

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 )  
P0000863, the Kahe 4 Generator )  
Rotor Rewind Project, and for )  
Waiver of Paragraph 2.3(G)(2) of )  
General Order No. 7. )

DOCKET NO. 03-0154

ORDER NO. 20232

Filed June 13, 2003  
At 9:00 o'clock A.M.

Karen Higashi  
Chief Clerk of the Commission

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2003 JUN 13 P 4:21  
DIV. OF CONSUMER AFFAIRS  
DEPT. OF COMMERCE AND ECON.  
DEVELOPMENT  
HONOLULU, HAWAII

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

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

In the Matter of the Application of)  
HAWAIIAN ELECTRIC COMPANY, INC. ) Docket No. 03-0154  
For Approval to Commit Funds in ) Order No. 20232  
Excess of \$500,000 for Item )  
P0000863, the Kahe 4 Generator )  
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Waiver of Paragraph 2.3(G)(2) of )  
General Order No. 7. )  
\_\_\_\_\_)

ORDER

I.

By application filed on May 28, 2003, HAWAIIAN ELECTRIC COMPANY, INC. (HECO) requests commission approval to commit approximately \$776,383 for Item P0000863, the Kahe 4 Generator Rotor Rewind project (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).

Pursuant to section 1.2.b of G.O. No. 7, HECO also seeks a waiver of the section 2.3.g.2 requirement that its application "be submitted to the commission for review at least 60 days prior to the commencement of construction or commitment for expenditure, whichever is earlier" (60-day notice period). The instant order,

thus, only addresses HECO's request for a waiver of the section 2.3.g.2 applicable requirement, and does not make a determination on HECO's request to commit funds for the proposed project.

## II.

### A.

The proposed project involves installing new alternating layers of bent copper bars and a thin coating of electrical insulation on the generator rotor. The new bent copper bars will be insulated from each other by insulating paper and from the rotor core by a glass laminate based insulation. This installation is necessary because HECO determined that bent copper bars in the generator rotor of the Kahe 4, a nominal 90 megawatt (MW) reheat steam unit commissioned in 1972, need to be replaced to correct a ground fault problem. HECO performed tests, in April of this year, to determine the cause of an intermittent field ground fault alarm on the Kahe 4 generator system. The tests revealed that while the generator rotor is grounded during normal operation, the ground disappears when the unit is off-line, and the rotor temperature decreases and the speed is reduced.

HECO states that while a single ground fault on an ungrounded system is unable to create a current path and causes no further damage to the unit, a second ground fault provides a current path for DC current to flow, which would cause the generator to fail. Depending on the location of the ground faults, damage to the generator could be catastrophic. For example, the

forces of electric current, combined with centrifugal force could tear pieces off the generator rotor. There is also the possibility that a hydrogen explosion could occur.

Replacement of the bent copper bars in the generator rotor is required to correct the ground fault problem. It is also needed to correct a "foreshorting of the coils" in the generator rotor.<sup>1</sup>

HECO has rescheduled its Kahe 4 overhaul from April 2004 to September 2003 to expedite repair of the rotor and installation of new copper bars and insulation. Procurement and manufacture of the bent copper bars will take approximately 70 days. Delaying rotor repair increases the chances for a failure of the rotor. Receipt of a commission waiver of the 60-day notice period will allow HECO to order the appropriate materials, repair the rotor and install the repaired generator during the September 2003 overhaul, returning Kahe 4 to normal service as soon as practical.

B.

HECO represents that the Consumer Advocate does not object to HECO's request for waiver of the 60-day notice period. The Consumer Advocate does, however, according to HECO, reserve the right to complete a review of the instant application and to state its position on the merits of the application based upon this review.

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<sup>1</sup>HECO states that "foreshorting of the coils" is an inherent design problem for General Electric generators designed and manufactured at the Lynn Plant between 1966 and 1974, which, when combined with various modes of operation, results in shorted copper coils vibration and loss of generator capability.

Upon review, the commission finds good cause to approve HECO's request for a waiver of the 60-day notice period. The commission emphasizes, however, that this order does not constitute a decision on the merits of HECO's application. As HECO acknowledges in its application, "if the [c]ommission does not approve [the] [a]pplication, HECO will have the burden of proof to justify the reasonableness of the capital expenditures in its next rate case."

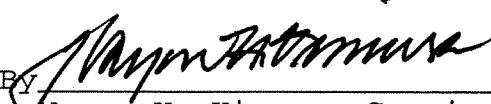
III.

THE COMMISSION ORDERS that HECO's request for waiver of the section 2.3.g.2 requirement to file its application at least 60 days prior to the commencement of construction or commitment for the expenditure of funds, filed on May 28, 2003, is approved.

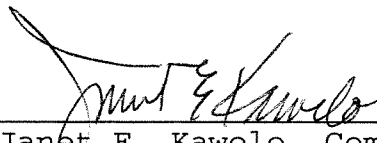
DONE at Honolulu, Hawaii this 13th day of June, 2003.

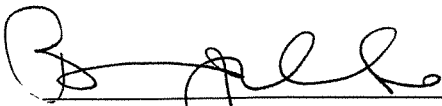
PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

By   
Carlito P. Caliboso, Chairman

By   
Wayne H. Kimura, Commissioner

APPROVED AS TO FORM:

By   
Janet E. Kawelo, Commissioner

  
Benedyne S. Stone  
Commission Counsel

03-0154.eh

CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Order No. 20232 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  
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WILLIAM A. BONNET  
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Karen Higashi

DATED: June 13, 2003