 391.3 and 393.0 to 398.0) to vintage amortization accounting.[1] As a result, the Company had calculated approximately $3,772,000 of under-accrual of depreciation for assets which are subject to vintage amortization including those assets that were retired as a result of implementing the Company's vintage amortization accounting methodology outlined in its 2008 Depreciation Study. This amounts to an annual net unrecovered amortization adjustment of $754,000 ($3,772,000 amortized over five years). Vintage amortization was effective January 14, 2011

[1] See HELCO T-2, Docket No. 2009-0321 at 18-20.

and the $26,000 is the amount remaining to be amortized in the 2016 test year.[2]

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

A. The annual vehicle depreciation accrual is subtracted because it is actually reflected in capital or operations and maintenance ("O&M") costs, as a result of the Company's clearing process. Depending on the type of projects for which vehicles are used, vehicle depreciation is appropriately reflected in either the O&M expenses for particular O&M projects or in the subsequent depreciation expense of the assets resulting from the capital projects to which the vehicle depreciation is charged. Therefore, it is necessary to exclude the vehicle depreciation accrual from the total depreciation and amortization accrual to avoid double-counting the expense.

Q. Why is the amortization of contributions in aid of construction ("CIAC") subtracted from the depreciation and amortization accrual?

A. The amortization of CIAC is subtracted from the depreciation and amortization accrual because CIAC represents cash and in-kind property contributions provided by customers to offset a portion or all of the cost of certain projects, rather than investors, and it is therefore appropriate to exclude that portion of depreciation related to CIAC.

Q. How was the amortization of CIAC calculated for the 2016 test year?

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[2] The five year amortization period is referenced in HELCO T-2, Docket No. 2009-0321, at 20.

A. The calculation of the CIAC amortization estimate for the 2016 test year is shown in HELCO-WP-1603. Since CIAC amounts are currently amortized over 41 years, beginning in the year following the year in which the CIAC is recorded, the amortization of each year in which the CIAC is recorded (i.e., the amortization of each vintage) is totaled to derive the 2016 test year estimate.

Q. Why is the amortization of federal investment tax credits ("ITC") subtracted from the depreciation and amortization accrual?

A. Under ASC 740, deferred investment tax credits are considered reductions to the cost of the related asset. In order to recognize the effect on net operating income of this reduction in cost, the Company subtracts the investment tax credit amortization from the depreciation and amortization accrual. Prior to ASC 740, the investment tax credit amortization was shown as a reduction to estimated income tax expense. Mr. Lon Okada discusses the accounting for federal investment tax credit in HELCO T-17.

Q. Why is the depreciation and amortization accrual adjusted for the amortization of the net regulatory assets and liabilities related to ASC 740?

A. Under ASC 740, the Company is required to treat as temporary book/tax differences, certain items that were previously treated as permanent differences. The adjustment to depreciation expense is the mechanism by which the Company offsets the effect of the various gross-ups for items now required to be reported on a pre-tax basis as opposed to an after-tax basis so that there is no effect on operating income. Prior to ASC 740, the adjustment was applied against the income tax expense estimate. Mr.

Lon Okada discusses the accounting for net regulatory assets and liabilities related to ASC 740 in HELCO T-17.

ACCUMULATED DEPRECIATION

Q. What is the Company's 2016 test year estimate for accumulated depreciation?

A. As shown on HELCO-1602, the estimate for accumulated depreciation at December 31, 2016 is $595,976,000 based on depreciation and amortization expense using the current depreciation and amortization rates.

Q. How was the ending 2016 accumulated depreciation balance, using the current depreciation and amortization rates calculated?

A. The December 31, 2016 accumulated depreciation balance was calculated as follows:

1) Recorded accumulated depreciation balance at January 1, 2016 adjusted for the additional Shipman Steam Units 3 and 4 terminal retirements recorded in 2016 which should have been recorded in 2015;
2) Plus estimated depreciation and amortization accrual for 2016;
3) Plus estimated salvage value projected to be received for 2016 plant retirements;
4) Less estimated 2016 plant retirements; and
5) Less estimated cost of removal for 2016 plant retirements.

Q. How were the estimated plant retirements for 2016 test year calculated?

A. The estimation of 2016 test year plant retirements is discussed by Mr. Dave Okamura in HELCO T-18.

Q. How were the cost of removal and salvage for plant retirements estimated for test year 2016?

A. The Company examined the historic ratio of actual cost of removal and salvage to plant retirements, not including terminal retirements, for the last five years (2011-2015). The Company then calculated a five-year simple average ratio. This ratio was then multiplied by the estimated amount of retirements excluding retirement of vintage amortizable plant to determine the estimated amount of cost of removal and salvage. These calculations are shown on HELCO-WP-1604.

Terminal retirements are the complete retirement of specific production facilities (units) for which retirement, salvage and cost of removal are specifically estimated. In the 2016 test year, additional terminal retirements of $652,000 related to the December 31, 2015 decommissioning of Shipman Steam Units 3 and 4 were identified which should have been recorded in 2015.

Q. What is the reclassification of cost of removal for financial reporting purposes?

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

Q. What are the Company's estimated 2016 test year balances for its regulatory liability for cost of removal accrual included in accumulated depreciation?

A. The amount of the estimated reclassification from accumulated depreciation to regulatory liability for financial statement presentation purposes is $6,106,000 for 2016 based on the current depreciation and amortization rates. This calculation is shown on HELCO-WP-1605.

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

A. The reclassification has no effect on rate base since both the accumulated depreciation and the regulatory liability are net against total plant-in-service. Refer to Ms. Teri Kam's testimony at HELCO T-19 and exhibits HELCO-1902 for the plant-in-service summary and exhibit HELCO-1904 for a general description of rate base and how it is calculated.

SUMMARY

Q. Please summarize your testimony.

A. Net depreciation and amortization expense for the 2016 test year is $37,773,000 and the average accumulated depreciation balance for the 2016 test year is $581,961,000 based on the Company's current depreciation and amortization rates approved by the Commission. Pursuant to the Depreciation D&O, Hawai'i Electric Light's next depreciation study is to be filed no later than December 31, 2016.

Q. Does this conclude your testimony?

A. Yes, it does.

MICHELLE KOYANAGI

EDUCATIONAL BACKGROUND AND EXPERIENCE

Present employer:	Hawaiian Electric Company, Inc. 900 Richards Street Honolulu, HI 96813
Current position:	Director, Property Accounting
Previous position:	Property Accountant June 2004 – April 2012
Years of service:	12 years
Other experience:	Financial Analyst, First Insurance Company of Hawaii July 2002 – June 2004
	Various positions at Verizon Hawai‘i, Inc. previously GTE Hawaiian Telephone Company, Inc. and Hawaiian Telephone Company Specialist – Financial Planning & Analysis Senior Administrator/Administrator – Operations Support Accounting Supervisor – Payroll & Labor Technical Administrator – OPARS EDP Auditor October 1983 – March 2002
	Supervising Senior Auditor/Computer Audit Specialist, Arthur Young & Co. January 1979 – September 1983
Certification:	Certified Public Accountant (not in public practice) State of Hawai‘i
	Certified Information Systems Auditor
Education:	Bachelor of Business Administration in Accounting University of Hawai‘i at Manoa
	Completed requirements for Master of Business Administration Chaminade University of Honolulu

Hawaii Electric Light Company, Inc.
Depreciation and Amortization Expense
For Years 2011 - 2016
($ In Thousands)

						A	B
		Recorded 2011	Recorded 2012	Recorded 2013	Recorded 2014	Recorded 2015	Test Year Estimate 2016
1	Depreciation & Amortization Accrual	36,031	36,725	37,861	39,760	41,315	42,106
2	Less: Depreciation on Vehicles	(1,183)	(1,253)	(1,276)	(1,282)	(1,342)	(1,505)
3	Amortization of CIAC	(2,397)	(2,506)	(2,766)	(2,955)	(3,142)	(3,232)
4	Amortization of Federal ITC - Note (1)	(23)	(23)	(23)	(23)	(23)	(23)
5	Amortization of ASC 740 Reg Asset - Note (1)	352	403	400	408	418	427
6	Depreciation & Amortizaton Expense	32,780	33,346	34,196	35,908	37,226	37,773

Amounts may not tie due to rounding

Note (1): Amortization of Federal Investment Tax Credit ("ITC") and ASC740 Regulatory Asset ("Reg Asset") is included in depreciation expense in accordance with the ASC 740 method of accounting for income taxes as described in Mr. Lon Okada's testimony in HELCO T-17.

Sources:
See HELCO-WP-1601, page 1 for Columns A and B, lines 1 and 2
See HELCO-WP-1603 for Columns A and B, line 3
See HELCO-1703 for line 4.
See HELCO-1706 for line 5.

Hawaii Electric Light Company, Inc.
Accumulated Depreciation
For Years 2011 - 2016
($ In Thousands)

		Recorded 2011	Recorded 2012	Recorded 2013	Recorded 2014	Recorded 2015	A Test Year Estimate 2016
1	Acc Dep Beg Bal @ January 1	464,084	475,992	500,189	525,430	549,592	567,945
2	Adjustment - Note (1)						(652)
3	Adjusted Acc Dep Beg Bal @ January 1	464,084	475,992	500,189	525,430	549,592	567,293
	Plus:						
4	Depreciation & Amortization Accrual	36,031	36,725	37,861	39,760	41,316	42,106
5	Gross Salvage	223	29	252	493	132	297
	Less:						
6	Retirements - Note (1)	(21,089)	(8,535)	(8,094)	(9,505)	(18,500)	(8,646)
7	Cost of Removal	(3,311)	(3,876)	(5,012)	(6,228)	(4,060)	(5,074)
8	Change in Removal Work in Progress	54	(146)	234	(358)	(535)	
9	Acc Dep End Bal @ December 31	475,992	500,189	525,430	549,592	567,945	595,976
10	Average Acc Dep Bal ((567,945+595,976)/2)						581,961

Amounts may not tie due to rounding

Note (1): 2015 retirements include $10,165,000 for terminal retirements related to the 12/31/2015 decommissioning of Shipman Steam Units 3 and 4. In test year 2016, additional terminal retirements of $652,000 related to the decommissioning of Shipman Steam Units 3 and 4 were identified which should have been recorded in 2015. See HELCO-WP-1814 Note (1).

Sources:
See HELCO-WP-1601, page 1 for Column A, line 4
See HELCO-WP-1604, page 2 for Column A, lines 5 and 7

Hawaii Electric Light Company, Inc.
Depreciation and Amortization Accrual by Functional Account Group
For Years 2015 - 2016
($ In Thousands)

		A	B=C/A	C	D	E=F/D	F
	Functional Account Group	Depreciable & Amortizable Plant at 1/1/2015	Composite Rate	2015 Recorded Dep & Amort Accrual	Depreciable & Amortizable Plant at 1/1/2016 (Adjusted)	Composite Rate	2016 TY Estimate Dep & Amort Accrual
1	Production - Note (1)	333,110	2.52%	8,391	326,457	2.52%	8,223
2	Transmission	162,756	2.44%	3,971	169,243	2.46%	4,167
3	Distribution	610,572	3.96%	24,198	632,172	3.98%	25,139
4	General - Note (2)	52,621	6.49%	3,413	60,506	5.08%	3,072
5	Vehicles	19,973	6.72%	1,342	22,387	6.72%	1,505
6	Total - Note (3)	1,179,032	3.50%	41,315	1,210,765	3.48%	42,106

Amounts may not tie due to rounding

Note (1): In test year 2016, additional terminal retirements of $652,000 related to the decommissioning of Shipman Steam Units 3 and 4 were identified which should have been recorded in 2015. See HELCO-WP-1814 Note (1).
Note (2): General Dep & Amort Accrual includes depreciation of leasehold improvements of $12,000 in test year 2016. Also, the depreciation and amortization accrual includes net unrecovered amortization of $754,000 and $26,000 in 2015 and test year 2016, respectively, approved by the Commission in Docket No. 2009-0321, Decision and Order filed June 3, 2011.
Note (3): Depreciable & Amortizable Plant above excludes land and leasehold improvements.

Source:
See HELCO-WP-1601 for Columns A, C, D, and F. See also HELCO-1605, Columns A and B, line 6

Hawaii Electric Light Company, Inc.
Regulatory Liabilities
Negative Net Salvage in Excess of Cost of Removal
For Years 2003 - 2016
($ In Thousands)

	Year Recorded	Recorded 12/31/2015	A Test Year Estimate 12/31/2016
1	2003	35,468	35,468
2	2004	2,554	2,554
3	2005	2,717	2,717
4	2006	3,073	3,073
5	2007	2,563	2,563
6	2008	2,934	2,934
7	2009	2,958	2,958
8	2010	3,112	3,112
9	2011	5,843	5,843
10	2012	5,436	5,436
11	2013	5,051	5,051
12	2014	3,950	3,950
13	2015	6,258	6,258
14	Test Year 2016 Estimate		6,106
15	Balance	81,917	88,023

Amounts may not tie due to rounding

Source:
See HELCO-WP-1605 for Column A, line 14

Hawaii Electric Light Company, Inc.
Summary of Plant Balances, Accumulated Depreciation
and Annual Depreciation and Amortization Accruals
For Years 2011 - 2016 ($ in Thousands)

		A	B	C=B/A	D	E=D/A
Line	Year	Dep & Amort Plant at Beg of Yr	Dep & Amort Accrual Note (1)	As % of Plant	Acc Dep at Beg of Yr	As % of Plant
1	2011	1,030,520	36,031	3.50%	464,084	45.03%
2	2012	1,048,599	36,725	3.50%	475,992	45.39%
3	2013	1,086,048	37,861	3.49%	500,189	46.06%
4	2014	1,136,923	39,761	3.50%	525,430	46.22%
5	2015	1,179,032	41,316	3.50%	549,592	46.61%
6	TY Estimate 2016	1,210,765	42,106	3.48%	567,293	46.85%

Amounts may not tie due to rounding.

Note (1): Includes depreciation and amortization on vehicles and leasehold improvements.

Sources:
See HELCO-1603, page 1 for Columns A and B, line 6
See HELCO -1602, page 1 for Column D, line 6

TESTIMONY OF
LON K. OKADA

MANAGER
CORPORATE TAXES
HAWAIIAN ELECTRIC INDUSTRIES, INC.

Subject: Taxes Other Than Income Taxes
Income Tax Expense
Unamortized Net ASC 740 Regulatory Asset
Unamortized Investment Tax Credits
Accumulated Deferred Income Taxes
Recent Tax Developments

EXECUTIVE SUMMARY

Taxes in Operating Expenses and Rate Base

- Hawai'i Electric Light Company, Inc.'s ("Hawai'i Electric Light's") operating expenses include a variety of taxes, which are recoverable in its cost of service: revenue, payroll, and income taxes
- Hawai'i Electric Light's rate base includes deferred income taxes, unamortized state investment tax credits and regulatory assets and liabilities associated with income taxes, which are primarily a result of differences between ratemaking and tax accounting recognition of income and expense
- Hawai'i Electric Light's tax objectives are twofold: 1) to accurately reflect the tax expense included in operating expense to ensure proper recovery of its costs and 2) to accelerate tax deductions and defer income to the extent reasonably possible under the tax law, resulting in lower income tax payments that effectively represent interest-free borrowing from the government.

TABLE OF CONTENTS

INTRODUCTION 1

TAXES OTHER THAN INCOME TAXES 1

(1) FICA/Medicare Tax 3

(2) FUTA Tax 5

(3) SUTA Tax 5

(4) PSC Tax 7

(5) Public Utility Fee 7

(6) Utility Franchise Tax 8

INCOME TAX EXPENSE 8

Adjustments to Derive Taxable Income for Ratemaking Purposes 9

Interest Expense Related to Operations 9

Permanent Book/Tax Differences 10

Domestic Production Activities Deduction 11

Accounting for the State Capital Goods Excise Tax Credit 15

Accounting for Federal Investment Tax Credit 16

UNAMORTIZED NET ASC 740 REGULATORY ASSET 17

Excess Deferred Income Taxes 18

Deficit Deferred Income Taxes 20

UNAMORTIZED INVESTMENT TAX CREDITS 21

ACCUMULATED DEFERRED INCOME TAXES 25

ASC 740-10, Uncertain Tax Positions 26

RECENT TAX DEVELOPMENTS 30

Extension of Bonus Depreciation 30

INTRODUCTION

Q. Please state your name and business address.

A. My name is Lon Okada and my business address is 1001 Bishop Street, Honolulu, Hawaii.

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

A. I am the Manager of Corporate Taxes for Hawaiian Electric Industries, Inc. ("HEI"). I have provided my educational background and work experience in HELCO-1700.

Q. What are your areas of responsibility in this proceeding?

A. My testimony will cover the following areas for the 2016 test year for Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light" or the "Company"):

(1) Taxes Other Than Income Taxes,

(2) Income Tax Expense,

(3) Unamortized FASB Accounting Standards Codification 740 ("ASC 740")[1] Regulatory Asset,

(4) Unamortized Investment Tax Credits,

(5) Accumulated Deferred Income Taxes, and

(6) Recent Tax Developments.

TAXES OTHER THAN INCOME TAXES

Q. What are the specific taxes included in "Taxes Other Than Income Taxes"?

[1] Accounting for Income Taxes was previous addressed in Financial Accounting Standards Board ("FASB") Statement of Financial Accounting Standards No. 109, prior to the implementation of the FASB Accounting Standards Codification ("ASC").

A. The following six taxes or fees are included in this category and are related either to payroll or utility revenue:

Payroll Taxes

(1) Federal Insurance Contribution Act and Medicare ("FICA/Medicare") taxes,

(2) Federal Unemployment ("FUTA") tax,

(3) State Unemployment ("SUTA") tax,

Utility Revenue Taxes

(4) State Public Service Company ("PSC") tax,

(5) State Public Utility ("PU") fee, and

(6) County Utility Franchise tax.

Q. What are Hawai'i Electric Light's test year estimates for Taxes Other Than Income Taxes?

A. With HEP as IPP-Owned, the 2016 test year estimates for taxes other than income are $25,675,000 at present rates, $27,431,000 at current effective rates, and $29,144,000 at proposed rates, as shown in HELCO-1701.[2] With HEP as Utility-Owned, the 2016 test year estimates for taxes other than income are $24,092,000, at present rates, $25,846,000 at current effective rates, and $28,933,000 at proposed rates, as shown in HELCO-1701 . The breakdown of these amounts by taxes or fees is summarized below in Table 1, followed by the explanations:

[2] See HELCO T-27 for explanation of present rates and current effective rates, as well as the scenario with Hamakua Energy Partner ("HEP") as an independent power producer-owned ("IPP-Owned") facility and HEP as a utility-owned facility ("Utility-Owned").

1 Table 1: Taxes Other Than Income Taxes

Taxes/Fees	At Present Rates	At Current Effective Rates	At Proposed Rates
With HEP As IPP-Owned			
FICA/Medicare Taxes	$ 1,235,000	$ 1, 235,000	$ 1,235,000
FUTA	7,000	7,000	7,000
SUTA	14,000	14,000	14,000
Total Payroll Taxes	$ 1,256,000	$ 1,256,000	$ 1,256,000
PSC Tax	$16,192,000	$17,355,000	$18,491,000
PU Fee	1,376,000	1,475,000	1,571,000
Utility Franchise Tax	6,851,000	7,345,000	7,827,000
Total Revenue Taxes	$24,419,000	$26,175,000	$27,889,000
Total Taxes Other Than Income Taxes	$25,675,000	$27,431,000	$29, 144,000
With HEP As Utility-Owned			
FICA/Medicare Taxes	$ 1,235,000	$ 1,235,000	$ 1,235,000
FUTA Tax	7,000	7,000	7,000
SUTA Tax	14,000	14,000	14,000
Total Payroll Taxes	$ 1,256,000	$ 1,256,000	$ 1,256,000
PSC Tax	$15,144,000	$16,306,000	$18,351,000
PU Fee	1,287,000	1,385,000	1,559,000
Utility Franchise Tax	6,406,000	6,900,000	7,768,000
Total Revenue Taxes	$22,836,000	$24,590,000	$27,677,000
Total Taxes Other Than Income	$24,092,000	$25,846,000	$28,933,000

2 The derivation of each tax amount is discussed below.

3 (1) FICA/Medicare Tax

4 Q. How is the amount of FICA/Medicare tax expense determined?

5 A. Both FICA and Medicare taxes are based on taxable wages; however, the FICA

6 taxable wage base is limited by a maximum amount per employee while the

7 Medicare taxable wage base is unlimited.

8 For the 2016 test year, the FICA component of the tax has a per employee

9 maximum taxable wage base of $118,500 and a rate of 6.2%. The Medicare

1 component of the tax has no wage base limitation and is based on a rate of 1.45%.
2 The test year estimate of FICA/Medicare taxes was calculated by applying the
3 quarterly effective tax rates actually experienced by Hawai'i Electric Light in 2015
4 to the 2016 test year estimates of gross pay by pay period. The effective tax rates are
5 calculated for each quarter and represent the ratio of FICA/Medicare taxes paid to
6 total compensation earned during the quarter, as reported for payroll tax purposes.
7 Generally as the year progresses, the effective tax rate trends downward as more
8 employees reach the FICA maximum wage base. See HELCO-WP-1701, page 3, for
9 the calculation of the estimated 2016 FICA/Medicare taxes.
10 Q. How is the total FICA/Medicare tax allocated to operations, capital projects and
11 billable projects?
12 A. The total FICA/Medicare tax is calculated and then allocated amongst operations,
13 capital projects and billable projects based on the estimated division of labor charges
14 to these three categories. See HELCO-WP-1701, page 2. The amount allocated to
15 operating expenses is included in Taxes Other Than Income Taxes.
16 The amount allocated to capital projects represents charges to construction
17 work in progress that is eventually closed to plant in service. The cost of these
18 payroll taxes is recovered through depreciation of plant in service. The amount
19 allocated to billable projects is recovered through outside billings to third parties
20 with no net cost or benefit to the Company.
21 Q. Why is this allocation methodology reasonable?
22 A. As previously explained, total FICA/Medicare tax is calculated by multiplying the
23 applicable tax rate by the test year wages. These wages are essentially equivalent to

total labor charges. Therefore, allocating FICA/Medicare tax charges according to where labor is charged is a reasonable method of allocation. This methodology was used by Hawai'i Electric Light and accepted by the Commission in determining Hawai'i Electric Light's 2010 test year revenue requirements in its Decision and Order No. 30168 (February 8, 2012), issued in Docket No. 2009-0164 ("D&O No. 30168").

(2) FUTA Tax

Q. How is the FUTA tax amount determined?

A. FUTA taxes are based on a taxable wage base of $7,000 per employee and a net tax rate of 0.6% in accordance with Internal Revenue Code ("IRC") §3301 and §3302. See HELCO-WP-1701, page 3, for the calculation of the FUTA taxes. The allocation of this tax cost between operations, capital, and billable projects is identical to the methodology used for the FICA/Medicare tax explained above, and accepted by the Commission in determining Hawai'i Electric Light's revenue requirements in its D&O No. 30168, issued in Docket No. 2009-0164.

(3) SUTA Tax

Q. How is the SUTA tax amount determined?

A. The Company's test year estimate for SUTA tax expense is based on a contribution rate of 0.21% and a wage base of $42,200. See HELCO-WP-1701, page 3, for the calculation of the SUTA taxes.

The allocation of this tax cost between operations, capital, and billable projects is identical to the methodology used for the FICA/Medicare and FUTA

1 taxes explained above, and accepted by the Commission in determining Hawai'i
2 Electric Light's 2010 test year revenue requirements in its D&O No. 30168, issued
3 in Docket No. 2009-0164.
4 Q. How did the Company estimate the 2016 test year wage base?
5 A. The Company applied the 2016 SUTA wage base of $42,200 for 2016 as approved
6 by the Hawaii Department of Labor and Industrial Relations ("DLIR") at the end of
7 2015. Please refer to HELCO-WP-1701, page 10.
8 Q. Which contribution rate schedule did Hawai'i Electric Light use to establish the
9 SUTA rate for the test year 2016?
10 A. For test year 2016, the Company used contribution rate schedule C, as issued by the
11 State DLIR. See HELCO-WP-1701, page 11.
12 Q. How does the Company estimate the 2016 SUTA contribution rate?
13 A. The Company uses the contribution rate assigned by the DLIR for 2016, based on
14 Hawai'i Electric Light's actual reserve ratio. See HELCO-WP-1701, page 10, for a
15 copy of the State's contribution rate notice.
16 Q. How is the reserve ratio determined?
17 A. The DLIR tracks each employer's accumulated reserve balance based on each
18 company's contributions made less benefits paid. The reserve ratio is the ratio of the
19 employer's accumulated reserve balance to its average annual taxable payroll.
20 Q. What is Hawai'i Electric Light's estimated reserve ratio?
21 A. Hawai'i Electric Light's 2016 reserve ratio is .1301, which under Schedule C
22 corresponds to a contribution rate of 0.2% plus 0.01% for the employment and

1 training assessment pursuant to the Hawaii Revised Statutes ("HRS") §383-129. See
2 HELCO-WP-1701, pages 10 and 11.

3 (4) PSC Tax

4 Q. How is the PSC tax determined?

5 A. The PSC tax is imposed on the gross utility revenues of the Company at a base rate
6 of 5.885% in accordance with HRS §239-5. The tax rate increases by an incremental
7 percentage if the ratio of PSC net income to PSC gross taxable revenue exceeds
8 15%. However, in recent years, the Company's ratio has been below the 15%
9 threshold. The test year's ratio is estimated to be less than 15% based on the
10 projected PSC net income to PSC gross taxable revenue ratio. Accordingly, the
11 Company has applied the 5.885% minimum rate in calculating its 2016 test year PSC
12 tax expense. HRS §239-5 also provides that the tax in excess of the tax at 4% will
13 be paid to the county in which the Company generates its taxable revenue. In this
14 case, the excess calculated at the rate of 1.885% will be the portion payable to the
15 County of Hawaii. Hawai'i Electric Light has consistently used the 5.885% rate to
16 calculate test year PSC tax expense in its most recent rate cases. See
17 HELCO-WP-1701, page 13, for the calculation of the PSC tax expense.

18 (5) Public Utility Fee

19 Q. How is the PU fee determined?

20 A. The fee is determined by multiplying gross utility revenues by a statutory
21 semiannual rate of 0.25%, or 0.5% annually as set forth in HRS §269-30(b). See
22 HELCO-WP-1701, page 13, for the calculation of the PU fee.

(6) Utility Franchise Tax

Q. How is the Utility Franchise tax determined?

A. The Utility Franchise tax is computed by multiplying gross receipts from the sale of electricity by a rate of 2.5% in accordance with Hawai'i Electric Light's franchise and HRS §240-1. See HELCO-WP-1701, page 13, for the calculation of the Utility Franchise tax expense.

INCOME TAX EXPENSE

Q. What is the 2016 test year income tax expense?

A. The estimated income tax expense for the 2016 test year is shown in HELCO-1702 pages 1 to 4, and is summarized in Table 2.

Table 2: Estimated Income Tax Expense for 2016 Test Year

	At Present Rates	At Current Effective Rates	At Proposed Rates
HEP IPP-Owned	$3,757,000	$10,763,000	$17,603,000
HEP Utility-Owned	$1,249,000	$8,249,000	$20,569,000

The calculations of income taxes at present, current effective and proposed rates employ a composite rate of 38.91%. This rate assumes the top marginal federal income tax rate of 35% and a state income tax rate of 6.4%. This combined rate became effective as of January 1, 1993, after the enactment of the Revenue Reconciliation Act of 1993. The calculations of the effective income tax rates are shown on HELCO-WP-1702, page 1.

Q. What method did Hawai'i Electric Light use to compute the test year income tax expense?

A. Hawai'i Electric Light calculated the test year income tax expense based on the "short form" method that the Commission has consistently adopted in previous rate cases, including D&O No. 30168 in Docket No. 2009-0164. This method simplifies the calculation of income tax expense by applying the applicable tax rates to adjusted operating income in one step.

Adjustments to Derive Taxable Income for Ratemaking Purposes

Q. Please explain the derivation of taxable income for ratemaking purposes, starting with the calculation of net operating income before income taxes.

A. Net operating income before income taxes is equal to operating revenues less operation and maintenance expenses, depreciation expense, amortization of state capital goods excise tax credit ("state ITC"), taxes other than income taxes and interest expense on customer deposits.

Q. What adjustments are made to pretax net operating income to compute test year taxable income for ratemaking purposes?

A. Pretax net operating income is adjusted for: (1) Interest expense related to operations and (2) Permanent book/tax differences.

Interest Expense Related to Operations

Q. Why does interest expense related to operations reduce taxable income for the calculation of income taxes?

A. For ratemaking purposes, interest expense related to operations is recovered in rates as a component of the allowed rate of return on rate base (specifically, the debt rate embedded in the weighted cost of capital) which is expressed on a pretax basis. The

interest component, however, is tax deductible and must therefore be included in the calculation of income tax expense in order to account for the tax benefit related to the deductible interest.

Q. What is the 2016 test year interest expense?

A. The estimated 2016 test year interest expense is $10,906,000 with HEP as IPP-Owned, and $12,892,000 with HEP as Utility-Owned. See HELCO-1702, pages 1 and 3.

Q. How is this interest expense calculated?

A. The 2016 test year interest expense for Hawai'i Electric Light is calculated based on the interest synchronization methodology approved by the Commission in Decision and Order No. 24171 (May 1, 2008) in Docket No. 04-0113 (Hawaiian Electric's 2005 test year rate case) in determining Hawaiian Electric's revenue requirements in that docket and in Hawai'i Electric Light's No. D&O No. 30168 in Docket No. 2009-0164.

This method attempts to match the interest deduction in calculating the income tax expense to Hawai'i Electric Light's rate base and cost of debt for the test year. The interest deduction is derived by applying Hawai'i Electric Light's estimated weighted cost of debt to its estimated rate base at proposed rates for each scenario as shown on HELCO-WP-1702, page 2.

<u>Permanent Book/Tax Differences</u>

Q. What are "permanent book/tax differences"?

A. Permanent book/tax differences are items that are recognized in the calculation of regulatory and book net income that will never be recognized in taxable income <u>or</u> vice versa.

Q. What is the total amount of the permanent book/tax differences accounted for in the 2016 test year?

A. For the 2016 test year, the only permanent book/tax difference relates to meals and entertainment expenses of $10,000. See HELCO WP-1702, page 3, for the calculation of the meals and entertainment disallowance.

Q. Why are meals and entertainment expenses treated as a permanent book/tax differences?

A. Meals and entertainment expenses are reasonable costs of doing business. However, only 50% of these expenses are deductible for tax purposes and recognized in the calculation of taxable income. Therefore, 50% of these expenses are added back in determining taxable income for ratemaking purposes. This is consistent with Hawai'i Electric Light's determination of income taxes in D&O No. 30168 in Docket No. 2009-0164.

<u>Domestic Production Activities Deduction</u>

Q. What is the domestic production activities deduction?

A. IRC §199 was enacted under the American Jobs Creation Act of 2004 and provides tax relief, in the form of the domestic production activities deduction ("DPAD"), for domestic manufacturers. This deduction is calculated as a percentage of income from qualified activities. However, the income from the qualified activities cannot

1 exceed the total taxable income of the taxpayer. Thus, the base to which the
2 percentage is applied is the lesser of qualified activities income or total taxable
3 income. Eligible taxpayers are entitled to a 9% deduction in 2010 and thereafter.
4 Hawai'i has not adopted this Federal DPAD deduction for state income tax purposes.
5 Consequently, in order to isolate the federal tax benefit, the DPAD benefit is
6 computed and treated as an adjustment to tax expense instead of a permanent
7 adjustment in the calculation of both federal and state tax expense.
8 Q. How does DPAD apply to Hawai'i Electric Light?
9 A. One of those qualified activities is the production of electricity. As an integrated
10 producer of electricity, Hawai'i Electric Light generates and delivers electricity to
11 customers. IRC §199 and its related regulations specify that only the production of
12 electricity is an eligible activity, and income from the transmission or distribution of
13 electricity will not qualify. Consequently, Hawai'i Electric Light is entitled to take
14 this DPAD deduction as a percentage of income attributable only to the generation of
15 electricity.
16 Q. How does the Company determine this income and segregate it from the income
17 attributable to the Company's other activities?
18 A. The Treasury regulations state that an integrated producer, such as Hawai'i Electric
19 Light, that produces and delivers electricity, must allocate its gross receipts between
20 1) production, which qualifies as domestic production gross receipts ("DPGR"), and
21 2) distribution and transmission, which do not qualify as DPGR. Any "reasonable
22 method" that is satisfactory to the Internal Revenue Service ("IRS") may be used,
23 based on the facts and circumstances. Hawai'i Electric Light allocates the gross

receipts based on the latest cost of service study performed for ratemaking purposes. The Treasury regulations further provide that cost of goods sold must be allocated specifically to the qualified gross receipts and all other indirect costs should be allocated or apportioned using the guidelines set forth in IRC §861. Based on this guidance, indirect costs are allocated based on the DPGR as a percentage of total gross receipts, and interest expense is allocated based on the tax basis of generation assets relative to the tax basis of all assets.

Q. What cost of service study is utilized in computing the generation revenue percentage in this case?

A. In prior cases, Hawai‘i Electric Light used the last full cost of service study performed, which in this case would be for D&O No. 30168 in its 2010 test year rate case, Docket No. 2009-0164. However, when there are large changes in plant additions or when fuel price fluctuations occur, using a cost of service study of a prior period may result in revenue allocations that are significantly different from the cost of service study performed on the current test year.

Consequently, in the instant case, the DPAD calculation will use the revenue allocation computed on the 2016 test year revenue requirements based on the latest cost of service study performed in this current docket. Hawai‘i Electric Light attempts to synchronize, as close as possible, the revenue ratios derived in the study to the revenue requirements proposed since many assumptions made in prior studies are likely to have changed and may not be consistent with the assumptions in this case. Therefore, Hawai‘i Electric Light strives to use the results of the 2016 test year cost of service study in determining generation revenue percentage.

Q. How can the cost of service study be performed in time for use in the DPAD calculation?

A. In this test year rate case, the Company ran preliminary revenue requirements without the DPAD benefit, as is normally done. Based on these revenue requirements, Mr. Young, in Hawai'i Electric Light T-22, performed the first step in the cost of service study, that is the functionalization of costs and rate base items into the major operating functions of production, transmission and distribution. This first step provides the necessary classification of costs and rate base items to arrive at the revenue allocations, on which the DPAD calculation is based. In this way, the DPAD calculation was based on the 2016 test year data, albeit preliminary, and is more consistent and synchronized with the data going into the revenue requirement calculation. See HELCO-WP-1702, page 9 for the percentage revenue breakdown.

Q. How does the Company allocate administrative and general ("A&G") expenses?

A. The Company allocates its A&G expense based on the ratio of direct costs associated with generation to total direct costs (i.e., the Company's cost of service study A&G allocation based on relative cost) in its DPAD calculation for the 2016 test year.

Q. What is the Company's estimate of the impact of DPAD on income tax expense?

A. With HEP as IPP-Owned, the estimated DPAD deduction reduces tax expense for the 2016 test year by $701,000. With HEP as Utility-Owned, the estimated DPAD deduction reduces income tax expense for the test year 2016 by $963,000. See HELCO-1702, pages 1 and 3. See also HELCO-WP-1702, pages 5 through 8, for the DPAD calculation.

1 Accounting for the State Capital Goods Excise Tax Credit

2 Q. What is the estimated 2016 test year amortization of the state capital goods excise
3 tax credit ("state ITC")?

4 A. The estimated 2016 test year amortization of the state ITC is $521,000. See
5 HELCO-1704. For ratemaking purposes, based on the last depreciation study in
6 Docket No. 2009-0321, the credits earned and taken in prior years' income tax
7 returns are amortized over 41 years, which is the approximate composite useful life
8 of the assets giving rise to the credits.

9 Q. What is the state ITC?

10 A. The state ITC was enacted in 1987 under HRS §235-110.7 and was designed to
11 promote capital investment and to mirror the qualification rules of the old federal
12 ITC. The 4% credit applies to qualifying equipment purchased and placed into
13 service by businesses in Hawaii.

14 For book and ratemaking purposes, the credit is deferred in the year earned
15 and subsequently amortized over the estimated useful life of the associated asset as
16 was done with the federal ITC. The amortization on new additions begins when the
17 book depreciation commences on those additions.

18 Note that the foregoing explanation of the accounting for state ITC applies
19 equally to other state credits earned on utility property such as solar energy and wind
20 energy property. The unamortized balance of state ITC and amortization includes
21 small amounts of solar energy credits earned in 2002 and 2004 under HRS §235-12
22 and §235-12.5. See HELCO-WP-1704 page 5 for the breakdown.

23 Q. How is the 2016 test year amortization of state ITC presented?

1 A. Consistent with D&O No. 30168, state ITC is presented as a pretax amortization
2 which increases operating income for ratemaking purposes. The federal and state
3 income tax expense related to the state ITC is incorporated in the income tax
4 calculation for ratemaking purposes. This presentation is used since it is consistent
5 with the financial presentation under ASC 740, which favors a "gross of tax"
6 presentation.

7 Accounting for Federal Investment Tax Credit

8 Q. What is the estimated 2016 test year amortization of federal ITC?
9 A. The estimated 2016 test year amortization of federal ITC is $23,000. See
10 HELCO-1703. For ratemaking purposes, the federal ITC is also amortized over 41
11 years, based on the last depreciation study in Docket No. 2009-0321. The
12 amortization of federal ITC (formerly included as an adjustment to income tax
13 expense prior to ASC 740) is included as an adjustment in determining depreciation
14 expense. See exhibit HELCO-1601 to Ms. Koyanagi's testimony in HELCO T-16.
15 Q. What is the 2016 test year amortization of the regulatory liability related to federal
16 ITC?
17 A. The 2016 test year amortization of the regulatory liability related to federal ITC is
18 $15,000. See HELCO-1706, page 2.
19 Q. What is the relationship between federal ITC and this regulatory liability?
20 A. As mandated by ASC 740, Income Taxes (previously SFAS 109, Accounting for
21 Income Taxes), the regulatory liability represents the "gross-up" for the tax effect of
22 the ITC amortization as well as the tax on tax. The amortization of the regulatory

1 liability (credit to depreciation expense) has no impact on revenue requirements or
2 net income because this amortization is offset by a corresponding increase (debit) to
3 deferred income tax expense. The regulatory liability is amortized over the same
4 period as the related federal ITC.

5 Q. How is the amortization of federal ITC treated?

6 A. Under ASC 740, the amortization of federal ITC is treated like a temporary
7 difference on which a deferred tax must be provided. A regulatory liability is
8 established as the equal and offsetting credit to the deferred income tax asset. This is
9 an artificial creation of ASC 740 since federal ITC never entered into the
10 computation of taxable income for federal income tax return purposes. Federal ITC
11 was a credit (as opposed to a deduction) that reduced the calculated income tax
12 liability, dollar for dollar.

13 Consequently, the amortization of this regulatory liability increases net
14 operating income by the identical amount of income tax expense calculated on the
15 combined amortization of ITC and of the related regulatory liability. The
16 amortizations of the regulatory liability and the additional income tax expense are
17 equal and offsetting, resulting in the same revenue requirements impact of federal
18 ITC before ASC 740.

19 UNAMORTIZED NET ASC 740 REGULATORY ASSET

20 Q. What is the 2016 test year average net unamortized ASC 740 regulatory asset?

21 A. The 2016 test year average unamortized net ASC 740 regulatory asset is
22 $11,471,000 as shown on HELCO-1706, page 2. This represents the "gross up" of

1 taxes required under ASC 740. The equal and offsetting accumulated deferred
2 income tax ("ADIT") liabilities are provided in HELCO-1707, page 3.
3 Q. How was the 2016 test year average net unamortized ASC 740 regulatory asset
4 calculated?
5 A. The Company calculated this amount by taking the average of the ASC 740
6 regulatory asset at the beginning and end of the test year. The balance at the
7 beginning of the test year is the actual recorded net ASC 740 regulatory asset as of
8 December 31, 2015. The end of test year balance was derived by adding the
9 estimated 2016 additions and subtracting the estimated 2016 amortization. See
10 HELCO-1706.

11 Excess Deferred Income Taxes

12 Q. How does the Company's adoption of ASC 740 alter the presentation of excess
13 deferred income taxes?
14 A. ASC 740 requires that deferred tax liabilities and assets be established to reflect
15 changes in income tax rates. Consequently, the income tax rate reduction enacted by
16 the 1986 Tax Reform Act ("1986 TRA") required an adjustment to the Company's
17 deferred income tax balance as of January 1, 1993. Consistent with ASC 740's
18 focus on the balance sheet, the portion of the deferred tax balance (established prior
19 to 1987 at higher rates) in excess of that which is required to satisfy future tax
20 liabilities at the 1986 TRA 34% rate represents excess deferred taxes. This excess
21 was carved out and classified as a regulatory liability.

In addition, the amount carved out as a regulatory liability was grossed up to reflect the fact that the amortization of this regulatory liability represents current and future revenue reductions which have a related tax effect. Mechanically, this is accomplished by computing the tax effect of the regulatory liability plus the tax on the computed tax (i.e., tax on tax). This "gross up" amount serves to increase the regulatory liability with an equal and offsetting debit to ADIT liability.

Q. How does the ASC 740 book treatment affect the ratemaking presentation of excess deferred income taxes?

A. Because the future financial statement impact of the excess deferred taxes is now reflected in the resulting regulatory liability, the reduction of test year income tax expense is now accomplished in two pieces: 1) through the amortization of the "grossed up" regulatory liability included in operating income, and 2) the income taxes calculated on the amortization. For ratemaking purposes, the net operating income impact is equivalent to the former adjustment to income tax expense for excess deferred taxes in the calculation of income tax expense.

