

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

In the Matter of the Application of)  
HAWAIIAN ELECTRIC COMPANY, INC. )  
For Approval to Commit Funds in )  
Excess of \$500,000 for )  
Item P9454000, Installation of )  
the Kahe 4 Boiler Control System )  
Project. )  
\_\_\_\_\_ )

DOCKET NO. 02-0207

DECISION AND ORDER NO. 19775

Filed Nov. 15, 2002  
At 11:00 o'clock A.M.

Karen Higashi  
Chief Clerk of the Commission

DIV. OF CONSUMER ADVOCACY  
DEPT. OF COMMERCE AND  
CONSUMER AFFAIRS  
STATE OF HAWAII

2002 NOV 15 P 4:15

RECEIVED

ATTEST: A True Copy  
KAREN HIGASHI  
Chief Clerk, Public Utilities  
Commission, State of Hawaii.

K. Higashi

OF THE STATE OF HAWAII

HAWAIIAN ELECTRIC COMPANY, INC. )  
 )  
For Approval to Commit Funds in )  
Excess of \$500,000 for )  
Item P9454000, Installation of )  
the Kahe 4 Boiler Control System )  
Project. )  
 )  
\_\_\_\_\_ )

Decision and Order No. 19775

### DECISION AND ORDER

I.

By an application filed on August 2, 2002, HAWAIIAN ELECTRIC COMPANY, INC. (HECO) requests commission approval to commit approximately \$2,439,590 for Item P9454000, the installation of the Kahe 4 Boiler Control System (proposed project). HECO's request is made pursuant to paragraph 2.3.g.2 of the commission's General Order No. 7, Standards for Electric Utility Service in the State of Hawaii (G.O. No. 7).

HECO served copies of the application on the Division of Consumer Advocacy, Department of Commerce and Consumer Affairs (Consumer Advocate).

Paragraph 2.3.g.2 of G.O. No. 7 provides that if the commission does not act on a public utility's application and render a decision and order within 90 days of filing (90-day review period), the utility will be allowed "to include the project in its

rate base without the determination by the [c]ommission required by this rule."

By Order No. 19728, filed on October 24, 2002 in this docket, the commission granted HECO's request for an extension of the 90-day review period, from October 31, 2002, to November 15, 2002, and ordered the Consumer Advocate to file its statement of position by November 8, 2002. The Consumer Advocate's statement of position was filed with the commission on November 7, 2002, stating that it does not object to approval of the proposed project, with certain reservations.

## II.

### A.

Commissioned in 1972, Kahe Unit 4, is a nominal 93 MW steam unit. The boiler is a Combustion Engineering single drum, radiant type, reheat steam generator with a pressurized furnace and membrane-type water cooled walls, a continuous tube two-stage superheater, a reheater, and a continuous tube economizer. The boiler control system controls the firing rate of the boiler to maintain the appropriate steam production under all operating conditions and to safely shut down the boiler in the event of an emergency. The system includes: (1) boiler controls; (2) operator interfaces; (3) power conditioning and control equipment; (4) unit data trending display and historical archiving equipment; (5) an annunciator system; and (6) associated field devices.

The existing boiler control system is a combination of a microprocessor-based and a pneumatic system that operates with mechanical devices.<sup>1</sup> HECO represents that spare or replacement parts for pneumatic control systems are in short supply and costly. Should HECO be unable to find a replacement part, it would have to install a different type of replacement equipment, and retrofit the system to adapt to the replacement part. As such, pneumatic control technology is being phased out and replaced with more reliable and flexible microprocessor-based systems.

The scope of work for the proposed project consists of modernizing the existing pneumatic controls and instrumentation. This includes: (1) installing cathode ray tube (CRT) based operator interfaces; (2) upgrading the power conditioning and control equipment; (3) displaying the unit data trends and annunciation on the CRT interfaces; (4) upgrading the control board recorders; (5) installing historical archiving within the distributed control system (DCS); (6) installing redundant transmitters for critical control loops; and (7) incorporating the boiler control logic into the DCS. HECO estimates the proposed project to be completed

---

<sup>1</sup>If the proposed project is approved, the pneumatic boiler control system equipment will be scrapped, and the existing microprocessor based control system will be used for spare parts for other units.

within the 15 week scheduled unit overhaul that begins in April 2004.<sup>2,3,4</sup>

The proposed project is expected to produce a system more reliable and flexible to operate and maintain. Specifically, HECO represents that the proposed project will: (1) decrease maintenance and operations costs; (2) increase reliability and flexibility; (3) offer a higher availability of major equipment through on-line monitoring capability; and (4) reduce shutdowns for corrective maintenance. HECO represents that the proposed project is similar to other projects approved in Decision and Order No. 18703, filed on July 30, 2001 in Docket No. 01-0072, and Decision and Order No. 19142, filed on January 11, 2002, in Docket No. 01-0272, and that it intends to select the same equipment manufacturer.

In evaluating the proposed project, HECO considered not replacing the control system, and a project upgrade of the control board recorders. The "do nothing" alternative would leave HECO

---

<sup>2</sup>In addition to the proposed boiler control system work, HECO will perform a standard boiler overhaul, and various other capital projects during the April 2004 overhaul.

<sup>3</sup>HECO asserts that if the proposed project is not performed in April 2004, the next available planned maintenance outage wherein the proposed project could be accommodated would be in 2006, if the planned outage can be increased from three to 15 weeks.

