June 29, 2012

Dean K. Matsuura
Manager
Regulatory Affairs

FILED
2012 JUN 29 P 1:51
PUBLIC UTILITIES COMMISSION

The Honorable Chair and Members
of the Hawaii Public Utilities Commission
Kekuanaoa Building, 1st Floor
465 South King Street
Honolulu, Hawaii 96813

Dear Commissioners:

Subject: Docket No. 2011-0206
Reliability Standards Working Group
Monthly Report

Pursuant to Ordering Paragraph 3 of the Commission's Order No. 30371, filed on May 4, 2012, in the above subject proceeding, enclosed as Exhibit A is the Hawaiian Electric Companies'[1] first filing of their monthly report on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources. As ordered, the first filing includes reports for the immediate preceding six months, December 2011 through May 2012.

In addition, an electronic copy of each report is also included with this filing. These files are voluminous, and therefore, the Company is providing compact discs ("CD") containing the electronic files to both the Commission and the Consumer Advocate. Copies of the CDs will be available to any Party to this proceeding. Interested Parties should email Marisa Chun at marisa.chun@heco.com to request a copy.

If you have any questions on this matter, please contact Marisa Chun at (808) 543-4723.

Sincerely,

for Dean K. Matsuura
Manager, Regulatory Affairs

Enclosure

cc: Service List

[1] Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited are collectively referred to as the "Hawaiian Electric Companies" or "Companies".

SERVICE LIST
(Docket No. 2011-0206)

JEFFREY T. ONO EXECUTIVE DIRECTOR DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS DIVISION OF CONSUMER ADVOCACY P.O. Box 541 Honolulu, HI 96809	2 Copies Via Hand Delivery
GREGG J. KINKLEY, ESQ. DEPARTMENT OF THE ATTORNEY GENERAL 425 Queen Street Honolulu, Hawaii 96813 Counsel for DBEDT	1 Copy Electronically Transmitted
DANIEL W.S. LAWRENCE, ESQ. DEPARTMENT OF THE CORPORATION COUNSEL CITY AND COUNTY OF HONOLULU 530 S. King Street, Room 110 Honolulu, HI 96813 Counsel for the CITY AND COUNTY OF HONOLULU	1 Copy Electronically Transmitted
LINCOLN S.T. ASHIDA, ESQ. WILLIAM V. BRILHANTE, JR., ESQ. MICHAEL J. UDOVIC, ESQ. DEPARTMENT OF THE CORPORATION COUNSEL COUNTY OF HAWAII 101 Aupuni Street, Suite 325 Hilo, HI 96720 Counsel for the COUNTY OF HAWAII	1 Copy Electronically Transmitted
HENRY Q CURTIS KAT BRADY LIFE OF THE LAND 76 North King Street, Suite 203 Honolulu, HI 96817	1 Copy Electronically Transmitted
WARREN S. BOLLMEIER II PRESIDENT HAWAII RENEWABLE ENERGY ALLIANCE 46-040 Konane Place, #3816 Kaneohe, HI 96744	1 Copy Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

DOUGLAS A. CODIGA, ESQ.
SCHLACK ITO LLLC
Topa Financial Center
745 Fort Street, Suite 1500
Honolulu, HI 96813
Counsel for BLUE PLANET FOUNDATION

1 Copy
Electronically Transmitted

ISAAC MORIWAKE, ESQ.
DAVID HENKIN, ESQ.
EARTHJUSTICE
223 South King Street, Ste. 400
Honolulu, HI 96813-4501
Counsel for HAWAII SOLAR ENERGY ASSOCIATION

1 Copy
Electronically Transmitted

KENT D. MORIHARA, ESQ.
KRIS N. NAKAGAWA, ESQ.
LAUREN M. IMADA-LEE, ESQ.
Morihara Lau & Fong LLP
841 Bishop Street, Suite 400
Honolulu, Hawaii 96813
Counsel for KAUAI ISLAND UTILITY COOPERATIVE

1 Copy
Electronically Transmitted

ERIK W.KVAM
CHIEF EXECUTIVE OFFICER
ZERO EMISSIONS LEASING LLC
2800 Woodlawn Drive, Suite 131
Honolulu, HI 96822

1 Copy
Electronically Transmitted

SANDRA-ANN Y.H. WONG, ESQ.
ATTORNEY AT LAW, A LAW CORPORATION
1050 Bishop Street, #514
Honolulu, HI 96813
Counsel for TAWHIRI POWER LLC

1 Copy
Electronically Transmitted

RILEY SAITO
73-1294 Awakea Street
Kailua-Kona, HI 96740
For SOLAR ENERGY INDUSTRIES ASSOCIATION