Q. What is the 2016 test year amortization of the regulatory liability related to excess deferred income taxes?

A. The 2016 test year amortization of the regulatory liability related to excess deferred taxes is $3,000. See HELCO-1706, page 2. This amount was calculated by determining the amount of excess deferred income tax benefit flowing back to ratepayers. This is consistent with the treatment of excess deferred taxes in Docket Nos. 2009-0164 and 05-0315.

Q. How does the Company's adoption of ASC 740 impact rate base?

A. ASC 740 has no impact on rate base. Although ASC 740 requires Hawai'i Electric Light to establish certain tax-related regulatory assets and liabilities, equal and offsetting increases are made to ADIT.

Deficit Deferred Income Taxes

Q. How does the 1993 Omnibus Budget Reconciliation Act ("1993 Tax Act") affect the deferred income tax balances for the 2016 test year?

A. The 1993 Tax Act increased the income tax rate by 1%, from 34% to 35%. As a result, the federal deferred income tax liability balances were deficient by that 1% since the underlying temporary differences are expected to reverse at the current 35% rate.

Q. What does ASC 740 require in this instance where the income tax rate increases?

A. Under ASC 740's balance sheet orientation, Hawai'i Electric Light must provide the additional deferred income taxes to cover this 1% deficit since the deferred tax liability balances were adjusted at the beginning of 1993 to provide for future taxes at the lower 34% rate. The 1993 Tax Act was signed into law later in the year and provided for the higher 35% rate.

Q. What accounting adjustments were made upon the enactment of the higher 1993 income tax rate?

A. Consistent with the treatment of excess deferred income taxes, the 1% deficit deferred income tax was calculated and grossed up for the tax on tax effect. This amount was then set up as additional deferred income tax liability with an offsetting

1 regulatory asset. In effect, this adjustment reinstates a portion of the excess deferred
2 income taxes, previously carved out and placed into the regulatory liability account.
3 Q. What is the 2016 test year amortization of the regulatory asset related to deficit
4 deferred income taxes?
5 A. The 2016 test year amortization of the regulatory asset related to deficit deferred
6 income taxes is ($11,000). See HELCO-1706, page 2. This amount was calculated
7 using a method similar to the amortization of excess deferred income taxes.

8 UNAMORTIZED INVESTMENT TAX CREDITS

9 Q. What is the 2016 test year estimate of the average unamortized federal and state
10 investment tax credits?
11 A. The estimated 2016 test year average unamortized investment tax credits within HEP
12 as IPP-Owned is $15,454,000 and with HEP Utility-Owned is $17,096,000. See
13 HELCO-1704. The entire balance is made up of the state ITC, except for a small
14 amount of solar energy credits previously described. The federal ITC originating in
15 years prior to 1971 was fully amortized as of December 31, 1998. Federal
16 investment credits originating after 1971 are subject to the tax normalization rules
17 under the 1971 Revenue Act and are not included as a reduction in rate base under
18 IRC §46.
19 Q. What current federal credits are included in the definition of investment credits
20 subject to tax normalization?
21 A. Under current law, IRC §46 defines investment credits to include energy credits and
22 rehabilitation credits, among others. IRC §48 defines qualified energy property to

1 include photovoltaic systems. The tax normalization rules are set forth in Treasury
2 Regulations §1.46-6.
3 Q. How does tax normalization affect the treatment of federal investment credits?
4 A. The tax normalization rules for regulated utilities were enacted in the 1971 Revenue
5 Act. Congress specifically mandated that the benefits of the federal investment
6 credit must be shared between ratepayers and shareholders. Companies were given
7 the option to share the credits in one of two ways.
8 Under "Option 1," the unamortized balance of federal investment credits is
9 required to reduce rate base. Thus, the ratepayer receives the benefit of the credits
10 via the lower rate base. However, the annual amortization of credits is recognized
11 "below the line" and therefore does not affect operating income. In this way, the
12 benefit of the amortization income is retained by shareholders.
13 Under "Option 2," the unamortized balance of federal investment credits is
14 not subtracted from rate base. Instead, the ratepayers receive the benefit through
15 reduced cost of service from the annual amortization of credits and of the related
16 regulatory liability.
17 Hawai'i Electric Light elected Option 2 for post-1970 ITC, and consequently
18 Option 2 also applies to other federal energy credits earned. The unamortized
19 federal energy credits are not included in the unamortized federal ITC that reduces
20 rate base.
21 Q. How was the 2016 test year average unamortized state ITC calculated?
22 A. The Company calculated this amount by taking the average of the state ITC at the
23 beginning and end of the test year. The balance at the beginning of the test year is

the actual recorded unamortized state ITC as of December 31, 2015. The balance at the end of the test year was derived by adding estimated 2016 state ITC earned and subtracting the 2016 amortization. See HELCO-1704.

Q. What is the Company's position regarding the regulatory treatment of benefits due to the state ITC?

A. Because there are no laws or regulations that require the sharing of the state ITC benefits between ratepayers and shareholders, the Company passes all of the benefits of the state ITC to the ratepayers. Thus, the unamortized balance serves to reduce rate base and the annual amortization reduces the income tax expense. This treatment of the state ITC benefit was used by the Commission in determining Hawai'i Electric Light's revenue requirement in prior rate cases, including Docket Nos. 2009-0164 and 05-0315.

Q. How do other federal investment credits that are not subject to tax normalization under Treasury Regulations §1.46-6 impact rate base?

A. Based on the regulatory treatment of state ITC, other federal credits that are not subject to tax normalization requirements are generally included as a reduction in rate base and amortized into cost of service over the average service life of the Company's utility assets. This treatment effectively passes all the benefits of these credits to the customer.

Q. Please describe the credits that the Company anticipates earning on the installation of three electric vehicle (EV) charging stations in 2016.

A. The Company will be installing three EV charging stations in different locations on the Big Island. IRC §30C provides for an alternative fuel vehicle refueling property

1 credit of 30% of the cost of such property placed in service, subject to a limitation of
2 $30,000 per location. This credit is effective for qualified property placed in service
3 before January 1, 2017. The three EV stations are estimated to cost $344,000, and if
4 the actual costs incurred are approximately equal among the three locations, then the
5 estimated credit to be earned will be $90,000 in 2016 (3 x $30,000).
6 Q. What is the revenue requirement impact of the §30C EV charging station credits?
7 A. Unfortunately, the Company inadvertently excluded the impact of this credit in the
8 revenue requirements submitted and will account for the credits at the next available
9 opportunity.
10 Q. How will the §30C credits impact revenue requirements when revised?
11 A. The credits will reduce test year revenue requirements by reducing the end of year
12 rate base balance by the estimated $90,000 of credits earned, decreasing average rate
13 base by $45,000. Consistent with the accounting of other credits, the amortization of
14 the credits would not begin until 2017, the year after the charging stations are placed
15 into service. Thus, operating income will not be affected by the credits earned in the
16 test year.
17 Q. What is the financial accounting presentation of the §30C credits?
18 A. Similar to the treatment of federal ITC explained above, these federal credits will be
19 grossed up for the income tax effect. The gross up will result in a regulatory liability
20 which is offset by a deferred tax asset but the net effect on cost of service and rate
21 base will be the same as just described.

1 ACCUMULATED DEFERRED INCOME TAXES

2 Q. What is the average ADIT in the 2016 test year?

3 A. The average ADIT is $107,869,000 with HEP as IPP-Owned and $107,836,000 with
4 HEP as Utility-Owned, as shown on HELCO-1705.

5 Q. How does the ADIT balance affect rate base?

6 A. Hawai'i Electric Light's net positive ADIT balance (which is a credit to a liability
7 account) reduces rate base.

8 Q. How did the Company calculate the average ADIT balance?

9 A. The Company calculated this amount by taking the average of the estimated
10 accumulated federal and state deferred tax balances at the beginning and end of the
11 test year. The balance at the beginning of the test year was the recorded December
12 31, 2015 and the balances at the end of the test year were derived by adding the
13 estimated deferred income tax expense for the 2016 test year to the beginning
14 balances.

15 Q. What deferred income tax items were excluded from the ADIT balance?

16 A. Consistent with prior Hawai'i Electric Light rate cases, the deferred taxes for items
17 excluded in determining Hawai'i Electric Light's revenue requirements in prior year
18 rate case decisions have been excluded from the deferred tax balance for the 2016
19 test year. See HELCO-WP-1705a and HELCO-WP-1705b for the details of the
20 exclusions for federal and state ADIT, respectively.

1 ASC 740-10, Uncertain Tax Positions[3]

2 Q. Please summarize how the ASC 740-10, Accounting for Uncertainty in Income
3 Taxes, ("Uncertain Tax Positions" or "UTP") affects ADIT.

4 A. UTP, as codified in ASC 740-10, provides specific guidance on how to evaluate and
5 quantify income tax uncertainty. The UTP adjustments represent management's
6 estimate of the difference between the recognizable income tax benefits for book
7 purposes and the benefits claimed on the Company's tax returns. These differences
8 are basically a "discount" factor to the tax benefits associated with uncertain tax
9 positions claimed on the income tax returns. To the extent that these tax benefits are
10 associated with temporary differences, ASC 740-10 requires this "discount" portion
11 of the tax benefit to be carved out and separately presented as an "other tax liability."

12 Q. Please explain the background of ASC 740-10 and the mechanics of how these
13 adjustments are calculated.

14 A. The UTP analysis applies a two-step evaluation process to quantify the portion of the
15 total tax benefit to be set aside as the UTP liability. This was fully explained in
16 Ms. Ishii's testimony in Docket No. 2009-0164 (HELCO T-14, pages 33 to 35).

17 Q. What other impacts does UTP have on the financial statements?

18 A. Under ASC 740-10, a taxpayer is required to accrue interest and penalties for which,
19 under relevant law, the taxpayer would be liable, based on the UTP adjustments.
20 ASC 740-10 allows the taxpayer to classify the interest and penalties as part of the

[3] Accounting for Uncertainty in Income Taxes was previous addressed in FASB Interpretation No. 48, prior to the implementation of the FASB's Accounting Standards Codification.

UTP tax liability or as a discrete item separate from the related taxes. Hawai'i Electric Light has accrued interest separate from the related UTP tax liabilities.

Q. How does Hawai'i Electric Light propose to treat the UTP liability for rate base purposes?

A. Hawai'i Electric Light has projected that its UTP liability will grow in 2016 and will continue to grow until the Company is examined by the IRS or the statute of limitations expires on the years for which the UTP liability is accrued. The deductions for which UTP liability and related interest is being accrued relates to generation repairs deductions taken based on the Treasury Revenue Procedure 2013-24. No safe harbor method was offered in this guidance.

As agreed in Hawaiian Electric's 2011 test year rate case in Docket No. 2010-0080 and in Maui Electric's 2012 test year rate case Docket No. 2011-0092, ADIT is adjusted to include the UTP liability related to uncertain tax positions. This is accomplished by an "adjustment" made to ADIT (although categorized as an "exclusion"), reinstating the ADIT associated with the UTP liability or effectively including the UTP liability in rate base.

Q. Why did Hawaiian Electric agree to the adjustment made in the Hawaiian Electric settlement agreement?

A. The Consumer Advocate and the Department of Defense ("DOD") acknowledged that there was a cost associated with UTP liabilities but did not agree with Hawaiian Electric's solution in its direct testimony. In the alternative, the Consumer Advocate proposed that Hawaiian Electric adopt regulatory asset accounting for interest costs actually incurred as a result of an IRS or state tax audit. Hawaiian Electric and the

DOD agreed to the Consumer Advocate's proposal for regulatory asset accounting, as an appropriate method of capturing the interest costs incurred on audit related to UTPs in the interim period between rate cases. It was stated that without the approval of this regulatory asset accounting in the Hawaiian Electric 2011 test year rate case proceeding, Hawaiian Electric would be at risk of permanently losing the ability to recover realized UTP costs incurred between this proceeding and its next succeeding rate case.

Q. What methodology of computing and recovery of audit costs was agreed to in Hawaiian Electric's settlement agreement?

A. The following methodology was agreed to by Hawaiian Electric, the Consumer Advocate and the DOD, its settlement agreement in Docket No. 2010-0080:

- Hawaiian Electric's UTP liability related to temporary book/tax timing differences will be treated as a deferred income tax liability that reduces rate base. Hawaiian Electric will maintain records by vintage and tax issue associated with each uncertain tax issue and its related UTP liability that was included in the determination of rate base in each of its general rate cases and RAM proceedings ("Proceedings").
- In any quarter that Hawaiian Electric resolves with finality (defined as a closing agreement signed by the Company and the applicable government authority and taxes are paid) a tax issue for which a UTP liability has been included in rate base in a prior Proceeding, the Company shall determine the

final tax liability amount, exclusive of IRS interest, associated with the amount of the UTP 48 liability that was included in rate base.

- Hawaiian Electric shall establish a regulatory asset equal to the monthly interest computed on the final tax liability related to temporary book/tax timing difference(s) from the effective date of the rates established in such prior Proceeding(s) to the date of the final resolution of the tax liability, using the currently effective IRS interest rate on the federal tax liability and the applicable Hawaii interest rate on the Hawaii tax liability.
- Regulatory asset balances established pursuant to this agreement shall be increased to reflect monthly interest on such regulatory asset balances beginning with the date of the final resolution of the tax liabilities and ending with the effective date of the rates established in the next succeeding general rate case, using the currently effective IRS interest rate and the Hawaii interest rate for the respective regulatory assets.
- Such regulatory asset shall be recovered in rates by amortization ratably over a three year period beginning with the effective date of the rates established in a general rate case concurrent with or immediately following the final resolution of the tax liability. However, such regulatory asset shall not be included in rate base.

Q. What is Hawai‘i Electric Light’s position with regard to the methodology proposed by Hawaiian Electric in Docket No. 2010-0080?

A. Hawai'i Electric Light asserts that the methodology is reasonable and proposes to implement the same methodology for ratemaking purposes, as a condition to the adjustment for the UTP liability.

RECENT TAX DEVELOPMENTS

Extension of Bonus Depreciation

Q. How did the tax legislation passed in 2015 impact bonus depreciation?

A. On December 18, 2015, Congress passed, and President Obama signed into law, the "Protecting Americans from Tax Hikes (PATH) Act of 2015" and the "Consolidating Appropriations Act, 2016," providing government funding and a number of significant tax changes.

The provision with the greatest impact to the Company is the extension of bonus depreciation. The PATH Act retroactively extended 50% bonus depreciation for qualified property acquired and placed in service in 2015 and continues 50% bonus depreciation through 2017. The bonus depreciation percentage decreases to 40% in 2018 and 30% in 2019 and terminates thereafter.

Bonus depreciation under current law has been accounted for in the 2016 test year calculations of ADIT related to accelerated depreciation.

Additionally, the "Consolidating Appropriations Act, 2016" extended a variety of energy-related credits that were expired or soon to expire. These credits include the production credit for wind facilities and the 30% investment credit for qualified solar energy property, with various phase-out dates through 2021. Finally, the PATH Act made the research credit permanent, providing a 20% credit on the

amount that the cost of qualified research expenditures for the tax year exceeds an amount based on prior expenditures.

Q. Does this conclude your testimony?

A. Yes, it does.

LON K. OKADA

EDUCATION AND EXPERIENCE BACKGROUND

Business Address:	Hawaiian Electric Industries, Inc. 900 Richards Street, Honolulu, Hawai‘i 96813
Current Position:	Manager of Corporate Taxes (26 years)
Previous Positions:	Manager of Taxes and Depreciation Hawaiian Electric Company, Inc. (1 year) Director of Taxes and Depreciation Hawaiian Electric Company, Inc. (5 years) Tax Manager, Coopers & Lybrand (5 years) Senior Assistant Accountant, Deloitte Haskins & Sells (2 years)
Education:	Bachelor of Science, Business Administration Graduated Magna Cum Laude University of Southern California Juris Doctor Hastings College of the Law, University of California
Other Qualifications:	Certified Public Accountant, Hawai‘i Member of the State Bar, Hawai‘i and California (inactive)
Previous Testimony:	Docket No. 5658--Depreciation Adjustment Income Tax Calculation Docket Nos. 6432, 6531, 6998, 6999, 7000, 7764, 99-0207, 04-0113, 2006-0386, 2006-0387, 2008-0083, 2009-0163, 2010-0080, 2011-0092, 2013-0373, and 2014-0318 — Hawaiian Electric Company, Inc., Hawai‘i Electric Light Company, Inc., and Maui Electric Company, Limited Taxes Other than Income Taxes, Income Tax Expense, Unamortized Investment Tax Credits, Accumulated Deferred Income Taxes and Net SFAS 109 Regulatory Assets

Hawaii Electric Light Company, Inc.
Test Year 2016
Taxes Other Than Income Taxes Charged To Operations
(In Thousands)

	HEP as IPP-Owned			HEP as Utility-Owned		
	A	B	C	D	E	F
At Present Rates	At Present Rates	Adjustment	At Proposed Rates	At Present Rates	Adjustment	At Proposed Rates
PAYROLL TAXES						
1 FICA/Medicare taxes	$1,235	-	$1,235	$1,235	-	$1,235
2 Federal unemployment tax	7	-	7	$7	-	$7
3 State unemployment tax	14	-	14	$14	-	$14
4 Total payroll taxes	1,256	-	1,256	1,256	-	1,256
REVENUE TAXES						
5 Public service company tax	16,192	2,298	18,491	15,144	3,207	18,351
6 Public utility fee	1,376	195	1,571	1,287	272	1,559
7 Utility franchise tax	6,851	976	7,827	6,406	1,362	7,768
8 Total revenue taxes	24,419	3,470	27,889	22,836	4,842	27,677
9 Total taxes other than income taxes	25,675	3,470	29,144	24,092	4,842	28,933

At Current Effective Rates	At Current Effective Rates	Adjustment	At Proposed Rates	At Current Effective Rates	Adjustment	At Proposed Rates
PAYROLL TAXES						
10 FICA/Medicare taxes	$1,235	-	$1,235	$1,235	-	$1,235
11 Federal unemployment tax	7	-	7	7	-	7
12 State unemployment tax	14	-	14	14	-	14
13 Total payroll taxes	1,256	-	1,256	1,256	-	1,256
REVENUE TAXES						
14 Public service company tax	17,355	1,135	18,491	16,306	2,045	18,351
15 Public utility fee	1,475	96	1,571	1,385	174	1,559
16 Utility franchise tax	7,345	482	7,827	6,900	868	7,768
17 Total revenue taxes	26,175	1,713	27,889	24,590	3,087	27,677
18 Total taxes other than income taxes	$27,431	1,713	$29,144	$25,846	3,086.78	$28,933

Notes:

- Totals may not add or tie exactly due to rounding.

Lines 1 to 4 and lines 10 to 13
See calculation at HELCO-WP-1701, p.2

Lines 5 to 8 and lines 14 to 17
See calculation at HELCO-WP-1701 p.13

Hawaii Electric Light Company, Inc.
2016 Test Year Rate Case
Computation Of Income Tax Expense - HEP IPP-Owned
($ in Thousands)

	At Present Rates - HEP IPP-Owned		A At Present Rates	B Adjustment	C At Proposed Rates
1	Total Operating Revenues	HELCO-301 p.1	$ 275,737	$ 39,054	$ 314,791
	Operating Expenses:				
2	Fuel Oil and Purchased Power	see D below	121,747	-	121,747
3	Other Operation & Maint Exp	HELCO-1101	68,440	-	68,440
4	Depreciation & Amortization	HELCO-1601	37,773	-	37,773
5	Amortization of State ITC	HELCO-1704	(521)	-	(521)
6	Taxes Other Than Income Taxes	HELCO-1701	25,675	3,469	29,144
7	Interest on Customer Deposits	HELCO-909	197	-	197
8	Total Operating Expenses		253,311	3,469	256,780
9	Operating Income Before Taxes	line 1-line 8	22,426	35,585	58,011
	Tax Adjustments:				
10	Interest Expense	HELCO-WP-1702, p.2	(10,906)	-	(10,906)
11	Meals & Entertainment	HELCO-WP-1702, p.3	10	-	10
12	Total Tax Adjustments	line 10 + line 11	(10,896)	-	(10,896)
13	Taxable Income for Rate-Making	line 9 + line 12	11,530	35,585	47,115
14	Composite Effective Income Tax Rate	HELCO-WP-1702, p.1	38.9098%	38.9098%	38.9098%
15	Income Tax Expense	line 13 * line 14	4,486	13,846	18,332
16	Tax Benefit of Federal Research Credit	HELCO-WP-1702, p.4	28	-	28
17	Total Income Tax Expense	line 15 - line 16	4,458	13,846	18,304
	Tax Benefit of Domestic Production				
18	Activities Deduction	HELCO-WP-1702, p.5	701	-	701
19	INCOME TAX EXPENSE		$ 3,757	$ 13,846	$ 17,603

Notes:
- Totals may not add or tie exactly due to rounding.

Line 2

Fuel expense	HELCO-401	45,289	
Purchased power expense	HELCO-608A	76,458	
		121,747	D

Hawaii Electric Light Company, Inc.
2016 Test Year Rate Case
Computation Of Income Tax Expense - HEP IPP-Owned
($ in Thousands)

	At Current Effective Rates - HEP IPP-Owned		A At Current Effective Rates	B Adjustment	C Rates
1	Total Operating Revenues	HELCO-301 p.2	$ 295,500	$ 19,291	$ 314,791
	Operating Expenses:				
2	Fuel Oil and Purchased Power	see D below	121,747	-	121,747
3	Other Operation & Maint Exp	HELCO-1101	68,440	-	68,440
4	Depreciation & Amortization	HELCO-1601	37,773	-	37,773
5	Amortization of State ITC	HELCO-1704	(521)	-	(521)
6	Taxes Other Than Income Taxes	HELCO-1701	27,431	1,713	29,144
7	Interest on Customer Deposits	HELCO-909	197	-	197
8	Total Operating Expenses		255,067	1,713	256,780
9	Operating Income Before Taxes	line 1-line 8	40,433	17,578	58,011
	Tax Adjustments:				
10	Interest Expense	HELCO-WP-1702, p.2	(10,906)	-	(10,906)
11	Meals & Entertainment	HELCO-WP-1702, p.3	10	-	10
12	Total Tax Adjustments	line 10 + line 11	(10,896)	-	(10,896)
13	Taxable Income for Rate-Making	line 9 + line 12	29,537	17,578	47,115
14	Composite Effective Income Tax Rate	HELCO-WP-1702, p.1	38.9098%	38.9098%	38.9098%
15	Total Income Tax Expense	line 13 * line 14	11,493	6,840	18,332
16	Tax Benefit of Federal Research Credit	HELCO-WP-1702, p.4	28	-	28
17	Total Income Tax Expense	line 15 - line 16	11,464	6,840	18,304
	Tax Benefit of Domestic Production				
18	Activities Deduction	HELCO-WP-1702, p.5	701	-	701
19	INCOME TAX EXPENSE		$ 10,763	$ 6,840	$ 17,603

Notes:
- Totals may not add or tie exactly due to rounding.

Line 2

Fuel expense	HELCO-401	45,289	
Purchased power expense	HELCO-608A	76,458	
		121,747	D

Hawaii Electric Light Company, Inc.
2016 Test Year Rate Case
Computation Of Income Tax Expense - HEP Utility-Owned
($ in Thousands)

	At Present Rates HEP Utility-Owned		A At Present Rates	B Adjustment	C At Proposed Rates
1	Total Operating Revenues	HELCO-351 p.1	$ 257,919	$ 54,493	$ 312,412
	Operating Expenses:				
2	Fuel Oil and Purchased Power	see D below	105,514	-	105,514
3	Other Operation & Maint Exp	HELCO-1101	72,224	-	72,224
4	Depreciation & Amortization	HELCO-1601	37,773	-	37,773
5	Amortization of State ITC	HELCO-1704	(521)	-	(521)
6	Taxes Other Than Income Taxes	HELCO-1701	24,092	4,841	28,933
7	Interest on Customer Deposits	HELCO-909	197	-	197
8	Total Operating Expenses		239,279	4,841	244,120
9	Operating Income Before Taxes	line 1-line 8	18,640	49,652	68,292
	Tax Adjustments:				
10	Interest Expense	HELCO-WP-1702, p.2	(12,892)	-	(12,892)
11	Meals & Entertainment	HELCO-WP-1702, p.3	10	-	10
12	Total Tax Adjustments	line 10 + line 11	(12,882)	-	(12,882)
13	Taxable Income for Rate-Making	line 9 + line 12	5,758	49,652	55,410
14	Composite Effective Income Tax Rate	HELCO-WP-1702, p.1	38.9098%	38.9098%	38.9098%
15	Income Tax Expense	line 13 * line 14	2,240	19,319	21,560
16	Tax Benefit of Federal Research Credit	HELCO-WP-1702, p.4	28	-	28
17	Total Income Tax Expense	line 15 - line 16	2,212	19,319	21,531
	Tax Benefit of Domestic Production				
18	Activities Deduction	HELCO-WP-1702, p.7	963	-	963
19	INCOME TAX EXPENSE		$ 1,249	$ 19,319	$ 20,568

Notes:
- Totals may not add or tie exactly due to rounding.

Line 2

Fuel expense	HELCO-411	58,068	
Purchased power expense	HELCO-609	47,447	
		105,514	D

Hawaii Electric Light Company, Inc.
2016 Test Year Rate Case
Computation Of Income Tax Expense - HEP Utility-Owned
($ in Thousands)

	At Current Effective Rates - HEP Utility-Owned		A At Current Effective Rates	B Adjustment	C At Proposed Rates
1	Total Operating Revenues	HELCO-351 p.2	$ 277,665	$ 34,748	$ 312,413
	Operating Expenses:				
2	Fuel Oil and Purchased Power	see D below	105,514	-	105,514
3	Other Operation & Maint Exp	HELCO-1101	72,224	-	72,224
4	Depreciation & Amortization	HELCO-1601	37,773	-	37,773
5	Amortization of State ITC	HELCO-1704	(521)	-	(521)
6	Taxes Other Than Income Taxes	HELCO-1701	25,846	3,087	28,933
7	Interest on Customer Deposits	HELCO-909	197	-	197
8	Total Operating Expenses		241,033	3,087	244,120
9	Operating Income Before Taxes	line 1-line 8	36,632	31,661	68,293
	Tax Adjustments:				
10	Interest Expense	HELCO-WP-1702, p.2	(12,892)	-	(12,892)
11	Meals & Entertainment	HELCO-WP-1702, p.3	10	-	10
12	Total Tax Adjustments	line 10 + line 11	(12,882)	-	(12,882)
13	Taxable Income for Rate-Making	line 9 + line 12	23,750	31,661	55,411
14	Composite Effective Income Tax Rate	HELCO-WP-1702, p.1	38.9098%	38.9098%	38.9098%
15	Income Tax Expense	line 13 * line 14	9,241	12,319	21,560
16	Tax Benefit of Federal Research Credit	HELCO-WP-1702, p.4	28	-	28
17	Total Income Tax Expense	line 15 - line 16	9,212	12,319	21,532
	Tax Benefit of Domestic Production				
18	Activities Deduction	HELCO-WP-1702, p.7	963	-	963
19	INCOME TAX EXPENSE		$ 8,249	$ 12,319	$ 20,569

Notes:
- Totals may not add or tie exactly due to rounding.

Line 2

Fuel expense	HELCO-411	58,068	
Purchased power expense	HELCO-609	47,447	
		105,514	D

Hawaii Electric Light Company, Inc.
Accumulated Deferred Federal Investment Tax Credit
For The Years 2012-2016
(In Thousands)
(DR)/CR

		(A) Actual 2012	(B) Actual 2013	(C) Actual 2014	(D) Actual 2015	(E) Test Year 2016
	1971 Revenue Act					
1	Beginning Balance	315	292	269	246	223
2	Amortization (note a)	(23)	(23)	(23)	(23)	(23)
3	Ending Balance	292	269	246	223	200
	Business Energy Credits					
4	Beginning Balance	-	-	-	-	-
5	Amortization	-	-	-	-	-
6	Additions	-	-	-	-	-
7	Ending Balance	-	-	-	-	-
	Total Accumulated Deferred Federal ITC					
8	Beginning Balance	315	292	269	246	223
9	Amortization	(23)	(23)	(23)	(23)	(23)
10	Additions	-	-	-	-	-
11	Ending Balance	292	269	246	223	200

Notes:

- Totals may not add exactly due to rounding.

a See HELCO-WP-1703 for calculation of amortization amount.

Hawaii Electric Light Company, Inc.
Accumulated Deferred State Investment Tax Credit
For The Years 2012-2016
(In Thousands)
(DR)/CR

		A	B	C	D	E	F	G
		Actual				2016 TY Estimate		
		2012	2013	2014	2015	HEP IPP-Owned	Diff	HEP Utility-Owned
	State Capital Goods Excise Tax Credit							
1	Beginning Balance	12,559	13,077	13,907	14,598	15,137	-	15,137
2	Amortizations	(397)	(426)	(458)	(484)	(509)	-	(509)
3	Additions	914	1,256	1,149	1,023	1,062	3,284	4,346
4	Ending Balance	13,077	13,907	14,598	15,137	15,691	3,284	18,975
	State Renewable Energy Technologies Tax Credit (Solar)							
5	Beginning Balance	94	82	70	58	46	-	46
6	Amortizations	(12)	(12)	(12)	(12)	(12)	-	(12)
7	Additions	-	-	-				-
8	Ending Balance	82	70	58	46	34	-	34
	Total Accumulated Deferred State ITC							
9	Beginning Balance	12,653	13,159	13,977	14,657	15,184	-	15,184
10	Amortizations	(409)	(438)	(469)	(496)	(521)	-	(521)
11	Additions	914	1,256	1,149	1,023	1,062	3,284	4,346
12	Ending Balance	13,159	13,977	14,657	15,184	15,725	3,284	19,009
					a	b		c
13	**Average Balance**				(a+b)/2	**15,454**	(a+c)/2	**17,096**

Notes:

- Totals may not add exactly due to rounding.

line 2

See HELCO-WP-1704, p.2 for the 2016 test year amortization amount.

line 3

See HELCO-WP-1704, p.2 for the 2016 test year additions estimate.

line 6

See HELCO-WP-1704, p.5 for the 2016 test year amortization amount.

column F

The difference is due to certain assets included in the purchase of Hamakua Energy Partners power plant qualifying for the state capital goods excise tax credit. See HELCO-WP-1704 for the calculation.

Hawaii Electric Light Company, Inc.
2016 Test Year Rate Case
Summary Of Deferred Income Tax Balances
For Rate Base Purposes
(In Thousands)
DR/(CR)

	A	B	C	D	E	F	G
	Actual						
	Balance 12/31/12	Change 2013	Balance 12/31/13	Change 2014	Balance 12/31/14	Change 2015	Balance 12/31/15
Accelerated Depreciation Over Straight Line:							
1 FEDERAL	(46,697)	(6,804)	(53,502)	(4,341)	(57,842)	(3,912)	(61,754)
2 STATE	(2,912)	(250)	(3,162)	(226)	(3,388)	(90)	(3,478)
3 Subtotal	(49,610)	(7,054)	(56,664)	(4,566)	(61,231)	(4,002)	(65,232)
All Other Items:							
4 FEDERAL	(18,365)	(3,174)	(21,539)	(3,920)	(25,460)	(4,602)	(30,062)
5 STATE	(4,630)	(740)	(5,370)	(558)	(5,928)	(1,114)	(7,042)
6 Subtotal	(22,995)	(3,914)	(26,909)	(4,478)	(31,388)	(5,716)	(37,104)
7 TOTAL	(72,605)	(10,969)	(83,573)	(9,045)	(92,618)	(9,718)	(102,336)

	G	H	I	J	K
			=G + H		=G + J
		Estimated			
	Actual	HEP IPP-Owned		HEP Utility-Owned	
	Balance 12/31/15	Change 2016	Balance 12/31/16	Change 2016	Balance 12/31/16
Accelerated Depreciation Over Straight Line:					
8 FEDERAL	(61,754)	(5,066)	(66,820)	(6,083)	(67,837)
9 STATE	(3,478)	(196)	(3,674)	(381)	(3,860)
10 Subtotal	(65,232)	(5,262)	(70,494)	(6,465)	(71,697)
All Other Items:					
11 FEDERAL	(30,062)	(4,888)	(34,950)	(3,815)	(33,877)
12 STATE	(7,042)	(916)	(7,958)	(720)	(7,762)
13 Subtotal	(37,104)	(5,804)	(42,908)	(4,535)	(41,639)
14 TOTAL	(102,336)	(11,066)	(113,402)	(11,000)	(113,336)
	a		b		c
15 AVERAGE BALANCE		(a+b)/2	(107,869)	(a+c)/2	(107,836)

Notes:

- Totals may not add exactly due to rounding.
- Source: HELCO-WP-1705a and WP-1705b.

Hawai'i Electric Light Company, Inc.
Regulatory Assets And Liabilities - ASC 740
Dr/(Cr)
(In Thousands)

		A	B	C	D	E	F	G
					Actual			
		Balance	2013		Balance	2014		Balance
		12/31/12	Amort	Adds	12/31/13	Amort	Adds	12/31/14
1	CWIP Equity Transition (# 18673100)	67	(3)		64	(3)		61
2	ASC 740 Flow Through (# 18673200)	445	(21)		424	(21)		403
3	Plant Transition (# 18673300)	1,028	(49)		979	(49)		930
4	CWIP Equity Ongoing (# 18673400)	10,070	(333)	410	10,146	(343)	301	10,104
5	Federal ITC (# 18673500)	(186)	15		(171)	15		(156)
	Excess Def'd Taxes							
6	(# 18673110 - Acct 282)	(28)	1		(27)	3		(24)
7	(# 18673900 - Acct 283)	(42)	2		(40)	2		(38)
8	Subtotal	(70)	3	-	(67)	5	-	(62)
	Deficit Def'd Taxes							
9	(# 18673120 - Acct 282)	238	(11)		227	(11)		216
10	(# 18673190 - Acct 283)	-	-		-			-
11	Subtotal	238	(11)		227	(11)	-	216
12	RAR 88-89 (# 18670191)	-	-		-			-
13	Total	11,593	(400)	410	11,603	(408)	301	11,496

Notes:

- Totals may not add exactly due to rounding.

line 5

See HELCO-WP-1703 for calculation of the federal ITC amount.

Hawai'i Electric Light Company, Inc.
Regulatory Assets And Liabilities - ASC 740
Dr/(Cr)
(In Thousands)

		H	I	J	K	L	M
		Actual			Estimated		
		2015		Balance	2016		Balance
		Amort	Adds	12/31/15	Amort	Adds	12/31/16
1	CWIP Equity Transition (# 18673100)	(3)		58	(3)		55
2	ASC 740 Flow Through (# 18673200)	(21)		382	(21)		361
3	Plant Transition (# 18673300)	(49)		881	(49)		832
4	CWIP Equity Ongoing (# 18673400)	(352)	385	10,137	(361)	444	10,220
5	Federal ITC (# 18673500)	15		(142)	15		(127)
	Excess Def'd Taxes						
6	(# 18673110 - Acct 282)	2		(22)	1		(21)
7	(# 18673900 - Acct 283)	2		(36)	2		(34)
8	Subtotal	4	-	(58)	3	-	(55)
	Deficit Def'd Taxes						
9	(# 18673120 - Acct 282)	(11)		205	(11)		194
10	(# 18673190 - Acct 283)			-			-
11	Subtotal	(11)		205	(11)	-	194
12	RAR 88-89 (# 18670191)			-			-
13	Total	(418)	385	11,463	(427)	444	11,480
				a			b
14	Average Balance					(a+b)/2	11,471

Note: See notes on page 1.

Hawaii Electric Light Company, Inc.
Reconciliation Of ASC 740 Regulatory
Assets/Liabilities And Deferred Taxes
Dr/(Cr)
(In Thousands)

		A	B	C	D	E
	Description	Regulatory Asset/Liab Balance 12/31/2012	Federal Def Tax Balance 12/31/2012	State Def Tax Balance 12/31/2012	Other 12/31/2012	Total Def Tax Balance 12/31/2012
1	CWIP Equity Transition	67	(57)	(10)	0	(67)
2	SFAS 109 Flow Through	445	(377)	(69)	1	(445)
3	Plant Transition	1,028	(870)	(159)	1	(1,028)
4	CWIP Equity Ongoing	10,070	(8,511)	(1,556)	(3)	(10,070)
5	Federal ITC	(186)	157	29		186
6	Excess AccDep	(28)	9	2	17	28
7	Excess Deferred Taxes	(42)	14	3	25	42
8	Deficit AccDep	238	(78)	(14)	(145)	(238)
9	Deficit Deferred Taxes	-	(24)	(1)	25	(0)
10	RAR 88-89	-	3	1	(4)	(0)
11	Total	11,593	(9,734)	(1,776)	(82)	(11,593)

	Description	Regulatory Asset/Liab Balance 12/31/2013	Federal Def Tax Balance 12/31/2013	State Def Tax Balance 12/31/2013	Other 12/31/2013	Total Def Tax Balance 12/31/2013
12	CWIP Equity Transition	64	(54)	(10)	0	(64)
13	SFAS 109 Flow Through	424	(359)	(65)	0	(424)
14	Plant Transition	979	(828)	(151)	0	(979)
15	CWIP Equity Ongoing	10,146	(8,574)	(1,568)	(4)	(10,146)
16	Federal ITC	(171)	145	26	0	171
17	Excess AccDep	(27)	9	2	17	27
18	Excess Deferred Taxes	(40)	13	2	24	40
19	Deficit AccDep	227	(74)	(14)	(139)	(227)
20	Deficit Deferred Taxes	-	(24)	(1)	25	(0)
21	RAR 88-89	-	3	1	(3)	0
22	Total	11,603	(9,744)	(1,777)	(80)	(11,602)

Note: See notes on page 3.

Hawaii Electric Light Company, Inc.
Reconciliation Of ASC 740 Regulatory
Assets/Liabilities And Deferred Taxes
Dr/(Cr)
(In Thousands)

		A	B	C	D	E
	Description	Regulatory Asset/Liab Balance 12/31/2014	Federal Def Tax Balance 12/31/2014	State Def Tax Balance 12/31/2014	Other 12/31/2014	Total Def Tax Balance 12/31/2014
1	CWIP Equity Transition	61	(52)	(9)	0	(61)
2	SFAS 109 Flow Through	403	(341)	(62)	1	(403)
3	Plant Transition	930	(787)	(144)	1	(930)
4	CWIP Equity Ongoing	10,104	(8,540)	(1,562)	(3)	(10,104)
5	Federal ITC	(156)	132	24	0	156
6	Excess AccDep	(24)	8	2	14	24
7	Excess Deferred Taxes	(38)	13	2	23	38
8	Deficit AccDep	216	(71)	(13)	(132)	(216)
9	Deficit Deferred Taxes	-	(24)	(1)	25	(0)
10	RAR 88-89	-	3	1	(4)	(0)
11	Total	11,496	(9,659)	(1,762)	(74)	(11,496)

	Description	Regulatory Asset/Liab Balance 12/31/2015	Federal Def Tax Balance 12/31/2015	State Def Tax Balance 12/31/2015	Other 12/31/2015	Total Def Tax Balance 12/31/2015
12	CWIP Equity Transition	58	(49)	(9)	0	(58)
13	SFAS 109 Flow Through	382	(323)	(59)		(382)
14	Plant Transition	881	(746)	(136)	1	(881)
15	CWIP Equity Ongoing	10,137	(8,568)	(1,567)	(3)	(10,137)
16	Federal ITC	(142)	120	22		142
17	Excess AccDep	(22)	7	1	13	22
18	Excess Deferred Taxes	(36)	12	2	22	36
19	Deficit AccDep	205	(67)	(12)	(126)	(205)
20	Deficit Deferred Taxes	-	(24)	(1)	26	0
21	RAR 88-89	-	3	1	(3)	0
22	Total	11,463	(9,635)	(1,758)	(70)	(11,463)

Note: See notes on page 3.

Hawaii Electric Light Company, Inc.
Reconciliation Of ASC 740 Regulatory
Assets/Liabilities And Deferred Taxes
Dr/(Cr)
(In Thousands)

		A	B	C	D	E
	Description	Regulatory Asset/Liab Balance 12/31/2016	Federal Def Tax Balance 12/31/2016	State Def Tax Balance 12/31/2016	Other 12/31/2016	Total Def Tax Balance 12/31/2016
1	CWIP Equity Transition	55	(47)	(8)		(55)
2	SFAS 109 Flow Through	361	(305)	(56)		(361)
3	Plant Transition	832	(704)	(128)		(832)
4	CWIP Equity Ongoing	10,220	(8,638)	(1,580)	(2)	(10,220)
5	Federal ITC	(127)	108	20	(1)	127
6	Excess AccDep	(21)	6	1	14	21
7	Excess Deferred Taxes	(34)	11	2	21	34
8	Deficit AccDep	194	(63)	(12)	(119)	(194)
9	Deficit Deferred Taxes	-	(24)	(1)	25	-
10	RAR 88-89	-				-
11	Total	11,480	(9,656)	(1,762)	(62)	(11,480)

Notes:

- Totals may not add exactly due to rounding.
- Column A: Refer to HELCO-1706.
- Column B: Refer to HELCO-WP-1705a.
- Column C: Refer to HELCO-WP-1705b.
- Column D:
  Amounts represent the net unamortized "base" ASC 740 adjustments recorded in 1993 related to excess and deferred taxes booked to Regulatory Asset/Liability. Columns B and C represent the tax "gross up" of these "base" items. Lines 1 - 5 do not have comparable "base" amounts because their ASC 740 adjustments required only a tax "gross up". The differences represent rounding. The "base" for these items reside in either plant in service or unamortized Federal ITC. The "base" for lines 6 - 10 were accounted for in the Regulatory Asset/Liability account.