<sup>4</sup>Concurrent with this docket, HECO is also submitting an application for the installation of the Kahe 3 Boiler Control System, Docket No. 02-0206. An outside consultant was hired to prepare a project scope document for the Kahe 3 Boiler Control System docket. Since Kahe 3 and Kahe 4 units are similar, the Kahe 3 project scope document will also be used for the Kahe 4 Boiler Control System project. The new Kahe 3 and Kahe 4 Boiler Control Systems will be the same, except that fewer transmitters will be installed on Kahe 3 than on Kahe 4.

vulnerable to failures of a control component, wherein, while repairs of this nature can be done in-house, the part or equipment needed for the repairs may not be readily available. The duration of the outage would depend upon the availability of replacement parts or equipment.

In addition, upgrading the control board recorders is also considered by HECO to be risky. The existing control board recorders are obsolete pneumatic instruments for which replacement parts are costly and difficult to obtain. Should any recorder part fail, the control operator would not have the appropriate indications from the recorder to safely operate the unit, and while modern recorders could replace the existing recorders, the full benefits of modernizing the complete control system would not be realized.

#### B.

While the Consumer Advocate believes the proposed project to be reasonable, it has certain reservations concerning the need for replacing the existing boiler control system and the reasonableness of the estimated project costs. For example, it notes that HECO is unable to provide information supporting the claimed difficulty in locating spare and/or replacement parts for the existing boiler control systems, and that HECO cites only one incident wherein it had to replace the pneumatic recorder equipment. It also has concerns about the reasonableness of ON-COST and Allowance for Funds Used During Construction amounts. The Consumer Advocate acknowledges, however, that these concerns can be

more appropriately addressed after it has the opportunity to review the final cost report at the completion of the proposed project, and if necessary, review the reasonableness of the actual costs in HECO's next rate proceeding.

On balance, the Consumer Advocate recognizes: (1) the need to eventually replace the existing boiler control system; (2) that performing the replacement during the planned overhaul in 2004 will minimize additional down time and costs; and (3) the importance of the Kahe 4 base load unit. It therefore recommends that the commission grant HECO's request to approve the proposed project, with the Consumer Advocate reserving its right to review, as necessary, the reasonableness of the project costs and the inclusion of any resulting savings in expenses in HECO's next rate proceeding.

### C.

Based on our review of the record, we find the proposed project to be reasonable and in the public interest. Specifically, at this time, the modernization of the control system appears necessary to provide steady and reliable service to the public, to assure the proper and safe functioning of the boiler control system, and to avert extended outages. Moreover, the timing of the proposed project, to coincide with the scheduled unit overhaul beginning in April 2004, is reasonable.

Accordingly, the commission will approve HECO's application, filed on August 2, 2002. We agree, however, that the Consumer Advocate should have the right to review the

reasonableness of the proposed project costs and the proper inclusion of any resulting savings in operational and maintenance expenses, on a prospective basis, in HECO's next rate proceeding.

### III.

#### THE COMMISSION ORDERS:

1. HECO's request to expend approximately \$2,439,590 for Item P9454000, installation of the Kahe 4 Boiler Control System, is approved; provided that no part of the project may be included in HECO's rate base unless and until the project is in fact installed, and is used and useful for utility purposes.


2. The Consumer Advocate shall be allowed to review the reasonableness of the proposed project costs and the inclusion of any resulting savings in operational and maintenance expenses, on a prospective basis, in HECO's next rate proceeding.

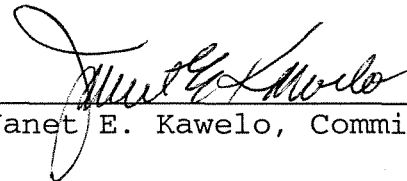
3. HECO shall submit a report within 60 days of the proposed project's completion, with an explanation of any deviation of 10 per cent or more in the proposed project cost from that estimated in the application. Failure to submit the report, as required by this decision and order, will constitute cause to limit the cost of the proposed project, for ratemaking purposes, to that estimated in the application.



DONE at Honolulu, Hawaii this 15th day of November,  
2002.

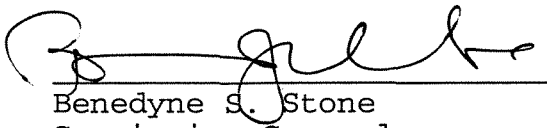
PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

By   
Wayne H. Kimura, Chairman

By   
Janet E. Kawelo, Commissioner

By \_\_\_\_\_ (RECUSED)  
Gregg J. Kinkley, Commissioner

APPROVED AS TO FORM:

  
Benedyne S. Stone  
Commission Counsel

02-0207.cs

CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Decision and Order No. 19775 upon the following parties, by causing a copy hereof to be mailed, postage prepaid, and properly addressed to each such party.

DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS  
DIVISION OF CONSUMER ADVOCACY  
P. O. Box 541  
Honolulu, HI 96809

WILLIAM A. BONNET, VICE PRESIDENT  
GOVERNMENT AND COMMUNITY AFFAIRS  
HAWAIIAN ELECTRIC COMPANY, INC.  
P. O. Box 2750  
Honolulu, HI 96840-0001

LORIE ANN NAGATA, TREASURER  
HAWAIIAN ELECTRIC COMPANY, INC.  
P. O. Box 2750  
Honolulu, HI 96840-0001

  
\_\_\_\_\_  
Karen Higashi

DATED: November 15, 2002