1 Copy
Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

DEAN T. YAMAMOTO, ESQ.
DUKE T. OISHI, ESQ,
YAMAMOTO & SETTLE
700 Bishop Street, Suite 200
Honolulu, HI 96813
Counsel for FOREST CITY HAWAII RESIDENTIAL, INC., CASTLE & COOKE HOMES HAWAII, INC., CASTLE & COOKE RESORTS, LLC and LANAI SUST AINABILITY RESEARCH, LLC

1 Copy
Electronically Transmitted

MICHAEL J. HOPPER, ESQ.
DEPUTY CORPORATION COUNSEL
DEPARTMENT OF THE CORPORATION COUNSEL
COUNTY OF MAUI
200 S. High Street
Wailuku, HI 96793
Counsel for the COUNTY OF MAUI

1 Copy
Electronically Transmitted

MONA W. CLARK, ESQ.
OFFICE OF THE COUNTY ATTORNEY
COUNTY OF KAUAI
4444 Rice Street, Suite 200
Lihue, HI 96766-1300

1 Copy
Electronically Transmitted

THOMAS C., GORAK, ESQ.
GORAK & BAY, L.L.C.
1161 Ikena Circle
Honolulu, HI 96821
Counsel for SUN EDISON LLC

1 Copy
Electronically Transmitted

BRADLEY ALBERT
PRESIDENT
HAWAII PV COALITION
P.O. Box 81501
Haiku, HI 96708

1 Copy
Electronically Transmitted

HILTON H. UNEMORI
ECM, INC.
130 N. Market Street
Wailuku, HI 96793-1716
For SOUTH MAUI RENEWABLE RESOURCES, LLC

1 Copy
Electronically Transmitted

SERVICE LIST
(Docket No. 2011-0206)

KEVIN T. FOX
KEYES & FOX, LLP
436 14th Street, Suite 1305
Oakland, CA 94612
For the INTERSTATE RENEWABLE ENERGY COUNCIL

1 Copy
Electronically Transmitted

MARCO MANGELSDORF, PRESIDENT
DOUGLAS BATH, VICE-PRESIDENT
PROVISION SOLAR, INC.
69 Railroad Avenue, A-7
Hilo, Hawaii 96720

1 Copy
Electronically Transmitted

HUGH D. BAKER, JR.
HDBAKER & COMPANY HAWAII LLC
78-7000 Kewalo Street
Kailua-Kona, HI 96740

1 Copy
Electronically Transmitted

PETE COOPER
SOLARCITY CORPORATION
REGIONAL DIRECTOR, HAWAII
599 Kahelu Street
Mililani, HI 96789

1 Copy
Electronically Transmitted

STANLEY ALLEN GRAY, SENIOR DEVELOPER
Pier 1, Bay 3
San Francisco, CA 94111
For MOLOKAI RENEWABLES LLC

1 Copy
Electronically Transmitted

ALISON SILVERSTEIN
19213 Luedtke Lane
Pflugerville, TX 78660

1 Copy
Electronically Transmitted

BRENDAN KIRBY
12011 SW Pineapple Court
Palm City, FL 34990

1 Copy
Electronically Transmitted

The Commission's Order No. 30371 (Docket No 2011-0206 – Relating To Various Matters in RSWG Process), filed May 4, 2012, ordered the following information for each island grid:

1) System frequency control performance during month:
   a) Frequency duration plot based on the highest resolution SCADA data available for the month detailing how many seconds each power system operated at frequencies above 60 hertz and at frequencies below 60 Hz.
   b) Tabulation of the number, magnitude and duration of frequency excursions (high and low) outside normal frequency control range (59.95 to 60.05 Hz).

The following provides information with respect to items 1a) through 1b) – (all statements are current as of the month ending May 31, 2012):

1a) Frequency duration plot based on the highest resolution SCADA data available for the month detailing how many seconds each power system operated at frequencies above 60 hertz and at frequencies below 60 Hz:

The frequency duration plots for Hawaiian Electric, MECO (Maui Division) and HELCO based on two-second data are provided in Attachment 1, and the enclosed Excel files. Refer to the electronic files for the individual data points because the information is voluminous and does not translate well to a hard copy.

1b) Tabulation of the number, magnitude and duration of frequency excursions (high and low) outside normal frequency control range (59.95 to 60.05 Hz):

Tabulation of the number, magnitude and duration of frequency excursions outside of the frequency range of 59.95 Hz to 60.05 Hz for Hawaiian Electric, MECO (Maui Division) and HELCO are provided in Attachment 2, and the enclosed Excel files. Refer to the electronic files for the individual data points because the information is voluminous and does not translate well to a hard copy.

(2) Significant system events during month:
   a) Tabulation of contingency reserve activations including date and time, MW magnitude, duration, and triggering event.
   b) Tabulation of under frequency load shed activations including date and time, triggering frequency, MW magnitude, duration, and triggering event.
   c) Tabulation of demand response activations for system events, including date and time, MW magnitude, duration, and triggering event, (excluding demand response utilization for unit commitment deferral or system operations economics.)