TESTIMONY OF
DAVE OKAMURA

MANAGER
ENGINEERING DEPARTMENT
HAWAI'I ELECTRIC LIGHT COMPANY, INC.

Subject: Plant Additions
Plant Retirements
Property Held for Future Use
Contributions in Aid of Construction
Customer Advances
Engineering Department
Renewable Energy Integration

EXECUTIVE SUMMARY

- In order to achieve a high level of customer satisfaction and progress towards the State's goal of 100% renewable energy by 2045, Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light" or "Company") must continually invest significant resources (e.g., plant additions) to upgrade the electric grid, improve reliability and increase the integration of renewable energy. This testimony addresses Hawai'i Electric Light's investment in plant additions. In doing so, Hawai'i Electric Light's capital plan focuses on investments and improvements to the Company's plant and systems that appropriately align with the applicable portions of the Hawaiian Electric Companies'[1] Strategic Transformation Plan. Hawai'i Electric Light's capital budget is comprised of projects and programs that will enhance the Company's ability to (i) serve customer requests, (ii) upgrade infrastructure and manage critical assets to modernize the grid and maintain reliability, (iii) interconnect more renewable distributed energy resources, (iv) stabilize the grid to accept the high penetration of distributed solar generation, (v) achieve affordable customer bills with generation investments, and (vi) improve safety for the public and our employees.
- Hawai'i Electric Light will be implementing the following major plant additions for the test year 2016, which are further discussed in this testimony:
    - H0002612 6800 Line Recond Ph 2 project (Rebuild of the aging 69 kilovolt transmission line and upgrade of conductor size to reduce the possibility of line overload).

[1] The Hawaiian Electric Companies are comprised of Hawai'i Electric Light; Hawaiian Electric Company, Inc. ("Hawaiian Electric"); and Maui Electric Company, Limited.

  - H0002668 6800 Line Recond Ph 3 project (A continuation of the above project in another segment of the line).
  - H0002724 CT5 Zero Time (Perform a 50,000 run hour overhaul of Keahole Combustion Turbine No. 5 to restore engine efficiency and capacity to "as-new" condition).
  - H0003191 HEP Purchase (Purchase of Hamakua Energy Partners power plant).

- The test year 2016 estimates include proposed accounting changes that affect the net plant additions.
- Joint pole sales are an offset to the net plant additions and will therefore be covered as part of plant additions in this testimony.
- This testimony discusses how plant retirements are estimated for test year 2016. The estimates for plant retirements incorporate one change to the estimation methodology from previous years: the use of vintage amortization rules for specific accounts as detailed in Hawai'i Electric Light's 2008 Book Depreciation Study proceeding, which is described in the Hawaii Public Utilities Commission Decision and Order, issued on June 3, 2011, in Docket No. 2009-0321, and as further discussed by Ms. Michelle Koyanagi in HELCO T-16.
- Certain projects are dependent on properties that the Company owns and holds for its future use in the provision of utility service under a definite plan. These properties that are held for future use will be discussed further in this testimony.
- This testimony also discusses the Company's test year 2016 estimates for contributions in aid of construction ("CIAC") and customer advances. Ms. Teri Kam, in her testimony (HELCO T-19), covers unamortized CIAC, which is a component of the test year 2016

rate base. The test year 2016 CIAC estimates were obtained by reviewing known projects requiring contributions and calculating the three year average from various programs. The test year 2016 estimates for customer advances are based on a vintage year percentage of refunds to receipts and are discussed further in this testimony.

- This testimony also includes a discussion of the Hawai'i Electric Light Engineering Department's staffing, operations and maintenance expenses, and the cost containment and productivity improvement measures that have been implemented by the department. In 2010, the Company reorganized and, as a result, many of the Engineering Department's functions changed. Since then, the Engineering Department continues to play a vital role in the Company's renewable energy integration efforts on Hawai'i island. For example, the department led the Company's efforts in significantly increasing the Company's Renewable Portfolio Standard ("RPS") from 34.6% in 2010 to 48.7% in 2015. The largest component of the increase was the rapid adoption of DER, primarily customer-sited PV generation. Specifically, during this time, the Engineering Department approved the connection of over 10,000 Net Energy Metering ("NEM"), Customer Grid Supply ("CGS"), Standard Interconnection Agreement ("SIA") and Feed-In-Tariff ("FIT") systems equating to approximately 71 additional megawatts ("MW") of renewable energy on the Hawai'i Island grid. The department also initiated and designed (and continues to design) capital projects to interconnect renewable energy resources and improvements that help to mitigate the high penetration of PV on the Hawai'i island system.

TABLE OF CONTENTS

INTRODUCTION 1

PLANT ADDITIONS 4

Major Projects 8

Baseline Projects 11

Baseline Projects above $1,000,000 19

Capital Project Monitoring Reports 22

Other Adjustments to Plant Additions 24

Joint Pole Sales 25

PLANT RETIREMENTS 26

PROPERTY HELD FOR FUTURE USE 27

CONTRIBUTIONS IN AID OF CONSTRUCTION 29

CUSTOMER ADVANCES 31

ENGINEERING DEPARTMENT 34

O&M EXPENSES 45

COST CONTAINMENT AND PRODUCTIVITY IMPROVEMENTS MEASURES 48

RENEWABLE ENERGY INTEGRATION 50

SUMMARY 60

INTRODUCTION

Q. Please state your name and business address.

A. My name is Dave Okamura and my business address is 54 Halekauila Street, Hilo, Hawai‘i.

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

A. I am the Manager of the Engineering Department of the Hawai‘i Electric Light Company, Inc. (“Hawai‘i Electric Light” or “Company”).

Q. Please describe your educational background and work experience.

A. HELCO-1800 provides my educational background and work experience.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to present the Company’s test year 2016 estimate of:

1. Plant Additions;
2. Plant Retirements;
3. Property Held for Future Use;
4. Contributions in Aid of Construction (“CIAC”); and
5. Customer Advances.

In addition, my testimony will cover the Engineering Department staffing, operations and maintenance (“O&M”) expenses, and the Engineering Department’s cost containment and productivity improvement measures. Finally, my testimony will cover the Engineering Department’s role in the Company’s renewable energy integration efforts on Hawai‘i island.

Q. Please summarize the Company's test year 2016 estimate of plant additions and other related items that you are covering in this testimony.

A. The table below provides a summary of the Company's overall 2016 test year estimates for those items that will be discussed in further detail in my testimony.

2016	Total ($000s)	Reference
Plant Additions[2] (HEP as IPP-Owned)	51,760	HELCO-1808
Plant Retirements	8,647	HELCO-1812
Property Held For Future Use BOY[3] Balance	987	HELCO-1817
Property Held For Future Use EOY[4] Balance	755	HELCO-1817
CIAC Cash Receipts	2,515	HELCO-1815
CIAC In-Kind	411	HELCO-1815
CIAC Transfers from Customer Advances	793	HELCO-1816
Customer Advances BOY Balance	11,172	HELCO-1816
Customer Advances EOY Balance	12,121	HELCO-1816
Net Customer Advances	949	HELCO-1816

The table below reflects the estimated net plant additions for the 2016 test year, including the HEP generating unit as a Hawai'i Electric Light plant in service asset assuming that the Commission approves the proposed acquisition in Docket No. 2016-0033. In Docket No. 2016-0033, Hawai'i Electric Light filed an

[2] The plant additions amount in this table excludes the acquisition of the Hamakua Energy Partners ("HEP") generating unit.
[3] "BOY" means beginning of year.
[4] "EOY" means end of year

application for the purchase of HEP's power plant, requesting approval by November 1, 2016.

2016	Total	Reference
Plant Additions (with HEP as Utility-Owned)	$137,960,000	HELCO-WP-1808

Q. Please explain the goals of Hawai'i Electric Light's capital program.

A. In order to achieve a high level of customer satisfaction and progress towards the State's goal of 100% renewable energy by 2045, Hawai'i Electric Light's capital plan focuses on investments and improvements that align with the Hawaiian Electric Companies' Strategic Transformation Plan. Hawai'i Electric Light's capital budget consists of projects and programs that will enhance the Company's ability to (i) serve customer requests, (ii) upgrade infrastructure and manage critical assets to modernize the grid and maintain reliability, (iii) interconnect more renewable distributed energy resources, (iv) stabilize the grid to accept the high penetration of distributed solar generation, (v) achieve affordable customer bills with generation investments, and (vi) improve safety for the public and our employees. These investments and improvements (through the various plant additions discussed further below) will, among other things, create a modern transmission and distribution grid, and an efficient, renewable-friendly generation system on the island of Hawai'i.

PLANT ADDITIONS

Q. What are plant additions?

A. Plant additions are the capital cost of projects that the Company completes and are used and useful for utility service. Costs are included as a plant addition after the completed project/facility is placed into service, and are recorded by transferring the total capital expenditures of the completed project/facility from the construction work in progress ("CWIP") account to the utility plant in service account.

Q. What is the difference between capital expenditures and plant additions?

A. Capital expenditures are the amount of dollars spent for a project or program but at any given time would include dollars that are still in CWIP as well as those that are plant additions. In the context of a rate case, plant additions are relevant because in Hawai'i, CWIP currently is not included in rate base and capital dollars for a project generally go into rate base after the project goes into service and the capital dollars are recorded into plant in service. In addition, property held for future use is included in rate base.

Q. How are plant additions used in this rate case?

A. Plant additions are used to determine gross utility plant in service balances. The estimated test year 2016 plant additions are added to the 2016 BOY balance to determine the estimated gross utility plant in service balance at EOY 2016. The BOY and EOY gross plant in service balances are used to develop the average net plant in service component of rate base, as described by Ms. Teri Kam in HELCO T-19.

Q. What is gross plant in service?

A. The gross plant in service is the original cost of plant assets. The original cost of plant assets includes the cost of equipment, construction, and all other capitalized costs necessary for the Company's projects to be used or useful for public utility purposes. The EOY gross plant in service is the sum of the BOY gross plant in service, plus the estimated plant additions for the year, less the estimated plant retirements.

Q. What was the gross plant in service on December 31, 2015 (2016 BOY)?

A. The 2016 BOY gross plant in service was $1,216,776,000, as shown in HELCO-1814.

Q. What is the estimated December 31, 2016 (2016 EOY) gross plant in service?

A. The estimated test year 2016 EOY gross plant in service is $1,259,890,000, as shown in HELCO-1814.

Q. What is the Company's net plant additions estimate for test year 2016?

A. Hawai'i Electric Light's net plant additions estimate is $51,760,000 for test year 2016, as shown in HELCO-1808. The plant additions estimate includes in-kind contributions of $411,000, as shown in HELCO-1815 (which is addressed later in the section on contributions in aid of construction ("CIAC")).

Q. How are the Company's 2016 BOY gross plant in service, estimated EOY gross plant in service, and estimated net plant additions affected if the Commission approves Hawai'i Electric Light's application for the purchase of HEP's power plant

in Docket No. 2016-0033 and the unit goes into Hawai'i Electric Light's plant in service by the end of 2016?

A. If the purchase is approved in 2016, the purchase amount of $86,200,000 will be included in the 2016 BOY gross plant in service as shown in HELCO-1814A. This accounting treatment is further explained by Ms. Teri Kam in HELCO T-19. As a result, the Company's 2016 BOY gross plant in service would be adjusted to $1,302,976,000 and the estimated EOY gross plant in service would be $1,346,090,000. Estimated net plant additions would remain unchanged at $51,760,000. In HELCO T-1, Mr. Jay Ignacio discusses the benefits of the acquisition and resulting cost savings to Hawai'i Electric Light and its customers.

Q. How was the estimate for plant additions for test year 2016 developed?

A. The plant additions estimate consists of the following components:

1. Specific Project Budget expenditures for 2016 that are forecasted to be incurred in order for the plant to be constructed and placed in service;
2. Program Budget expenditures for 2016 that are forecasted to be incurred in order for the plant to be constructed and placed in service. This includes Joint Pole sales that offset the amount of plant additions;
3. The CWIP balance from December 31, 2015 (BOY 2016) for projects and programs to be placed in service during the 2016 test year. CWIP represents the costs that are incurred on projects and programs while the project is under construction but not yet in service;

4. Adjustments made to the budgeted amounts for 2016 that either reduce or increase the plant addition estimate;
5. Forecasted transfer of land purchase from Property Held for Future Use;
6. A Corporate Placeholder Adjustment that reduces the 2016 plant addition estimate to a target amount that the Company is committing to manage to; and
7. Employee benefits cost adjustments and proposed accounting changes that result in reductions or increases in plant additions. (Further detailed by Mr. Paul Franklin in HELCO T-11):

A discussion of the process to determine the plant additions estimate is further explained in HELCO-1809. The following chart summarizes the 2016 plant additions components:

2016	Amount ($000s)	Reference
Program Budget Forecasted 2016 Expenditures	22,184	HELCO-WP-1808
Specific Project Budget Forecasted 2016 Expenditures (with HEP as IPP-Owned)	29,914	HELCO-WP-1808 (Total Specific Project less HEP Purchase)
BOY CWIP Balance for Projects and Programs to be Placed in Service in 2016	1,235	HELCO-WP-1808
2016 Adjustments	131	HELCO-WP-1808
2016 Forecasted Transfer from Property Held for Future Use	232	HELCO-WP-1808
Corporate Placeholder Adjustment	(5,977)	HELCO-WP-1808 Pg 4
Employee Benefits Adjustments and Proposed Accounting Changes	4,041	HELCO-1808 Pg 1 Lines 2, 3, 4, 5, and 6
Plant Additions Estimate	51,760	HELCO-1808

Major Projects

Q. What are "major projects"?

A. "Major projects" are capital projects that are subject to Paragraph 2.3(g)(2) of General Order No. 7, as modified by Decision and Order No. 21002 in Docket No. 03-0257. This rule requires the Company to file an application for any project with estimated capital expenditures in excess of $2,500,000, excluding customer

contributions, at least 60 days prior to commencement of construction or commitment for expenditure, whichever is earlier. HELCO-1810 reflects a list of applications for major projects that (i) have been filed with the Commission or have been approved by the Commission in accordance with Paragraph 2.3(g)(2) of General Order No. 7, and (ii) are expected to be placed in service by the end of 2016.

Q. Which "major projects" (i.e., capital projects with plant additions in excess of $2,500,000) does Hawai'i Electric Light expect to complete in test year 2016?

A. As shown on HELCO-1810, there are four projects costing more than $2,500,000 that Hawai'i Electric Light expects to complete in test year 2016. These four "major projects" are summarized as follows:

1. H0002612 – 6800 Line Reconductoring, Phase 2 ($2,859,636): This project is part of four phases (i.e., Phase 2) to rebuild and reconductor 21 miles of the Company's 69 kilovolt ("kV") line between the Keamuku Switching Station and the Keahole Switching Station to meet West Hawai'i transmission needs by reducing the possibility of line overload and replacing aging infrastructure. The 6800 line was built in the mid-1950s and is one of the Company's oldest 69 kV transmission lines. Phase 2 rebuilds and reconductors 6.3 miles of the 21 mile 69 kV line up to the current National Electric Safety Code ("NESC") requirements. The Commission approved Phases 2-4 of this project in Decision and Order No. 32930, issued on June 24, 2015, in Docket No. 2013-0153 ("Decision and Order No. 32930") and construction is currently in progress.

2. H0002668 – 6800 Line Reconductoring, Phase 3 ($4,639,054): Similar to the above-described Phase 2 project, this project (i.e., Phase 3) rebuilds and reconductors a different segment of the 21 mile 69kV line (i.e, 6.9 miles of the same 6800 line), up to the current NESC requirements. As stated above, the Commission approved Phases 2-4 of this project in Decision and Order No. 32930. This Phase 3 project is currently awaiting other regulatory agency approvals before commencing construction.
3. H0002724 – CT5 Zero Time ($3,227,224): This project performs a 50,000 run hour overhaul of Keahole Combustion Turbine No. 5 ("CT5") to restore engine efficiency and capacity to "as-new" condition. The Commission approved the commitment of funds for the CT5 overhaul in Decision and Order No. 31707, issued on November 26, 2013, in Docket No. 2013-0144. Additional details on this project are provided by Mr. Norman Uchida in HELCO T-7.
4. H0003191 – HEP Purchase ($86,200,000): An application to, among other things, commit funds in excess of $2,500,000 in accordance with Paragraph 2.3(g)(2) of General Order No. 7 (Docket No. 2016-0033) is pending before the Commission regarding the proposed purchase of the HEP power plant. Additional details on this project or proposed purchase are provided by Mr. Jay Ignacio in HELCO T-1.

1 Baseline Projects

2 Q. What are "baseline projects"?

3 A. Baseline projects are projects with capital expenditures that are $2.5 million or less
4 and not subject to Paragraph 2.3.g.2. of General Order No. 7.

5 Q. Please provide Hawai'i Electric Light's historical and projected level of plant
6 additions for baseline projects.

7 A. The table below provides Hawai'i Electric Light's historical baseline plant additions
8 for the period 2011-2015 and projected baseline plant additions for the 2016 test
9 year and 2017 and 2018. Order No. 32735 (Docket No. 2013-0141) established a
10 decoupling Rate Adjustment Mechanism ("RAM") cap and an above the cap
11 recovery mechanism for major projects in order to manage baseline spending
12 (detailed further by Mr. Joseph Viola in HELCO T-25). The Company strategically
13 prioritized and managed the baseline capital plant additions spending to best serve
14 and benefit customers and as a result, did not need to request above the cap recovery
15 for these major projects:

16 - H0002509 6800 Line Recond Ph 1 – completed in 2014
17 - H0002725 CT-4 Zero Time – completed in 2014
18 - H0002612 6800 Line Recond Ph 2 – planned in test year 2016
19 - H0002668 6800 Line Recond Ph 3 – planned in test year 2016
20 - H0002724 CT-5 Zero Time – planned in test year 2016
21 - H0002669 6800 Line Recond Ph 4 – planned in 2017

Historical and Forecasted Plant Additions (in 000s)								
	Actual 2011	Actual 2012	Actual 2013	Actual 2014	Actual 2015	Forecast 2016	Forecast 2017	Forecast 2018
Baseline	40,430	47,921	59,017	47,263	51,664	41,034	50,758	53,700
GO7 [5]				4,353		10,726	1,142	
Total Additions	40,430	47,921	59,017	51,616	51,664	51,760	51,900	53,700

Q. Describe the types of projects and programs that constitute Hawai'i Electric Light's baseline plant additions in the 2016 test year.

A. The table below provides a breakdown of the 2016 test year baseline plant additions by strategic categories. See HELCO-WP-1809 for details. Explanations of each category along with major initiatives within each category follows.

2016 Baseline Capital Plant Additions by Strategic Category (in 000s)	
Upgrade and Maintain T&D Assets	12,259
Improve Safety	11,242
Serve Customer Requests	8,603
Mitigation for High Penetration of DER[6]	3,663
Telecommunication Modernization	2,722
Generation Asset Management	2,196
Environmental Stewardship	654
Electric Vehicle Charger Stations	344
Other	1,287
Total	**42,970**
Adjustments	(1,936)
2016 Test Year Baseline Plant Additions Forecast	**41,034**

[5] Above the cap recovery was not requested for these major General Order No. 7 projects
[6] "DER" stands for distributed energy resources

1. Upgrade and Maintain T&D Assets: These investments allow the Company to maintain and improve the reliability of the transmission and distribution facilities. The projects in this strategic category help reduce the chance of large or prolonged outages by upgrading facilities to provide contingency capacity and routes to feed power to customers. These projects and programs also support the asset management strategies detailed by Mr. Miles Nagato in HELCO T-8.
    a. Two large specific projects to improve contingency capacity and voltage quality thru reconductoring, H0002777 Kilauea 3400 Ph 1 and H0003124 Laupahoehoe Recond Ph 3, are detailed in the next section of my testimony. These projects will improve reliability, voltage constraints, and employee safety and will bring these facilities to current NESC standards.
    b. A collection of projects at the Waimea Switching Station is planned to upgrade the transmission relaying for this critical node in the island system. This collection of projects includes:
        i. H0003064 – Waimea Control Room ($909,960): Installs a new control room to improve environmental conditions for critical substation microprocessor relays that currently reside in outdoor cabinets. Reliable operation of transmission relays during faults is critical to system stability.
        ii. H0002830 – Waimea 7300 Relay Upgrade ($90,887); H0002831 – Waimea 7200 Relay Upgrade ($76,961);

H0003170 – Waimea 7700 Relay Upgrade ($72,047); and

H0003144 – Waimea 3300 Relay Upgrade ($72,047):

These four projects replace 20+ year old end-of-life microprocessor transmission line relays with updated models and protection schemes.

c. Distribution transformers are purchased and replaced on the H1002000 Purchase Tsf and Related Eq program, which is further described by Mr. Miles Nagato in HELCO T-8 and HELCO-808.

d. Asset management strategy programs (strategies detailed in Mr. Miles Nagato's testimony, HELCO T-8) for primary underground cables, transmission breakers and substation transformers are normally budgeted in this category.

i. Due to higher priority projects in 2016, asset replacements of primary cables, transmission breakers and substation transformers were deferred. These deferrals can be accommodated in the short-term, however, this practice cannot continue indefinitely.

ii. H1012000 – Unit Substation Purchase ($784,496): This program precapitalizes purchases of substation transformers for growth, replacements and spares. Due to the long timeframe to receive an order, transformers are purchased the year before planned construction.

2. Improve Safety: Safety, for the public and employees, is a top priority for the Company. Projects and programs are initiated to address specific safety issues or to minimize ongoing hazards.

   a. The two main specific projects in this category – H0003037 Kano 13.8 kV Bus B Sw Gear and H0003172 RPR Banyan Dr MH#3-MH#11 Switch Replace– are described further in the next section of my testimony. These projects will improve safety by reducing a very high-arc-flash hazard with new relay protection and equipment, and by replacing an aging and hazardous underground system in a heavy foot traffic area.

   b. H1006000 Pole Line Repl & Reloc ($7,705,723). This program (which is comprised of various individual projects less than $100,000) addresses identified problems with existing poles and fixtures on the pole to avoid a failure that causes an outage and possible safety hazard. The majority of the budget is spent proactively to replace poles with identified structural problems to prevent a failure that could affect the public safety. Aged based replacements are also addressed according to the wood pole asset strategy (detailed in Mr. Miles Nagato's testimony, HELCO T-8) to manage the pole asset and avoid a buildup of failures that could negatively affect reliability. If poles identified to be replaced are in hard-to-access or unsafe areas, the pole line is relocated to make it safer for employees to work on and to reduce restoration time during an outage.

3. Serve Customer Requests: The Company's business is to serve customers. The projects and programs in this category build facilities to provide reliable electric service to customers. Specific projects to relocate facilities, at the request of the State and/or County, are also included.
    a. Two substation additions for new customers – H0002695 Haleaha Sub and H0003063 New Umauma Substation – are described further in the next section of my testimony. These projects will serve additional loads and mitigate issues caused by the additional loads.
    b. The largest program in this category is H1001000 Purchase New KWH Meters, which is further described by Mr. Miles Nagato in HELCO T-8 and HELCO-808.
4. Mitigation of High Penetration of DER: The high penetration of photovoltaic ("PV") systems on the island system has increased the risk of large widespread outages or total system failure due to the aggregate amount of power that could be lost during under- or over- frequency events. The following projects will reduce the risk of such outages and failures.
    a. Dynamic Underfrequency Load-Shedding ("UFLS"): The large amount and variability of PV energy has made the existing underfrequency load-shedding scheme less effective in protecting the system from sudden loss of generation. A collection of 41 projects modifying and upgrading underfrequency relays was undertaken to create a dynamic scheme that adjusts the load-shed blocks automatically every 15 minutes according to

the current load on each circuit. The new scheme should reduce the amount of customers affected and reduce the risk of a system frequency excursion disconnecting legacy PV systems (this risk is further described, in the context of "ride-thru" setting requirements, on page 55 of my testimony).

b. H0002046 – Kanoe Breaker Fail Relays ($589,496): To enable speeding up of transmission fault clearing times, which reduces the risk of mass disconnection of PV inverters, this project will install breaker failure relay protection at the Kanoelehua switching stations. A breaker failing to trip and clear a fault is a rare but disruptive system event, especially at a critical station like Kanoelehua switching station, which has multiple transmission lines and power plants.

c. This category also contains customer-funded projects that enable interconnection of large customer DER systems by addressing the potentially damaging voltage issues on the distribution circuit. An example of this is the installation of a direct transfer trip ("DTT") function from the substation to the New Hope PV system (H0002956) that insures a quick disconnection of the large PV system from the grid when the substation circuit breaker opens.

5. Telecommunication Modernization: The Company is investing in a packet communication network (a digital networking communications method that uses Internet Protocol ("IP") addressing and groups transmitted data into packets that

seek out the most efficient transmission route) in order to increase the functions and bandwidth needed to modernize the grid and manage the non-traditional resources interconnecting to the power system.

a. The largest specific project in this category is H0002872 TMP Hilo Baseyard Comm which is further explained in the next section of my testimony. This project will install packet network equipment to support existing and future applications in the Company's substations, power plants, baseyards, and offices.

6. Generation Asset Management: The Company invests in projects and programs to maintain the reliability and efficiency of the generating equipment so that customers benefit from better service and lower cost.

a. The largest specific project in this category is H0003123 CT-3 Hot Section which is further described by Mr. Norman Uchida in HELCO T-7 and HELCO-WP-710.

7. Environmental Stewardship: The Company is committed to being a good environmental steward. The projects and programs in this category invest in facilities and technologies that help protect the environment.

8. Electric Vehicle Charger Stations: One of the strategic initiatives of the Company is to help electrify transportation in Hawai'i. To support this, the Company has funded projects to install fast charging stations.

9. Other: This category consists of miscellaneous projects and programs that support the business, including facility improvements, vehicles and information technology.

Baseline Projects above $1,000,000

Q. Which baseline projects do Hawai'i Electric Light estimate to cost more than $1,000,000, but less than $2,500,000 (excluding customer contributions), and expect to complete in test year 2016?

A. As shown on HELCO-1811, there are eight specific baseline projects that the Company estimates to cost more than $1,000,000, but less than $2,500,000 (excluding customer contributions), and expects to complete in test year 2016:

1. H0002695 – Haleaha Sub ($1,084,147): This project to build a new 10 Mega Volt Amp ("MVA") distribution substation in Waimea was initiated by new customer loads, specifically the Department of Hawaiian Home Lands ("DHHL") Lalamilo Phase 2A residential housing development. The new substation will serve the additional loads and mitigate area voltage issues caused by the additional loads. The customer (DHHL) contributed funds and land to construct the new substation. The 69 kV line extension to the substation was approved by the Commission in Decision and Order No. 32821, issued on May 1, 2015, in Docket No. 2014-0068. Construction is currently in progress and expected to be completed in August 2016.
2. H0002777 – Kilauea 3400 Ph 1 ($2,127,864): This is a system project to relocate and reconductor approximately 9 miles of 34 kV line between

Kilauea Switching Station and Namakani Paio Substation to improve reliability, voltage constraints, and employee safety. The 3400 line was built in 1953 in the lava fields. It will be rebuilt to current NESC standards and relocated to the highway where it can be more safely maintained by employees and accessed by trucks. This project also involves reconductoring the 34 kV circuit between the two substations to increase capacity and reduce voltage drop, especially during contingency conditions to restore customers from an alternate source. This project is currently awaiting approvals from the Hawai'i Volcanos National Park and the Department of Transportation prior to commencing construction.

3. H0002872 – TMP Hilo Baseyard Comm ($2,032,364): This project involves building a secure, hardened facility and tower at the Hilo Baseyard, which is the central core of Hawai'i Electric Light's telecommunication network on the island. The project is also consistent with the 2013 Corporate Telecom Master Plan ("TMP") by installing modern packet network equipment to support existing and future applications in the Company's substations, power plants, baseyards, and offices. Construction is currently in progress and expected to be completed in December 2016.

4. H0003037 – Kano 13.8kV Bus B Sw Gear ($1,451,709): This project involves replacing an aging 13.8 kV switchgear lineup at the Kanoelehua Switching Station in Hilo. This will improve safety for the Company's employees by reducing a very high arc-flash hazard with new relay

protection and equipment. The installation of new equipment and 13.8 kV breakers will modernize the equipment so it is maintainable with available parts. Construction is currently in progress and expected to be completed in October 2016.

5. H0003063 – New Umauma Substation ($1,714,450): This project to build a 5 MVA distribution substation was initiated by new customer loads that caused the area to exceed the existing Hakalau substation capacity. The existing substation was on a very small parcel of land, so a new lot was purchased to build the Umauma Substation. The new substation will be fed from the 34 kV system and provide distribution at 12 kV in preparation for future projects to establish ties to the neighboring substation. Currently, Hakalau substation feeds the area with 2.4 kV, which is unable to serve long distances, and is isolated from any alternate sources. The new large customers partially contributed to the cost of construction. Construction is currently in progress and expected to be completed in November 2016.

6. H0003123 – CT-3 Hot Section ($1,136,410): This project involves replacing the high pressure turbine for Puna Combustion Turbine No. 3. This project was completed in June 2016. Additional details on this project are provided by Mr. Norman Uchida in HELCO T-7.

7. H0003124 – Laupahoehoe Recond Ph 3 ($1,235,632): This system project upgraded approximately 1.1 miles of 2.4 kV distribution conductors to enable a proper tie between Laupahoehoe substation and Papaaloa substation. In the

event of an emergency contingency, the tie allows faster restoration of customers. The tie also allows planned maintenance of the substations and line. This project was the third and final phase of the Laupahoehoe reconductoring effort. It included the replacement of several transmission poles to meet NESC standards since the 2.4 kV distribution was underbuilt. This project was completed and placed into service in February 2016.

8. H0003172 – RPR Banyan Dr MH#3-MH#11 Switch Replace ($1,344,036): This system project involves replacing an aging and hazardous underground system on Banyan Drive in Hilo, where the community and tourists often walk. The focus is on replacing the submersible vacuum switches which have failed violently at other utilities. A new conduit system and new cables will be installed to facilitate the transition from the old system and retire the existing, aged cables. This project is currently being designed and is expected to be completed in November 2016.

Capital Project Monitoring Reports

Q. Does Hawai'i Electric Light file reports to keep the Commission informed of the capital projects that the Company has planned and those that are in progress or completed?

A. Yes. The Company does both. In accordance with Paragraph 2.3.g.1. of General Order No. 7 and Decision and Order No. 21002 in Docket No. 03-0257, the Company files an annual report of projected capital expenditures for the ensuing five years. Among other things, the report includes a brief description of each project

with estimated capital costs of $1 million or more for the upcoming year, the project's estimated capital costs and start and completion dates. If the Commission desires, the Company provides a presentation to the Commission and the Consumer Advocate of the Company's capital budget and the status of on-going projects of $1 million or more. Hawai'i Electric Light filed the most recent five-year capital budget expenditures report on January 8, 2016 and filed an update of the report on June 1, 2016.

In accordance with Decision and Order No. 21002 in Docket No. 03-0257 and the Final Decision and Order in Docket No. 2008-0274, the Company files an annual capital projects completion report by March 31 of each year with a narrative list of capital projects completed in the preceding year.[7] The report includes the following information:

1. *Completed Projects with a Total Cost of Less Than $2.5 Million.* Itemize each completed project with the actual costs incurred, with an explanation of any deviations of plus or minus fifteen (15) percent from the budgeted cost, and a general discussion of the reasons causing the variance.

2. *Completed Projects with a Total Cost of $2.5 Million or More.* Identify each completed project and its total cost.

Hawai'i Electric Light filed the most recent report on March 29, 2016 in Docket No. 03-0257.

[7] Decision and Order No. 21002 required the Hawaiian Electric Companies to file this report by May 31 of each subsequent calendar year. However, to comply with the Final Decision and Order in Docket No. 2008-0274, issued on August 31, 2010, the Company has since filed this report by March 31 of each year.

1 Every quarter, the Company files a capital project status report which
2 provides various information on the Company's major projects including planned
3 and actual in-service dates, estimated costs, and explanations of total cost variances
4 of 10% or more of completed major projects pending a final cost report. The
5 Company filed the most recent report on June 29, 2016.

6 Other Adjustments to Plant Additions

7 Q. Were there any other adjustments to the test year 2016 plant additions?

8 A. Yes. After the rate case budget scenario was suspended in the UI Planner budgeting
9 system, the Company made minor corrections and updates to the plant addition
10 estimates to provide an accurate 2016 plant addition forecast. These adjustments are
11 shown on HELCO-WP-1808. An adjustment to reduce plant addition estimates was
12 also made for employee benefits transferred to construction as shown in
13 HELCO-WP-1808, page 4, and discussed by Mr. Paul Franklin in HELCO T-11.
14 There were also adjustments made due to certain proposed accounting treatment
15 changes.

16 Q. Please identify these accounting treatment changes.

17 A. The proposed accounting treatment changes are as follows:

18 a. A change in the method of calculating the Administrative and General
19 ("A&G") costs transferred to construction.

20 b. A change in accounting treatment of Operation & Maintenance expenses
21 Associated with Capital projects ("OMAC").

c. Implementation of a Power Supply clearing account to appropriately allocate Production Department supervisory and administrative costs to capital projects.

d. A change in accounting for Distribution Department training expenses (see Mr. Miles Nagato's T-8 testimony and HELCO-803).

Mr. Paul Franklin discusses these accounting treatment changes in HELCO T-11. HELCO-WP-1808, page 4, shows the adjustment amounts and the methodology to distribute the costs to the various plant functions.

Joint Pole Sales

Q. What are joint pole sales?

A. Joint pole sales are costs reimbursed to Hawai'i Electric Light for ownership shares in jointly owned poles from the other joint pole owners.

Q. What are the Company's estimated test year 2016 joint pole sales?

A. The joint pole sales estimate is $2,464,727 for the 2016 test year, as shown in HELCO-WP-1813.

Q. How were joint pole sales reflected in 2016 test year estimates?

A. Joint pole sales are reflected as an offset to gross plant additions under the program budget for H1007000 Minor Other Overhead Additions, as shown in HELCO-1813.

Q. How is the amount of joint pole sales determined?

A. Joint pole sales for test year 2016 were estimated by examining the historical amounts of actual joint pole sales for the previous five recorded years (2011-2015).

A five-year simple average ratio is calculated and applied as an offset to gross plant additions on the H1007000 program budget. See HELCO-WP-1813.

PLANT RETIREMENTS

Q. What are plant retirements?

A. Plant retirements are facilities that were in plant in service but have been removed or retired from service because they are no longer used or useful for utility purposes.

Q. What is the Company's plant retirements estimate for test year 2016?

A. The plant retirements estimate is $8,647,000 for test year 2016, as shown in HELCO-1812.

Q. How was the plant retirements estimate for test year 2016 determined?

A. Due to the approval of vintage amortization accounting for certain plant accounts in the Commission's Decision and Order, issued on June 3, 2011, in Docket No. 2009-0321, the plant retirements for test year 2016 were calculated separately for depreciable plant accounts and vintage amortizable accounts. In HELCO T-16, Ms. Michelle Koyanagi provides a more detailed explanation of vintage amortization accounting.

Except for production plant, retirements for depreciable plant accounts were estimated for test year 2016 by examining the historical ratio of actual plant retirements per functional group to BOY depreciable plant balances for the previous five recorded years (2011–2015). A five-year simple average ratio was calculated and applied to the test year 2016 plant balances to determine the estimated plant retirements for test year 2016. See HELCO-WP-1812, pages 1-2. This

methodology is consistent with the methodology used by the Company in its recent rate cases including test year 2010 and withdrawn test year 2013.

For production plant, the Company first separately identified terminal (final) retirements and interim retirements for the last five years (2011-2015). Interim retirements are the retirements of component parts of a major structure prior to the complete removal of the production unit from service. Terminal or final retirement is the retirement of a major structure unit in its entirety, or a very large part of it. In 2015, the retirement of Shipman generators 3 and 4 was a terminal retirement. The five-year simple average of production retirements to BOY depreciable production plant balances was only determined for interim retirements. For a test year, the Company would estimate the terminal retirement amounts for each major production unit being retired. However, no terminal retirements are anticipated in test year 2016.

Plant retirements for vintage amortizable accounts for test year 2016 were determined based on the original costs in the vintage accounts which would reach the end of their amortization periods in 2016. See HELCO-WP-1812, page 3.

PROPERTY HELD FOR FUTURE USE

Q. What is property held for future use?

A. Property held for future use is property that is not currently used and useful for utility operations, but is owned and being held by the Company for its future use in the provision of utility services under a definite plan.

Q. Does the Company currently have any property that is being held for future use?

A. Yes. There are currently three properties being held for future use. These three properties are summarized as follows:

1. Umauma Substation Land (acquired in 2013): This property will be used for the construction of Umauma substation in 2016 (project described previously in this testimony).
2. Papaaloa Substation Land (acquired in 2015): This property will be used for the construction of the new Papaaloa substation scheduled for completion in 2017. The existing substation is substandard in capacity and safety clearances. It is also located on an extremely small lot that does not allow for a proper rebuild.
3. Hokukano Substation Land (acquired in 2007): This property was provided as in-kind CIAC by the developer of the Hokulia resort in South Kona. The lot will be used to construct a new Hokukano substation to add capacity for the area to serve the development. The project is scheduled for completion in 2018.

Q. What is the test year 2016 estimate of property held for future use?

A. The BOY test year 2016 estimate for property held for future use is $987,000, as shown in HELCO-1817. The EOY test year 2016 balance for property held for future use is estimated to be $755,000, as shown in HELCO-1817. The Umauma substation land is planned to be put in service in 2016 and is reflected in the test year plant additions, as shown in HELCO-WP-1808.

Q. Will additional properties held for future use be acquired in test year 2016?

A. There are no plans to acquire properties for future use in test year 2016.

CONTRIBUTIONS IN AID OF CONSTRUCTION

Q. What are contributions in aid of construction ("CIAC")?

A. CIAC is defined in Rule No. 1 of the Company's Tariff as "money, property or services contributed to the Company for construction which is not subject to refund or reimbursement in whole or in part." These types of contributions are non-refundable and generally are required when a customer requests services and/or facilities that are acceptable to the Company, but involve or require additions beyond the standard facilities that the Company would normally install. For example, when a customer requests an underground installation, the Company collects a non-refundable contribution equal to the difference in estimated cost between an equivalent overhead facility and the requested underground facility of a higher estimated cost. The collected amount is classified as a CIAC.

Q. What are in-kind contributions?

A. In-kind contributions ("in-kind CIAC") are non-cash contributions such as the duct line infrastructure built by a subdivision developer or similar customer, who later dedicates (i.e., turns over ownership of) the facilities to the Company.

Q. How is the value of in-kind contributions determined?

A. The value of the in-kind contributions or in-kind CIAC is based on cost estimates to construct the in-kind contribution (e.g., cost to construct the duct line infrastructure).

The Company periodically updates its average unit cost estimates for in-kind contribution infrastructure by evaluating local current construction costs.

Q. What are the Company's estimates of cash and in-kind CIAC for test year 2016?

A. The Company's 2016 test year estimates are $2,515,000 for cash CIAC and $411,000 for in-kind contributions. See HELCO-1815.

Q. How were the estimates of CIAC for test year 2016 derived?

A. The estimates were derived by reviewing known specific projects requiring contributions and also using a three-year average that was calculated for the various programs. See HELCO-WP-1815.

Q. What is Hawai'i Electric Light's estimated transfers of customer advances to CIAC for test year 2016?

A. The estimated transfers from customer advances to CIAC is $793,000 for test year 2016, as shown in HELCO-1815 and HELCO-1816. Transfers from customer advances to CIAC are discussed further in the section below on customer advances. When the refunding period has expired for customer advances, the funds originally advanced by the customers are no longer refundable and are transferred to CIAC.

Q. What is the Company's total CIAC estimate for the 2016 test year?

A. Hawai'i Electric Light's 2016 test year estimate of total CIAC is the sum of the cash and in-kind CIAC and transfers of customer advances to CIAC, which is $3,719,000, as shown in HELCO-1815.

1 CUSTOMER ADVANCES

2 Q. What are customer advances?

3 A. Customer advances are funds advanced by a customer for facilities provided by the
4 Company. Rule No. 1 of the Company's Tariff defines Customer Advances as the
5 "amount of money paid to the Company for construction which may be subject to
6 refund in whole or in part." Similar to CIAC, the Company collects funds from the
7 customer in exchange for certain facilities to be provided by the Company. These
8 advances are received under the conditions of Rule No. 13 of the Company's Tariff
9 relating to line extensions to individuals or developers and Rule No. 13-S of the
10 Company's Tariff relating to line extensions to certain qualifying participants, as
11 discussed further below. However, customer advances differ from CIAC in that they
12 are subject to refund in whole or in part under certain situations. Under Rule No. 13,
13 generally, customer advances are required for service requests that construct new
14 lines within a development/subdivision or to serve an individual applicant for which
15 the cost to construct the lines exceeds the Company's expected revenue from that
16 customer for thirty-six months. Rule No. 13-S addresses requests for line extensions
17 for lots in subdivisions developed prior to the enactment of the Hawaii County
18 Ordinance No. 62 in 1967. Under Rule No. 13-S, generally, customer advances
19 equal two-thirds of the total cost of the line extension project divided by the total
20 number of subscribers.

Q. What are the components of customer advances?

A. The components of customer advances consist of (1) receipts of customer advances, (2) offset/reduced by (a) refunds of customer advances, and (b) transfers of customer advances to CIAC.

Q. What are refunds of customer advances?

A. Refunds of customer advances are reimbursements of amounts that an applicant paid up front to install a line extension required to receive electric service. As described further below, the process for customer advance refunds is different for individual applicants as compared to developers/sub-dividers.

Q. How is the customer advance refunded to individual applicants?

A. When the cost of the line extension to serve the individual applicant exceeds the 36 month estimate of revenues, the individual applicant pays a customer advance for the difference. An annual review of revenue from this line extension is monitored for the duration of the five-year refunding period from the date the line extension is first energized. A customer advance refund is made when the revenue received exceeds 1/5 of the individual applicant's customer advance. In addition, the individual applicant is entitled to a line extension allowance for any new permanent customers or additional loads connected off of the individual applicant's line extension for which the advance was made. The total amount to be refunded to the individual applicant is limited to the amount of the customer advance made. After the five-year period expires, any customer advance amount not refunded becomes non-refundable and is transferred to CIAC.

Q. How is the customer advance refunded to developers/sub-dividers?

A. Unlike individual applicants, developers/sub-dividers are required to pay a customer advance for the entire estimated cost of the line extension up front. Customer advance refunds are made to a developer/sub-divider making the advance as permanent customers are connected to the line. An annual review of the revenue from this line extension is monitored for the duration of the five-year refunding period from the date the line extension is first energized. The developer/sub-divider is refunded all revenue received from permanent customers or additional permanent load within the subdivision. The total amount to be refunded to the developer/sub-divider is limited to the amount of customer advance made. After the five-year refunding period expires, any customer advance amount not refunded becomes non-refundable and is transferred to CIAC.

Q. What is the estimated customer advance for test year 2016?

A. As shown on HELCO-1816, receipts of customer advances for 2016 is estimated at $2,257,000 for test year 2016. This amount is reduced by the estimated refund of $515,000 for test year 2016 and estimated transfers to CIAC of $793,000 in test year 2016. This results in a net customer advance of $949,000 for test year 2016.

Q. How were the test year 2016 customer advance receipts estimated?

A. The customer advances receipts were estimated by reviewing known specific customer projects requiring customer advances and estimating trended amounts from various programs. Refer to HELCO-WP-1816, pages 1 and 2.

Q. How were the test year 2016 customer advance refunds and transfer amounts estimated?

A. Using the list of projects that paid advances in the past five years, the estimates of refunds and transfers to CIAC were based on actual revenue between January 1, 2016 and March 31, 2016 and forecasted revenue between April 1, 2016 and December 31, 2016. Refer to HELCO-WP-1816 page 3. Customer advances are held by the Company for the five-year refunding period. At the conclusion of that period, any remaining customer advances become non-refundable and are transferred to CIAC. Using a subset of projects that were in the fifth year of refunding, the estimated amount to be transferred to CIAC in test year 2016 was calculated by subtracting the estimated refunds from the 2016 BOY balance of advance for each project. Refer to HELCO-WP-1816, page 5.

ENGINEERING DEPARTMENT

Q. What is the function of the Engineering Department?

A. The Engineering Department is responsible for designing all electrical facilities required to transmit and deliver power from outside the generating plant to the Company's customers. The Engineering Department is also responsible for designing interconnection facilities for all types of generation including, without limitation, large generating facilities (that require purchase power agreements) and smaller DER facilities (that interconnect through the Company's distribution facilities). Finally, the Engineering Department is responsible for developing studies

for and designing future improvements to the Company's transmission and distribution system.

Q. How is the Engineering Department organized?

A. The Engineering Department currently consists of five divisions, as follows, with the responsibility area designation in parentheses:

1. Administration Division (HWA)
2. Customer Engineering Hilo Division (HWC)
3. Customer Engineering Kona Division (HWK)
4. Customer Engineering Waimea Division (HWW)
5. Planning Division (HWX)

The functions and/or activities of these divisions are described in more detail in HELCO-1818.

Q. Have there been any changes to the Engineering Department and/or functions since the last rate case?

A. Yes. In 2010, the Company reorganized and created the Support Services Department, transferring the Survey Division (4 positions) and Information Services Division (10 positions) from the Engineering Department. See the direct testimony of Mr. Tom Cummins (HELCO T-10) for further discussion on this matter.

Q. Where do Engineering Department personnel charge their labor time?

A. Engineering Department personnel charge their time to two primary areas: capital projects and non-capital/non-project work:

1. Capital projects: Personnel working directly on specific capital projects and programs.
2. Non-capital/non-project work: Personnel working on non-capital functions such as routine customer requests, planning and administrative tasks, including operations and maintenance activities (primarily the customer service block of accounts for the Company's DER interconnection process, and to a much lesser degree the transmission, distribution, and A&G block of accounts).

The labor input sheet workpapers supporting the Engineering Department personnel are shown at HELCO-WP-1801.

Q. How were the estimates of the number of employees in the Engineering Department developed?

A. The count is derived from the actual 2016 positions and is adjusted to account for temporary vacancies expected to be filled by the end of 2016. These positions were filled in the past, and the vacancies were created by voluntary separations from the Company.

Q. What role did the Hawaiian Electric Companies' Strategic Transformation Plan play in determining the work to be done.

A. The Hawaiian Electric Companies' Strategic Transformation Plan provides guidance on the near and longterm priorities that the Engineering Department focuses on. All of the department's resources and projects are linked to achieving the Company's

goals of providing quality customer experiences, modernizing the grid, realizing cost effective, clean energy and improving safety.

Q. What was the 2011 budgeted employee count for the Engineering Department?

A. The budgeted employee count for 2011 was 50 employees, broken down as follows:

Division	Count
Administrative Division (HWA)	10
Customer Engineering Hilo Division (HWC)	13
Energy Planning Division (HWE)	2
Customer Engineering Kona Division (HWK)	14
Customer Engineering Waimea Division (HWW)	1
Planning Division (HWX)	10
Total Count	50

Q. Were there any staffing count and organizational changes for the Engineering Department since 2011?

A. Yes. The following summarizes the changes that occurred since 2011:

1. In 2012, the Administrator from the Operating Group was transferred to the Engineering Department Administrative Division (HWA) after the Operating Group (HOA) was eliminated. This position provides administrative support for the Engineering manager and the Support Services manager. The addition of this position in 2012 also enabled one bargaining unit clerical resource to be directed towards the growing Net Energy Metering ("NEM") program that the Engineering Department was responsible for administering.

2. In 2012, a third clerical position in Kona was created to address the increased workload from the NEM program. This position did not increase staffing count because a vacant Kona Customer Designer position was eliminated from the Customer Engineering Kona Division (HWK).
3. In 2012, the three clerical positions from the Customer Engineering Kona Division (HWK) were transferred to the Administrative Division (HWA) so all clerical functions in the department were under one supervisor. The reason for the change was to achieve consistency in policies and procedures islandwide and consistency in training, especially with the rapid growth of NEM and with the introduction of the new SAP Customer Information System.
4. In 2013, the Energy Planning Division (HWE) was eliminated when the Clean Energy Scenario Planning ("CESP") process was suspended. One planning engineer was transferred to the Planning Division (HWX) to add resources to conduct Technical and Supplemental reviews of NEM applications. The second planning engineer was transferred to the newly created System Planning Division under the Production Department to work on the production model and eventually the Company's Power Supply Improvement Plan ("PSIP") required by Decision and Order No. 31758 (Docket No. 2012-0212).
5. In 2013, the Energy Services Department was broken up after the manager retired. Three employees working on the CESP process and electric vehicle

("EV") rate program were absorbed by the Engineering Department. When the CESP process was suspended, the three employees were repurposed to form the Renewable Energy Administration ("RE Admin") group under the Administrative Division (HWA). The RE Admin group took over administration of the NEM program from the engineers in the Planning Division (HWX). They performed the NEM application completeness review, all written and verbal correspondence with customers and all reporting related to the NEM program. The RE Admin group also administered the Feed-in-Tariff program and continued to administer the EV rate program.

6. In 2015, two new Electrical Engineer positions were filled in the Planning Division (HWX) in order to address the increased workload from Transformation initiatives like the Smart Grid Foundational project, integration of DER and the implementation of the Telecom Master Plan communication network improvements.

7. In 2016, the Customer Engineering Waimea Division (HWW) position was eliminated when the incumbent employee transferred. The vacancy will be filled in the Customer Engineering Kona Division (HWK) in order to have a more flexible pool of resources located together under the Kona supervisor. This adjustment is shown on HELCO-1805.

Overall, the Engineering Department gained five positions since 2011 for a total of 55 employees in test year 2016. Only two out of the five positions were additions to the Company staffing count. The remaining changes were redeployed resources.

Q. What were the primary reasons for the organizational changes that occurred within the Engineering Department since 2010?

A. The Company initially made cost containment decisions to consolidate planning functions in the Engineering Department. However, the majority of the organizational changes occurred in order to manage and address transformational changes to the energy utility business such as, among other things, the substantial growth of DER interconnections (detailed later in the Renewable Energy Integration section), the requirement to produce a PSIP and the planning for the installation of the Smart Grid foundation.

Q. What is the estimated number of employees for the Engineering Department at the end of test year 2016?

A. The estimated number of employees for the Engineering Department at the end of test year 2016 is 55 as shown below and in HELCO-1805:

Division	Count
Administrative Division (HWA)	17
Customer Engineering Hilo Division (HWC)	13
Customer Engineering Kona Division (HWK)	12
Customer Engineering Waimea Division (HWW)	0
Planning Division (HWX)	13
Total Count	55

Q. What was the actual number of employees in the Engineering Department at the end of year 2015?

A. The actual number of employees in the Engineering Department at the end of the year 2015 was 54 as shown below and in HELCO-1805. One temporary vacancy existed in the Customer Engineering Kona Division (HWK).

Division	Count
Administrative Division (HWA)	17 (16*)
Customer Engineering Hilo Division (HWC)	13
Customer Engineering Kona Division (HWK)	10 (11*)
Customer Engineering Waimea Division (HWW)	1
Planning Division (HWX)	13
Total Count	54

*Note: The responsibility area of one position in HWA was still HWK on 12/31/2015 and corrected in 2016.

Q. What was the current number of employees in the Engineering Department as of May 31, 2016?

A. The number of employees in the Engineering Department as of May 31, 2016 was also 54 as shown below and in HELCO-1805:

Division	Count
Administrative Division (HWA)	17
Customer Engineering Hilo Division (HWC)	13
Customer Engineering Kona Division (HWK)	10
Customer Engineering Waimea Division (HWW)	0
Planning Division (HWX)	14
Total Count	54

Q. Please explain the difference between the May 31, 2016 actual and the estimated test year 2016 year-end employee count for the Engineering Department.

A. The difference is due to the addition of two employees and the retirement of another, as follows:

- Two Junior Customer Planner vacancies in the Customer Engineering Kona Division (HWK) – Due to difficulty in attracting qualified applicants in Kona, the job standards for the positions are being modified. The position will be reposted and candidates will be tested and interviewed. Based on the current schedule, it is estimated the two positions will be filled by October 2016.

- The employee currently filling the Engineering Drafting Technician position in the Planning Division (HWX) is scheduled to retire in August 2016. Because the Drafting Technician I position was filled in February 2016 in anticipation of this retirement,the backfill has already been completed and no additional employee will be hired.

Q. Does the Engineering Department anticipate that all budgeted positions will be filled by the end of 2016?

A. Yes. The Engineering Department expects to fill the budgeted 55 employees.

Q. Has the Engineering Department secured the required management approvals for the vacant positions?.

A. Yes. Approvals have been obtained and, as explained above, the positions will be reposted.

Q. Were adjustments made to the Engineering Department's test year O&M expenses to reflect the vacant positions at the beginning of 2016?

A. No. The vacant positions do not charge to O&M expense as they almost exclusively work on capital programs and non-project clearing associated with capital work.

Q. Is it anticipated that the Engineering Department's workload will increase in test year 2016 and subsequent years?

A. Yes. It is anticipated that the workload will increase for the Engineering Department. DER activities continue to take up a large amount of resources in the department as the Company processes and administers DER applications and seeks innovative solutions and policies to interconnect more variable customer generation.

Resources are also dedicated to a tri-company collaboration and investment in an online application system (discussed later in this testimony) to help the department meet customer expectations for the DER process.

The department has also experienced increased project work load to mitigate the effects of high penetration of solar energy on the system. The Customer Engineering divisions have additional design work to replace transformers and conductors to avoid high voltage on the secondary circuits. The Planning division has focused on implementing a Dynamic Underfrequency Load-Shedding scheme (covered earlier in this testimony) and expects additional projects in subsequent years, including interconnecting a system contingency battery storage device and improving fault clearing times on the transmission system with additional relay protection and replacement of old equipment.

If approved by the Commission, the Smart Grid Foundation Project (Docket No. 2016-0087) will require engineering resources to manage and design the installation of the substation conservation voltage reduction ("CVR") scheme and the Smart Grid communication network equipment which includes pole replacements and substation work to mount the new equipment. Mr. Miles Nagato's testimony in HELCO T-8 and HELCO-835 provide additional information on the Smart Grid Foundation Project.

The Asset Management strategies, as described in Mr. Miles Nagato's testimony (HELCO T-8), will continue to be implemented to manage transmission and distribution assets and maintain acceptable reliability. The Engineering

Department budgets for these replacements and provides designs and project management. The amount of assets to design replacements for will increase in years subsequent to 2016. Outside engineering resources are used when necessary to meet the implementation schedule.

O&M EXPENSES

Q. What are the estimated Engineering Department operations and maintenance ("O&M") expenses for the test year?

A. The total Engineering Department O&M expenses for the 2016 test year is $1,843,000, of which $254,000 is for labor O&M expenses and $1,589,000 is for non-labor O&M expenses. HELCO-1801 provides the Engineering Department's O&M expenses by NARUC Block of Accounts and HELCO-1802 provides the Engineering Departments O&M expenses by Responsibility Area.

Q. How was the Engineering Department's 2016 test year O&M expense estimate developed?

A. The Engineering Department's O&M expense estimates were developed through the Company's budget process as explained by Mr. Paul Franklin in HELCO T-11. In addition, adjustments to the Company's 2016 budget were made to include budget, normalization and ratemaking adjustments to develop a normal test year budget. HELCO-1801 and HELCO-1802 show the adjustments that were made to the Engineering Department's 2016 budget. HELCO-WP-1803 and supporting documentation provide, describe and document the development of the adjustments.

Q. Were there any Smart Grid related O&M expenses in the test year 2016 budget?

A. Yes. Estimated O&M expenses related to building the business case and preparing the application to the Commission for the Smart Grid Foundation Project (Docket No. 2016-0087) are included in the Engineering Department's 2016 budget and are not included in the amount that the Companies' requested approval for recovery through the Renewable Energy Infrastructure Program ("REIP") surcharge. Hawai'i Electric Light's share of the estimated costs totaled $129,981 in 2016 and will be intercompany billed by Hawaiian Electric. O&M project costs subsequent to test year 2016 were not included in the test year 2016 budget because those expenses are subject to project approval by the Commission. As a result, the estimated Smart Grid application phase O&M expenses were normalized over three years so that a total of $43,327 was included in the test year 2016 budget. Mr. Miles Nagato's testimony in HELCO T-8 and HELCO-835 provide additional information on the Smart Grid Foundation Project.

Q. Were there any DER related O&M expenses included in the test year 2016 budget?

A. Yes. Because Hawai'i Electric Light is a party in the ongoing DER docket (Docket No. 2014-0192), the Company included DER related O&M expenses in the test year 2016 budget. Normalized expenses of $70,107 have been included in the test year 2016 budget for continuing work on Phase 2 of this docket.

In response to Commission Order No. 32053, the Company is implementing an Interconnection Improvement Program ("IIP") to provide customers with an online system to submit and monitor DER applications and improve the customer experience. Normalized expenses of $150,000 have been included in the test year

2016 budget for IIP development and support. In addition, Hawai'i Electric Light will incur annual expenses to maintain and support the IIP system. This cost includes the vendor software and hardware subscription fees and the hiring of a full time tri-company IIP System Administrator to support the IIP system. The normalized allocation of $49,525 is also included in the test year 2016 budget. HELCO-914 provides further details on IIP development and annual support costs.

Q. Will the Engineering Department incur any test year O&M expenses associated with the Company's telecommunications network?

A. Yes. In 2012, the Hawaiian Electric Companies created a tri-company Telecommunications Planning Division under the System Planning Department at Hawaiian Electric. Among the accomplishments of the group was creating a Corporate Telecom Master Plan in 2013, creating a roadmap to modernize the communication network on the island. The centralized telecommunications system planning will help to insure standardization, consistency and interoperability which enables cost-effective, secure and reliable systems for the Company and its customers. The purpose, functions and cost breakdown of the Telecommunications Planning Division can be found on HELCO-1820. A normalized amount of $251,558 is included in the test year 2016 O&M expenses.

1 COST CONTAINMENT AND PRODUCTIVITY IMPROVEMENTS MEASURES

2 Q. What are some of the cost containment and productivity improvements measures
3 that the Engineering Department has implemented since the last rate case?

4 A. The measures undertaken by the Engineering Department are summarized below:

5

	Description	Category	Cost Type	Estimated Annual Savings
1	Grouped pole replacement packages	Productivity Improvement	Capital	$4,688,914
2	Repurpose employees to address growth in DER without hiring new employees	Cost Containment	Capital and Expense	$751,393
3	Video and Online Conferencing	Productivity Improvement	Capital	$25,524
4	Cancel all plant rentals	Cost Containment	Expense	$2,900

6 Source: HELCO-WP-1804

7 1. At the end of 2012, the Engineering Department began grouping pole
8 replacements in packages of 50 instead of individual or smaller counts,which
9 increased productivity and lowered costs. Mr. Miles Nagato's testimony
10 (HELCO T-8) covers the key drivers in reducing the unit cost for pole
11 replacements. The average cost to replace a pole reduced from $18,639 in
12 2011 to an average of $12,778 (2013-2015) after packaging of pole
13 replacements started. The average cost increased in 2015 because there were
14 less opportunities to do entire subdivisions and large pole groupings.

However, the Company's asset management strategy of replacing 800 poles per year (further discussed by Mr. Miles Nagato in HELCO T-8) will, nevertheless, save the Company an estimated $4,688,914 of capital expenditures annually and maintain the safety and reliability of the pole asset for the customers. HELCO-WP-1804, page 2, provides historic details regarding pole replacements.

2. Since 2009, there was a tremendous increase in workload for the Engineering Department to manage DER programs. The department executed close to 10,000 interconnection agreements since 2010 while still completing customer requests and designing system improvements. Four existing employees from other departments and one position within the Engineering Department were repurposed to support the large demand of DER application processing, technical review, and reporting requirements. As a result of this repurposing, the Company avoided hiring five new employees, which equated to $751,393 of annual savings. Cost savings are further detailed in HELCO-WP-1804, pages 3 and 4.

3. Video conferencing and online meetings improved communication and productivity between Hawai'i Electric Light baseyards as well as for numerous recurring Tri-company meetings for Transformation Initiatives (Smart Grid, DER, One Company). The use of video conferencing and online meetings reduced travel time, increased productivity, and increased communication where prior participation may not have been possible or

considered. One example of productivity improvement for the Engineering Department was with monthly Project Meeting attendance where Engineering project managers and Distribution construction supervisors meet to communicate and coordinate on-going projects. Prior to having the video conferencing technology, four Engineering Department employees in Kona needed to drive to Hilo and attend the monthly Project Meetings in person. Video conferencing enabled the Kona employees to participate from the Kona office and avoid the travel time. The reduction in travel time for this one monthly meeting equated to approximately $25,524 in annual labor savings. Savings are detailed in HELCO-WP-1804, pages 5 and 6. Although the department project meetings were scaled back to quarterly meetings in 2015, monthly small group project meetings are still held monthly and would have required travel by two Kona employees.

4. Cancelling the rental of live plants in 2012 saved $2,900 on annual rental and maintenance costs. The plants had been used to brighten up office spaces where customers frequented. Refer to HELCO-WP-1804, page 7.

RENEWABLE ENERGY INTEGRATION

Q. Was the Engineering Department involved in the Company's renewable energy integration efforts?

A. Yes.

Q. What is the Engineering Department's role in these renewable energy integration efforts on Hawai'i island?

A. The administrative and clerical staff of the Engineering Department receive and process all DER applications including NEM, SIA, CGS and FIT applications. The engineering staff performs the technical and supplemental reviews associated with each application and determines mitigation measures (technical solutions) for each interconnection. The customer planners field inspect all of the PV systems to confirm compliance with the interconnection agreement and insure customer safety.

On a system level, the Engineering Department finds technical solutions and designs capital improvements to mitigate high penetration of PV at the circuit level and for overall system stability.

Q. What capital investments related to the Company's renewable energy integration efforts has the Engineering Department been involved with?

A. Between 2010 and 2015, the Company spent approximately $10.2 million in capital to interconnect renewable energy resources. The design and installation of those capital investments were significant draws on the Company's engineering and construction resources. $1.6 million was spent to interconnect an additional 8 MW of geothermal power at Puna Geothermal Ventures ("PGV") in 2012. $4.4 million was spent for NEM installations, $1.6 million on battery storage and $2.6 million for DER mitigation projects (i.e., mitigation for large PV systems). Specific mitigation projects included relay protection and control installations to reduce the effects of high penetration of PV, including transient overvoltage. Because the Company

collected approximately $2.4 million in CIAC for the DER mitigation projects and the PGV 8 MW interconnection, the Company's net capital expenditure for its renewable energy integration efforts over this period was $7.8 million. See HELCO-1821 for details.

Q. Do you believe that the Engineering Department made any contributions to the Company's renewable energy intergration efforts?

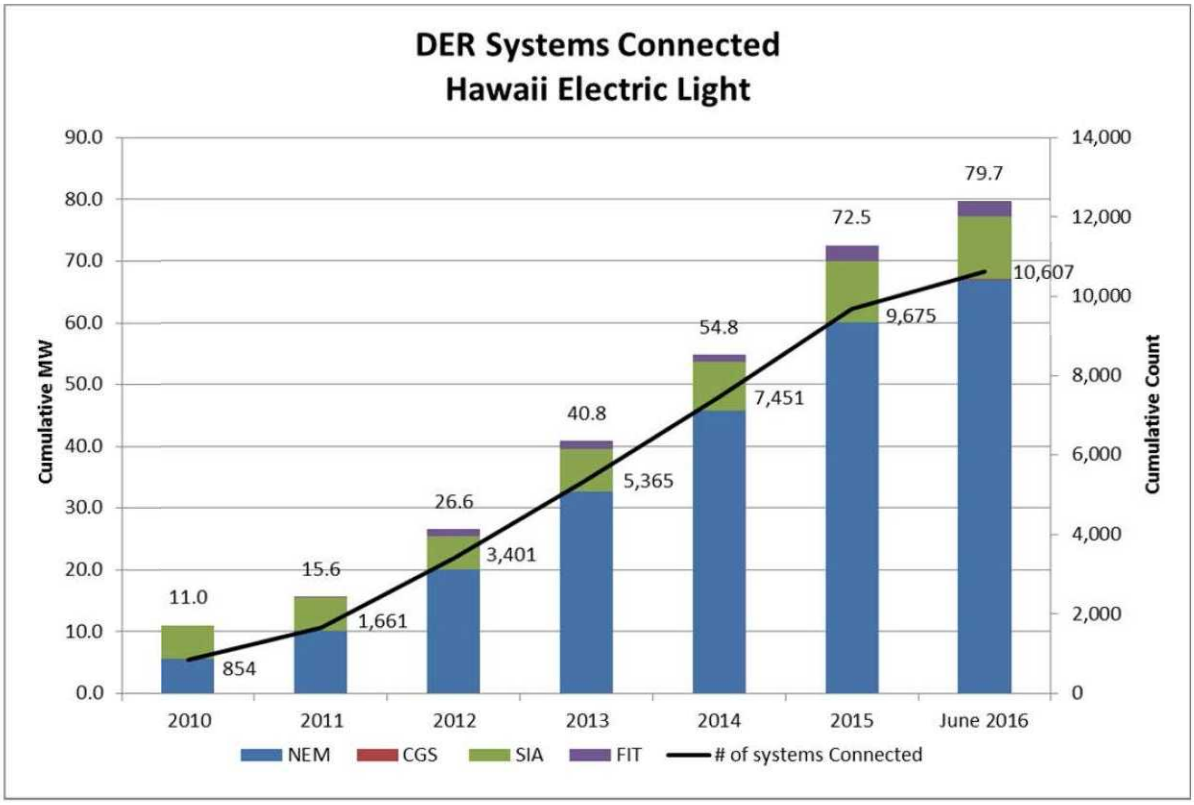
A. Yes, the Engineering Department's role was integral in the Company's renewable energy integration efforts since 2010 while, at the same time, ensuring that the Company's system is operated in the most efficient, safe and reliable manner.

Q Please provide some examples of the Company's accomplishments which the Engineering Department contributed to integrating more renewable energy into the Company's system?

A. The department played a vital role (on behalf of the Company) in significantly increasing the Company's RPS from 34.6% in 2010 to 48.7% in 2015 (see Ms. Lisa Dangelmaier's testimony, HELCO T-6). The largest component of the increase was the rapid adoption of DER, primarily customer-sited PV generation. Specifically, the Engineering Department processed numerous applications and found technical solutions to enable thousands of customers to participate in the DER programs. The department also initiated and designed (and continues to design) capital projects to interconnect renewable energy resources and improvements that help to mitigate the high penetration of PV on our island system.

Q. How many renewable DER systems were connected since 2010?

A. The Engineering Department succeeded in approving the connection of over 10,000 NEM, CGS, SIA and FIT systems equating to approximately 71 additional MW of the total 79.7 MW of renewable energy on the Hawai'i island grid. The figure below shows the accumulated amount of NEM, CGS, SIA and FIT systems that were connected to the grid since 2010.



Source: HELCO-WP-1819

Q. Did the additional work for DER affect the department's traditional work of connecting new customers with electric service?

A. No. As previously mentioned, although the department focused much of its time on addressing the Company's renewable energy integration efforts, it was still able to address other operational needs such as, among other things, continuing to fulfill customer requests for basic electric service. Since 2010, the average customer count on Hawai'i island went up from 80,171 to 84,699 in 2016 (see Mr. Jon Hayashida's testimony HELCO T-2), a 5.6% increase over 6 years. The Engineering Department was able to effectively address regular operational needs, as well as renewable energy integration efforts, with existing and repurposed employees as detailed later in this testimony.

Q. Describe the technical solutions that the Engineering Department contributed to in enabling more participation in the DER programs.

A. Over the last four years, the Engineering Department collaborated and worked together with colleagues from the other Hawaiian Electric Companies and the solar industry to allow higher amounts of DER on distribution circuits while ensuring the safety and reliability of electric service for all customers. The primary technical concern that was addressed by the department related to high penetration of DER on the circuits and the resulting transient overvoltage (aka, TrOV) created due to load rejection when the substation circuit breaker opened. Eventually, the concern was virtually eliminated by the Companies collaborating and working directly with the inverter manufacturers and the National Renewable Energy Laboratory ("NREL") to

demonstrate fast-trip functionality that quickly disconnected a PV system when overvoltage was detected. As a result of the Company's collaboration, the Company was able to increase the allowable circuit penetration (without additional study for small systems) from 75% of Gross Daytime Minimum Load ("GDML") to 100% of GDML in 2013, to 120% of GDML in 2014, and eventually to 250% of GDML in February 2015 (albeit with some additional requirements at those step increments for the purpose of ensuring safety and reliability).

The Hosting Capacity method of calculating allowable penetration without study was proposed in December 2015 (Docket No. 2014-0192). The Engineering Department had a significant undertaking in 2015 to build the previously unmodeled distribution circuits in the Synergi modeling program in order to calculate each circuit's hosting capacity. The circuit modeling enables engineers to analyze the effects of individual interconnections and has allowed customers to connect PV systems to circuits that are well above 250% of GDML. The department continues to work on refining the model to provide more accurate analysis and to identify more solutions to integrate renewable energy.

The Engineering Department also carefully studies the effects of PV on secondary voltage and has mitigated secondary voltage concerns at approximately 16 locations by requiring the installation of an additional distribution transformer.

In summary, all of the technical solutions identified by the Engineering Department changed the renewable energy integration process and requirements so that customers can participate in DER programs faster and at lower cost.

Q. How many customers were held up prior to increasing the circuit penetration limit?

A. After February 2015, when penetration limits were increased from 120% to 250% with improved inverter performance and requirements, 336 customers that were previously prevented from participating were approved to install their systems, as reported in a Clear the Queue update to the Commission on April 2, 2015 (Docket No 2014-0192).

After the distribution circuit models were created for hosting capacity in December 2015, approximately 25 customers that were previously prevented from participating were approved to install their systems.

Currently, there are no customers awaiting technical solutions to install their system.

Q. What other technical accomplishments contribute to increasing renewable energy integration?

A. Another significant improvement on the PV inverters was the "ride-thru" setting requirements. Rooftop PV generation became, in aggregate, the equivalent of the largest generator on the system. If all rooftop PV systems were to disconnect simultaneously during under or over frequency, this would result in a large loss of generation during daytime solar production and possibly lead to a total island system failure. The Engineering Department, in collaboration with its colleagues at the other Hawaiian Electric Companies and/or the applicable solar/renewable energy stakeholders, again worked directly with inverter manufacturers to develop functionality and settings that would keep the PV generation connected to the system

(aka, "ride-thru") during frequency and voltage excursions. The interim "ride-thru" settings were required starting from February 9, 2015, but compliance with the full "ride-thru" settings was not required until October 1, 2015. To help with the island system stability, an inverter manufacturer remotely reprogrammed inverters with the interim ride-thru settings at the request of the Hawaiian Electric Companies. The table below shows the status of inverter settings for the installed systems. Hawai'i Electric Light has managed its system risk due to high penetration of PV generation with 41% of the PV generation having full ride-thru settings and only 14% still on original legacy settings.

Status of Inverter Settings for PV Systems Installed

As of July 2016 (Includes NEM, CGS, SIA and FIT)

	No. of Systems	Size (kW)	% of kW
59.3/60.5 Hz Legacy	567	11,887	14%
57/60.5 Hz Legacy[8]	4,364	38,549	45%
Frequency / Voltage Ride thru	6,421	34,826	41%
Total	11,352	85,261	100%

Q. Has Hawai'i Electric Light done anything to monitor the effects of PV on the distribution circuits?

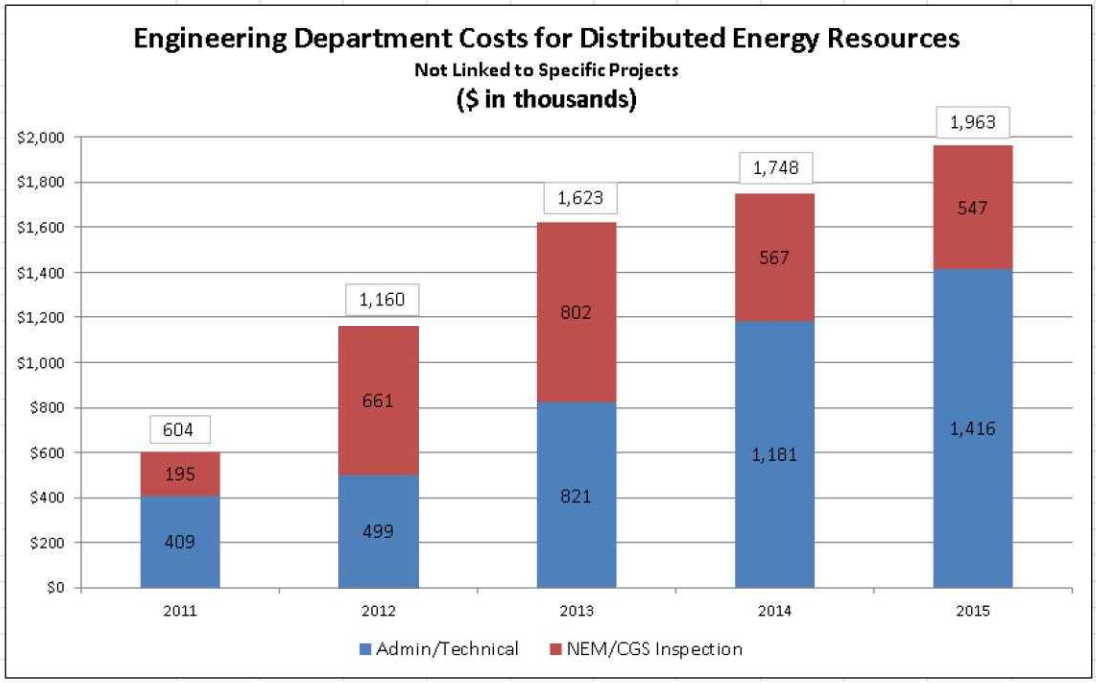
A. Yes, as part of the Distribution Circuit Monitoring Program Plan filed on June 27, 2014 (Docket No. 2011-0206), the Company installed 120 single phase and

[8] In 2009, Hawai'i Electric Light recognized that the 59.3 Hz underfrequency trip setting of the PV inverter would exasperate a system underfrequency situation caused by the sudden loss of generation. Subsequently, inverters were required to be set to disconnect at 57 Hz after 300 seconds.

three phase voltage recorders on 30 representative circuits. Three phases (A, B and C) at the beginning, middle and end of each circuit were recorded to obtain data to analyze if the high penetration of PV adversely affects customers. Between December 1, 2014 and December 31, 2015, the data indicated that the Company was in compliance with Tariff Rule 2.B.3 (within +/-5%) 99.995% of the time or 30,791,399 out of 30,792,960 5-minute intervals. 136 intervals showed voltage just above 5% of nominal voltage (0.00044%) and 1,425 intervals showed voltage under 5% of nominal voltage (0.00463%). The results were encouraging, indicating that distribution engineering studies and mitigation efforts have prevented widespread, systemic voltage problems.

Q. What costs has the Engineering Department incurred due to its role in the Company's renewable integration efforts?

A. Between 2011 and 2015, the Engineering Department's annual spending on DER activities significantly increased from $0.6 million to $1.96 million, as shown on the graph below. The portion of that cost shown as "NEM/CGS Inspection" on the graph below is the capital cost of the customer planners inspecting the NEM/CGS installations prior to execution of the agreement. The administrative and technical non-project cost (clearing and O&M expense), represented as "Admin/Technical", consists of processing of applications, technical review and efforts to implement technical solutions to allow more DER to connect to the grid.



Source: HELCO-WP-1821

Q. Are the current resources (e.g., staffing, etc.) within the Engineering Department sufficient to address present and future renewable integaration efforts by the Company?

A. Yes, provided the Engineering Department is able to seek the applicable recovery of its O&M expenses including an employee count of 55 for test year 2016. The Engineering Department currently does not have plans to increase staffing despite the changing landscape of DER and other renewable energy integration efforts that may require its expertise and/or support. For example, the closing of the NEM program, the saturation of the CGS program and the new IIP online application tool may change the current workload on the team of employees that currently uses some overtime and outside consultants to complete prioritized work.

SUMMARY

Q. Please summarize your testimony.

A. The Company's capital projects and programs were prudently prioritized and managed to align with the applicable portions of the Hawaiian Electric Companies' Strategic Transformation Plan to achieve a high level of customer satisfaction and progress towards the State's goal of 100% renewable energy in 2045. The Company's forecast of plant additions for test year 2016 is approximately $51,760,000 (excluding the HEP purchase). The Company's capital plan focuses on (i) serving customer and agency requests, (ii) upgrading infrastructure and manage critical assets to modernize the grid and maintain reliability, (iii) interconnecting more renewable distributed energy resources, (iv) stabilizing the grid to accept the high penetration of distributed solar generation, (v) achieving affordable customer bills with generation investments, and (vi) improving safety for the public and our employees.

The Engineering Department will be fully staffed at 55 employees to design and provide safe, reliable options for Hawai'i island customers. The Engineering Department's O&M expenses for the 2016 test year of $1,843,000 will allow the department to meet the needs of its customers and continue supporting the transformation of the business. Supporting transformation initiatives like DER, Smart Grid foundation and Telecom modernization make up a large part of the O&M expenses.

Q. What are your conclusions?

A. The Company's 2016 test year estimates for plant additions, plant retirements, property held for future use, CIAC, customer advances, employee staffing level, and O&M expenses (as discussed and supported in further detail in my testimony and the associated exhibits and/or workpapers) are reasonable for test year ratemaking purposes. Hawai'i Electric Light's capital plan focuses on investments and improvements that align with the Hawaiian Electric Companies' Strategic Transformation Plan and are critical and necessary for Hawai'i Electric Light to provide safe, reliable services to its customers, while meeting the challenges of achieving the State's clean energy future.

Q. Does this conclude your testimony?

A. Yes, it does.

Hawai'i Electric Light Company, Inc.

DAVE OKAMURA

EDUCATIONAL BACKGROUND AND EXPERIENCE

BUSINESS ADDRESS:	Hawaii Electric Light Company, Inc. 54 Halekauila Street, Hilo, HI 96720
POSITION:	Manager, Engineering Department
YEARS OF SERVICE:	23 Years
EDUCATION:	University of Southern California (1992) Bachelor of Science in Electrical Engineering University of Hawaii at Manoa (2002) Masters of Business Administration
PREVIOUS POSITIONS:	Superintendent, Technical Distribution Department – Technical Division Hawai'i Electric Light Company, Inc. (2009-2014) Assistant Superintendent, Electronics Distribution Department – Technical Division Hawai'i Electric Light Company, Inc. (2001-2009) Electrical Engineer Engineering Department – Planning Division Hawai'i Electric Light Company, Inc. (1993-2001) Electrical Engineer Harold H. Miura, Inc. (1992-1993)

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Operation and Maintenance Expenses
($ Thousands)

				A	B	C	D	E
					(See HELCO-WP-1803)			=sum(A to D)
				2016				2016
				Operating	Adjustments			Test Year
	NARUC Block	Reference	L/NL	Budget	Budget	Normalization	Ratemaking	Estimate
1	Production	HELCO-1801 p.2	L	$ -	$ -	$ -	$ -	$ -
2	Production	HELCO-1801 p.5	NL	69	3	-	-	71
3			Subtotal	69	3			71
4	Transmission	HELCO-1801 pp.2-3	L	12	-	-	-	12
5	Transmission	HELCO-1801 pp.5-6	NL	370	116	(137)	-	349
6			Subtotal	383	116	(137)	-	361
7	Distribution	HELCO-1801 p.3	L	20	-	-	-	20
8	Distribution	HELCO-1801 p.6	NL	159	226	(28)	-	357
9			Subtotal	179	226	(28)	-	377
10	Customer Accounts	HELCO-1801 p.3	L	-	-	-	-	-
11	Customer Accounts	HELCO-1801 p.6	NL	236	0	-	-	236
12			Subtotal	236	0	-	-	236
13	Customer Services	HELCO-1801 p.4	L	214	-	-	-	214
14	Customer Services	HELCO-1801 p.7	NL	152	-	-	-	152
15			Subtotal	366	-	-	-	366
16	A&G	HELCO-1801 p.4	L	8	-	-	-	8
17	A&G	HELCO-1801 p.7	NL	707	(143)	(141)	-	423
18			Subtotal	715	(143)	(141)		431
19	**Total Engineering Department**		**L**	**254**	**-**	**-**	**-**	**254**
20	**Total Engineering Department**		**NL**	**1,694**	**202**	**(306)**	**-**	**1,589**
21			**Grand Total**	**$ 1,948**	**$ 202**	**$ (306)**	**$ -**	**$ 1,843**

Notes:

- Totals may not add exactly due to rounding.
- See O&M expense aggregation schedule at HELCO-1101 which incorporates lines 3, 6, 9, 15, and 18 above to arrive at the balances presented in the results of operation in the revenue requirement calculation. Revenue requirement calculation is presented in HELCO-2701.