The following provides information with respect to items 2a) through 2c) – (all statements are current as of the month ending May 31, 2012):

2a) Tabulation of contingency reserve activations including date and time, MW magnitude, duration, and triggering event:

Hawaiian Electric's contingency reserve actions are provided in Attachment 3. MECO and HELCO do not operate with contingency reserve requirements.

2b) Tabulation of under frequency load shed activations including date and time, triggering frequency, MW magnitude, duration, and triggering event:

The tabulation of under frequency load shed events is provided in Attachment 4.

2c) Tabulation of demand response activations for system events, including date and time, MW magnitude, duration, and triggering event, (excluding demand response utilization for unit commitment deferral or system operations economics.)

Hawaiian Electric's demand response activations for system evens are provided in Attachment 5. MECO and HELCO currently do not have demand response programs.

(3) Curtailment of non-dispatchable renewable resources:
   (a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment.
   (b) Total MWh of non-dispatchable renewable resources curtailed for the month.

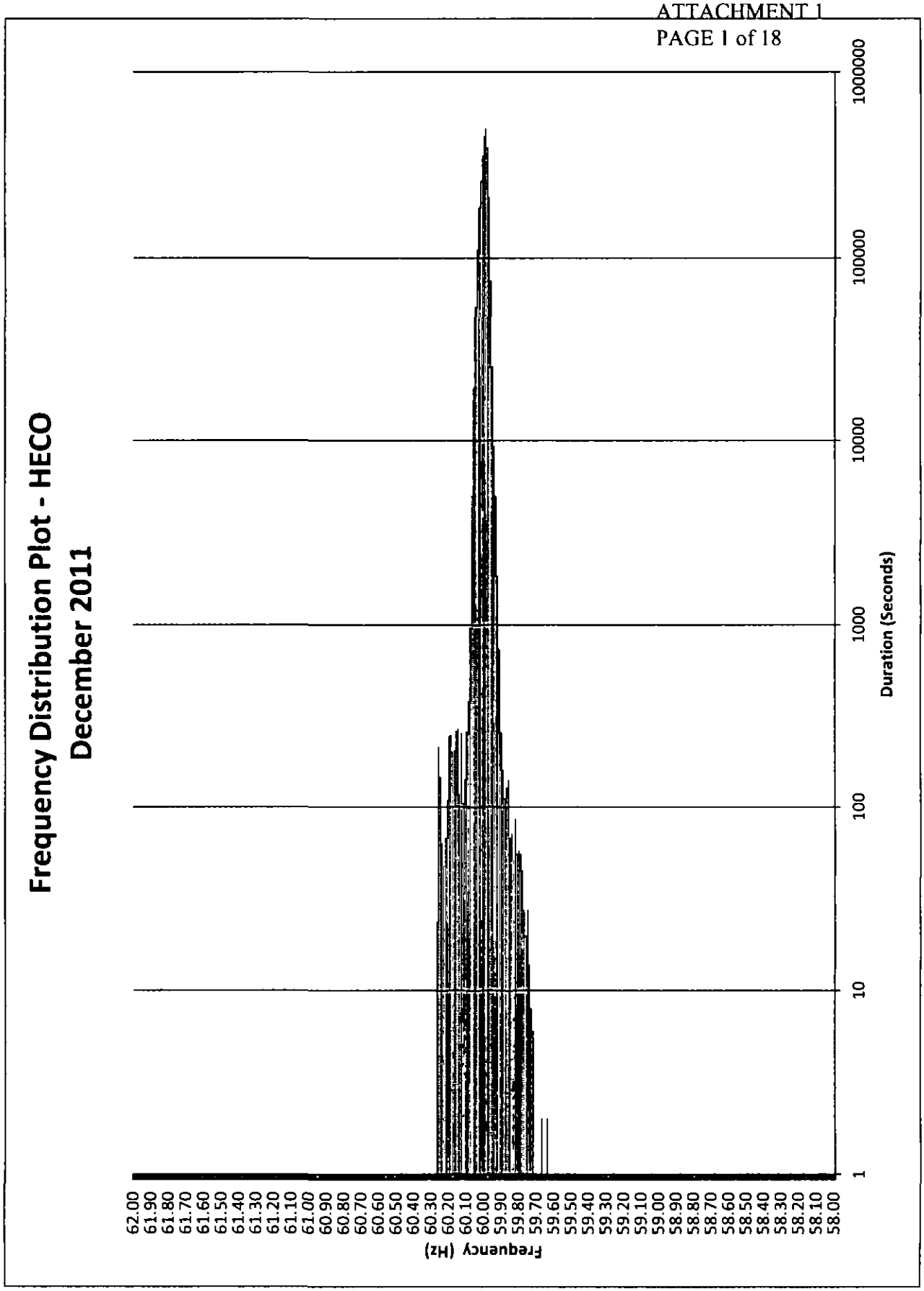
The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending May 31, 2012):