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
					(See HELCO-WP-1803)		=sum(A to D)
			2016				2016
			Operating	Adjustments			Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
	Production Operation (B30)						
1	HWA	Admin-Engineering	$ -	$ -	$ -	$ -	$ -
2	HWC	Hilo Customer	-	-	-	-	-
3	HWD	Design	-	-	-	-	-
4	HWE	Energy Planning - Engineer	-	-	-	-	-
5	HWI	Information Services	-	-	-	-	-
6	HWK	Kona Customer	-	-	-	-	-
7	HWS	Surveying Division	-	-	-	-	-
8	HWW	Waimea Customer	-	-	-	-	-
9	HWX	Planning	-	-	-	-	-
10	Subtotal		-	-	-	-	-
	Production Maintenance (B31)						
11	HWA	Admin-Engineering	-	-	-	-	-
12	HWC	Hilo Customer	-	-	-	-	-
13	HWD	Design	-	-	-	-	-
14	HWE	Energy Planning - Engineer	-	-	-	-	-
15	HWI	Information Services	-	-	-	-	-
16	HWK	Kona Customer	-	-	-	-	-
17	HWS	Surveying Division	-	-	-	-	-
18	HWW	Waimea Customer	-	-	-	-	-
19	HWX	Planning	-	-	-	-	-
20	Subtotal		-	-	-	-	-
	Transmission Operation (B32)						
21	HWA	Admin-Engineering	-	-	-	-	-
22	HWC	Hilo Customer	-	-	-	-	-
23	HWD	Design	-	-	-	-	-
24	HWE	Energy Planning - Engineer	-	-	-	-	-
25	HWI	Information Services	-	-	-	-	-
26	HWK	Kona Customer	-	-	-	-	-
27	HWS	Surveying Division	-	-	-	-	-
28	HWW	Waimea Customer	-	-	-	-	-
29	HWX	Planning	-	-	-	-	-
30	Subtotal		-	-	-	-	-

	Transmission Maintenance (B33)						
31	HWA	Admin-Engineering	-	-	-	-	-
32	HWC	Hilo Customer	-	-	-	-	-
33	HWD	Design	-	-	-	-	-
34	HWE	Energy Planning - Engineer	-	-	-	-	-
35	HWI	Information Services	-	-	-	-	-
36	HWK	Kona Customer	-	-	-	-	-
37	HWS	Surveying Division	-	-	-	-	-
38	HWW	Waimea Customer	-	-	-	-	-
39	HWX	Planning	12	-	-	-	12
40	Subtotal		12	-	-	-	12
	Distribution Operation (B34)						
41	HWA	Admin-Engineering	-	-	-	-	-
42	HWC	Hilo Customer	5	-	-	-	5
43	HWD	Design	-	-	-	-	-
44	HWE	Energy Planning - Engineer	-	-	-	-	-
45	HWI	Information Services	-	-	-	-	-
46	HWK	Kona Customer	-	-	-	-	-
47	HWS	Surveying Division	-	-	-	-	-
48	HWW	Waimea Customer	-	-	-	-	-
49	HWX	Planning	-	-	-	-	-
50	Subtotal		5	-	-	-	5
	Distribution Maintenance (B35)						
51	HWA	Admin-Engineering	-	-	-	-	-
52	HWC	Hilo Customer	13	-	-	-	13
53	HWD	Design	-	-	-	-	-
54	HWE	Energy Planning - Engineer	-	-	-	-	-
55	HWI	Information Services	-	-	-	-	-
56	HWK	Kona Customer	-	-	-	-	-
57	HWS	Surveying Division	-	-	-	-	-
58	HWW	Waimea Customer	-	-	-	-	-
59	HWX	Planning	2	-	-	-	2
60	Subtotal		15	-	-	-	15
	Customer Accounts (B36)						
61	HWA	Admin-Engineering	-	-	-	-	-
62	HWC	Hilo Customer	-	-	-	-	-
63	HWD	Design	-	-	-	-	-
64	HWE	Energy Planning - Engineer	-	-	-	-	-
65	HWI	Information Services	-	-	-	-	-
66	HWK	Kona Customer	-	-	-	-	-
67	HWS	Surveying Division	-	-	-	-	-
68	HWW	Waimea Customer	-	-	-	-	-
69	HWX	Planning	-	-	-	-	-
70	Subtotal		-	-	-	-	-

	Customer Service (B37)						
71	HWA	Admin-Engineering	214	-	-	-	214
72	HWC	Hilo Customer	-	-	-	-	-
73	HWD	Design	-	-	-	-	-
74	HWE	Energy Planning - Engineer	-	-	-	-	-
75	HWI	Information Services	-	-	-	-	-
76	HWK	Kona Customer	-	-	-	-	-
77	HWS	Surveying Division	-	-	-	-	-
78	HWW	Waimea Customer	-	-	-	-	-
79	HWX	Planning	-	-	-	-	-
80	Subtotal		214	-	-	-	214
	A&G (B38, B39)						
81	HWA	Admin-Engineering	6	-	-	-	6
82	HWC	Hilo Customer	0	-	-	-	0
83	HWD	Design	-	-	-	-	-
84	HWE	Energy Planning - Engineer	0	-	-	-	0
85	HWI	Information Services	-	-	-	-	-
86	HWK	Kona Customer	0	-	-	-	0
87	HWS	Surveying Division	-	-	-	-	-
88	HWW	Waimea Customer	-	-	-	-	-
89	HWX	Planning	2	-	-	-	2
90	Subtotal		8	-	-	-	8
	Grand Total						
91	**Engineering Department Labor Expense**		**$ 254**	**$ -**	**$ -**	**$ -**	**$ 254**

Notes:

- Totals may not add exactly due to rounding.
- Column A: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns B, C, D: HECO-WP-1803

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
				(See HELCO-WP-1803)			=sum(A to D)
			2016				2016
			Operating	Adjustments			Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
	Production Operation (B30)						
1	HWA	Admin-Engineering	$ 69	$ -	$ -	$ -	$ 69
2	HWC	Hilo Customer	-	-	-	-	-
3	HWD	Design	-	-	-	-	-
4	HWE	Energy Planning - Engineer	-	-	-	-	-
5	HWI	Information Services	-	-	-	-	-
6	HWK	Kona Customer	-	-	-	-	-
7	HWS	Surveying Division	-	-	-	-	-
8	HWW	Waimea Customer	-	-	-	-	-
9	HWX	Planning	-	-	-	-	-
10	Subtotal		69	-	-	-	69
	Production Maintenance (B31)						
11	HWA	Admin-Engineering	-	-	-	-	-
12	HWC	Hilo Customer	-	1	-	-	1
13	HWD	Design	-	-	-	-	-
14	HWE	Energy Planning - Engineer	-	-	-	-	-
15	HWI	Information Services	-	-	-	-	-
16	HWK	Kona Customer	-	1	-	-	1
17	HWS	Surveying Division	-	-	-	-	-
18	HWW	Waimea Customer	-	-	-	-	-
19	HWX	Planning	-	0	-	-	0
20	Subtotal		-	3	-	-	3
	Transmission Operation (B32)						
21	HWA	Admin-Engineering	2	-	-	-	2
22	HWC	Hilo Customer	-	-	-	-	-
23	HWD	Design	-	-	-	-	-
24	HWE	Energy Planning - Engineer	-	-	-	-	-
25	HWI	Information Services	-	-	-	-	-
26	HWK	Kona Customer	-	-	-	-	-
27	HWS	Surveying Division	-	-	-	-	-
28	HWW	Waimea Customer	-	-	-	-	-
29	HWX	Planning	60	-	(0)	-	59
30	Subtotal		61	-	(0)	-	61

	Transmission Maintenance (B33)						
31	HWA	Admin-Engineering	300	18	(137)	-	181
32	HWC	Hilo Customer	-	49	-	-	49
33	HWD	Design	-	-	-	-	-
34	HWE	Energy Planning - Engineer	-	-	-	-	-
35	HWI	Information Services	-	-	-	-	-
36	HWK	Kona Customer	-	46	-	-	46
37	HWS	Surveying Division	-	-	-	-	-
38	HWW	Waimea Customer	-	-	-	-	-
39	HWX	Planning	9	3	-	-	12
40	Subtotal		309	116	(137)	-	288
	Distribution Operation (B34)						
41	HWA	Admin-Engineering	42	-	(28)	-	14
42	HWC	Hilo Customer	35	(1)	-	-	35
43	HWD	Design	-	-	-	-	-
44	HWE	Energy Planning - Engineer	-	-	-	-	-
45	HWI	Information Services	-	-	-	-	-
46	HWK	Kona Customer	20	(1)	-	-	19
47	HWS	Surveying Division	-	-	-	-	-
48	HWW	Waimea Customer	1	-	-	-	1
49	HWX	Planning	5	80	-	-	85
50	Subtotal		103	78	(28)	-	153
	Distribution Maintenance (B35)						
51	HWA	Admin-Engineering	-	-	-	-	-
52	HWC	Hilo Customer	37	74	-	-	111
53	HWD	Design	-	-	-	-	-
54	HWE	Energy Planning - Engineer	-	-	-	-	-
55	HWI	Information Services	-	-	-	-	-
56	HWK	Kona Customer	-	70	-	-	70
57	HWS	Surveying Division	-	-	-	-	-
58	HWW	Waimea Customer	-	-	-	-	-
59	HWX	Planning	19	5	-	-	24
60	Subtotal		56	148	-	-	204
	Customer Accounts (B36)						
61	HWA	Admin-Engineering	236	-	-	-	236
62	HWC	Hilo Customer	-	-	-	-	-
63	HWD	Design	-	-	-	-	-
64	HWE	Energy Planning - Engineer	-	-	-	-	-
65	HWI	Information Services	-	-	-	-	-
66	HWK	Kona Customer	-	0	-	-	0
67	HWS	Surveying Division	-	-	-	-	-
68	HWW	Waimea Customer	-	-	-	-	-
69	HWX	Planning	-	-	-	-	-
70	Subtotal		236	0	-	-	236

	Customer Service (B37)						
71	HWA	Admin-Engineering	152	-	-	-	152
72	HWC	Hilo Customer	-	-	-	-	-
73	HWD	Design	-	-	-	-	-
74	HWE	Energy Planning - Engineer	-	-	-	-	-
75	HWI	Information Services	-	-	-	-	-
76	HWK	Kona Customer	-	-	-	-	-
77	HWS	Surveying Division	-	-	-	-	-
78	HWW	Waimea Customer	-	-	-	-	-
79	HWX	Planning	-	-	-	-	-
80	Subtotal		152	-	-	-	152
	A&G (B38, B39)						
81	HWA	Admin-Engineering	375	(75)	(186)	-	114
82	HWC	Hilo Customer	0	-	-	-	0
83	HWD	Design	-	-	-	-	-
84	HWE	Energy Planning - Engineer	0	-	-	-	0
85	HWI	Information Services	-	-	-	-	-
86	HWK	Kona Customer	6	-	-	-	6
87	HWS	Surveying Division	-	-	-	-	-
88	HWW	Waimea Customer	-	-	-	-	-
89	HWX	Planning	326	(68)	45	-	303
90	Subtotal		707	(143)	(141)	-	423
	Grand Total						
91	**Engineering Department Labor Expense**		**$ 1,694**	**$ 202**	**$ (306)**	**$ -**	**$ 1,589**

Notes:

- Totals may not add exactly due to rounding.
- Column A: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns B, C, D: HECO-WP-1803

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Operation and Maintenance Expenses
($ Thousands)

				A	B	C	D	E
					(See HELCO-WP-1803)			=sum(A to D)
				2016				2016
				Operating	Adjustments			Test Year
	NARUC Block	Reference	L/NL	Budget	Budget	Normalization	Ratemaking	Estimate
1	Production	HELCO-1801 p.2	L	$ -	$ -	$ -	$ -	$ -
2	Production	HELCO-1801 p.5	NL	69	3	(17)	-	55
3			Subtotal	69	3	(17)		55
4	Transmission	HELCO-1801 pp.2-3	L	12	-	-	-	12
5	Transmission	HELCO-1801 pp.5-6	NL	370	196	(137)	-	429
6			Subtotal	383	196	(137)	-	442
7	Distribution	HELCO-1801 p.3	L	20	-	-	-	20
8	Distribution	HELCO-1801 p.6	NL	159	146	(28)	-	277
9			Subtotal	179	146	(28)	-	297
10	Customer Accounts	HELCO-1801 p.3	L	-	-	-	-	-
11	Customer Accounts	HELCO-1801 p.6	NL	236	(11)	(75)	-	150
12			Subtotal	236	(11)	(75)	-	150
13	Customer Services	HELCO-1801 p.4	L	214	-	-	-	214
14	Customer Services	HELCO-1801 p.7	NL	152	-	-	-	152
15			Subtotal	366	-	-	-	366
16	A&G	HELCO-1801 p.4	L	8	-	-	-	8
17	A&G	HELCO-1801 p.7	NL	707	(132)	(50)	-	525
18			Subtotal	715	(132)	(50)		534
19	**Total Engineering Department**		**L**	**254**	**-**	**-**	**-**	**254**
20	**Total Engineering Department**		**NL**	**1,694**	**202**	**(306)**	**-**	**1,589**
21			**Grand Total**	**$ 1,948**	**$ 202**	**$ (306)**	**$ -**	**$ 1,843**

Notes:

- Totals may not add exactly due to rounding.
- See O&M expense aggregation schedule at HELCO-1101 which incorporates lines 3, 6, 9, 15, and 18 above to arrive at the balances presented in the results of operation in the revenue requirement calculation. Revenue requirement calculation is presented in HELCO-2701.

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
				(See HELCO-WP-1803 R)			=sum(A to D)
			2016				2016
			Operating	Adjustments			Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
	Production Operation (B30)						
1	HWA	Admin-Engineering	$ 69	$ -	$ (17)	$ -	$ 52
2	HWC	Hilo Customer	-	-	-	-	-
3	HWD	Design	-	-	-	-	-
4	HWE	Energy Planning - Engineer	-	-	-	-	-
5	HWI	Information Services	-	-	-	-	-
6	HWK	Kona Customer	-	-	-	-	-
7	HWS	Surveying Division	-	-	-	-	-
8	HWW	Waimea Customer	-	-	-	-	-
9	HWX	Planning	-	-	-	-	-
10	Subtotal		69	-	(17)	-	52
	Production Maintenance (B31)						
11	HWA	Admin-Engineering	-	-	-	-	-
12	HWC	Hilo Customer	-	1	-	-	1
13	HWD	Design	-	-	-	-	-
14	HWE	Energy Planning - Engineer	-	-	-	-	-
15	HWI	Information Services	-	-	-	-	-
16	HWK	Kona Customer	-	1	-	-	1
17	HWS	Surveying Division	-	-	-	-	-
18	HWW	Waimea Customer	-	-	-	-	-
19	HWX	Planning	-	0	-	-	0
20	Subtotal		-	3	-	-	3
	Transmission Operation (B32)						
21	HWA	Admin-Engineering	2	-	-	-	2
22	HWC	Hilo Customer	-	-	-	-	-
23	HWD	Design	-	-	-	-	-
24	HWE	Energy Planning - Engineer	-	-	-	-	-
25	HWI	Information Services	-	-	-	-	-
26	HWK	Kona Customer	-	-	-	-	-
27	HWS	Surveying Division	-	-	-	-	-
28	HWW	Waimea Customer	-	-	-	-	-
29	HWX	Planning	60	-	(0)	-	59
30	Subtotal		61	-	(0)	-	61

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
				(See HELCO-WP-1803 R)			=sum(A to D)
			2016 Operating	Adjustments			2016 Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
	Transmission Maintenance (B33)						
31	HWA	Admin-Engineering	300	18	(137)	-	181
32	HWC	Hilo Customer	-	49	-	-	49
33	HWD	Design	-	-	-	-	-
34	HWE	Energy Planning - Engineer	-	-	-	-	-
35	HWI	Information Services	-	-	-	-	-
36	HWK	Kona Customer	-	46	-	-	46
37	HWS	Surveying Division	-	-	-	-	-
38	HWW	Waimea Customer	-	-	-	-	-
39	HWX	Planning	9	83	-	-	92
40	Subtotal		309	196	(137)	-	368
	Distribution Operation (B34)						
41	HWA	Admin-Engineering	42	-	(28)	-	14
42	HWC	Hilo Customer	35	(1)	-	-	35
43	HWD	Design	-	-	-	-	-
44	HWE	Energy Planning - Engineer	-	-	-	-	-
45	HWI	Information Services	-	-	-	-	-
46	HWK	Kona Customer	20	(1)	-	-	19
47	HWS	Surveying Division	-	-	-	-	-
48	HWW	Waimea Customer	1	-	-	-	1
49	HWX	Planning	5	(0)	-	-	5
50	Subtotal		103	(2)	(28)	-	73
	Distribution Maintenance (B35)						
51	HWA	Admin-Engineering	-	-	-	-	-
52	HWC	Hilo Customer	37	74	-	-	111
53	HWD	Design	-	-	-	-	-
54	HWE	Energy Planning - Engineer	-	-	-	-	-
55	HWI	Information Services	-	-	-	-	-
56	HWK	Kona Customer	-	70	-	-	70
57	HWS	Surveying Division	-	-	-	-	-
58	HWW	Waimea Customer	-	-	-	-	-
59	HWX	Planning	19	5	-	-	24
60	Subtotal		56	148	-	-	204

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Non-Labor Operation and Maintenance Expenses
($ Thousands)

			A	B	C	D	E
				(See HELCO-WP-1803 R)			=sum(A to D)
			2016 Operating	Adjustments			2016 Test Year
	NARUC Block		Budget	Budget	Normalization	Ratemaking	Estimate
	Customer Accounts (B36)						
61	HWA	Admin-Engineering	236	(11)	(75)	-	150
62	HWC	Hilo Customer	-	-	-	-	-
63	HWD	Design	-	-	-	-	-
64	HWE	Energy Planning - Engineer	-	-	-	-	-
65	HWI	Information Services	-	-	-	-	-
66	HWK	Kona Customer	-	0	-	-	0
67	HWS	Surveying Division	-	-	-	-	-
68	HWW	Waimea Customer	-	-	-	-	-
69	HWX	Planning	-	-	-	-	-
70	Subtotal		236	(11)	(75)	-	150
	Customer Service (B37)						
71	HWA	Admin-Engineering	152	-	-	-	152
72	HWC	Hilo Customer	-	-	-	-	-
73	HWD	Design	-	-	-	-	-
74	HWE	Energy Planning - Engineer	-	-	-	-	-
75	HWI	Information Services	-	-	-	-	-
76	HWK	Kona Customer	-	-	-	-	-
77	HWS	Surveying Division	-	-	-	-	-
78	HWW	Waimea Customer	-	-	-	-	-
79	HWX	Planning	-	-	-	-	-
80	Subtotal		152	-	-	-	152
	A&G (B38, B39)						
81	HWA	Admin-Engineering	375	(64)	(94)	-	217
82	HWC	Hilo Customer	0	-	-	-	0
83	HWD	Design	-	-	-	-	-
84	HWE	Energy Planning - Engineer	0	-	-	-	0
85	HWI	Information Services	-	-	-	-	-
86	HWK	Kona Customer	6	-	-	-	6
87	HWS	Surveying Division	-	-	-	-	-
88	HWW	Waimea Customer	-	-	-	-	-
89	HWX	Planning	326	(68)	45	-	303
90	Subtotal		707	(132)	(50)	-	525
	Grand Total						
91	**Engineering Department Labor Expense**		**$ 1,694**	**$ 202**	**$ (306)**	**$ -**	**$ 1,589**

Notes:

- Totals may not add exactly due to rounding.
- Column A: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns B, C, D: HECO-WP-1803

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Total Operation and Maintenance Expenses by Responsibility Area
($ Thousands)

	RA	Description	A 2015 Recorded	B 2016 Operating Budget	C Adjustments Budget	D (See HELCO-WP-1803) Adjustments Normalization	E Adjustments Ratemaking	F =sum(B to E) 2016 Test Year Estimate
1	HWA	Admin-Engineering	$ 1,169	$ 1,395	$ (57)	$ (351)	$ -	$ 987
2	HWC	Hilo Customer	96	90	123	-	-	213
3	HWD	Design	217	-	-	-	-	-
4	HWE	Energy Planning - Engineer	-	0	-	-	-	0
5	HWI	Information Services	-	-	-	-	-	-
6	HWK	Kona Customer	132	26	116	-	-	141
7	HWS	Surveying Division	9	-	-	-	-	-
8	HWW	Waimea Customer	1	1	-	-	-	1
9	HWX	Planning	279	437	20	45	-	501
10	**Grand Total Engineering Department**		**$ 1,903**	**$ 1,948**	**$ 202**	**$ (306)**	**$ -**	**$ 1,843**

Notes:
- Totals may not add exactly due to rounding.
- Columns A-E = HELCO-1802, p.2
- Columns A, B: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns C, D, E: HELCO-WP-1803

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Labor and Non-Labor Operation and Maintenance Expenses by Responsibility Area
($ Thousands)

	RA	Description	L/NL	A 2015 Recorded	B 2016 Operating Budget	C (See HELCO-WP-1803) Adjustments Budget	D Normalization	E Ratemaking	F =sum(B to E) 2016 Test Year Estimate
1	HWA	Admin-Engineering	L	$ 256	$ 220	$ -	$ -	$ -	$ 220
2	HWC	Hilo Customer	L	32	18	-	-	-	18
3	HWD	Design	L	-	-	-	-	-	-
4	HWE	Energy Planning - Engineer	L	-	0	-	-	-	0
5	HWI	Information Services	L	-	-	-	-	-	-
6	HWK	Kona Customer	L	21	0	-	-	-	0
7	HWS	Surveying Division	L	4	-	-	-	-	-
8	HWW	Waimea Customer	L	0	-	-	-	-	-
9	HWX	Planning	L	38	17	-	-	-	17
10	Subtotal Engineering Department Labor		L	351	254	-	-	-	254
11	HWA	Admin-Engineering	NL	913	1,176	(57)	(351)	-	768
12	HWC	Hilo Customer	NL	63	72	123	-	-	196
13	HWD	Design	NL	217	-	-	-	-	-
14	HWE	Energy Planning - Engineer	NL	-	0	-	-	-	0
15	HWI	Information Services	NL	-	-	-	-	-	-
16	HWK	Kona Customer	NL	111	26	116	-	-	141
17	HWS	Surveying Division	NL	6	-	-	-	-	-
18	HWW	Waimea Customer	NL	1	1	-	-	-	1
19	HWX	Planning	NL	242	420	20	45	-	484
20	Subtotal Engineering Department Non-Labor		NL	1,552	1,694	202	(306)	-	1,589
21	**Grand Total Engineering Department**			**$ 1,903**	**$ 1,948**	**$ 202**	**$ (306)**	**$ -**	**$ 1,843**

Notes:
- Totals may not add exactly due to rounding.
- Columns A, B: HELCO-WP-101 (HELCO 2016 Rate Case Reports)
- Columns C, D, E: HELCO-WP-1803

Not Used

Not Used

Hawai'i Electric Light Company, Inc.
2016 Test Year Rate Case
Engineering Department
Staffing as of May 31, 2016

		A	B	C =B-A	D	E =D-B	F	G	H =F+G	I =H-B	J =H-A
		12/31/15 Recorded Headcount	5/31/16 Recorded Headcount	Difference	5/31/16 Budgeted Headcount	Vacancies as of 5/31/16	12/31/16 Budgeted Headcount	Adjustments to 12/31/16 Budgeted Headcount	12/31/16 Adjusted Headcount	Positions to be filled between 5/31/16-12/31/16	Total Positions filled in 2016
1	HWA	16	17	1	17	0	17		17	0	1
2	HWC	13	13	0	13	0	13		13	0	0
3	HWK	11	10	-1	11	1	11	1	12	2	1
4	HWW	1	0	-1	1	1	1	-1	0	0	-1
5	HWX	13	14	1	13	-1	13		13	-1	0
6	TOTAL	54	54	0	55	1	55	0	55	1	1

Notes:

- HWA: Administration - Engineering
- HWC: Hilo Customer Engineering
- HWK: Kona Customer Engineering
- HWW: Waimea Customer Engineering
- HWX: Planning
- HWA and HWK: The responsibility area of one position in HWA was still HWK on 12/31/2015 and corrected in 2016.

Hawai'i Electric Light Company, Inc.

ENGINEERING DEPARTMENT
STAFFING FROM 2011 - 2015

		(A) 1/1/2011 Headcount	(B) 1/1/2012 Headcount	(C) 1/1/2013 Headcount	(B) 1/1/2014 Headcount	(C) 1/1/2015 Headcount
1	HWA	10	11	14	17	17
2	HWC	11	11	12	12	13
3	HWE	0	0	2	0	0
4	HWK	12	9	10	11	10
5	HWW	1	1	1	1	1
6	HWX	9	10	8	11	11
7	Total	43	42	47	52	52

NOTES:

- HWA: Administration - Engineering
- HWC: Hilo Customer Engineering
  HWE: Energy Planning
- HWK: Kona Customer Engineering
- HWW: Waimea Customer Engineering
- HWX: Planning

HAWAI'I ELECTRIC LIGHT COMPANY
2016 TEST YEAR ESTIMATE

ENGINEERING DEPARTMENT O&M BUDGET DETAIL

The Engineering Department's operation and maintenance ("O&M") expense for labor was prepared based on staffing levels needed to meet the work demands for the 2016 test year; and the non-labor expense was prepared using historical averaging and intercompany billing estimates. The estimates' supporting documentations are provided in HELCO T-18 work papers accompanying this testimony and its exhibits.

During the preparation of the test year estimates for the Engineering Department's O&M expenses used in the calculation of the revenue requirement, an inadvertent error was made to the NARUC coding in several of the non-labor adjustments (budget, normalization and ratemaking) made to the O&M expenses as shown in HELCO-WP-1803, pages 1 and 2. HELCO-WP-1803, pages 3 and 4, provide the corrected coding. As a result of this error, the 2016 test year estimates shown in HELCO-1801, pages 1 and 4-7, were not correct and were corrected in HELCO-1801, pages 8-11. The impact of this correction on any other expenses used in developing the test year revenue requirement will be made at the next opportunity. These corrected amounts are used in the narrative below.

Total Power Production Expense (B30-B31)

The Engineering Department's 2016 test year estimate for power production expense is $55,000 as shown in HELCO-1801, page 9, lines 10 and 20.

Power production expense includes labor and non-labor costs incurred in the operation of generators and electrical equipment in generating stations to the point where electricity leaves for conversion for transmission or distribution as discussed in Mr. Norman Uchida's testimony, HELCO T-7.

The Engineering Department's overall power production expense is estimated to increase by $3,000 from $52,000 in 2015 to $55,000 in 2016. The 2016 test year estimate increase for power production expense is primarily attributable to higher intercompany billing ("ICB") expense for the Community Based Renewable Energy ("CBRE") program offset by lower anticipated cost for interconnection requirement studies.

The largest components of the Engineering Department's power production expenses are associated with the CBRE program. See HELCO-WP-1802.

Power Production Expense	2016 TY Estimate ($000s)
HWA- Administration - Engineering	53
HWC- Hilo Customer	1
HWK- Kona Customer	1
HWW- Waimea Customer	
HWX- Planning	
Total Power Production Expense	55

Transmission Operation Expense (B32)

The Engineering Department's 2016 test year estimate for transmission operation expense is $61,000 as shown on HELCO-1801, page 9, line 30.

Transmission operation expense includes labor and non-labor costs that supports load dispatching, transmission switching operations, transmission substation inspections and operations, communications systems operations including, supervisory control and data acquisition ("SCADA"), and transmission line, pole and structure inspections as discussed in Mr. Miles Nagato's testimony, HELCO T-8.

The Engineering Department's overall transmission operation expense is estimated to decrease by $39,000, from $100,000, in 2015 to $61,000 in 2016. The 2016 test year estimate decrease for transmission operation expense is primarily attributable to the elimination of Demand Response from the SmartGrid Foundation project application.

The largest components of the Engineering Department's transmission operation expense are associated with ICB expenses for Transmission Planning services. See HELCO-WP-1802.

Transmission Operation Expense	2016 TY Estimate ($000s)
HWA- Administration - Engineering	2
HWC- Hilo Customer	
HWK- Kona Customer	
HWW- Waimea Customer	
HWX- Planning	59
Total Transmission Operation Expense	61

Transmission Maintenance Expense Estimate (B33)

Engineering Department's 2016 test year estimate for transmission maintenance expense is $380,000 as shown on HELCO-1801, page 3, line 40 and page 10, line 40.

Transmission maintenance expense includes labor and non-labor expenses that support activities such as maintenance and repairs for transmission substation equipment and facilities, communications equipment, transmission lines and cables, and transmission line tree trimming as discussed in Mr. Miles Nagato's testimony, HELCO T-8.

The Engineering Department's overall transmission maintenance expense is estimated to increase by $70,000, from $310,000 in 2015 to $380,000 in 2016. The 2016 test year estimate increase for transmission maintenance expense is primarily attributable to the addition of normalized legal fees for the 2016 joint pole shares payment claim offset by lower anticipated cost for abandoned projects (design costs expensed when the projects are cancelled by customers or the Company).

The largest components of Engineering Department's transmission maintenance expense are associated with legal fees for the 2016 joint pole shares claim. See HELCO-WP-1802.

Transmission Maintenance Expense	**2016 TY Estimate ($000s)**
HWA- Administration - Engineering	181
HWC- Hilo Customer	49
HWK- Kona Customer	46
HWW- Waimea Customer	
HWX- Planning	104
Total Transmission Maintenance Expense	380

Distribution Operation Expense Estimate (B34)

Engineering Department's 2016 test year estimate for distribution operation expense is $78,000 as shown on HELCO-1801, page 3, line 50 and page 10, line 50.

Distribution operation expense includes labor and non-labor costs to support activities such as trouble dispatching and distribution switching operations, distribution substation inspections and operations, distribution line, pole and structure inspections, connecting, disconnecting and locking meters, investigating customer complaints and testing and treating of wood distribution poles as discussed in Mr. Miles Nagato's testimony, HELCO T-8.

Engineering Department's overall distribution operation expense is estimated to decrease by $111,000, from $189,000 in 2015 to $78,000 in 2016. The 2016 test year estimate decrease for distribution operation expense is primarily attributable to lower normalized SmartGrid Foundation project ICB expenses.

The largest components of the Engineering Department's distribution operation expense are associated with the SmartGrid Foundation project ICB expenses. See HELCO-WP-1802.

Distribution Operation Expense	**2016 TY Estimate ($000s)**
HWA- Administration - Engineering	14
HWC- Hilo Customer	39
HWK- Kona Customer	19
HWW- Waimea Customer	1
HWX- Planning	5
Total Distribution Operation Expense	78

Distribution Maintenance Expense Estimate (B35)

Engineering Department's 2016 test year estimate for distribution maintenance expense is $220,000 as shown on HELCO-1801, page 3, line 60 and page 10, line 60.

Distribution maintenance expense includes labor and non-labor costs to support activities such as maintenance and repairs of distribution substation equipment and facilities, distribution lines and cables and distribution line vegetation management as discussed in Mr. Miles Nagato's testimony, HELCO T-8.

Engineering Department's overall distribution maintenance expense is estimated to increase by $34,000, from $186,000 in 2015 to $220,000 in 2016. The 2016 test year estimate increase for distribution maintenance expense is primarily attributable to the allocation of anticipated abandoned distribution projects.

The largest components of the Engineering Department's distribution maintenance expense are associated with the allocation of anticipated abandoned distribution projects. See HELCO-WP-1802.

Distribution Maintenance Expense	**2016 TY Estimate ($000s)**
HWA- Administration - Engineering	
HWC- Hilo Customer	124
HWK- Kona Customer	70
HWW- Waimea Customer	
HWX- Planning	26
Total Distribution Maintenance Expense	220

Customer Accounts (B36)

Engineering Department's 2016 test year estimate for its share of customer accounts is $150,000 as shown on HELCO-1801, page 11, line 70.

Customer accounts expenses includes labor and non-labor costs associated with customer accounting and collection activities. Both expenses are discussed in Ms. Natalie Epenesa's testimony, HELCO T-9.

Engineering Department's overall customer account expense is estimated to increase by $88,000, from $62,000 in 2015 to $150,000 in 2016. The 2016 test year estimate increase for customer accounts expenses is primarily attributable to the increased cost to develop and implement the Interconnection Improvement Program ("IIP") online application system.

The largest components of the Engineering Department's customer accounts expense are associated with the normalized ICB expense for IIP development and implementation. See HELCO-WP-1802.

Customer Accounts Expense	**2016 TY Estimate ($000s)**
HWA- Administration - Engineering	150
HWC- Hilo Customer	
HWK- Kona Customer	
HWW- Waimea Customer	
HWX- Planning	
Total Customer Accounts Expense	150

Customer Service (B37)

Engineering Department's 2016 test year estimate for its share of customer service is $366,000 as shown on HELCO-1801, page 4, line 80 and page 11, line 80.

Customer service expenses include labor and non-labor costs associated with customer interaction activities and processing customer requests. Both expenses are discussed in Ms. Natalie Epenesa's testimony, HELCO T-9.

Engineering Department's overall customer service expense is estimated to increase by $38,000, from $328,000 in 2015 to $366,000 in 2016. The 2016 test year estimate increase for customer service expenses is primarily attributable to labor on-cost increases.

The largest components of the Engineering Department's customer service expense are associated with the labor for the Renewable Energy administration group that, among other duties, processes DER applications. See HELCO-WP-1802.

Customer Accounts Expense	**2016 TY Estimate ($000s)**
HWA- Administration - Engineering	366
HWC- Hilo Customer	
HWK- Kona Customer	
HWW- Waimea Customer	
HWX- Planning	
Total Customer Accounts Expense	366

Administrative and General Expense (B38-B39)

Engineering Department's 2016 test year estimate for its share of administrative and general expense is $534,000 as shown on HELCO-1801, page 4, line 90 and page 11, line 90.

Administrative and general expense includes labor and non-labor costs compensation of officers and executive, office supplies, cost of insurance to protect the utility against losses and damages, and recoveries from insurance companies as discussed in Mr. Paul Franklin's testimony, HELCO T-11.

Engineering Department's overall administrative and general expense is estimated to decrease by $142,000, from $676,000 in 2015 to $534,000 in 2016. The 2016 test year estimate decrease for administrative and general expense is primarily attributable to the normalization of large ICB expenses including DER docket activities, Telecom Planning and SmartGrid Foundation project application phase.

The largest components of Engineering Department's administrative and general expense are for ICB costs associated with the Telecom Planning organization and activities. See HELCO-WP-1802.

Administrative and General Expense	**2016 TY Estimate ($000s)**
HWA- Administration - Engineering	223
HWC- Hilo Customer	
HWK- Kona Customer	6
HWW- Waimea Customer	
HWX- Planning	305
Total Administrative and General Expense	534

Not Used

Hawai'i Electric Light Company, Inc.

Test Year 2016

PLANT ADDITIONS

($ Thousands)

Line	Plant Addition	Source
1	53,696	HELCO-WP-1808, page 3
2	2,379	HELCO-WP-1808, page 4
3	436	HELCO-WP-1808, page 4
4	(67)	HELCO-WP-1808, page 4
5	619	HELCO-WP-1808, page 4
6	674	HELCO-WP-1808, page 4
7	(5,977)	HELCO-WP-1808, page 4
8	51,760	Sum of Line 1 to Line 7

Notes: Totals may not tie due to rounding
Line 2: Administrative Expenses Transferred to Construction
Line 3: OMAC Project Changeover Costs
Line 4: Employee Benefits Adjustment
Line 5: T&D Training Clearing
Line 6: Pension Clearing
Line 7: Corporate Placeholder Adjustment

Allocation by Plant Functional category in HELCO-WP-1808, page 4

Hawai'i Electric Light Company, Inc.

Test Year 2016

PLANT ADDITION FACTOR

($ Thousands)

		A	B	C=A/B
Line	Year	Actual Plant Additions	Plant Addition Forecast	Plant Add Factor
1	2011	40,430	57,248	71%
2	2012	47,921	51,812	92%
3	2013	59,017	58,079	102%
4	2014	51,616	64,901	80%
5	2015	51,664	53,230	97%
6	2011-2015	250,648	285,270	88%

Note: Totals may not tie due to rounding

Source:: Accounting Records

Hawai'i Electric Light Company, Inc.

Test Year 2016

SUMMARY OF PLANT ADDITIONS

($ Thousands)

Line	Description	A Test Year 2016
1	Specific Projects	117,778
2	Programs	21,886
3	Land	232
4	Total Plant Additions	139,896
5	Exclude: HEP Purchase	(86,200)
6	Grand Total Plant Additions	53,696
7	Adjustments	(1,936)
8	Net Plant Additions	51,760

Sources: HELCO-WP-1808
HELCO-1808 page 1

Note: Totals may not tie due to rounding

HAWAI'I ELECTRIC LIGHT COMPANY
2016 TEST YEAR

Development of Test Year 2016 Plant Addition Estimates

Hawai'i Electric Light Company, Inc.'s ("Hawai'i Electric Light" or "Company") test year 2016 plant addition estimates are the outcome of a process that rigorously quantifies and qualifies the highest impact projects that align with the Hawaiian Electric Companies'[1] Strategic Transformation Plan. The process included identifying and estimating specific projects ("projects") and programs (as further defined below) in 2015 and prior years to build a 2016 capital plan that best helps achieve our strategic goals. The projects and programs are prioritized to make best use of the capital funds available and a final capital budget is approved for execution in 2016.

The test year 2016 plant additions estimate was calculated by adding the following:

1) The estimated 2016 capital expenditures for all projects and programs to be placed in service in 2016.
2) The beginning-of-year ("BOY") Construction Work In Progress ("CWIP") balance as of December 31, 2015, for projects and programs to be placed in service during 2016.
3) A Corporate Placeholder Adjustment that reduces the 2016 plant addition estimate to a target amount that the Company is committing to manage to.
4) Any adjustments to the approved 2016 capital budget which impacted the projects and programs to be placed in service in 2016 .

[1] The Hawaiian Electric Companies are comprised of Hawai'i Electric Light; Hawaiian Electric Company, Inc.; and Maui Electric Company, Limited.

Specific Projects

A specific project is a capital project that has an estimated total project cost greater than $50,000. Once identified as a specific project ("project"), the project is then assigned a specific project number and an estimated total expenditure amount so that the project can be budgeted as a line item in the capital budget.

Projects originate from customer requests or solutions identified by the Company's planning engineers to address needs on the Hawai'i Electric Light system. Customer requests include new service connections, Distributed Energy Resources ("DER") interconnections and relocation of facilities. The Company's planning engineers specify the requirements to safely fulfill the customer's requests.

The Company's planning engineers identify projects to address needs found in studies or by inspection. They forecast the need for additional electric facilities or modifications to existing facilities (such as upgrades of obsolete equipment or replacement of equipment that is no longer economical to maintain) to ensure the continued safe, reliable, and efficient operation of the system. Based on factors such as load growth forecasts, the condition of existing facilities, and governmental regulations, the Company collaboratively develops the specific project scope of work and timeline required to satisfy the expected needs. Outside consultants may be hired to help determine the best solutions and/or to assist with the design of a specific project.

Project estimates are developed by the project manager to determine the cost of the project. Estimates consist of the cost of engineering and construction labor, materials, outside services, overhead loadings, and an Allowance for Funds Used During Construction ("AFUDC"). Estimates are built in the UI Planner budgeting software including cash flows and

milestone dates. Reports from UI Planner compile all the projects being identified across the Company for management review and prioritization (explained further below).

The Company's estimated plant additions attributable to specific projects completed or to be completed in test year 2016 is $117,778,000 (which includes the purchase of the Hamakua Energy Partners facility ("HEP") as shown in HELCO-1808, page 3.

Programs

Programs (formerly known as blanket projects) are collections of smaller capital projects of a particular category or type that are generally lower in cost and have shorter construction periods than specific projects. Individual projects included in the programs usually cost less than $50,000 and/or will require a short time to construct. Program expenditures typically consist of the following: (1) service drops, (2) short line extensions, (3) purchase and installation or change outs of meters and/or line transformers, (4) vehicles, (5) tools and equipment, and (6) office furniture and equipment. To develop the estimates for test year 2016 programs, the Company reviewed program historical expenditures and current trends that impact the programs.

The Company's test year 2016 estimated plant additions attributable to programs is $21,886,000 as shown in HELCO-1808, page 3.

CWIP, Utility Plant in Service, and Straggling Costs

All costs associated with installing property units (i.e., all capital project costs) are recorded in Account 107 Construction Work in Progress ("CWIP"). These capital costs are transferred to Account 101 Utility Plant in Service when the property units become used and useful. A project that spans multiple years and is put in service in test year 2016 will have costs

in CWIP at the beginning of the year that add to the estimated capital expenditure in 2016 to calculate a total estimated plant addition for the project.

Straggling costs are costs that are prudently incurred in a capital project after it has already been placed in-service in a year prior to the test year. Straggling costs impact the plant addition estimate for test year 2016. Examples of straggling costs include invoices received after the in-service date from outside contractors for services already performed, as-built drawings, and the associated project managers' time in reviewing their respective projects to ensure proper closing and accounting for these types of costs. For this proceeding, Hawai'i Electric Light's straggling costs for projects placed in-service in years prior to 2016 are included as 2016 plant additions as shown in HELCO-WP-1808.

Corporate Placeholder Adjustment

The Company determines a target plant addition amount that best serves its customers. From past experience, there are uncertainties in project cost and schedule that can affect the capital expenditures placed in-service in the budget year. Unexpected delays in material shipment and permit approvals are some examples that could result in a project not completing in the intended year and reducing the plant additions for the year. One strategy that the Company uses to manage these uncertainties is to closely monitor the progress of projects and substitute in shovel-ready projects to construct during the year to make up for any reductions. Another strategy that the Company uses to manage uncertainties is to retain more project/program expenditures in the budget than its intended target of capital funding. The Corporate Placeholder Adjustment reduces the inflated plant additions estimate down to the intended target. The test

year 2016 Corporate Placeholder Adjustment was equal to $5,977,000. See HELCO-1808, page 1.

Capital Expenditures Budget Process

Once the individual projects and programs are identified and their scope, timeline, and cost estimates are developed, the following process is generally followed to develop the Company's capital plant addition estimate:

1) Projects and programs are reviewed by the responsible process areas to determine which projects/programs should be considered for inclusion in the upcoming five-year capital budget.
2) Managers and staff from each department meet to review and prioritize the entire Company's proposed projects/programs to determine which projects/programs should be included in the proposed budget. Ranking of projects/programs is based on the effectiveness in meeting the Strategic Transformation Plan goals. Prioritization focuses the resources and capital funds on the most cost-effective projects/programs while evaluating risk on the system and to the business.
3) During the prioritization process, resource leveling is considered to allow those providing resources an opportunity to review the demands (in terms of labor hours) placed on their respective resources for each project/program. If necessary, adjustments are then made to level the demand placed on a specific resource class. This generally results in a more realistic capital budget.
4) After inclusion in the budget, the project managers submit an initialization request for the project/program in the Project Business Case ("PBC") approval system. The PBC

write-up provides management with scope, justification, benefits and expenditure information in order to make a decision to approve the project/program or not.

5) The forecasted capital budget amounts for the next five years are then reviewed at Company officer briefings for approval. Financial and business impacts are evaluated.

6) Subsequently, the five-year capital budget is presented to the Company's Board of Directors for its review and approval.