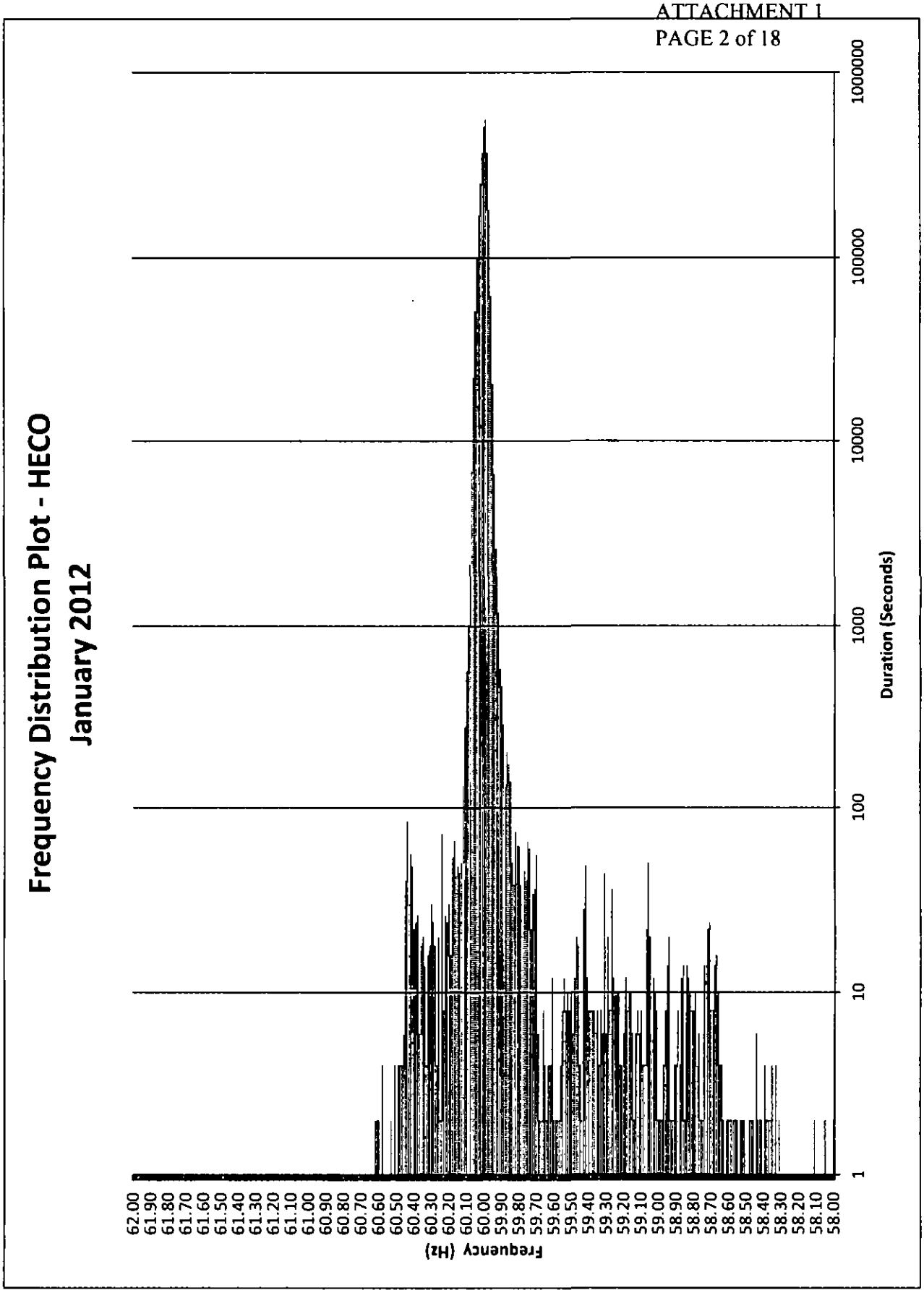
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

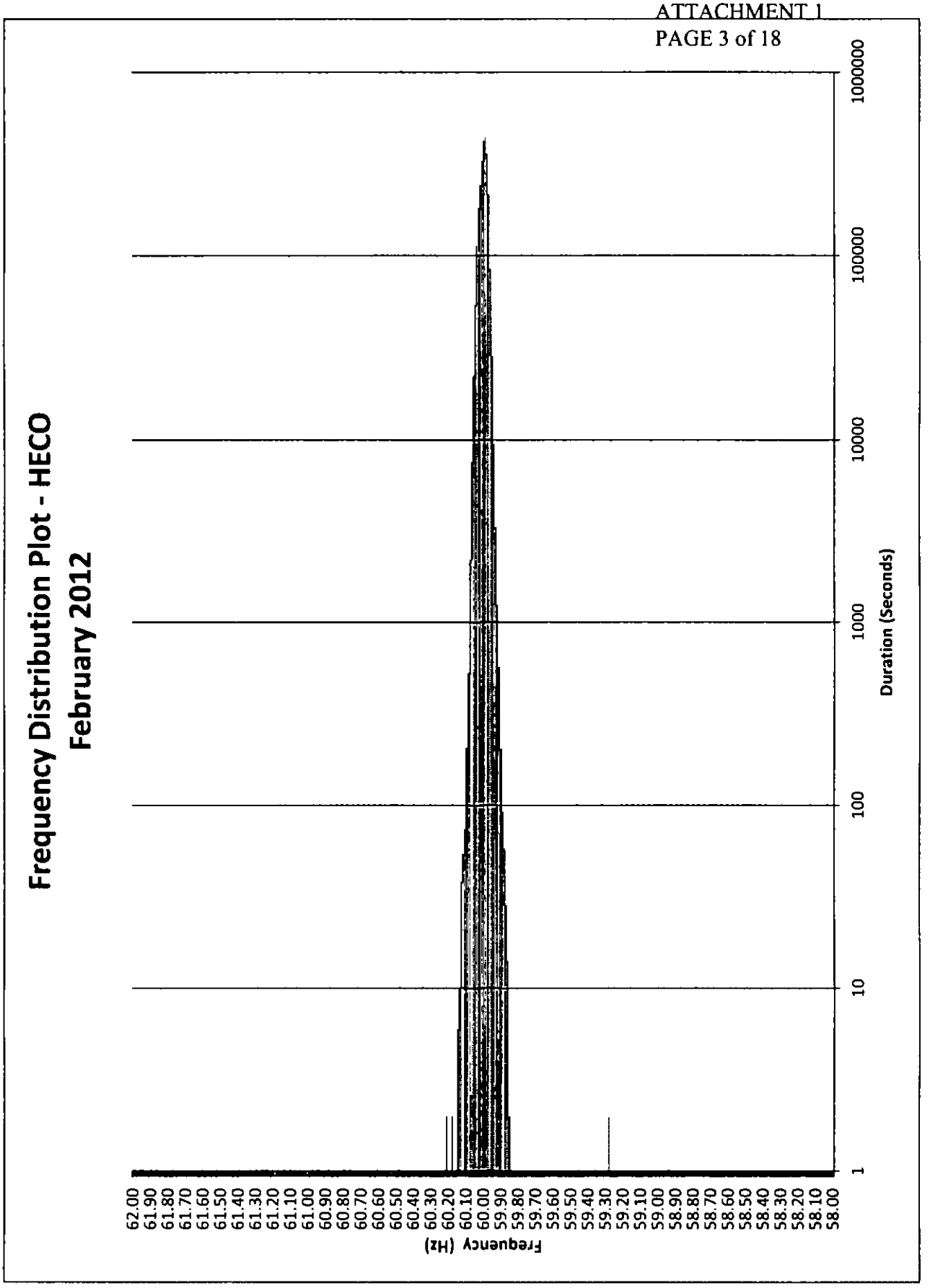
The tabulation of each curtailment event for each resource is provided in Attachment 6.