Adjustments

The approved capital budget for 2016 was further reviewed in April 2016 and updated with adjustments. By that time, project managers had more current information on project/program cost and timelines. Based on such additional information and updates, the test year 2016 plant additions estimates were adjusted accordingly. Manual adjustments to projects/programs were reflected in HELCO-1808 and its applicable supporting workpaper HELCO-WP-1808.

Employee benefits cost adjustments and adjustments for proposed accounting changes were also applied to the overall plant additions estimate and is shown on HELCO-WP-1808, page 4 (Further detailed by Mr. Paul Franklin in HELCO T-11).

After all adjustments were made, the total capital plant addition estimate of $51,760,000 (with HEP as IPP-Owned) for test year 2016 was finalized.

Hawai'i Electric Light Company, Inc.

Test Year 2016

SPECIFIC PROJECTS OVER $2,500,000 SCHEDULED TO BE ADDED TO PLANT

($ Thousands)

				A	B	C
Year	Line	Item	Description	Estimated Plant Additions	Docket No.	D&O No.
2016	1	H0002612	6800 Line Recond Ph 2	2,860	2013-0153	32930
2016	2	H0002668	6800 Line Recond Ph 3	4,639	2013-0153	32930
2016	3	H0002724	CT5 Zero Time	3,227	2013-0144	31707
2016	4	H0003191	HEP Purchase	86,200	2016-0033	N/A

Source: HELCO-WP-1810, page 1

Note: Totals may not tie due to rounding

Hawai'i Electric Light Company, Inc.

Test Year 2016

SPECIFIC PROJECTS OVER $1,000,000 AND LESS THAN $2,500,000
SCHEDULED TO BE ADDED TO PLANT

($ Thousands)

	A	B	C
Line	Project No.	Project Description	Estimated Plant Additions
1	H0002695	Haleaha Sub	1,084
2	H0002777	Kilauea 3400 Ph 1	2,128
3	H0002872	TMP Hilo Baseyard Comm	2,032
4	H0003037	Kano 13.8KV Bus B Sw Gear	1,452
5	H0003063	New Umauma Substation	1,714
6	H0003123	CT-3 Hot Section	1,136
7	H0003124	Laupahoehoe Recond Ph 3	1,236
8	H0003172	RPR Banyan DR MH#3-MH#11 Switch Replacement	1,344

Source: HELCO-WP-1808
Note: Totals may not tie due to rounding

Hawai'i Electric Light Company, Inc.

Test Year 2016

PLANT RETIREMENTS

($ Thousands)

Line	Description	A TEST YEAR 2016
1	Production Plant	979
2	Transmission Plant	626
3	Distribution Plant	4,236
4	General Plant	2,806
5	Total	8,647

Note: Totals may not tie due to rounding

Source: HELCO-WP-1814

Hawai'i Electric Light Company, Inc.

Test Year 2016

H1007000 Minor Other Overhead Additions

($ Thousands)

Line	Description	A TEST YEAR 2016
1	Design and Installation Costs	73
2	Joint Pole Sales	(2,465)
3	AFUDC	(136)
4	Total	(2,528)

Note: Totals may not tie due to rounding

Source:
Line 1: Accounting Records
Line 2: HELCO-WP-1813, Column G, Line 7
Line 3: Accounting Records
Line 4: HELCO-WP-1808

Hawai'i Electric Light Company, Inc.

Test Year 2016

GROSS PLANT IN SERVICE

($ Thousands)

		A	B	C	D (A+B+C)
Line	Year	BOY Gross Plant in Service	Estimated Plant Additions	Estimated Plant Retirements	EOY Gross Plant in Service
1	2016	1,216,776	51,760	(8,646)	1,259,890

Note: Totals may not tie due to rounding

Source: HELCO-WP-1814

Hawai'i Electric Light Company, Inc.

Test Year 2016

GROSS PLANT IN SERVICE
(With HEP as Utility-Owned)

($ Thousands)

		A	B	C	D (A+B+C)
Line	Item	BOY Gross Plant in Service	Estimated Plant Additions	Estimated Plant Retirements	BOY Gross Plant in Service
1	2016	1,302,976	51,760	(8,646)	1,346,090

Note: Totals may not tie due to rounding

Source: HELCO-WP-1814A

Hawai'i Electric Light Company, Inc.

Test Year 2016

SUMMARY OF CONTRIBUTIONS IN AID OF CONSTRUCTION

($ Thousands)

Line	Description	A Test Year 2016
1	Programs	1,993
2	Projects	522
3	Cash Receipts Subtotal	2,515
4	In-Kind	411
5	SSPP Transfers	186
6	Customer Advance Transfers	607
7	Total Contributions	3,719

Sources: Line 1: HELCO-WP-1815, column F, line 10
Line 2: HELCO-WP-1815, column F, line 21
Line 3: Line 2 + Line 3, also HELCO-WP-1815, column F, line 22
Line 4: HELCO-WP-1815, column F, line 31
Line 5: HELCO-WP-1815, column F, line 32
Line 6: HELCO-WP-1815, column F, line 33
Line 7: Line 3 + Line 4 + Line 5 + Line 6, also HELCO-WP-1815, column F, line 34
Lines 3, 4, 5 and 6 to HELCO-1905

Note: Totals may not tie due to rounding

Hawai'i Electric Light Company, Inc.

Test Year 2016

SUMMARY OF
CUSTOMER ADVANCES

($ Thousands)

Line	Description	A Test Year 2016	
1	Customer Advance Beginning Balance ("BOY")	11,172	
2	Specific Projects	779	
3	GL Level	1,478	
4	Subtotal (Receipts of Customer Advances)	2,257	(Ln 2 + Ln 3)
5	Refund on Customer Advances	(515)	
6	Transfers to CIAC	(793)	
7	Net Customer Advances	949	(Ln 4 + Ln 5 + Ln 6)
8	Estimated Ending Balance ("EOY")	12,121	
9	Average Balance	11,646	(Ln 1 + Ln 8)/2 To: HELCO-1901 & HELCO-1901A

Note: Totals may not tie due to rounding

Source: Line 1: Accounting Records
Line 2: HELCO-WP-1816, page 1, column C, line 3
Line 3: HELCO-WP-1816, page 2, column F, line 4
Line 5: HELCO-WP-1816, page 4, column B, line 47 + HELCO-WP-1815, page 1, column F, line 32
Line 6: HELCO-WP-1816, page 5, column D, line 22

Hawai'i Electric Light Company, Inc.

Test Year 2016

PROPERTY HELD FOR FUTURE USE

($ Thousands)

Line	A	B	
1	Recorded Balance 12/31/2015 (2016 "BOY")	987	
2	Estimated Changes in 2016	(232)	
3	Estimated Balance 12/31/2016 (2016 "EOY" and 2017 "BOY")	755	(Ln 1 + Ln 2)
4	Average Balance	871	(Ln 1 + Ln 3)/2 To: HELCO-1901 & HELCO-1901A

Note: Totals may not tie due to rounding

Source: Line 1: HELCO-1817 page 2, line 4
Line 2: HELCO-1817, page 2, line 1

Hawai'i Electric Light Company, Inc.

Test Year 2016

PROPERTY HELD FOR FUTURE USE

($ Thousands)

Line	Property Name	When Acquired	Purchase Price	Proposed Service Date	
1	Umauma Substation Land & Improvement	2013	$ 232	5/31/2016	
2	Papaaloa Substation Land	2015	$ 488	3/1/2017	
3	Hokukano Substation Land	2007	$ 267	3/1/2018	
4	Total: 2016 BOY Balance		$ 987		Ln 1 + Ln 2 + Ln 3 To: HELCO-1817 p. 1

Note: Totals may not tie due to rounding

Source: Lines 1 - 3: Accounting Records

HAWAI'I ELECTRIC LIGHT COMPANY
2016 TEST YEAR

FUNCTIONS/ACTIVITIES OF THE ENGINEERING DEPARTMENT'S DIVISIONS

As stated in HELCO T-18, Hawai'i Electric Light Company, Inc.'s ("Hawai'i Electric Light" or "Company") Engineering Department is divided into five (5) divisions (also referred to as "responsibility areas") by function and geographical location.

HWA	Administration
HWC	Customer Engineering Hilo
HWK	Customer Engineering Kona
HWW	Customer Engineering Waimea
HWX	Planning

The functions/activities for each of these Divisions are as follows:

Administration (HWA)

- Performs administrative and clerical functions for the department.
- Accepts requests for electric service from customers and contractors. This includes requests for Electric Vehicle ("EV") rates.
- Accepts and processes Distributed Energy Resources ("DER") interconnection applications. This includes Customer Grid Supply ("CGS") and Customer Self Supply ("CSS") programs.
- Administers the Feed-in-Tariff ("FIT") program and contract agreements.
- Prepares reports for renewable and distributed energy programs.

- Meets with and/or answers phone calls from customers to answer questions and provide information on new or existing requests and applications.
- Maintains records on all customer advances and processes refunds.
- Administers the Special Subdivision Project Provision ("SSPP") program. This is a program governed by the Company's Tariff Rule 13-S that assists customers to construct overhead electric lines in qualifying subdivisions that were created without electric service (pre-1967).
- Maintains Joint Pole ownership records and processes payment transactions.
- Operates the Company's switchboard and directs phone calls.

Customer Engineering Hilo (HWC)

- Designs and issues plans for the construction of new overhead and underground service connections to customers. This includes facilities for DER interconnections.
- Designs and issues plans for the construction of new pole lines and underground extensions for customers.
- Designs and issues plans for the construction of re-conductoring projects and pole line replacements. This includes upgrades required for DER interconnections.
- Designs and issues plans for the construction of pole replacements for rotten poles, accident damaged poles, and storm and natural disaster damage.
- Meets with customers and provides design support for new or existing services to meet the customer's electrical needs.

Customer Engineering Kona (HWK)

- This division performs the same functions as HWC, except in the Kona district.

Customer Engineering Waimea (HWW)

- This division performs the same functions as HWC, except in the Waimea district.

Planning (HWX)

- Performs transmission and distribution planning.
- Designs single lines for Customer Engineering projects.
- Develops Company DER interconnection plans, policies and procedures.
- Performs technical reviews and studies for DER applications.
- Designs and manages substation and communication network projects. This includes implementing the SmartGrid communication network and technologies proposed.
- Designs interconnections for new generation facilities.
- Maintains substation loading data.
- Maintains underfrequency load-shedding scheme.
- Provides engineering assistance to developers, consultants and contractors.

Not Used

HAWAI'I ELECTRIC LIGHT COMPANY
2016 TEST YEAR

TELECOMMUNICATIONS PLANNING DIVISION

Background

Traditionally, utility companies industry-wide have considered communications to be an important component of initiatives and projects. In recent years, the utility industry has undergone significant changes, and is on the brink of even further transformation in areas such as non-traditional power sources, renewable generation, advances in technology, and customer demands. The Hawaiian Electric Companies[1] (aka, the "Companies") are no different. In order to support the Companies' vision of empowering our customers and communities with affordable, reliable, clean energy, the enabling role of communications has and will continue to expand. With this expansion of communications, the Companies have taken on a strategic enterprise approach when evaluating and planning communications needs, and in January 2012, formed a tri-Company Telecommunications Planning Division.

Purpose and Benefits

The mission and vision of the Telecommunications Planning Division ("Telecom Planning") are as follows:

Mission

To provide a forward looking strategy and roadmap that identifies the appropriate infrastructure for cost-effective, efficient, secure, and reliable telecommunications transport networks that support both operational and business demands, and facilitates the effective integration of Smart Grid technologies and customer programs.

[1] The Hawaiian Electric Companies are comprised of Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light"); Hawaiian Electric Company, Inc. ("Hawaiian Electric"); and Maui Electric Company, Limited ("Maui Electric").

Vision

To provide the Companies with dependable, consistent, and predictable telecommunications services, which reliably and economically enable a clean energy future.

Telecom Planning provides support and services for Hawaiian Electric, Maui Electric, and Hawai'i Electric Light as part of its workgroup Charter. There are five essential activities supported by Telecom Planning on an ongoing basis, which are: Project Planning, Communication System Planning, Governance, Telecom Master Plan Process Enablement, and Telecom Strategy.

Project Planning consists of two subset areas of responsibility. The first pertains to developing and maintaining a Corporate Telecom Master Plan ("Telecom Master Plan"). The Telecom Master Plan is a long-term, comprehensive plan, encompassing Hawaiian Electric, Hawai'i Electric Light, and Maui Electric, that identifies a strategy and roadmap to provide the appropriate communications infrastructure to achieve a modernized grid. The second entails routine, day-to-day telecom planning work. Examples of activities that fall under this category include initializing projects, assisting with the creation of Request for Proposals, managing bid processes until project award, and proactively specifying communication requirements on a project level.

Communication System Planning refers to system level planning. Telecom Planning identifies tri-Company uniform system technology standards and system architectures. In regards to the Companies' Land Mobile Radio Systems, Telecom Planning assesses how the current needs are being met, and provides recommendations on how to make improvements on or replacements of the systems as technology becomes antiquated. Lastly, Telecom Planning maintains an inventory of the Companies' communication assets as it is critical to properly plan, design, operate and maintain the telecom system.

Governance is an important area as it ensures that the communications networks are designed in alignment with the Telecom Master Plan, follows the technology standards and system architectures as established, incorporates the appropriate cybersecurity measures, and adheres to other telecom standards and policies as they are developed. With regard to any project or initiative, Telecom Planning is looked upon as being the advocate for all business application owners who require communications, as the division works in a horizontal fashion across all departments of all three Companies. This helps to ensure that all telecommunications requirements are satisfied. Finally, Telecom Planning assists to ensure that the telecommunication systems are in compliance with internal as well as external standards and regulations.

Telecom Master Plan Process Enablement includes the development of processes, procedures, and work flows to support the successful implementation of the telecommunication network as identified in the Telecom Master Plan.

Telecom Strategy encompasses working with external Regulatory Agencies such as various State of Hawaii Offices and Federal Communication Commission, to ensure alignment with current regulations. It also includes working with outside technical groups such as the Utilities Telecom Council, Electric Power Research Institute, Broadband Initiative entities, other electric utilities, etc., to remain current with emerging technologies, policies, and industry best practices.

In summary, Telecom Planning is a central entity within the tri-Company organization where various tri-Company, cross-functional, and inter-departmental collaboration occurs, the goal of which is to enable the transformation and enhancement of our telecom networks for the benefit of all customers. This will be achieved through the strategic alignment of communications technology, shared goals, and a common understanding between the three Companies of how the communications infrastructure and networks will support and enable the Companies' strategic goals. In addition, Telecom Planning, through the Telecom Master Plan, provides foundational concepts to achieve standardization, consistency, and interoperability within and between the tri-

Company telecom networks to effectively and efficiently serve the communications needs of the Companies. Furthermore, the Companies' customers will benefit from transformed communications systems by having systems designed in the most cost effective manner. In addition, by maximizing the systems' ability to transfer data, the Companies will be able to be more responsive and interactive with their respective customers. This is particularly important in integrating customer-based renewable energy systems. The Telecom Master Plan supports implementation of a common telecommunications infrastructure that allows the Companies' communications systems to be more compatible across the five island electric grids. In doing so, the Companies could achieve economies of scale related to equipment purchasing and would provide a common architecture and infrastructure for communications, should each island's electric grids and communications systems become interconnected.

Organizational Structure

There are currently four employees in Telecom Planning: (1) Director, (2) Senior Planning Engineers, and (1) Project Analyst. The primary role/function of each position is as follows:

- Director – Manages and directs the Telecommunications Planning Division to plan, evaluate, and recommend projects, programs, initiatives, policies, and methodologies for the development and enhancement of the Hawaiian Electric Companies' telecommunications infrastructure.
- Senior Planning Engineer – Under the direction of the Director, leads the planning, evaluation and recommendation of projects, programs, initiatives, policies, and methodologies for the development and enhancement of the Hawaiian Electric Companies' telecommunications infrastructure.
- Project Analyst - Responsible for providing accurate and timely analysis on project performance indicators such as cost and schedule to Sr. Planners and Telecom Planning Division Director to effectively manage their projects. Includes configuring, managing, and using project management tools, methodology, and information systems to support the projects from conceptualization/inception through scoping, high level budgeting, and

scheduling (PIF process). Ensures that the Division complies with all reporting requirements. Develops and documents procedures for individual projects and any division processes. Serves as a key resource for setting up projects in the Telecommunications Planning Division, estimating, scheduling, and accounting systems, and for monitoring, analyzing, and reporting project progress and performance against approved budgets and milestones. Coordinates communications among project team members, including internal and external teleconferences and other routine communications. Perform other duties delegated by the Director and/or Sr. Planners.

Costs incurred by Telecom Planning are largely shared between the Companies on a 50%/25%/25% allocation for Hawaiian Electric /Hawai'i Electric Light /Maui Electric respectively. This allocation was based on the number of potential major communications hubs that comprise each island's communications infrastructure. For a communications network, a majority of the system equipment (radio and fiber terminals, electronics, antennas, radio towers) is installed at the communications hubs. The communications hubs would be collocated ideally where there are existing company-owned facilities such as substations, power plants, and communications sites. Since the size and complexity of a communications network is often based on the number of hubs involved, the work appropriated to plan, design, and maintain the communications networks for each of the three companies was based on the number of potential major communications hubs for each. Currently, Hawaiian Electric has approximately 180 total transmission substations, distribution substations, power plants, and communications sites. Hawai'i Electric Light has approximately 90, and Maui Electric has approximately 60. Hence, this was how the 50%/25%/25% allocation is derived[2].

The Telecom Planning Division may also contract outside services to complete the above mentioned services should it be deemed necessary.

[2] Although the current number of sites for Hawai'i Electric Light Company and Maui Electric Company do not calculate to an exact 25%/25% split, these numbers vary each year based on system requirements. As such, the percentages are estimates used as this time, and will be modified as required.

Accomplishments

In June of 2013, Telecom Planning released a Corporate Telecommunications Master Plan, spanning a 2014-2023 planning horizon ("TMP"). The TMP was a product of a tri-Company strategic initiative to develop and implement a telecommunications infrastructure master plan that identifies the appropriate telecom infrastructure needed to support efficient, secure and reliable business and utility infrastructure operations and facilitates the effective integration of Smart Grid technologies and customer programs. There were a number of objectives for the TMP, including, but not limited to, the following:

- Business Alignment: Technology is a key enabler to the success or failure of corporate business strategies. If properly implemented, technology can provide to the business the critical tools that it needs to fulfill its mission. The TMP provides one common Corporate Plan vs. each Company, process area, or department "planning in silos."
- Technology Roadmap: The TMP provides the guidelines necessary for detailed engineering decisions in the future. It lays out the principles by which key decisions of capacity, reliability, and configuration can clearly be determined. The TMP provides the overall strategy that guides future implementation.
- Planning: The TMP Action Plans (listing of projects, high-level costs, and schedules per company) chart a course that each company can follow related to their specific communications technology needs. Each company has unique circumstances that need to be considered, so each Action Plan is pertinent to the challenges facing each group.
- Process Efficiency: The TMP is of sufficient scale that if existing planning, engineering, project management, and implementation processes are not streamlined, consolidated, and clarified, the implementation will struggle to succeed. This specifically relates to establishment of planning and design criteria, project life cycle efficiencies, documentation of standards, processes, asset inventory, etc.
- Resource Utilization: The TMP presents a challenging and opportune situation for the technical support staff. They will need to be as involved as possible in bringing in the new technology while at the same time keeping the existing systems operational. The assignment of implementation and maintenance team resources will need to follow a

specific strategy, which should include rotation that allows as many staff as possible to be exposed to and trained on the new technology at some point in the process.

- Existence of a Master Plan: External parties have expressed a desire for the Companies to have Master Plans to show how individual projects submitted for approval fit into the whole plan and picture.

One of the many intended outcomes of the TMP is to develop a communications technology roadmap for the Companies, to be in a strong position to meet the business demands of the future with the telecom infrastructure as the enabler. As a result of the TMP, Hawai'i Electric Light has embarked on its process to transform and modernize its telecommunications network by 1) beginning to install packet-based communications equipment and implementing appropriate cyber security measures, and 2) expanding service to successfully fulfill external customer requirements.

Future Plans

2016: Four Major Goals

In addition to its day-to-day planning activities as described above, Telecom Planning intends to achieve four major goals.

The first goal is to establish a formal, tri-Company Telecommunications Governance structure and process. Telecom Governance will enable the following:

- Ability to define high-level policies and standards for tri-company telecom networks which will promote standardization, consistency, and interoperability between the networks.
- Ability to define tri-company high level processes and procedures within telecom which will promote transparency, clarity, consistency, and efficiency.
- Ensure that the above mentioned policies, processes, procedures and standards are adhered to.

The second goal is to implement a Telecom Work Request tool and process. This tool and process will enable Telecom Planning to more efficiently track the inventory of infrastructure, projects and technology, enable an on-going and automated process to gather telecom requirements, centralize telecom requests for process efficiency, and maintain alignment with Telecom Governance.

The third goal is to complete a refresh of the TMP. As with any plan, the TMP is not static, but is updated to meet changing requirements of the business resulting from the dynamic energy environment we are in. For example, since the TMP was initially completed in 2013, many milestones have been achieved by the Companies. For example, several filings now provide a foundation with which to update the TMP, namely, the Power Supply Improvement Plans, Distributed Generation Interconnection Plan, Integrated Demand Response Portfolio Plan, and Smart Grid Foundation Project Plan. The TMP refresh will focus on the next 5-year planning horizon and will be referred to as the "Telecommunications Revitalization Plan".

The fourth goal is to provide a vision for mobilization. Mobilization refers to preparing the Companies for modernized telecom networks, as changes in operations will range from minimal to significant. People and processes are the two main areas of focus for mobilization.

2017 & 2018:

Barring any significant changes for telecommunications, 2017 and 2018 will focus on continually improving the Telecom Governance process, Telecom Work Request tool and process, and implementing mobilization activities. The Telecom Master Plan will be updated as required to maintain its ability to effectively support the business and customer needs.

Telecommunications Planning Expense Estimate

Telecommunications expense includes labor and non-labor costs and supports the above mentioned services.

The labor component is estimated at $116,252 for 2016 ($30,940 + $85,312; see Table 2 below), which includes actuals recorded in January, February, and March 2016, and forecasted amounts for April through December 2016. For 2017 and 2018, the labor costs are estimated to be $140,295 and $152,093 respectively (see Table 2 below). For the Director, based on 85% of labor being charged to telecom planning type of work, 25% is allocated to Hawai'i Electric Light. For the Planning Engineers, based on 90% of labor being charged to telecom planning type of work, 25% is allocated to Hawai'i Electric Light. Finally, for the Analyst, based on 50% of labor being charged to telecom planning type of work, 25% is allocated to Hawai'i Electric Light. The 25% allocation is based on the 50%/25%/25% allocations to each Company described above.

The non-labor component for 2016 is estimated to be $90,650 ($2,432 + $88,218; see Table 1 below). This amount represents Hawai'i Electric Light's share (25% per cost allocation formula) of anticipated outside services costs to support the following initiatives:

- Telecommunications Governance process
- Telecom Work Request tool
- Studies related to establishing standardized network management system(s) and cyber security design criteria, policies and processes, as related to the telecommunications networks

It is noted that a refresh of the original TMP released on 2013 will be done in 2016. In completing the original TMP, consultants were utilized to assist the Telecommunications Planning Division to accomplish this major undertaking. With the refresh of the TMP in 2016, the Telecommunications Planning Division will do the bulk of the work using in-house resources, hiring consultants only on an as-needed basis.

The non-labor components for 2017 and 2018 are estimated to be approximately $128,000 per year. This amount represents Hawai'i Electric Light's share (25% per cost allocation formula) of anticipated outside services costs to support the following initiatives:

- Telecommunications Master Plan - updates
- Telecommunications Governance and Mobilization processes
- Telecom Work Request tool - upgrades
- Studies related to establishing standardized network management system(s) and cyber security design criteria, policies and processes, as related to the telecommunications networks

The Company notes that included in the non-labor component for 2016, 2017, and 2018, are minimal travel costs for Telecom Planning Division inter-island travel to Hawai'i Electric Light. The estimated travel costs are $2,750, $2,475, and $2,925 for 2016, 2017 and 2018 respectively. These costs are allocated 100% to Hawai'i Electric Light.

Table 1

Hawai'i Electric Light Company, Inc.

2016-2018 Estimated Expenses
Telecommunications Planning Division

Line	Item	RECORDED COSTS JAN-MAR 2016	EXPENSE BUDGET APR-DEC 2016	EXPENSE BUDGET 2017	EXPENSE BUDGET 2018
1	Labor	30,940	85,312	140,295	152,093
2	Non-Labor	2,432	88,218	127,475	127,925
3	**Total**	**33,372**	**173,530**	**267,770**	**280,018**

(see HELCO-WP-1802)

Table 2

Hawai'i Electric Light Company, Inc.

2016-2018 Estimated Expenses - Labor
Telecommunications Planning Division

Line	Item	RECORDED COSTS JAN-MAR 2016	EXPENSE BUDGET APR-DEC 2016	EXPENSE BUDGET 2017	EXPENSE BUDGET 2018
1	Direct Labor	15,937	47,367	77,420	81,377
2	Overhead	15,003	37,945	62,875	70,716
3	**Total Labor**	**30,940**	**85,312**	**140,295**	**152,093**

(see HELCO-WP-1802)

Hawai'i Electric Light Company, Inc.

RENEWABLE ENERGY INTEGRATION COSTS
SEPTEMBER 2010 - DECEMBER 2015
($ Thousands)

Line	Description	Total	Reference
1	NEM Installations	4,390	WP-1821 pp 1-2, lines 49-77
2	Battery Storage Projects	1,640	WP-1821 p 2, lines 79-80
3	DER Mitigation Projects	2,608	WP-1821 p 2, lines 81-99
4	Puna Geothermal Venture 8MW Expansion	1,578	WP-1821 p 2, line 105
5	Total Capital Investments	10,216	line 1 + line 2 + line 3 + line 4
6	CIAC	(2,404)	WP-1821 p 2, lines 107-108
7	Net Capital Investments	7,812	line 5 + line 6
8	Net Non-Project Costs	4,501	WP-1821 p 1, line 47
9	Renewable Integration Costs	12,313	line 7 + line 8

Note: Difference due to rounding

TESTIMONY OF
TERI KAM

DIRECTOR
REGULATORY ACCOUNTING DEPARTMENT
HAWAIIAN ELECTRIC COMPANY, INC.

Subject: Rate Base

EXECUTIVE SUMMARY

Rate Base

- Rate base is the net investment in Hawai'i Electric Light Company, Inc.'s ("Hawai'i Electric Light" or the "Company") assets that are used and useful for public utility purposes and have been funded by investors.
- The Company uses an average rate base which, in general, is the sum of the average balances of investments in assets less the sum of the average balances of funds from non-investors, plus or minus working cash. At proposed rates, the Company estimates the average rate base for the 2016 test year to be $479 million with HEP as IPP-Owned and $565 million with HEP as Utility-Owned.
- Working cash included in investment in assets, represents the capital supplied by investors that bridges the gap between the time expenditures are required to provide services and the time revenues are collected from the customers who utilize those services. Hawai'i Electric Light calculates the working cash with the lead-lag approach, in which the average net lag days are applied to the estimated expenses for the test year to determine the working cash needs. All revenues are subject to the revenue collection lag and the working cash calculations are consistent with this fact. However, in the interest of simplifying the issues and expediting the regulatory process in this case, Hawai'i Electric Light has excluded certain non-cash expenses from its working cash calculation, even though all revenues and all expenses should be included in the working cash calculation, as these are items that are paid for or received by the utility, but for which the cash outlay occurs either before or after the test year.

TABLE OF CONTENTS

INTRODUCTION 1

AVERAGE RATE BASE 1

INVESTMENTS IN ASSETS AND FUNDS FROM NON-INVESTORS 6

WORKING CASH 7

Composite Payment Lag for Revenue Taxes 10

Working Cash Exclusions 12

SUMMARY 14

INTRODUCTION

Q. Please state your name and business address.

A. My name is Teri Kam and my business address is 900 Richards Street, Honolulu, Hawai'i, 96813.

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

A. I am the Director of the Regulatory Accounting Department at Hawaiian Electric Company, Inc. ("Hawaiian Electric"). HELCO-1900 provides my educational background and experience.

Q. What is the purpose of this testimony?

A. My testimony will present the estimated average rate base for Hawai'i Electric Light Company, Inc.'s 2016 test year and the calculation of the working cash included therein. In this testimony, I will: (1) summarize the issues relating to certain rate base items discussed in greater detail by other Company witnesses; and (2) explain the changes made in the working cash calculation in the interest of simplifying the issues and expediting the regulatory process in these proceedings.

AVERAGE RATE BASE

Q. What is the Company's estimate of the average rate base for the 2016 test year?

A. Hawai'i Electric Light estimates the 2016 test year average rate base at proposed rates to be $479 million with HEP as IPP-Owned and $565 million with HEP as Utility-Owned. Table 1 below provides the average rate base for Hawai'i Electric Light at present rates, current effective rates and proposed rates under both scenarios and the references to the respective exhibits in which the rate base is tabulated. Mr.

Jay Ignacio in T-27 provides an explanation of present, current effective and proposed rates.

Table 1: Average Rate Base

Amount ($000s)	HELCO-1901	HELCO-1901A
Average Rate Base at:	With HEP as IPP-Owned	With HEP as Utility-Owned
Present Rates	479,207	566,056
Current Effective Rates	478,987	565,836
Proposed Rates	478,773	565,450

Q. What is rate base and how is it calculated?

A. A general description of rate base and how it is calculated is more fully discussed in HELCO-1904.

Q. Why is Hawai'i Electric Light proposing to include the full cost of the test year Hamakua Energy Partners ("HEP") power plant addition in the average net cost of plant in service balance?

A. The Company is including the purchase amount of $86,200,000 in the 2016 Beginning of Year gross plant in service as discussed by Mr. Dave Okamura in his T-18 testimony and shown in his exhibit HELCO-1814A. As a result, the investment in HEP is reflected in both the beginning and ending of test year 2016 net plant in service balances, and subsequently the average year net cost of plant in service balance used in the calculation of the test year rate base. Adjusting the rate base in this manner allows the Company the opportunity to earn a reasonable rate of return on the total test year investment of HEP, from the moment it goes into service onward. Upon completion of the purchase, the plant will be fully operational and

will be serving customers. Therefore, including the full cost in rate base is necessary to allow the Company the meaningful opportunity to earn a fair return on 100% of its investment in the HEP plant.

In addition, changes to other rate base items such as fuel inventory, materials and supplies inventories, and working cash were required to reflect other changes in the rate case estimates that would result from HEP being included in the beginning of year plant, such as purchase power expense, Production O&M expenses, taxes, etc. The calculation of the 2016 test year rate base which reflects the impact of the inclusion of HEP the Company's rate case estimates is provided in HELCO-1901A. A more detailed discussion of the HEP docket is provided by Mr. Jay Ignacio in HELCO T-1.

Q. Were there any other adjustments made to the net cost of plant in service in the calculation of the test year rate base?

A. Yes, for both the HEP as IPP-Owned and HEP as Utility-Owned scenarios, the beginning of test year 2016 gross plant in service and accumulated depreciation were adjusted for the additional Shipman Steam Units 3 and 4 terminal retirements recorded in 2016 which should have been recorded in 2015 as discussed in Mr. Dave Okamura's testimony in HELCO T-18 and Ms. Michelle Koyanagi's testimony in HELCO T-16.

Q. Are there any rate base components that Hawai'i Electric Light proposes to include in the 2016 test year rate base that were not included in recent Hawai'i Electric Light rate cases?

A. No. The Company has not included any components of rate base that hasn't already been included in prior rate cases. The rate base components and estimated test year average for each component is listed in Table 2 and Table 3 below.

Table 2: Rate Base Components (at Present Rates)

	Amount ($000s)		HELCO-1901 With HEP as IPP-Owned	HELCO-1901A With HEP as Utility-Owned
Investments in Assets	Net Cost of Plant in Service	HELCO-1902, HELCO-1902A	656,699	742,899
	Property Held for Future Use	HELCO-1817	871	871
	Fuel Inventory	HELCO-504, HELCO-508	5,924	7,911
	Materials and Supplies Inventories	HELCO-1903	7,144	7,144
	Regulatory Assets:			
	Unamortized Net ASC 740	HELCO-1706	11,471	11,471
	Pension Tracking	HELCO-1111	20,621	20,621
	Contributions in Excess of NPPC	HELCO-1111	2,743	2,743
	Deferred System Development and Other Costs	HELCO-1122	5,776	5,776
	Total Investments in Assets		711,248	799,435
Funds from Non-Investors	Unamortized CIAC	HELCO-1905	95,541	95,541
	Customer Advances for Construction	HELCO-1816	11,646	11,646
	Customer Deposits	HELCO-909	3,274	3,274
	Accumulated Deferred Income Taxes	HELCO-1705	107,869	107,836
	Unamortized State ITC (gross)	HELCO-1704	15,454	17,096
	Pension Regulatory Liability	HELCO-1111	446	446
	OPEB Regulatory Liability	HELCO-1112	1,393	1,393
	Total Funds from Non-Investors		235,625	237,234
Working Cash	Working Cash at Present Rates	HELCO-1906 HELCO-1906A	3,584	3,855
	Change in Working Cash		(434)	(606)
	Working Cash at Proposed Rates		3,150	3,249
Average Rate Base at Proposed Rates		HELCO-1901 HELCO-1901A	478,773	565,450

Table 3: Rate Base Components (at Current Effective Rates)

	Amount ($000s)		HELCO-1901 With HEP as IPP-Owned	HELCO-1901A With HEP as Utility-Owned
Investments in Assets	Net Cost of Plant in Service	HELCO-1902, HELCO-1902A	656,699	742,899
	Property Held for Future Use	HELCO-1817	871	871
	Fuel Inventory	HELCO-504, HELCO-508	5,924	7,911
	Materials and Supplies Inventories	HELCO-1903	7,144	7,144
	Regulatory Assets:			
	Unamortized Net ASC 740	HELCO-1706	11,471	11,471
	Pension Tracking	HELCO-1111	20,621	20,621
	Contributions in Excess of NPPC	HELCO-1111	2,743	2,743
	Deferred System Development and Other Costs	HELCO-1122	5,776	5,776
	Total Investments in Assets		711,248	799,435
Funds from Non-Investors	Unamortized CIAC	HELCO-1905	95,541	95,541
	Customer Advances for Construction	HELCO-1816	11,646	11,646
	Customer Deposits	HELCO-909	3,274	3,274
	Accumulated Deferred Income Taxes	HELCO-1705	107,869	107,836
	Unamortized State ITC (gross)	HELCO-1704	15,454	17,096
	Pension Regulatory Liability	HELCO-1111	446	446
	OPEB Regulatory Liability	HELCO-1112	1,393	1,393
	Total Funds from Non-Investors		235,625	237,234
Working Cash	Working Cash at Current Effective Rates	HELCO-1906 HELCO-1906A	3,364	3,635
	Change in Working Cash		(215)	(387)
	Working Cash at Proposed Rates		3,150	3,249
Average Rate Base at Proposed Rates		HELCO-1901 HELCO-1901A	478,773	565,450

Q. Are there any changes in the way in which Hawai‘i Electric Light has calculated the 2016 test year average amount for each rate base item?

A. Yes. Although the general approach to the calculation of all items listed in Table 2 is consistent with the approach taken in Hawai'i Electric Light's 2010 test year rate case, a few changes have been made to the calculation of working cash in this rate case with respect to the composite payment lag for revenue taxes and the compilation of cost of service included in the working cash calculation. These changes are discussed later in the "Working Cash" section of my testimony.

INVESTMENTS IN ASSETS AND FUNDS FROM NON-INVESTORS

Q. Please describe the investments in assets funded by investors and funds from non-investors.

A. Each of the individual components are described and more fully discussed in HELCO-1904. In addition, the following components and its sub-components are explained in more detail by the following witnesses:

Investments in Assets	Net Cost of Plant in Service	HELCO T-16 HELCO T-18	Ms. Michelle Koyanagi Mr. Dave Okamura
	Property Held for Future Use	HELCO T-18	Mr. Dave Okamura
	Fuel Inventory	HELCO T-5	Ms. Cecily Barnes
	Materials and Supplies Inventories	HELCO T-7 HELCO T-8	Mr. Norman Uchida Mr. Miles Nagato
	Regulatory Assets:		
	Unamortized Net ASC 740	HELCO T-17	Mr. Lon Okada
	Pension Asset	HELCO T-11	Mr. Paul Franklin
	Pension Tracking	HELCO T-11	Mr. Paul Franklin
	Contributions in Excess of NPPC	HELCO T-11	Mr. Paul Franklin
	Deferred System Development and Other Costs	HELCO T-11	Mr. Paul Franklin

Funds from Non-Investors	Unamortized CIAC	HELCO T-16 HELCO T-18	Ms. Michelle Koyanagi Mr. Dave Okamura
	Customer Advances for Construction	HELCO T-18	Mr. Dave Okamura
	Customer Deposits	HELCO T-9	Ms. Nat Epenesa
	Accumulated Deferred Income Taxes	HELCO T-17	Mr. Lon Okada
	Unamortized State ITC (gross)	HELCO T-17	Mr. Lon Okada
	OPEB Regulatory Liability	HELCO T-11	Mr. Paul Franklin

WORKING CASH

Q. Please describe working cash and the calculation methodology used by the Company.

A. Working cash is more fully discussed in HELCO-1904.

Q. What are the test year estimates of working cash at present, current effective and proposed rates?

A. The test year estimates of working cash at present and proposed rates are summarized in Table 4 below (and in HELCO-1906) and include HEP as IPP-Owned. HELCO-1906A provides the test year estimates of working cash with HEP as Utility-Owned.

Table 4: Working Cash

	HELCO-1906	HELCO-1906A
Working Cash at: Amount ($000s)	With HEP as IPP-Owned	With HEP as Utility-Owned
Present Rates	3,584	3,855
Current Effective Rates	3,364	3,635
Proposed Rates	3,150	3,249

Q. What expense categories were included in the lead-lag study?

A. The Company reviewed transactions recorded in each expense category in a selected year. The lead-lag study for each expense category is documented in the following exhibits and related workpapers:

Fuel Purchase – With HEP as IPP-Owned	HELCO-1907
Fuel Purchase – With HEP as Utility-Owned	HELCO-1907A
Purchased Power – With HEP as IPP-Owned	HELCO-1908
Purchased Power – With HEP as Utility-Owned	HELCO-1908A
O&M Labor	HELCO-1909
O&M Non-Labor and Other Expenses – With HEP as IPP-Owned	HELCO-1910
O&M Non-Labor and Other Expenses – With HEP as Utility-Owned	HELCO-1910A
Revenue Taxes	HELCO-1911
Income Taxes	HELCO-1912

Q. For each expense category were calendar year 2015 transactions selected for review?

A. As more fully described in HELCO-1904, the Company selects the most recently completed calendar year, and reviews all transactions recorded in each expense category except for the O&M non-labor expenses[1]. In order to maintain the effort to update the lead lag study areas to reflect reasonably current vendor payment activities as recommended by the Consumer Advocate in the Company's 2010 test year rate case,[2] Hawai'i Electric Light reviewed recorded 2015 transactions

[1] Generally, due to the significant volume of the transactions recorded in O&M non-labor expenses, Hawai'i Electric Light calculates a statistical sample size to determine the number of transactions to review.

[2] During the settlement discussion in Hawai'i Electric Light's 2010 rate case, the Consumer Advocate made several recommendations regarding Hawai'i Electric Light's next rate case including:

wherever feasible in this instant rate case. The only exceptions were in the following categories:

- Purchased power payment lag – Feed-in Tariffs ("FIT"): Due to the significant volume of transactions from the approximately 16 FIT participants, Hawai'i Electric Light used estimated payment dates for the test year based on the payment terms in the Feed-in Tariff contract (HELCO-WP-1908, page 5)
- O&M labor payment lag: Since 2012 the Hawaiian Electric Companies has teamed up with Ceridian to provide payroll services. Ceridian draws funds from the Company's payroll account to pay the various payroll components on a set schedule. The Company determined the payment lag days based on the 2016 payroll schedule and Ceridian's scheduled payment dates (HELCO-WP-1909).
- O&M non-labor and other expenses payment lag – pension and OPEB and FICA, FUTA and SUTA: Hawai'i Electric Light reviewed the scheduled 2016 pension contributions to be made based on the payment schedule from HEI. There are currently no 2016 OPEB contributions scheduled to be made. (HELCO-WP-1910, page 3). As previously discussed, Ceridian draws funds

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(1) updating the lead lag study areas to reflect reasonably current vendor payment activity;
(2) including copies of the vendor invoices in the supporting workpapers or compiling them and making them readily accessible; and
(3) expanding the sample size of the O&M non-labor component beyond 83 transactions and limiting it to expense-related transactions.

See page 81 of the *Parties' Stipulated Settlement Letter* filed on September 16, 2010 in Docket No. 2009-0164.

from the Company's payroll account to pay the various payroll taxes on a set schedule. The Company determined the payment lag days based on the 2016 payroll schedule and Ceridian's scheduled payment dates (HELCO-WP-1910, pages 14-15).

- O&M non-labor - other non-labor expenses payment lag: The Hawaiian Electric Companies have implemented the ePayment program with its suppliers. Enrollment in the program enables the suppliers the benefit of net 15 payment terms. Suppliers who choose not to enroll are at net 30 payment terms. Based on a review of 2015 suppliers and payment activity a majority are not enrolled in ePayment and subject to net 30 payment terms. As such, the Company has estimated a payment lag of 30 days for other O&M non-labor expenses consistent with the payment terms currently provided to the majority of Hawai'i Electric Light suppliers (HELCO-1910 and HELCO-1910A).
- Income tax payment lag: Hawai'i Electric Light used the estimated tax installment payment due dates as set by the IRS and the Hawai'i State Department of Taxation (HELCO-WP-1912).