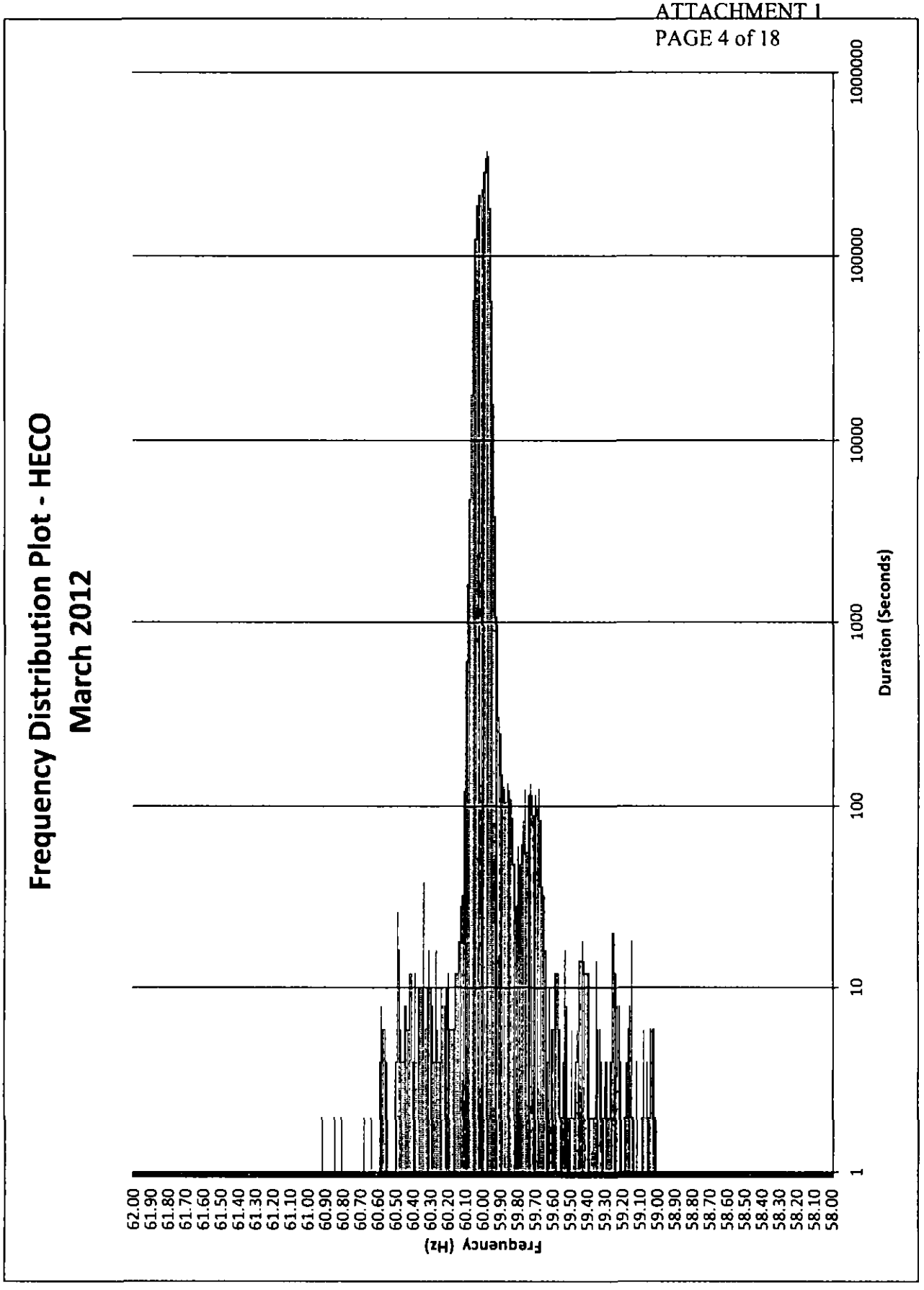
3b) Total MWh of non-dispatchable renewable resources curtailed for the month:

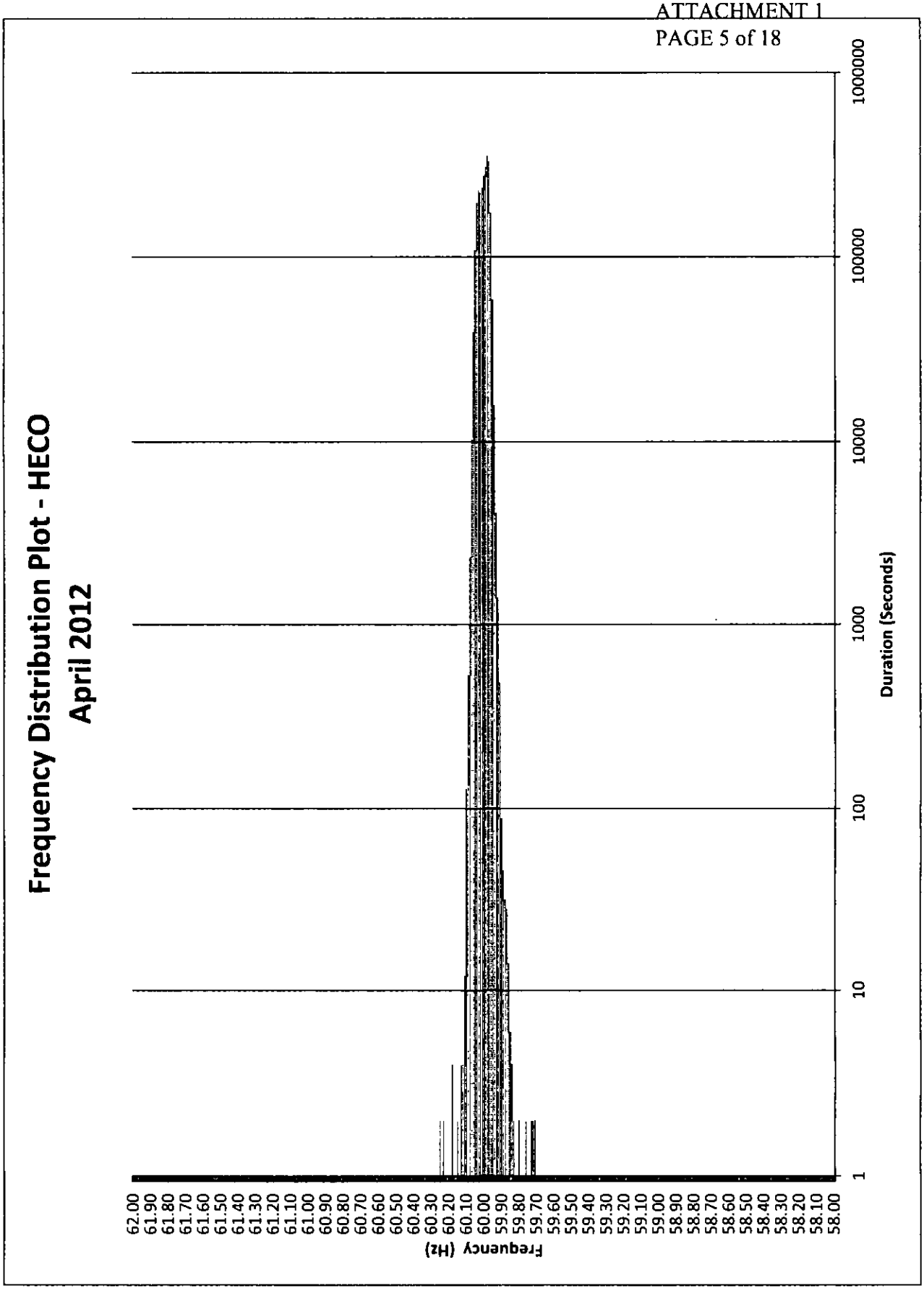
Curtailed MWH from non-dispatchable resources are difficult to determine due to the variability of the resource during curtailment periods. In some cases, the curtailed MWH estimates were provided by the IPPs under curtailment. HELCO is not providing an estimate of curtailed MWH, as this information is not provided to HELCO from the IPP. The Hawaiian Electric Companies do not make any representations as to the accuracy of the curtailed MWH. The estimated MWH of non-dispatchable resources curtailed for the month are provided in Attachment 6, corresponding to each curtailment event.