<u>Composite Payment Lag for Revenue Taxes</u>

Q. Are there any changes in the calculation of payment lag for the 2016 test year?

A. Yes, there is a change reflected in the calculation of the composite payment lag for revenue taxes. The overall methodology used to determine the payment lag for each expense category is consistent with that used in the Hawaiian Electric Companies'

previous rate cases. Hawai'i Electric Light calculates the payment lag for each transaction reviewed by taking the difference between the date on which the payment cleared Hawai'i Electric Light's bank account and the midpoint of the service period or the delivery date on which Hawai'i Electric Light received the service or the product it paid for. Hawai'i Electric Light then calculates either the average or weighted average of the payment lags for each category. The change reflected in the calculation of the composite payment lag for revenue taxes incorporates the agreement reached in the Stipulated Settlement filed on July 5, 2011 in Hawaiian Electric's 2011 test year rate case (Docket No. 2010-0080), in which Hawaiian Electric agreed to adjust the payment lag of the composite revenue tax payment lag to reflect the same net collection lag as that calculated by the Consumer Advocate.

Q. Please describe the nature of the issue of collection lag days for revenue taxes?

A. The PSC tax is paid in twelve installments and the Public Utility ("PU") fee is paid in two equal installments for the obligations of the current year. The Consumer Advocate has contended that revenue taxes do not become an obligation of the utility until the customer is billed and that the collection lag days should be from that date to the date that the utility receives payment. The Hawaiian Electric Companies have objected to this contention in previous rate cases. However, in the interest of simplifying the issues and expediting the regulatory process in this case, Hawai'i Electric Light has utilized the Consumer Advocate's method of calculating the payment lag for revenue taxes. Hawai'i Electric Light's limited utilization of the

Consumer Advocate's method should not be construed as an endorsement of that method, and accordingly, the Company reserves the right to raise this issue before the Commission in future rate cases. The calculation of the revenue tax payment lag is provided in HELCO-1911.

Working Cash Exclusions

Q. Are there any changes in the compilation of cost of service included in the working cash calculation?

A. Yes. Hawai'i Electric Light has excluded test year amortization amounts of pension and OPEB regulatory assets, system development costs, other deferred costs and test year allowance for uncollectible accounts from the O&M non-labor expense in the working cash calculation in this rate case, which were included in the 2010 test year rate case. (Hawai'i Electric Light is, however, continuing to include in the O&M non-labor expense the test year amortization of regulatory commission expense.)

Q. Why did Hawai'i Electric Light exclude these items from the cost of service used in the working cash calculation?

A. The Commission has disallowed items referred to as "non-cash" expenses in previous decisions,[3] primarily on the grounds that these non-cash items do not

[3] In previous decisions, the Commission did not specifically disallow amortizations and allowance for uncollectible accounts. It did, however, specifically disallow "non-cash" expenses such as depreciation and deferred taxes in Hawaiian Electric's 1985 test year rate case in *Decision and Order No. 8570* in Docket No. 5081, filed on December 12, 1985. The Commission referred to its discussion and conclusion in that decision in the following subsequent rate cases:

- Docket No. 6432, Hawai'i Electric Light 1990 test year rate case;
- *Decision and Order No. 10993*, issued March 6, 1991;
- Docket No. 6531, Hawaiian Electric 1990 test year rate case; and
- *Decision and Order No. 11317*, issued October 17, 1991.

involve cash outlays. However, as consistently explained in prior Hawai'i Electric Light, Hawaiian Electric Company, Inc. and Maui Electric Company, Limited rate cases, all revenues and all expenses should be included in the working cash calculation. These are items that are paid for or received by the utility, but for which the cash outlay occurs either before or after the test year.

Nevertheless, in the interest of simplifying the issues and expediting the regulatory process in this case, notwithstanding its position, the Company has excluded these items from the O&M non-labor expense in the working cash calculation. This change in the treatment should not be construed, however, as an endorsement of the Commission's rulings on this issue, and accordingly, the Company reserves the right to raise this issue before the Commission in future rate cases.

The calculations of the composite payment lag for O&M non-labor expense and the working cash are presented in HELCO-1910, HELCO-1910A, HELCO-1906A and HELCO-1906, respectively.

Q. Why is Hawai'i Electric Light continuing to include the amortization of regulatory commission expense in the O&M non-labor expense, while other amortizations are excluded from the O&M non-labor expense in this rate case?

A. The basis for this treatment is twofold. First, regulatory commission expense is a cash item with cash outlay occurring before, during and after the test year. Second, in lieu of proposing to include a regulatory asset for regulatory commission expense,

Hawai'i Electric Light has conservatively included the amortization in the working cash calculation with zero payment lag days.

SUMMARY

Q. What is your conclusion as to the 2016 test year rate base proposed by the Company?

A. The test year average rate base is $479 million at present, current effective and proposed rates with HEP as IPP-Owned and $566 million at present and current effective rates and $565 million at proposed rates with HEP as Utility-Owned. This rate base represents the investment which is used and useful in providing electric utility service that has been funded by investors. The Company's investors should be allowed the opportunity to earn a fair rate of return on this rate base.

Hawai'i Electric Light has demonstrated the reasonableness of each of the estimates used in this calculation and has demonstrated the appropriate treatment of each of the elements in the rate base calculation. Therefore, the rate base presented by the Company is reasonable and should be used to set electric rates in this docket.

Q. Does this conclude your testimony?

A. Yes, it does.

HAWAIIAN ELECTRIC COMPANY, INC.

TERI Y. KAM

EDUCATIONAL BACKGROUND AND EXPERIENCE

Business Address:	900 Richards Street Honolulu, HI 96813
Current Position:	Director, Regulatory Accounting Regulatory Accounting Department
Years of Service:	23 Years
Previous Positions with Current Employer:	Director, Labor Relations & Wage Administration Work Process Lead – Finance and Human Resources Director, Internal Audit Division
Other Experience:	Accounting Manager, Stark Ventures, Ltd. Controller, Consolidated Resorts Audit Supervisor, Coopers & Lybrand
Education:	University of Hawaii at Manoa Bachelor of Business Administration in Accounting
Certification:	Certified Public Accountant (inactive), State of Hawaii
Previous Testimonies:	None

Hawai'i Electric Light Company, Inc.

2016 Test Year Average Rate Base (Present Rates)

HEP IPP-OWNED

($ in thousands)

Investment in Assets Serving Customers	12/31/2015	12/31/2016	Average for 2016	HELCO Reference
Net Cost of Plant in Service	$ 649,484	$ 663,915	$ 656,699	1902
Property Held for Future Use	987	755	871	1817
Fuel Inventory	5,924	5,924	5,924	504
Materials & Supplies Inventories	7,144	7,144	7,144	1903
Regulatory Assets:				
Unamortized Net ASC 740 [1]	11,463	11,480	11,471	1706
Pension Tracking	22,911	18,329	20,620	1111
Contributions in Excess of NPPC	3,047	2,438	2,743	1111
Deferred System Development and Other Costs	5,822	5,730	5,776	1122
Working Cash at Present Rates	3,584	3,584	3,584	1906
Total Investments in Assets	710,366	719,299	714,832	
Funds from Non-Investors				
Unamortized CIAC	95,298	95,785	95,541	1905
Customer Advances	11,172	12,121	11,646	1816
Customer Deposits	3,224	3,325	3,274	909
Accumulated Deferred Income Taxes	102,336	113,402	107,869	1705
Unamortized ITC	15,184	15,725	15,454	1704
Pension Regulatory Liability	496	397	446	1111
OPEB Regulatory Liability	1,547	1,238	1,393	1112
Total Deductions	229,257	241,993	235,625	
Average Rate Base at Present Rates			479,207	
Change in Working Cash			(434)	1906
Average Rate Base at Proposed Rates			$ 478,773	

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.

[1] Unamortized Net ASC 740 was formerly referred to as unamortized net SFAS 109. As indicated in HECO T-18, p. 44 in Hawaiian Electric's 2011 test year rate case in Docket No. 2010-0080 and MECO T-11, p. 90 in MECO's 2012 test year rate case in Docket No. 2011-0092, beginning with interim and annual periods ending after September 15, 2009 the Financial Accounting Standards Board implemented the Financial Accounting Standards Codification, which is the single source of authoritative nongovernmental U.S. Generally Accepted Accounting Principles. SFAS 109 in the new codification is under ASC 740, Accounting for Income Taxes.

Hawai'i Electric Light Company, Inc.

2016 Test Year Average Rate Base (Current Effective Rates)

HEP IPP-OWNED

($ in thousands)

Investment in Assets Serving Customers	12/31/2015	12/31/2016	Average for 2016	HELCO Reference
Net Cost of Plant in Service	$ 649,484	$ 663,915	$ 656,699	1902
Property Held for Future Use	987	755	871	1817
Fuel Inventory	5,924	5,924	5,924	504
Materials & Supplies Inventories	7,144	7,144	7,144	1903
Regulatory Assets:				
Unamortized Net ASC 740 [1]	11,463	11,480	11,472	1706
Pension Tracking	22,911	18,329	20,620	1111
Contributions in Excess of NPPC	3,047	2,438	2,743	1111
Deferred System Development and Other Costs	5,822	5,730	5,776	1122
Working Cash at Current Effective Rates	3,364	3,364	3,364	1906
Total Investments in Assets	710,146	719,079	714,613	
Funds from Non-Investors				
Unamortized CIAC	95,298	95,785	95,541	1905
Customer Advances	11,172	12,121	11,646	1816
Customer Deposits	3,224	3,325	3,274	909
Accumulated Deferred Income Taxes	102,336	113,402	107,869	1705
Unamortized ITC	15,184	15,725	15,454	1704
Pension Regulatory Liability	496	397	446	1111
OPEB Regulatory Liability	1,547	1,238	1,393	1112
Total Deductions	229,257	241,993	235,625	
Average Rate Base at Current Effective Rates			478,988	
Change in Working Cash			(215)	1906
Average Rate Base at Proposed Rates			$ 478,773	

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.

[1] Unamortized Net ASC 740 was formerly referred to as unamortized net SFAS 109. As indicated in HECO T-18, p. 44 in Hawaiian Electric's 2011 test year rate case in Docket No. 2010-0080 and MECO T-11, p. 90 in MECO's 2012 test year rate case in Docket No. 2011-0092, beginning with interim and annual periods ending after September 15, 2009 the Financial Accounting Standards Board implemented the Financial Accounting Standards Codification, which is the single source of authoritative nongovernmental U.S. Generally Accepted Accounting Principles. SFAS 109 in the new codification is under ASC 740, Accounting for Income Taxes.

Hawai'i Electric Light Company, Inc.

2016 Test Year Average Rate Base (Present Rates)

HEP UTILITY-OWNED

($ in thousands)

Investment in Assets Serving Customers	12/31/2015	12/31/2016	Average for 2016	HELCO Reference
Net Cost of Plant in Service	$ 649,484	$ 663,915	$ 656,699	1902A
HEP Addition	$ 86,200	$ 86,200	$ 86,200	1902A
Property Held for Future Use	987	755	871	1817
Fuel Inventory	7,910	7,910	7,910	508
Materials & Supplies Inventories	7,144	7,144	7,144	1903
Regulatory Assets:				
Unamortized Net ASC 740 [1]	11,463	11,480	11,471	1706
Pension Tracking	22,911	18,329	20,620	1111
Contributions in Excess of NPPC	3,047	2,438	2,743	1111
Deferred System Development and Other Costs	5,822	5,730	5,776	1122
Working Cash at Present Rates	3,855	3,855	3,855	1906A
Total Investments in Assets	798,824	807,756	803,290	
Funds from Non-Investors				
Unamortized CIAC	95,298	95,785	95,541	1905
Customer Advances	11,172	12,121	11,646	1816
Customer Deposits	3,224	3,325	3,274	909
Accumulated Deferred Income Taxes	102,336	113,336	107,836	1705
Unamortized ITC	15,184	19,009	17,096	1704
Pension Regulatory Liability	496	397	446	1111
OPEB Regulatory Liability	1,547	1,238	1,393	1112
Total Deductions	229,257	245,211	237,234	
Average Rate Base at Present Rates			566,056	
Change in Working Cash			(606)	1906A
Average Rate Base at Proposed Rates			$ 565,450	

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.

[1] Unamortized Net ASC 740 was formerly referred to as unamortized net SFAS 109. As indicated in HECO T-18, p. 44 in Hawaiian Electric's 2011 test year rate case in Docket No. 2010-0080 and MECO T-11, p. 90 in MECO's 2012 test year rate case in Docket No. 2011-0092, beginning with interim and annual periods ending after September 15, 2009 the Financial Accounting Standards Board implemented the Financial Accounting Standards Codification, which is the single source of authoritative nongovernmental U.S. Generally Accepted Accounting Principles. SFAS 109 in the new codification is under ASC 740, Accounting for Income Taxes.

Hawai'i Electric Light Company, Inc.

2016 Test Year Average Rate Base (Current Effective Rates)

HEP UTILITY-OWNED

($ in thousands)

Investment in Assets Serving Customers	12/31/2015	12/31/2016	Average for 2016	HELCO Reference
Net Cost of Plant in Service	$ 649,484	$ 663,915	$ 656,699	1902A
HEP Addition	$ 86,200	$ 86,200	$ 86,200	1902A
Property Held for Future Use	987	755	871	1817
Fuel Inventory	7,910	7,910	7,910	508
Materials & Supplies Inventories	7,144	7,144	7,144	1903
Regulatory Assets:				
Unamortized Net ASC 740 [1]	11,463	11,480	11,472	1706
Pension Tracking	22,911	18,329	20,620	1111
Contributions in Excess of NPPC	3,047	2,438	2,743	1111
Deferred System Development and Other Costs	5,822	5,730	5,776	1122
Working Cash at Current Effective Rates	3,635	3,635	3,635	1906A
Total Investments in Assets	798,604	807,536	803,071	
Funds from Non-Investors				
Unamortized CIAC	95,298	95,785	95,541	1905
Customer Advances	11,172	12,121	11,646	1816
Customer Deposits	3,224	3,325	3,274	909
Accumulated Deferred Income Taxes	102,336	113,336	107,836	1705
Unamortized ITC	15,184	19,009	17,096	1704
Pension Regulatory Liability	496	397	446	1111
OPEB Regulatory Liability	1,547	1,238	1,393	1112
Total Deductions	229,257	245,211	237,234	
Average Rate Base at Current Effective Rates			565,837	
Change in Working Cash			(387)	1906A
Average Rate Base at Proposed Rates			$ 565,450	

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.

[1] Unamortized Net ASC 740 was formerly referred to as unamortized net SFAS 109. As indicated in HECO T-18, p. 44 in Hawaiian Electric's 2011 test year rate case in Docket No. 2010-0080 and MECO T-11, p. 90 in MECO's 2012 test year rate case in Docket No. 2011-0092, beginning with interim and annual periods ending after September 15, 2009 the Financial Accounting Standards Board implemented the Financial Accounting Standards Codification, which is the single source of authoritative nongovernmental U.S. Generally Accepted Accounting Principles. SFAS 109 in the new codification is under ASC 740, Accounting for Income Taxes.

Hawai'i Electric Light Company, Inc.
Net Cost of Plant in Service
HEP IPP-OWNED
($ in thousands)

		A HELCO-1814 WP-1902 p.2 Original Cost	B WP-1902 p.1 Accum Depreciation, Removal Reg Liability, ARO Reg Asset & ARO	C =A + B Net Cost of Plant in Service
1	Adjusted Balances - 12/31/15	$ 1,216,776	$ (567,292)	$ 649,484
	Estimated Changes in 2016:			
2	Net Plant Additions	51,760	-	51,760
3	Cost of Removal	-	5,074	5,074
4	Salvage	-	(297)	(297)
5	Depreciation Accrual	-	(42,106)	(42,106)
6	Depreciation Accrual Reclass	-	-	-
7	Accretion of ARO	-	-	-
8	ARO Retirements	-	-	-
9	Retirements	(8,646)	8,646	-
10	Estimated Balances - 12/31/16	1,259,890	(595,975)	663,915
11	**Average 2016 Test Year Balance**	**$ 1,238,333**	**$ (581,633)**	**$ 656,699**

Notes:

- Totals may not add exactly and amounts shown may not tie exactly to references due to rounding.

Column A

The compilation of the original cost of plant in service is documented in HELCO-1814.

Column B

The compilation of accumulated depreciation, removal regulatory liability, asset retirement obligation ("ARO") regulatory asset, and ARO, is documented in HELCO-WP-1902, p.1.

Column C

Net cost of plant in service represents the sum of columns A and B, and the actual balances as of 12/31/15 (line 1) and the estimated balances as of 12/31/16 (line 10), as well as the average 2016 test year balance (line 11), are included in the average rate base schedule presented in HELCO-1901.

Hawai'i Electric Light Company, Inc.
Net Cost of Plant in Service
HEP UTILITY-OWNED
($ in thousands)

		A HELCO-1814A WP-1902A p.2 Original Cost	B WP-1902A p.1 Accum Depreciation, Removal Reg Liability, ARO Reg Asset & ARO	C =A + B Net Cost of Plant in Service
1	Adjusted Balances - 12/31/15	$ 1,216,776	$ (567,292)	$ 649,484
2	HEP Addition	86,200	-	86,200
3	Adjusted Balances with HEP - 12/31/15	$ 1,302,976	$ (567,292)	$ 735,684
	Estimated Changes in 2016:			
4	Net Plant Additions	51,760	-	51,760
5	Cost of Removal	-	5,074	5,074
6	Salvage	-	(297)	(297)
7	Depreciation Accrual	-	(42,106)	(42,106)
8	Depreciation Accrual Reclass	-	-	-
9	Accretion of ARO	-	-	-
10	ARO Retirements	-	-	-
11	Retirements	(8,646)	8,646	-
12	Estimated Balances - 12/31/16	1,346,090	(595,975)	750,115
13	**Average 2016 Test Year Balance**	**$ 1,324,533**	**$ (581,633)**	**$ 742,899**

Notes:

- Totals may not add exactly and amounts shown may not tie exactly to references due to rounding.

Column A

The compilation of the original cost of plant in service is documented in HELCO-1814A.

Column B

The compilation of accumulated depreciation, removal regulatory liability, asset retirement obligation ("ARO") regulatory asset, and ARO, is documented in HELCO-WP-1902A, p.1.

Column C

Net cost of plant in service represents the sum of columns A and B, and the actual balances as of 12/31/15 (line 1) and the estimated balances as of 12/31/16 (line 12), as well as the average 2016 test year balance (line 13), are included in the average rate base schedule presented in HELCO-1901A.

Hawai'i Electric Light Company, Inc.
Materials & Supplies Inventories
($ in thousands)

		HELCO Reference	Test Year Average	
	Production Inventory			
1	Test Year Average Inventory	HELCO-709	$ 1,320	
2	Accounts Payable Adjustment	HELCO-WP-1903 p. 1	(18)	To HELCO-712
3	Adjusted Production Inventory	Line 1 + Line 2=	1,302	
	Transmission & Distribution Inventory			
4	Test Year Average Inventory	HELCO-807	6,155	
5	Accounts Payable Adjustment	HELCO-WP-1903 p. 1	(314)	To HELCO-807
6	Adjusted T&D Inventory	Line 4 + Line 5=	5,841	
7	Total Materials & Supplies	Line 3 + Line 6=	$ 7,144	To HELCO-1901

Purpose:

To document the adjustments made to the test year average inventory balances per the exhibits in HELCO T-7 and T-8, for the estimated portion of inventory balance at test year end that has not yet been paid for by the Company.

Background:

In Decision and Order No. 14412 issued on December 15, 1995 in Docket No. 7766, Hawaiian Electric's 1995 test year rate case, the Commission determined that materials and supplies inventory should be adjusted to reflect the payment lag associated with goods received but not yet paid for by the Utility. HELCO began reflecting the payment lag adjustment in the materials and supplies inventory balance in the test year 2006 rate case to be consistent with the treatment used in the Hawaiian Electric rate cases.

Notes:

- Totals may not add exactly and amounts shown may not tie exactly to references due to rounding.

Lines 1 and 4

The amounts represent the test year average inventory for Production and Transmission & Distribution, derived by the witnesses in their respective exhibits. Please see the exhibits referenced above for details of the calculation.

Lines 2 and 5

The amounts represent the portions of the respective test year inventory balances that are estimated not to have been paid for by the Company. The calculation of these amounts is documented in HELCO-WP-1903, p.1.

Line 7

The amount represented the total test year average materials and supplies inventory, adjusted for the estimated unpaid balance at test year end. The amount is included in the average rate base schedule presented in HELCO-1901.

HAWAI'I ELECTRIC LIGHT COMPANY
2016 TEST YEAR

Rate Base Summary

This exhibit provides a general overview of rate base for Hawai'i Electric Light Company, Inc. (Hawai'i Electric Light" or "Company").

In general, rate base consists of investments, funded by both investors and non-investors, in assets that are necessary to provide reliable electric service, less funds from non-investors, plus or minus working cash. As a measure of utility investments funded by investors, rate base provides the basis for determining the level of investment on and of which the Company's investors should be provided with an opportunity to earn a fair and reasonable return through rates charged to Company's customers for the utility services provided. [1]

For rate case purposes, the Company uses an average rate base, which, in general is the sum of the average balances of investments in assets less the sum of the average balances of funds from non-investors, plus or minus working cash. The calculation of rate base generally includes the following components which the Commission has allowed in determining rate base in the Company's previous rate case decisions[2]:

Investment in assets funded by investors:

- Net Cost of Plant in Service
- Property Held for Future Use
- Fuel Inventory
- Materials and Supplies Inventories
- Deferred System Development and Other Costs
- Regulatory Assets
    - Unamortized Net ASC 740 Regulatory Asset
    - Pension Asset
    - Pension Tracking Regulatory Asset
    - Contribution in Excess of NPPC Regulatory Asset

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[1] Hawai'i Revised Statutes§ 269-16(b) requires ". . . a fair return on the property of the utility actually used and useful for public utility purposes",

[2] *See*, *e.g.*, In re Hawai'i Electric Light Company, Inc., Docket No. 2009-0164, Decision and Order No. 30168 at 55-78, filed February 8, 2012 (2010 rate case); In re Hawai'i Electric Light Company, Inc., Docket No. 2005-0315 ("Hawai'i Electric Light 2006 Rate Case"), Decision and Order at 53-75, filed October 28, 2010 ("Hawai'i Electric Light 2006 Decision") (2006 rate case); In re Hawai'i Electric Light Company, Inc., Docket No. 99-0207, Decision and Order No. 18365 at 57-63, filed February 8, 2001 (2000 rate case); In re Hawai'i Electric Light Company, Inc., Docket No. 94-0140, Decision and Order No. 15480 at 25-31, filed April 2, 1997 (1996 rate case); and In re Hawai'i Electric Light Company, Inc., Docket No. 7764, Decision and Order No. 13762 at 36-47, filed February 10, 1995 (1994 rate case).

Funds from non-investors:

- Unamortized CIAC
- Customer Advances for Construction
- Customer Deposits
- Accumulated Deferred Income Taxes
- Unamortized State ITC (gross)
- OPEB Regulatory Liability

INVESTMENT IN ASSETS SERVING CUSTOMERS

Net Cost of Plant in Service

Net cost of plant in service consists of the gross plant in service less accumulated depreciation, removal regulatory liability, and asset retirement obligation ("ARO").

The gross plant in service is the original cost of plant assets. The original cost of plant assets includes the cost of equipment, construction and all other costs necessary for the projects and investments to be used and useful for public utility purposes. The total original cost of plant assets at year-end changes from year to year for the amount of plant additions and plant retirements recorded each year.

Accumulated depreciation is the cumulative amount of depreciation that has been expensed in the past. Depreciation is the allocation of a portion of the original cost of the asset to each period in the estimated useful life of an asset. Part of the accumulated depreciation is further reclassified to removal regulatory liability for financial reporting purposes. Accumulated depreciation also nets removal costs incurred.

RWIP consists of the costs incurred for removal. The accounting title Retirement Work in Progress is a misnomer because these are removal costs. RWIP is reported on the financial statement as a decrease to accumulated depreciation (i.e., it is net in accumulated depreciation line on the financial statements). Unlike CWIP, this balance does NOT earn allowance for funds used during construction ("AFUDC").

Removal regulatory liability represents amounts included in depreciation rates for the removal costs to be incurred in future years. Amounts are reclassified on a quarterly basis from accumulated depreciation to removal regulatory liability to separately track this amount. ARO is the Company's liability associated with the conditional retirement of certain assets in which the

fair value of the liability can be reasonably estimated. Each year, The Company records the accretion of ARO by increasing the ARO liability and decreasing the removal regulatory liability.

Since the Company recovers depreciation through its revenues, it has already recovered the accumulated depreciation amount. Investors do not earn a return on the amount already recovered. Removal regulatory liability should also be deducted from the original cost of assets because they represent the amounts recovered through rates for which the cost has not yet been recognized.

The net cost of plant in service represents the Company's unrecovered investment in plant that is used and useful and necessary to provide electric service.

In determining Net Cost of Plant in Service for an average rate base for a calendar based test year, the Company takes the beginning balance of Net Cost of Plant in Service as of December 31 of the year just prior to the test year and the ending balance of Net Cost of Plant in Service as of December 31 of the test year and averages the two balances.

Property Held for Future Use

Property held for future use represents the Company's investment in property needed to provide electric service in the future. The smooth operation of the utility sometimes requires the acquisition of property before it is needed.

In determining Property Held for Future Use for an average rate base for a calendar based test year, the Company takes the beginning balance of Property Held for Future Use as of December 31 of the year just prior to the test year and the ending balance of Property Held for Future Use as of December 31 of the test year and averages the two balances.

Fuel Inventory

Fuel inventory is the Company's investment in a supply of fuel held in inventory. An investment in fuel inventory is required to ensure a sufficient supply of fuel for the Company's power plants so that it can provide continuous and reliable electric service to its customers.

In determining Fuel Inventory for an average rate base for a calendar based test year, the Company takes the beginning balance of Fuel Inventory as of December 31 of the year just prior to the test year and the ending balance of Fuel Inventory as of December 31 of the test year and averages the two balances.

Materials and Supplies Inventory

Materials and supplies inventories include production inventory and transmission and distribution ("T&D") inventory.

In determining Materials and Supplies Inventory for an average rate base for a calendar based test year, the Company takes the beginning balance of Materials and Supplies Inventory as of December 31 of the year just prior to the test year and the ending balance of Material and Supplies Inventory as of December 31 of the test year and averages the two balances. The materials and supplies inventory balances included in rate base are then adjusted by the payment lag associated with materials and supplies purchases.

It is important to note that in *Decision and Order No. 14412,* issued December 11, 1995 in Docket No. 7766 (Hawaiian Electric's 1995 test year rate case), the Commission determined that materials and supplies inventory should be adjusted to reflect the payment lag associated with goods received but not yet paid for by the Company. The payment lag adjustment to reduce the average inventory balance has the causative effect of reducing the operations and maintenance ("O&M") non-labor payment lag. Since the inventory balance represents only that portion of inventory that has been paid for, the working cash related to O&M non-labor reflects inventory charges to O&M from the "paid-up" inventory balance. Therefore, O&M charges from inventory have no payment lag. An investment in an adequate supply of materials and supplies is necessary to ensure that the Company can effectively operate and maintain its electrical system to provide continuous and reliable service to its customers.

Deferred System Development Costs

Deferred system development costs consist of the unamortized portion of computer software development project costs for which Commission approval has been obtained to defer and amortize these costs for ratemaking purposes.[3]

The unamortized costs of computer software development projects are similar to capitalized plant and equipment net of accumulated depreciation. Investors have provided the funds up front to develop the computer software systems which are expected to be in service in or during the test year. Including the unamortized system development costs in rate base is appropriate, as it provides the investors an opportunity to earn a fair return on their investments.

In determining Deferred System Development Costs for an average rate base for a calendar based test year, the Company takes the beginning balance of Deferred System Development Costs as of December 31 of the year just prior to the test year and the ending balance of Deferred System Development Costs as of December 31 of the test year and averages the two balances.

Unamortized Net ASC 740 Regulatory Asset

The unamortized net ASC 740 regulatory asset is an accounting asset that arose due to the reporting requirements of ASC 740. ASC 740 requires the debt portion of AFUDC, as well as any other item previously recorded on a net-of-tax basis, to be calculated and capitalized on a

[3] In In re Hawai'i Electric Light Company, Inc., Docket No. 99-0207, Decision and Order No. 18365, filed February 8, 2001, the Commission ruled that its pre-approval is required before any computer software development project costs may be deferred and amortized for ratemaking purposes.

gross-of-tax basis. As a result, plant in service would have increased by the tax effect of the debt portion of AFUDC. However, instead of increasing plant in service, ASC 740 requires this gross-up adjustment to a regulatory asset, with the offsetting credit to the deferred income tax liability account. Because the regulatory asset is offset by the corresponding increase in accumulated deferred income taxes, there is no net rate base impact.

In determining Unamortized Net ASC 740 Regulatory Asset for an average rate base for a calendar based test year, the Company takes the beginning balance of Unamortized Net ASC 740 Regulatory Asset as of December 31 of the year just prior to the test year and the ending balance of Unamortized Net ASC 740 Regulatory Asset as of December 31 of the test year and averages the two balances.

Pension Asset

The pension asset is an investment that results when the cumulative funds contributed to the pension fund exceed the cumulative Net Periodic Pension Cost ("NPPC") recognized. If applicable, inclusion of the pension asset is required under the pension tracking mechanism agreed upon in the stipulation filed by the parties to Hawai'i Electric Light 2006 Rate Case and approved in that test year rate case decision.[4]

In determining Pension Asset for an average rate base for a calendar based test year, the Company takes the beginning balance of Pension Asset as of December 31 of the year just prior to the test year and the ending balance of Pension Asset as of December 31 of the test year and averages the two balances.

Pension Tracking Regulatory Asset

The pension tracking regulatory asset is the cumulative difference between the actuarially calculated NPPC during a rate effective period and the Commission approved NPPC included in rates ("NPPC in rates") for that rate effective period, tracked under the pension tracking mechanism approved by the Commission in the Hawai'i Electric Light 2006 Rate Case.[5]

The pension tracking mechanism ensures that the pension costs recovered through rates are based on NPPC as reported for financial reporting purposes and that all amounts contributed to the pension trust funds are in an amount equal to actual NPPC and recoverable through rates. The pension tracking regulatory asset represents the cumulative amount of actual NPPC calculated and recognized in a rate effective period in excess of the cumulative amount of ratepayer-provided funds recovered in rates during the same period. This asset is included in rate base because it represents costs which have not yet been paid for by customers. Inclusion of the

[4] Hawai'i Electric Light 2006 Decision at 62-64.
[5] *Id.* at 64.

pension regulatory asset in the rate base calculation is required under the pension tracking mechanism treatment approved by the Commission in the Hawai'i Electric Light 2006 Decision.[6]

In determining Pension Tracking Regulatory Asset for an average rate base for a calendar based test year, the Company takes the beginning balance of Pension Tracking Regulatory Asset as of December 31 of the year just prior to the test year and the ending balance of Pension Tracking Regulatory Asset as of December 31 of the test year and averages the two balances.

Contributions in Excess of Net Periodic Pension Costs (NPPC) Regulatory Asset

Contributions in excess of NPPC regulatory asset represent the cumulative amounts of contribution to the pension trust made in excess of the cumulative pension cost (NPPC accrual). The NPPC is actuarially calculated in accordance with the guidance provided by FASB ASC 715, formerly Financial Accounting Standard ("FAS") 87. NPPC represents the annual amount that the Company must recognize on its financial statements as the cost of providing pension benefits to its employees for the year, and includes amounts ultimately charged both to expense and to capital. It is the current period charge for the pension plan and is calculated based on the actuarial assumptions of pension obligation, economic performance of the fund investment, and amortization of prior period amounts.

Similar to the pension tracking regulatory asset discussed below, the contributions in excess of NPPC regulatory asset was established with the adoption of the pension tracking mechanism as approved in the Hawai'i Electric Light 2006 Decision. The excess contributions over NPPC regulatory asset in this rate case represent the cumulative excess of contributions made over the cumulative NPPC subsequent to the establishment of the pension tracking mechanism.

In determining Contributions in Excess of NPPC Regulatory Asset for an average rate base for a calendar based test year, the Company takes the beginning balance of Contributions in Excess of NPPC Regulatory Asset as of December 31 of the year just prior to the test year and the ending balance of Contributions in Excess of NPPC Regulatory Asset as of December 31 of the test year and averages the two balances.

FUNDS FROM NON-INVESTORS

Unamortized Contribution in Aid of Construction (CIAC)

CIAC is money or property that a developer or customer contributes to the Company to fund a utility capital project. As specified in the Company's tariff, the contribution is nonrefundable.

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[6] *Id.* at 64.

Amortization of CIAC offsets depreciation expense. CIAC is included as a deduction from investments in assets funded by investors in determining rate base.

In determining Unamortized CIAC for an average rate base for a calendar based test year, the Company takes the beginning balance of Unamortized CIAC as of December 31 of the year just prior to the test year and the ending balance of Unamortized CIAC as of December 31 of the test year and averages the two balances.

Customer Advances for Construction

Customer advances for construction are funds paid by customers to the Company which may be refunded in whole or in part as specified in the Company's tariff. The Commission included Customer advances are included as a deduction from investments in assets funded by investors in determining rate base.

In determining Customer Advances for Construction for an average rate base for a calendar based test year, the Company takes the beginning balance of Customer Advances for Construction as of December 31 of the year just prior to the test year and the ending balance of Customer Advances for Construction as of December 31 of the test year and averages the two balances.

Customer Deposits

Customer deposits are monies collected from customers who do not meet the Company's criteria for establishing credit at the time they request service. Customer deposits are included as a deduction from investments in assets funded by investors in determining rate base.

In determining Customer Deposits for an average rate base for a calendar based test year, the Company takes the beginning balance of Customer Deposits as of December 31 of the year just prior to the test year and the ending balance of Customer Deposits as of December 31 of the test year and averages the two balances.

Accumulated Deferred Income Taxes (ADIT)

ADIT represents the cumulative amount by which tax expense has exceeded tax remittances. This is primarily due to tax timing differences resulting from differences between depreciation and accelerated depreciation recorded for accounting purpose and those used for the calculation of income taxes. ADIT funds are provided by ratepayers. Although rates are established based on income tax expense, tax remittances to the government on a cumulative basis have been lower than the taxes collected through rates. As a result, ratepayers have funded the ADIT balance. Over time, the Company will eventually pay the government the amounts recorded as deferred income taxes. ADIT is reflected as a deduction from investments in assets funded by investors in determining rate base.

In determining ADIT for an average rate base for a calendar based test year, the Company takes the beginning balance of ADIT as of December 31 of the year just prior to the test year and the ending balance of ADIT as of December 31 of the test year and averages the two balances.

Unamortized Investment Tax Credits

Unamortized Investment Tax Credits are tax credits which reduce tax payments in the year the credit originates, but which are amortized for ratemaking purposes. Similar to accumulated deferred income taxes, unamortized investment tax credits are funds provided by ratepayers. These funds are provided as a result of differences in the timing of when the credits are taken for purposes of calculating tax payments to the government as opposed to when adjustments are made to income tax expense for ratemaking purposes. Unamortized investment tax credits are included as a deduction from investments in assets funded by investors in determining rate base.

In determining Unamortized Investment Tax Credits for an average rate base for a calendar based test year, the Company takes the beginning balance of Unamortized Investment Tax Credits as of December 31 of the year just prior to the test year and the ending balance of Unamortized Investment Tax Credits as of December 31 of the test year and averages the two balances.

OPEB Regulatory Liability

The OPEB regulatory liability (or regulatory asset) is the cumulative difference between the actuarially calculated net periodic benefit costs ("NPBC") during a rate effective period and the Commission approved postretirement benefits other than pension costs included in rates ("OPEB costs in rates") for that rate effective period, tracked under the OPEB tracking mechanism approved by the Commission in the Hawai'i Electric Light 2006 Decision.[7]

The NPBC is the annual amount that the Company must recognize on its financial statements as the cost of providing post-employment benefits other than pension to its employees for the year, and includes the amount ultimately charged primarily to both expense and to capital. It is the current period charge for the OPEB plan, and is calculated based on the actuarial assumptions of the OPEB obligation, the economic performance of the fund investment and amortization of prior period amounts.

An OPEB regulatory liability represents the actual cumulative NPBC included in rates over a rate effective period in excess of the actual cumulative NPBC during that same period. The OPEB tracking mechanism ensures that the OPEB costs recovered through rates are based on the NPBC as reported for financial reporting purposes and that all amounts contributed to the OPEB trust funds are in an amount equal to the actual OPEB costs and are recoverable through rates.

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[7] *Id.* at 64.

The OPEB regulatory liability represents the cumulative excess amount of OPEB costs in rates during a rate effective period over the actuarially calculated NPBC recognized during that same period. As the amount consists of funds from non-investors, it is a deduction in the calculation of rate base, as required under the OPEB tracking mechanism.

In determining OPEB Regulatory Liability for an average rate base for a calendar based test year, the Company takes the beginning balance of OPEB Regulatory Liability as of December 31 of the year just prior to the test year and the ending balance of OPEB Regulatory Liability as of December 31 of the test year and averages the two balances.

Working Cash

The Company's primary source of cash inflow is electric revenues. The primary cash outflow is for the payment of expenses. Working cash addresses these cash flows. Working cash is the capital over and above investments in plant and other rate base items to cover the cost of providing service to the Company's customers. It bridges the gap between the time the Company pays for the expenses incurred to provide electric service and the time customers pay for the electric service provided.

It is included in rate base because it represents an investment that enables the Company to pay suppliers and conduct other business activities necessary to provide electric service to consumers without interruption. Working cash is essential capital necessary for smooth fiscal operations. The inclusion of this essential capital in rate base recognizes the carrying cost to investors of monies that the Company needs to have on hand as a result of gaps in the timing of cash flows through the Company. Accordingly, as with the other components of the rate base, the investors should earn a return on this investment.

The Company's working cash estimate is based on a lead-lag approach, in which the Company reviews transactions recorded in certain expense categories in a selected year. The Company uses the date on which service is provided to the customer as the starting point in calculating both the collection lag days and payment lag days for a working cash component to the ending points when cash is received or paid. The data gathered are used to calculate the lag between the two events, to determine the payment lag for those expenses. A lead-lag study is performed for the following expense categories:

- Fuel Purchase
- Purchased Power
- O&M Labor
- O&M Non-Labor and Other Expenses
- Revenue Taxes
- Income Taxes

In most cases, the Company selects the most recently completed calendar year, and reviews all transactions recorded in each expense category except for the O&M non-labor expenses. The lag

days for Other O&M non-labor is based on the net 30 payment terms to suppliers who declined ePayment participation. Based on a review of total suppliers in 2015, approximately 90% were not enrolled in ePayment and were subject to net 30 payment terms. It was also noted that in certain exceptions some suppliers have a net 1 or net 7 payment term. The Company also reviewed 2015 payments to suppliers and noted approximately 90% of total dollars spent were attributed to net 30 payments.

Calculation of Payment Lag

The overall methodology used to determine the payment lag for each expense category is consistent with that used in the Hawaiian Electric Companies' previous rate cases. The Company calculates the payment lag for each transaction reviewed by taking the difference between the date on which the payment cleared in the Company's bank account and the midpoint of the service period or the delivery date on which the Company received the service or the product it paid for. The Company then calculates either the average or weighted average of the payment lags for each expense category.

Working Cash Exclusions

The test year other O&M non-labor expense excludes amortization of regulatory assets and liabilities and allowance for uncollectible accounts. The Company maintains the position that all revenues and all expenses should be included in the working cash calculation and that expenses whose cash outlay occurs outside the test year timeframe should be included with zero payment lag. This includes items that are paid for or received by the Company, but for which the cash outlay occurs either before or after the test year.

However, in the interest of simplifying the issues and expediting the regulatory process in this case, and notwithstanding its position, the Company has excluded these amortizations and the allowance from the working cash calculation. This treatment should not be construed, however, as an endorsement of the Commission's rulings on this issue, and accordingly, the Company reserves the right to raise this issue before the Commission in future rate cases.

Hawai'i Electric Light Company, Inc.
Unamortized Contributions in Aid of Construction
($ in thousands)

			HELCO Exhibit Reference
1	Recorded Balances - 12/31/15	$ 95,298	See note
	Estimated Changes in 2016:		
2	Cash Receipts	2,515	1815
3	In-Kind Receipts	411	1815
4	Transfer from Advances	793	1815
5	Amortization of CIAC	(3,232)	1601
6	Estimated Balance - 12/31/16	95,785	
7	Average 2016 Balance	$ 95,541	

Purpose:

To present the tabulation of the estimated unamortized contributions in aid of construction balance as of 12/31/16 and to calculate the test year average balance.

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to the references due to rounding.

Line 1

The recorded balance as of 12/31/15 was obtained from the general ledger through Ellipse MSO963 Application.

Line 6

The estimated unamortized CIAC balance as of 12/31/16 is the recorded balance as of 12/31/15 (line 1) plus or minus the estimated changes in 2016 (lines 2 through 5).

Line 7

The average 2016 test year balance is the sum of estimated balances as of 12/31/15 (line 1) and 12/31/16 (line 6) divided by two, and is calculated here to include in the average rate base schedule presented in HELCO-1901 and HELCO-1901A.

Hawai'i Electric Light Company, Inc.
Working Cash Calculation (Present Rates)
HEP IPP-OWNED
($ in thousands)

		A	A1	B	C	C1
					=A * B	=A1 * B
		Annual Expenses		Pay-	Dollar Weighted Lag	
	Expenses	Present Rates	Proposed Rates	ment lag	Present Rates	Proposed Rates
1	Fuel Purchases	$ 45,289	$ 45,289	15.6	$ 706,513	$ 706,513
2	Purchased Power	76,458	76,458	38.2	2,920,690	2,920,690
3	O&M Labor	18,195	18,195	10.7	194,687	194,687
4	O&M Non-labor and Other Expenses	47,444	47,444	22.9	1,086,469	1,086,469
5	Revenue Taxes	24,419	27,889	86.2	2,104,935	2,403,997
6	Income Taxes	(8,372)	5,474	39.0	(326,498)	213,496
7	Total	$ 203,434	$ 220,749		$ 6,686,795	$ 7,525,851
8	Average Lag in Collection of Revenues			HELCO-910	39.3	39.3
9	Average Lag in Payment of Expenses			Line 7 C/A or C1/A1	32.9	34.1
10	Collection Lag over (under) Payment Lag			Line 8 - Line 9	6.4	5.2
11	Daily Average Expenses			Line 7 A/365 or A1/365	557	605
12	Working Cash			Line 10 * Line 11	$ 3,584	$ 3,150
13	Change in WORKING CASH			Line 12 C1 - C	$ (434)	

Purpose:

To calculate the working cash amounts included in rate base based on the test year expense amounts and the net collection/payment lag.

Notes:

- Totals may not add exactly and the amounts shown may not tie to references exactly due to rounding.

Columns A and A1

While the Commission has disallowed "non-cash" expenses in its previous decisions, primarily on the grounds that these non-cash items do not involve cash outlays in the test year, Hawaii Electric Light, together with Hawaiian Electric and Maui Electric, maintains that all revenue and all expenses should be included in the working cash calculation. Notwithstanding its position, in the interest of simplifying the issues and expediting the regulatory process in this rate case, HELCO has excluded these items from the expense amounts used in the working cash calculation. See HELCO-WP-1906 for the sources and calculations of annual expense amounts, as well as the reconciliation of total operating expenses included in working cash to total operating expenses in the results of operations.

(Notes continued on the next page.)

Hawaii Electric Light Company, Inc.
Working Cash Calculation (Present Rates)
HEP IPP-OWNED, Continued
($ in thousands)

Notes, Continued:

Column B

The payment lag days for the respective expense categories are calculated in the following exhibits:

Fuel Purchases	HELCO-1907	O&M Non-labor & Other Expenses	HELCO-1910
Purchased Power	HELCO-1908	Revenue Taxes	HELCO-1911
O&M Labor	HELCO-1909	Income Taxes	HELCO-1912

The payment lag for revenue taxes has been adjusted to incorporate the Consumer Advocate's method of calculation presented in CA-101 Schedule B-5 and explained in CA-T-1 pages 101 through 104 in HELCO's 2010 test year rate case in Docket No. 2009-0164.

Columns C and C1

Dollar weighted payment lag is the respective annual expense amount (columns **A**, **A1**) multiplied by the payment lag days (column **B**).

Line 8

The revenue collection lag is calculated in HELCO-910.

Line 9

The average payment lag is the total dollar weighted payment lag days (respective column **C**) divided by the total annual expenses (respective column **A**).

Line 10

The net collection/payment lag is the average collection lag less the average payment lag.

Line 11

The daily average expense is the total annual expenses divided by 365.

Line 12

Working cash is calculated by multiplying the daily average expense by the average net collection/payment lag. The amounts calculated in the schedule above are included in the rate base schedules presented in HELCO-1901.

Hawai'i Electric Light Company, Inc.
Working Cash Calculation (Current Effective Rates)
HEP IPP-OWNED
($ in thousands)

	Expenses	A Annual Expenses Current Effective Rates	A1 Annual Expenses Proposed Rates	B Payment lag	C =A * B Dollar Weighted Lag Current Effective Rates	C1 =A1 * B Dollar Weighted Lag Proposed Rates
1	Fuel Purchases	$ 45,289	$ 45,289	15.6	$ 706,513	$ 706,513
2	Purchased Power	76,458	76,458	38.2	2,920,690	2,920,690
3	O&M Labor	18,195	18,195	10.7	194,687	194,687
4	O&M Non-labor and Other Expenses	47,444	47,444	22.9	1,086,469	1,086,469
5	Revenue Taxes	26,175	27,889	86.2	2,256,294	2,403,998
6	Income Taxes	(1,365)	5,474	39.0	(53,248)	213,492
7	Total	$ 212,196	$ 220,749		$ 7,111,404	$ 7,525,849
8	Average Lag in Collection of Revenues			HELCO-910	39.3	39.3
9	Average Lag in Payment of Expenses			Line 7 C/A or C1/A1	33.5	34.1
10	Collection Lag over (under) Payment Lag			Line 8 - Line 9	5.8	5.2
11	Daily Average Expenses			Line 7 A/365 or A1/365	581	605
12	Working Cash			Line 10 * Line 11	$ 3,364	$ 3,150
13	Change in WORKING CASH			Line 12 C1 - C	$ (215)	

Purpose:

To calculate the working cash amounts included in rate base based on the test year expense amounts and the net collection/payment lag.

Notes:

- Totals may not add exactly and the amounts shown may not tie to references exactly due to rounding.

Columns A and A1

While the Commission has disallowed "non-cash" expenses in its previous decisions, primarily on the grounds that these non-cash items do not involve cash outlays in the test year, Hawaii Electric Light, together with Hawaiian Electric and Maui Electric, maintains that all revenue and all expenses should be included in the working cash calculation. Notwithstanding its position, in the interest of simplifying the issues and expediting the regulatory process in this rate case, HELCO has excluded these items from the expense amounts used in the working cash calculation. See HELCO-WP-1906 for the sources and calculations of annual expense amounts, as well as the reconciliation of total operating expenses included in working cash to total operating expenses in the results of operations.

(Notes continued on the next page.)

Hawaii Electric Light Company, Inc.
Working Cash Calculation (Current Effective Rates)
HEP IPP-OWNED, Continued
($ in thousands)

Notes, Continued:

Column B

The payment lag days for the respective expense categories are calculated in the following exhibits:

Fuel Purchases	HELCO-1907	O&M Non-labor & Other Expenses	HELCO-1910
Purchased Power	HELCO-1908	Revenue Taxes	HELCO-1911
O&M Labor	HELCO-1909	Income Taxes	HELCO-1912

The payment lag for revenue taxes has been adjusted to incorporate the Consumer Advocate's method of calculation presented in CA-101 Schedule B-5 and explained in CA-T-1 pages 101 through 104 in HELCO's 2010 test year rate case in Docket No. 2009-0164.

Columns C and C1

Dollar weighted payment lag is the respective annual expense amount (columns **A**, **A1**) multiplied by the payment lag days (column **B**).

Line 8

The revenue collection lag is calculated in HELCO-910.

Line 9

The average payment lag is the total dollar weighted payment lag days (respective column **C**) divided by the total annual expenses (respective column **A**).

Line 10

The net collection/payment lag is the average collection lag less the average payment lag.

Line 11

The daily average expense is the total annual expenses divided by 365.

Line 12

Working cash is calculated by multiplying the daily average expense by the average net collection/payment lag. The amounts calculated in the schedule above are included in the rate base schedules presented in HELCO-1901.

Hawai'i Electric Light Company, Inc.
Working Cash Calculation (Present Rates)
HEP UTILITY-OWNED
($ in thousands)

	Expenses	A Annual Expenses Present Rates	A1 Annual Expenses Proposed Rates	B Pay-ment lag	C =A * B Dollar Weighted Lag Present Rates	C1 =A1 * B Dollar Weighted Lag Proposed Rates
1	Fuel Purchases	$ 58,068	$ 58,068	15.7	$ 911,664	$ 911,664
2	Purchased Power	47,447	47,447	44.0	2,087,654	2,087,654
3	O&M Labor	18,195	18,195	10.7	194,687	194,687
4	O&M Non-labor and Other Expenses	51,228	51,228	23.4	1,198,743	1,198,743
5	Revenue Taxes	22,836	27,677	86.2	1,968,469	2,385,781
6	Income Taxes	(14,097)	5,222	39.0	(549,799)	203,665
7	Total	$ 183,676	$ 207,837		$ 5,811,417	$ 6,982,193

8	Average Lag in Collection of Revenues	HELCO-910	39.3	39.3
9	Average Lag in Payment of Expenses	Line 7 C/A or C1/A1	31.6	33.6
10	Collection Lag over (under) Payment Lag	Line 8 - Line 9	7.7	5.7
11	Daily Average Expenses	Line 7 A/365 or A1/365	503	569
12	Working Cash	Line 10 * Line 11	$ 3,855	$ 3,249
13	Change in WORKING CASH	Line 12 C1 - C	$ (606)	

Purpose:

To calculate the working cash amounts included in rate base based on the test year expense amounts and the net collection/payment lag.

Notes:

- Totals may not add exactly and the amounts shown may not tie to references exactly due to rounding.

Columns A and A1

While the Commission has disallowed "non-cash" expenses in its previous decisions, primarily on the grounds that these non-cash items do not involve cash outlays in the test year, Hawaii Electric Light, together with Hawaiian Electric and Maui Electric, maintains that all revenue and all expenses should be included in the working cash calculation. Notwithstanding its position, in the interest of simplifying the issues and expediting the regulatory process in this rate case, HELCO has excluded these items from the expense amounts used in the working cash calculation. See HELCO-WP-1906A for the sources and calculations of annual expense amounts, as well as the reconciliation of total operating expenses included in working cash to total operating expenses in the results of operations.

(Notes continued on the next page.)

Hawai'i Electric Light Company, Inc.
Working Cash Calculation (Present Rates)
HEP UTILITY-OWNED, Continued
($ in thousands)

Notes, Continued:

Column B

The payment lag days for the respective expense categories are calculated in the following exhibits:

Fuel Purchases	HELCO-1907A	O&M Non-labor & Other Expenses	HELCO-1910A
Purchased Power	HELCO-1908A	Revenue Taxes	HELCO-1911
O&M Labor	HELCO-1909	Income Taxes	HELCO-1912

The payment lag for revenue taxes has been adjusted to incorporate the Consumer Advocate's method of calculation presented in CA-101 Schedule B-5 and explained in CA-T-1 pages 101 through 104 in HELCO's 2010 test year rate case in Docket No. 2009-0164.

Columns C and C1

Dollar weighted payment lag is the respective annual expense amount (columns **A**, **A1**) multiplied by the payment lag days (column **B**).

Line 8

The revenue collection lag is calculated in HELCO-910.

Line 9

The average payment lag is the total dollar weighted payment lag days (respective column **C**) divided by the total annual expenses (respective column **A**).

Line 10

The net collection/payment lag is the average collection lag less the average payment lag.

Line 11

The daily average expense is the total annual expenses divided by 365.

Line 12

Working cash is calculated by multiplying the daily average expense by the average net collection/payment lag. The amounts calculated in the schedule above are included in the rate base schedules presented in HELCO-1901A.

Hawai'i Electric Light Company, Inc.
Working Cash Calculation (Current Effective Rates)
HEP UTILITY-OWNED
($ in thousands)

		A	A1	B	C	C1
					=A * B	=A1 * B
		Annual Expenses			Dollar Weighted Lag	
	Expenses	Current Effective Rates	Proposed Rates	Pay-ment lag	Current Effective Rates	Proposed Rates
1	Fuel Purchases	$ 58,068	$ 58,068	15.7	$ 911,664	$ 911,664
2	Purchased Power	47,447	47,447	44.0	2,087,654	2,087,654
3	O&M Labor	18,195	18,195	10.7	194,687	194,687
4	O&M Non-labor and Other Expenses	51,228	51,228	23.4	1,198,743	1,198,743
5	Revenue Taxes	24,590	27,677	86.2	2,119,700	2,385,774
6	Income Taxes	(7,097)	5,222	39.0	(276,788)	203,661
7	Total	$ 192,431	$ 207,837		$ 6,235,660	$ 6,982,182
8	Average Lag in Collection of Revenues			HELCO-910	39.3	39.3
9	Average Lag in Payment of Expenses			Line 7 C/A or C1/A1	32.4	33.6
10	Collection Lag over (under) Payment Lag			Line 8 - Line 9	6.9	5.7
11	Daily Average Expenses			Line 7 A/365 or A1/365	527	569
12	Working Cash			Line 10 * Line 11	$ 3,635	$ 3,249
13	Change in WORKING CASH			Line 12 C1 - C	$ (387)	

Purpose:

To calculate the working cash amounts included in rate base based on the test year expense amounts and the net collection/payment lag.

Notes:

- Totals may not add exactly and the amounts shown may not tie to references exactly due to rounding.

Columns A and A1

While the Commission has disallowed "non-cash" expenses in its previous decisions, primarily on the grounds that these non-cash items do not involve cash outlays in the test year, Hawaii Electric Light, together with Hawaiian Electric and Maui Electric, maintains that all revenue and all expenses should be included in the working cash calculation. Notwithstanding its position, in the interest of simplifying the issues and expediting the regulatory process in this rate case, HELCO has excluded these items from the expense amounts used in the working cash calculation. See HELCO-WP-1906A for the sources and calculations of annual expense amounts, as well as the reconciliation of total operating expenses included in working cash to total operating expenses in the results of operations.

(Notes continued on the next page.)

Hawai'i Electric Light Company, Inc.
Working Cash Calculation (Current Effective Rates)
HEP UTILITY-OWNED, Continued
($ in thousands)

Notes, Continued:

Column B

The payment lag days for the respective expense categories are calculated in the following exhibits:

Fuel Purchases	HELCO-1907A	O&M Non-labor & Other Expenses	HELCO-1910A
Purchased Power	HELCO-1908A	Revenue Taxes	HELCO-1911
O&M Labor	HELCO-1909	Income Taxes	HELCO-1912

The payment lag for revenue taxes has been adjusted to incorporate the Consumer Advocate's method of calculation presented in CA-101 Schedule B-5 and explained in CA-T-1 pages 101 through 104 in HELCO's 2010 test year rate case in Docket No. 2009-0164.

Columns C and C1

Dollar weighted payment lag is the respective annual expense amount (columns **A**, **A1**) multiplied by the payment lag days (column **B**).

Line 8

The revenue collection lag is calculated in HELCO-910.

Line 9

The average payment lag is the total dollar weighted payment lag days (respective column **C**) divided by the total annual expenses (respective column **A**).

Line 10

The net collection/payment lag is the average collection lag less the average payment lag.

Line 11

The daily average expense is the total annual expenses divided by 365.

Line 12

Working cash is calculated by multiplying the daily average expense by the average net collection/payment lag. The amounts calculated in the schedule above are included in the rate base schedules presented in HELCO-1901A.

Hawai'i Electric Light Company, Inc.
Working Cash Study
Calculation of Composite Payment Lag Days - Fuel Purchases
HEP IPP-OWNED

Line		A WP-1907 p.1 Test Year Expense ($ 000's)	B =A / Total A % of Total	C WP-1907 pp.3-6 Total Payment Lag Days	D =B * C Weighted Average
	Fuel Oil Expense:				
1	Chevron	$ 41,325	91.2%	15.8	14.4 days
2	PAR Hawaii Refining ("PHR")[1]	3,724	8.2%	13.5	1.1 days
3	Fuel Handling Labor Expense	-	0.0%	10.7	.0 days
4	Fuel-Related Non-labor Expense	241	0.5%	15.4	.1 days
5	TOTAL	$ 45,289	100%		15.6 days

Purpose:

The purpose of the schedule presented above is to calculate the weighted average payment lag days of all the suppliers providing fuel. The weighted average payment lag for fuel purchase calculated in this exhibit is used in the working cash calculation on HELCO-1906.

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.

A **The test year expense by supplier** was determined by applying the supplier mix by location presented in HELCO-WP-502 to the fuel oil expense by location presented in HELCO-403. Refer to the calculation in HELCO-WP-1907 p.1.

The test year expense for fuel handling labor expense and fuel-related non-labor expense was obtained from HELCO-507.

B **The percentage of expense** for a supplier is the total test expense in column A for the particular supplier or fuel related non-labor expense divided by the total test year fuel expense in column A.

C **Total payment lag** for each supplier was calculated with data gathered of all payments made to the suppliers listed above for fuel purchases in 2015 by reviewing the invoices and obtaining the payment data from either the ERP Systems Administrators or the wire documents provided by Treasury Department. The data gathered and the calculation performed are documented in HELCO-WP-1907 pp. 3-7.

Total payment lag for fuel handling labor expense is the composite O&M Labor payment lag calculated in HELCO-1909.

Total payment lag for fuel-related non-labor expense is the composite O&M non-labor payment lag calculated in HELCO-1910.

D **Weighted average payment lag** for each supplier or other fuel-related expense is the percentage of the total expense (column **B**) multiplied by the total payment lag days (column **C**). The sum of all weighted average payment lag is **the composite payment lag for fuel purchase**, and used in the working cash calculation in HELCO-1906.

[1] In 2016 Hawaii Independent Energy ("HIE") changed their name to Par Hawaii Refining ("PHR"). The 2015 fuel payments included in HELCO-WP-1907, pages 5-6 are HIE invoices. For simplicity and for purposes of this exhibit and HELCO-WP-1907, HIE is referred to as PHR.

Hawai'i Electric Light Company, Inc.
Working Cash Study
Calculation of Composite Payment Lag Days - Fuel Purchases
HEP UTILITY-OWNED

Line		A WP-1907 p.2 Test Year Expense ($ 000's)	B =A / Total A % of Total	C WP-1907 pp.3-6 Total Payment Lag Days	D =B * C Weighted Average
	Fuel Oil Expense:				
1	Chevron	$ 54,115	93.2%	15.8	14.7 days
2	PAR Hawaii Refining ("PHR")[1]	3,712	6.4%	13.5	.9 days
3	Fuel Handling Labor Expense	-	0.0%	10.7	.0 days
4	Fuel-Related Non-labor Expense	241	0.4%	15.4	.1 days
5	TOTAL	$ 58,068	100%		15.7 days

Purpose:

The purpose of the schedule presented above is to calculate the weighted average payment lag days of all the suppliers providing fuel. The weighted average payment lag for fuel purchase calculated in this exhibit is used in the working cash calculation on HELCO-1906A.

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.

A **The test year expense by supplier** was determined by applying the supplier mix by location presented in HELCO-WP-502 to the fuel oil expense by location presented in HELCO-413. Refer to the calculation in HELCO-WP-1907 p.2.

The test year expense for fuel handling labor expense and fuel-related non-labor expense was obtained from HELCO-507.

B **The percentage of expense** for a supplier is the total test expense in column A for the particular supplier or fuel related non-labor expense divided by the total test year fuel expense in column A.

C **Total payment lag** for each supplier was calculated with data gathered of all payments made to the suppliers listed above for fuel purchases in 2015 by reviewing the invoices and obtaining the payment data from either the ERP Systems Administrators or the wire documents provided by Treasury Department. The data gathered and the calculation performed are documented in HELCO-WP-1907 pp.3-7.

Total payment lag for fuel handling labor expense is the composite O&M Labor payment lag calculated in HELCO-1909.

Total payment lag for fuel-related non-labor expense is the composite O&M non-labor payment lag calculated in HELCO-1910A.

D **Weighted average payment lag** for each supplier or other fuel-related expense is the percentage of the total expense (column B) multiplied by the total payment lag days (column C). The sum of all weighted average payment lag is **the composite payment lag for fuel purchase**, and used in the working cash calculation in HELCO-1906A.

[1] In 2016 Hawaii Independent Energy ("HIE") changed their name to Par Hawaii Refining ("PHR"). The 2015 fuel payments included in HELCO-WP-1907, pages 5-6 are HIE invoices. For simplicity and for purposes of this exhibit and HELCO-WP-1907, HIE is referred to as PHR.

Hawai'i Electric Light Company, Inc.
Working Cash
Calculation of the Composite Payment Lag Days - Purchased Power
HEP IPP-OWNED

	Vendor	A HELCO-609 p.1 TY Expense ($000)	B =A/ Total A % of Total	C Payment Lag Days	D =B * C Weighted Avg Pmt Lag	E Payment Lag Calculation
1	Hamakua Energy Partners ("HEP")	$ 28,438	37.2%	28.4	10.6 days	WP-1908 p.1
2	Puna Geothermal Venture	28,803	37.7%	43.6	16.4 days	WP-1908 p.1
3	Tawhiri Power	11,342	14.8%	43.7	6.5 days	WP-1908 p.2
4	Hawi Renewable Development	4,050	5.3%	43.7	2.3 days	WP-1908 p.2
5	Wailuku River Hydroelectric	2,741	3.6%	44.6	1.6 days	WP-1908 p.3
6	Various Small Hydro Power Producers	134	0.2%	60.8	0.1 days	WP-1908 p.4
7	Feed-in Tariff	950	1.2%	56.8	0.7 days	WP-1908 p.5
8	TOTAL	$ 76,458	100%		38.2 days	

Purpose:

To calculate the composite payment lag for purchased power, which is the weighted average payment lag days of all the suppliers providing purchased power. Mathematically, the weighted average is the percentage of purchased power from a particular supplier **(B)** multiplied by the total payment lag days of the supplier **(C)**.

Notes:

- Totals may not add exactly due to rounding.

A Estimated expenses for each supplier for test year per HELCO-609.

B **The percentage of expense of a supplier** is the test expense for that supplier (column **A**) divided by the total test year purchased power expense (total Column **A**).

C **Payment lag days** are calculated based on actual payments made in 2015 for all suppliers except for Feed-in Tariff ("FIT") suppliers. FIT is a program that started in November 2010 that allows HELCO customers to sell renewable energy to HELCO. The estimated payment lag days for FIT suppliers for 2016 are based on the payment terms within the FIT contract. The calculation of payment lag days is presented in the respective workpaper pages referenced in column (**E**).

D **The weighted average payment lag** is the percentage of expense (**B**) multiplied by the payment lag days for that supplier (**C**). The total weighted average payment lag is the sum of the weighted average payment lag calculated for the suppliers listed. The total weighted average payment lag (line 8) is used in the working cash calculation presented in HELCO-1906.

Hawai'i Electric Light Company, Inc.
Working Cash
Calculation of the Composite Payment Lag Days - Purchased Power
HEP UTILITY-OWNED

	Vendor	A HELCO-609 p.1 TY Expense ($000)	B =A/ Total A % of Total	C Payment Lag Days	D =B * C Weighted Avg Pmt Lag	E Payment Lag Calculation
1	Puna Geothermal Venture	$ 28,518	60.1%	43.6	26.2 days	WP-1908 p.1
2	Tawhiri Power	11,161	23.5%	43.7	10.3 days	WP-1908 p.2
3	Hawi Renewable Development	3,990	8.4%	43.7	3.7 days	WP-1908 p.2
4	Wailuku River Hydroelectric	2,696	5.7%	44.6	2.5 days	WP-1908 p.3
5	Various Small Hydro Power Producers	132	0.3%	60.8	0.2 days	WP-1908 p.4
6	Feed-in Tariff	950	2.0%	56.8	1.1 days	WP-1908 p.5
7	TOTAL	$ 47,447	100%		44.0 days	

Purpose:

To calculate the composite payment lag for purchased power, which is the weighted average payment lag days of all the suppliers providing purchased power. Mathematically, the weighted average is the percentage of purchased power from a particular supplier **(B)** multiplied by the total payment lag days of the supplier **(C)**.

Notes:

- Totals may not add exactly due to rounding.

A Estimated expenses for each supplier for test year per HELCO-609.

B **The percentage of expense of a supplier** is the test expense for that supplier (column **A**) divided by the total test year purchased power expense (total Column **A**).

C **Payment lag days** are calculated based on actual payments made in 2015 for all suppliers except for Feed-in Tariff ("FIT") suppliers. FIT is a program that started in November 2010 that allows HELCO customers to sell renewable energy to HELCO. The estimated payment lag days for FIT suppliers for 2016 are based on the payment terms within the FIT contract. The calculation of payment lag days is presented in the respective workpaper pages referenced in column (**E**).

D **The weighted average payment lag** is the percentage of expense (**B**) multiplied by the payment lag days for that supplier (**C**). The total weighted average payment lag is the sum of the weighted average payment lag calculated for the suppliers listed. The total weighted average payment lag (line 8) is used in the working cash calculation presented in HELCO-1906A.

Hawai'i Electric Light Company, Inc.
Working Cash Study
Calculation of the Composite Payment Lag Days - O&M Labor

		A	B	C	D	E
		See note	=A/ Total A		=B * C	
		Payment Amounts for 2015 ($)	% of Total	Payment Lag Days	Weighted Average	Payment Lag Calculation
	O&M Labor Items					
1	Net Pay by Checks	2,050,031	6.11%	10.7	0.7 days	WP-1909 p. 1
2	Net Pay by Direct Deposit	16,500,996	49.21%	10.7	5.2 days	WP-1909 p. 1
3	Federal Income Tax Withholdings	5,069,962	15.12%	9.7	1.5 days	WP-1909 p. 3
4	State Income Tax Withholdings	2,214,229	6.60%	9.7	0.6 days	WP-1909 p. 4
5	Employee Fica Withholdings	2,471,980	7.37%	9.7	0.7 days	WP-1909 p. 3
6	HEIRS & HEIRS Loans	2,535,754	7.56%	15.5	1.2 days	WP-1909 p. 6
7	Credit Union Shares & Loans	2,686,597	8.01%	10.7	0.9 days	WP-1909 p. 6
8	**Total O&M Labor**	33,529,549	100.00%		**10.7 days**	To HELCO-1906 & HELCO-1906A

Purpose:

The purpose of the schedule presented above is to calculate the composite weighted average payment lag for O&M labor expense.

Notes:

- Totals may not add exactly and amounts shown may not tie exactly to references due to rounding.

A 2015 payroll disbursement detailed amounts were obtained from HECO Payroll.

B The percentage of each payment amount is the respective total disbursement amount divided by the total 2015 O&M labor expense.

C Payment lag days for the different types of disbursements were calculated in the respective workpaper pages referenced in column (**E**).

D The weighted average payment lag for each type of disbursement is the respective percentage of O&M labor expense multiplied by the respective payment lag. The composite average payment lag for O&M labor expense is the total of all the weighted average payment lag days calculated in column **D**, shown on line 8.

Hawai'i Electric Light Company, Inc.
Payment Lag Calculation
O&M Non-Labor and Other Expenses
HEP IPP-OWNED

O&M Non-Labor and Other Expenses Weighted Average Payment Lag Calculation:

		A	B	C	D	E
			=A / Total A		=B * C	
		WP-1910 p.1 Test Year Expense ($000)	% of Total	WP-1910 Payment Lag Days	Wgt'd Avg Payment Lag	Payment Lag Calculation in WP-1910
1	Pension	$ 3,631	7.7%	14.2	1.1	p. 3
2	OPEB	-	0.0%	-	-	p. 3
3	Employee Benefits	1,948	4.1%	2.8	0.1	p. 5
4	Insurance	1,494	3.1%	(164.7)	(5.2)	p. 10
5	Emission Fees	232	0.5%	460.0	2.3	p. 12
6	EPRI Dues	219	0.5%	(2.0)	(0.0)	p. 12
7	Regulatory Commission Expense	1,104	2.3%	-	-	See notes below
8	SFAS 106 Regulatory Asset	-	0.0%	-	-	See notes below
9	Other O&M Non-labor	37,364	78.8%	30.0	23.6	See notes below
	Payroll Taxes:					
10	FICA	1,235	2.6%	9.7	0.3	p. 14
11	Federal Unemployment Taxes	7	0.0%	9.7	0.0	p. 14
12	State Unemployment Taxes	14	0.0%	9.7	0.0	p. 14
13	Interest on Customer Deposits	196	0.4%	182.5	0.8	See notes below
14	Total O&M Non-labor and Other Expenses	$ 47,444	100.0%		22.9	
					X	

Purpose:
The purpose of the schedule above is to calculate the composite payment lag for O&M non-labor and other expenses. The weighted average payment lag for O&M non-labor and other expense calculated here is used in the calculation of working cash in HELCO-1906.

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.
- Documentation supporting the lead lag study, including invoice copies, wire notices, information downloaded from Ellipse and other support, will be submitted in response to CA-IR-3.

A **The test year expense amounts** are calculated and summarized in HELCO-WP-1910 p.1.

Line 9

The test year **other O&M non-labor expense** excludes amortization of regulatory assets and liabilities and allowance for uncollectible accounts. In the previous rate cases of Hawaiian Electric, HELCO, and MECO, the Companies have maintained the position that all revenues and all expenses should be included in the working cash calculation and that expenses whose cash outlay occurs outside the test year timeframe should be included with zero payment lag. However, in the interest of simplifying the issues and expediting the regulatory process in this rate case, HELCO has decided to exclude these amortizations and the allowance from the working cash calculation. See HELCO-WP-1910 pages 1-2 for the compilation of other O&M non-labor expenses for working cash purposes.

(Notes continued on next page.)

Hawai'i Electric Light Company, Inc.
Payment Lag Calculation
O&M Non-Labor and Other Expenses, Continued

Notes, Continued:

B **% of total expense** represents the amount of the respective expense category as a percentage of the total O&M non-labor expenses, and is the respective expense amount divided by the total O&M non-labor expense.

C **The payment lag days** for each expense category is calculated in the pages of HELCO-WP-1910 noted in column E.

D **Weighted average payment lag** is the respective % of total expense (column **B**) multiplied by the payment lag days (column **C**). The total (**X**) of all weighted average payment lag for the expense categories listed is the composite weighted average payment lag for O&M non-labor and other expenses. This composite weighted average payment lag is used in the working cash calculation in HELCO-1906.

E HELCO-WP-1910 pages containing the payment lag calculations of the respective expense categories are referenced in this column.

Line 7

The test year **regulatory commission expense** is a normalized amount based on the estimated expense to be incurred before, during, and after the test year. Accordingly, the payment lag of zero is used because its nature is similar to that of amortization. See discussion on the exclusion of amortization in the note on column **A** line 9 above.

Line 8

As mentioned in the note on column A line 9 above, HELCO maintains that all revenues and expenses should be included in the working cash calculation and that expenses whose cash outlay occurs outside the test year timeframe should be included with zero payment lag. The same argument was presented for the amortization of FAS 106 OPEB regulatory asset in HELCO's 2010 test year rate case. However, in the interest of reaching a global settlement, HELCO and the Consumer Advocate agreed to include the amortization with the same payment lag as OPEB contribution. This agreement was approved by the Commission in its final decision and order in Docket No. 2009-0164 (see page 71). For the purposes of simplifying the issues and expediting the regulatory process in this rate case, HELCO includes the amortization of SFAS 106 regulatory asset with the payment lag equal to that of OPEB contribution on line 2 in the schedule above.

Line 9

The lag days for Other O&M non-labor of 30 days is based on the net 30 payment terms to suppliers who declined ePayment participation. Of the total suppliers in 2015 approximately 90% are not enrolled in ePayment and are subject to net 30 payment terms. It was also noted that in certain exceptions some suppliers have a net 1 or net 7 payment term. The Company also reviewed 2015 payments to suppliers of HELCO and noted approximately 90% of total dollars spent are attributed to net 30 payments. The remaining 10% of suppliers are enrolled in ePayment and are subject to net 15 payment terms.

Line 13

The payment lag for **interest on customer deposits** is estimated to be 1/2 year (i.e. 365/2 = 182.5 days). Customer deposits are held until the customer has established a record of 12 months of continuous prompt payments. See further discussion on the treatment of customer deposits in HELCO T-9.

Hawai'i Electric Light Company, Inc.
Payment Lag Calculation
O&M Non-Labor and Other Expenses
HEP UTILITY-OWNED

O&M Non-Labor and Other Expenses Weighted Average Payment Lag Calculation:

		A	B	C	D	E
			=A / Total A		=B * C	
		WP-1910 p.1 Test Year Expense ($000)	% of Total	WP-1910 Payment Lag Days	Wgt'd Avg Payment Lag	Payment Lag Calculation in WP-1910
1	Pension	$ 3,631	7.1%	14.2	1.0	p. 3
2	OPEB	-	0.0%	-	-	p. 3
3	Employee Benefits	1,948	3.8%	2.8	0.1	p. 5
4	Insurance	1,494	2.9%	(164.7)	(4.8)	p. 10
5	Emission Fees	232	0.5%	460.0	2.1	p. 12
6	EPRI Dues	219	0.4%	(2.0)	(0.0)	p. 12
7	Regulatory Commission Expense	1,104	2.2%	-	-	See notes below
8	SFAS 106 Regulatory Asset	-	0.0%	-	-	See notes below
9	Other O&M Non-labor	41,149	80.3%	30.0	24.1	See notes below
	Payroll Taxes:					
10	FICA	1,235	2.4%	9.7	0.2	p. 14
11	Federal Unemployment Taxes	7	0.0%	9.7	0.0	p. 14
12	State Unemployment Taxes	14	0.0%	9.7	0.0	p. 14
13	Interest on Customer Deposits	196	0.4%	182.5	0.7	See notes below
14	Total O&M Non-labor and Other Expenses	$ 51,228	100.0%		23.4	
					X	

Purpose:
The purpose of the schedule above is to calculate the composite payment lag for O&M non-labor and other expenses. The weighted average payment lag for O&M non-labor and other expense calculated here is used in the calculation of working cash in HELCO-1906A.

Notes:

- Totals may not add exactly and the amounts shown may not tie exactly to references due to rounding.
- Documentation supporting the lead lag study, including invoice copies, wire notices, information downloaded from Ellipse and other support, will be submitted in response to CA-IR-3.

A **The test year expense amounts** are calculated and summarized in HELCO-WP-1910 p.1.

Line 9

The test year **other O&M non-labor expense** excludes amortization of regulatory assets and liabilities and allowance for uncollectible accounts. In the previous rate cases of Hawaiian Electric, HELCO, and MECO, the Companies have maintained the position that all revenues and all expenses should be included in the working cash calculation and that expenses whose cash outlay occurs outside the test year timeframe should be included with zero payment lag. However, in the interest of simplifying the issues and expediting the regulatory process in this rate case, HELCO has decided to exclude these amortizations and the allowance from the working cash calculation. See HELCO-WP-1910 pages 1-2 for the compilation of other O&M non-labor expenses for working cash purposes.

(Notes continued on next page.)

Hawai'i Electric Light Company, Inc.
Payment Lag Calculation
O&M Non-Labor and Other Expenses, Continued

Notes, Continued:

B **% of total expense** represents the amount of the respective expense category as a percentage of the total O&M non-labor expenses, and is the respective expense amount divided by the total O&M non-labor expense.

C **The payment lag days** for each expense category is calculated in the pages of HELCO-WP-1910 noted in column E.

D **Weighted average payment lag** is the respective % of total expense (column **B**) multiplied by the payment lag days (column **C**). The total (**X**) of all weighted average payment lag for the expense categories listed is the composite weighted average payment lag for O&M non-labor and other expenses. This composite weighted average payment lag is used in the working cash calculation in HELCO-1906A.

E HELCO-WP-1910 pages containing the payment lag calculations of the respective expense categories are referenced in this column.

Line 7

The test year **regulatory commission expense** is a normalized amount based on the estimated expense to be incurred before, during, and after the test year. Accordingly, the payment lag of zero is used because its nature is similar to that of amortization. See discussion on the exclusion of amortization in the note on column **A** line 9 above.

Line 8

As mentioned in the note on column A line 9 above, HELCO maintains that all revenues and expenses should be included in the working cash calculation and that expenses whose cash outlay occurs outside the test year timeframe should be included with zero payment lag. The same argument was presented for the amortization of FAS 106 OPEB regulatory asset in HELCO's 2010 test year rate case. However, in the interest of reaching a global settlement, HELCO and the Consumer Advocate agreed to include the amortization with the same payment lag as OPEB contribution. This agreement was approved by the Commission in its final decision and order in Docket No. 2009-0164 (see page 71). For the purposes of simplifying the issues and expediting the regulatory process in this rate case, HELCO includes the amortization of SFAS 106 regulatory asset with the payment lag equal to that of OPEB contribution on line 2 in the schedule above.

Line 9

The lag days for Other O&M non-labor of 30 days is based on the net 30 payment terms to suppliers who declined ePayment participation. Of the total suppliers in 2015 approximately 90% are not enrolled in ePayment and are subject to net 30 payment terms. It was also noted that in certain exceptions some suppliers have a net 1 or net 7 payment term. The Company also reviewed 2015 payments to suppliers of HELCO and noted approximately 90% of total dollars spent are attributed to net 30 payments. The remaining 10% of suppliers are enrolled in ePayment and are subject to net 15 payment terms.

Line 13

The payment lag for **interest on customer deposits** is estimated to be 1/2 year (i.e. 365/2 = 182.5 days). Customer deposits are held until the customer has established a record of 12 months of continuous prompt payments. See further discussion on the treatment of customer deposits in HELCO T-9.

Hawai'i Electric Light Company, Inc.
Composite Payment Lag Calculation
Revenue Taxes

	A	B	C	D	E	F	G
		=A/Total A			=C + D	=B * E	
	Effective Rate	% of Total	Total Payment Lag Days	Collection Lag Adj	Adjusted Payment Lag	Weighted Average	Calculation in HELCO-WP-1911
Revenue Tax Payment Lag							
Public Service Company Tax	5.885%	66%	(3.3)	15.5	12.2	8.1 days	p.1
Franchise Royalty Tax	2.500%	28%	212.8	39.3	252.1	70.9 days	p.2
Public Utility Fees	0.500%	6%	112.7	15.5	128.2	7.2 days	p.2
	8.885%	100%				**86.2 days** x	

Purpose:

The purpose of the schedule presented above is to calculate the composite payment lag days for revenue taxes.

Notes:

- Totals may not add exactly and amounts shown may not tie exactly to references due to rounding.

A **Revenue tax rates** were obtained from HELCO-WP-1701, p.1.

B **Percentage of total tax** is the respective test year tax rate divided by the total test year tax rate. The percentages for revenue taxes are based on the tax rates expected to be in effect during the test year.

C **Total payment lag day** is calculated for each type of tax by reviewing either historical tax payment data or the forecasted payment dates in the test year. For this rate case, historical payment data from 2015 for each type of tax were reviewed using the payment data downloaded by the Enterprise Resource Planner (ERP) Systems Administrators per HELCO's request. Please see note D on check clearing date on WP-1911 pages 3 and 4 for further discussion on PSC tax payments to the State. Payment data and the calculation of the average payment lag for each type of tax are documented in the workpaper referenced in column E.

D **Collection lag adjustment** represents the adjustments to the respective revenue tax payment lag in order to incorporate the method of net collection lag calculation used by the Consumer Advocate in previous rate cases.

	Revenue Lag Per HELCO-WP-910 p.2	
Fixed Collection Lag	15.5	<-- for PSC Tax and PU Fee, "as billed" based taxes
Variable Collection Lag	23.8	
Revenue Lag Adjustment	39.3	<-- for Franchise Tax, "as collected" based tax

The Consumer Advocate reduces the revenue collection lag of the respective revenue taxes. Although HELCO does not agree with the Consumer Advocate's method of determining the revenue collection lag for revenue taxes, HELCO adopts the Consumer Advocate's calculation method in this rate case solely for the purposes of simplifying the issues and expediting the regulatory process.

(Discussion continued on page 2)

Notes, Continued:

D **Collection lag adjustment, continued.**

In view of the structure of HELCO's exhibits and the revenue requirement model, HELCO incorporates the Consumer Advocate's calculation by increasing the payment lag for the same number of days as its adjustments to the revenue collection lag to attain the equivalent effect in the net lag days. See explanation of the Consumer Advocate's method in pages 101 through 104 in CA-T-1, Docket No. 2009-0164, in HELCO's 2010 test year rate case, and in pages 89 through 92 in CA-T-3, Docket No. 2010-0080, in Hawaiian Electric's 2011 test year rate case.

E **The adjusted payment lag** is the sum of the total payment lag days calculated (column **C**) and the collection lag adjustment (column **D**).

F **The weighted average payment lag** is the respective total payment lag in column **E** multiplied by the % of total calculated in column **B** . The total weighted average payment lag for revenue tax (**x**) is used in the working cash calculation presented in HELCO-1906.

G **Payment lag study documentation** is presented in the respective workpapers referenced in this column. These workpapers contain the data gathered and the calculation performed to derive the payment lag days presented in column **C**.

Hawai'i Electric Light Company, Inc.
Composite Payment Lag Calculation
Income Taxes

		A	B	C	D
				=B/ Total B	=A * C
		Average Payment Lag	Effective Rates	% of Total Tax	Weighted Average Payment Lag
1	Federal Income Tax	37.0	32.895%	84.5%	31.3
2	State Income Tax	49.8	6.015%	15.5%	7.7
			38.910%	100.0%	

Composite Income Tax Payment Lag	**39.0 days**
	X

Purpose:

To calculate the composite payment lag days for income taxes.

Notes:

- Totals may not add exactly and amounts shown may not tie exactly to references due to rounding.

A **Average payment lag** for federal and state income taxes were calculated based on the scheduled payment dates in 2016. See the calculation of average payment lag for federal and state income taxes in HELCO-WP-1912.

B Effective income tax rates were obtained from HELCO-WP-1701, p.1.

C **Percentage of total tax** is the respective test year effective tax rate divided by the total test year effective tax rate.

D **The weighted average payment lag** is the average payment lag in column **A** multiplied by the percentage of the total effective tax rate (column **C**). The sum of the weighted average payment lag for federal and state income taxes (**X**) represents the composite payment lag for income taxes and is used in the working cash calculation in HELCO-1906.