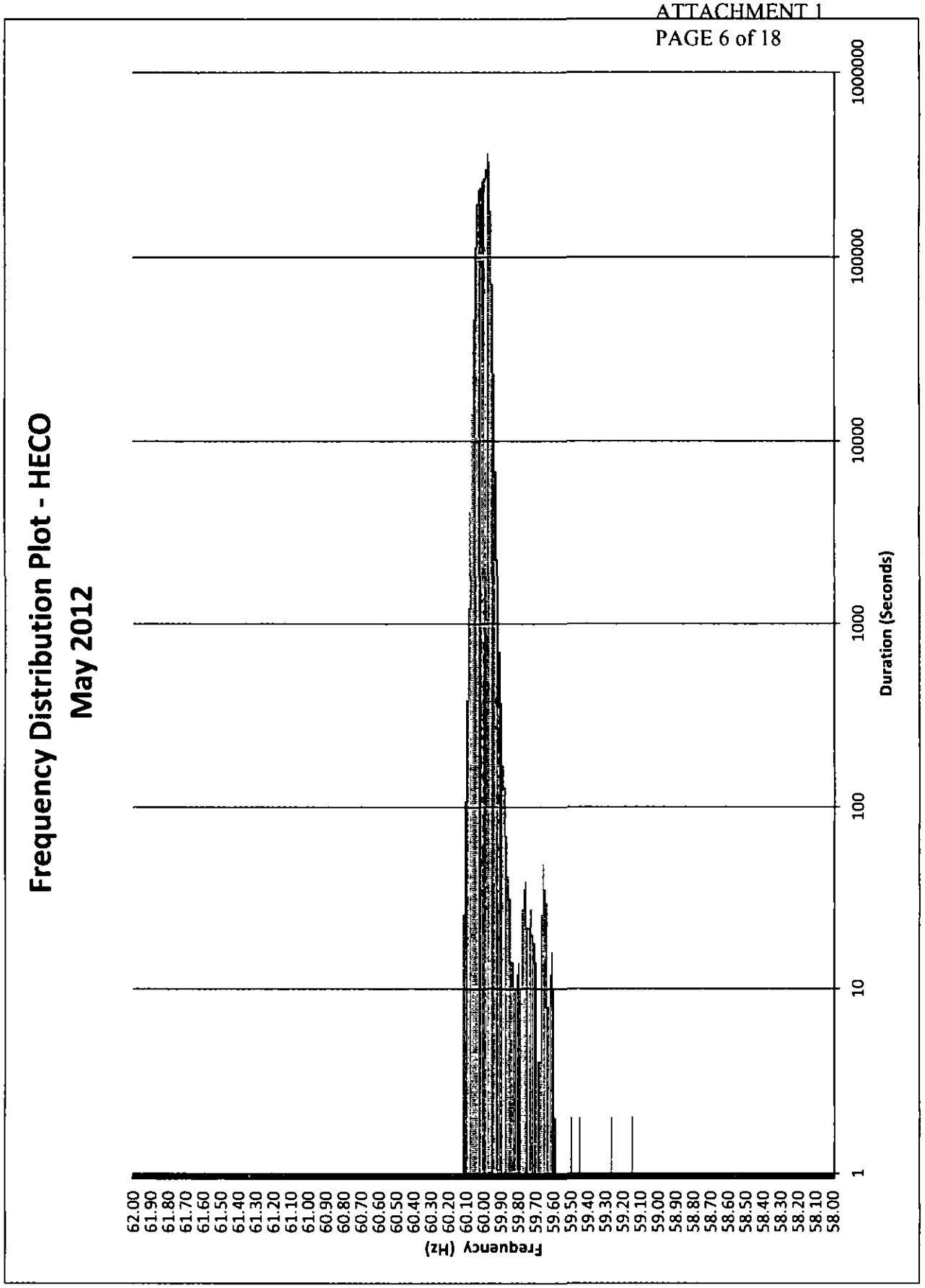

Frequency Distribution Plot - HECO
December 2011
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00

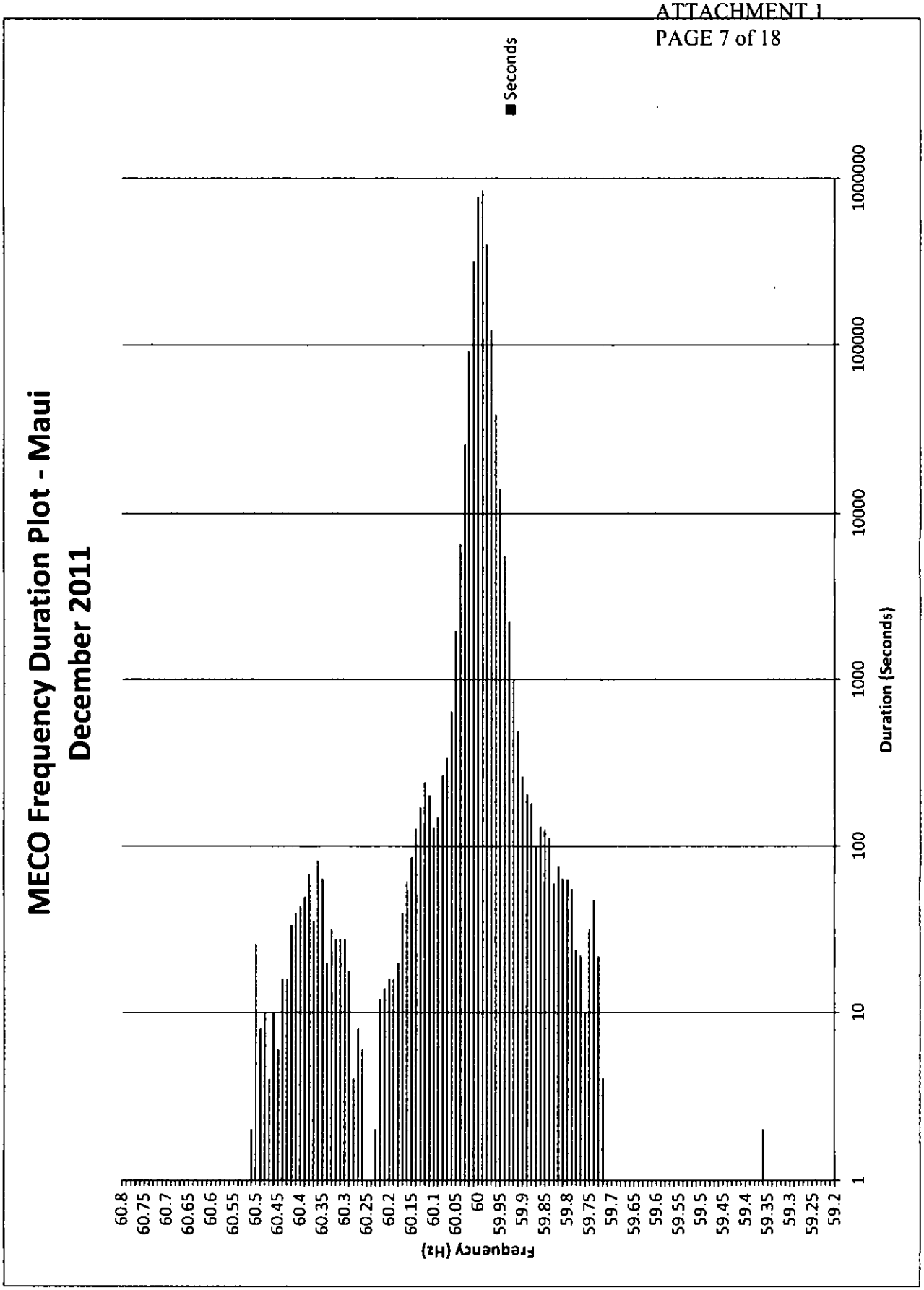

Frequency Distribution Plot - HECO
January 2012
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00
Duration (Seconds)
1
10
100
1000
10000
100000
1000000

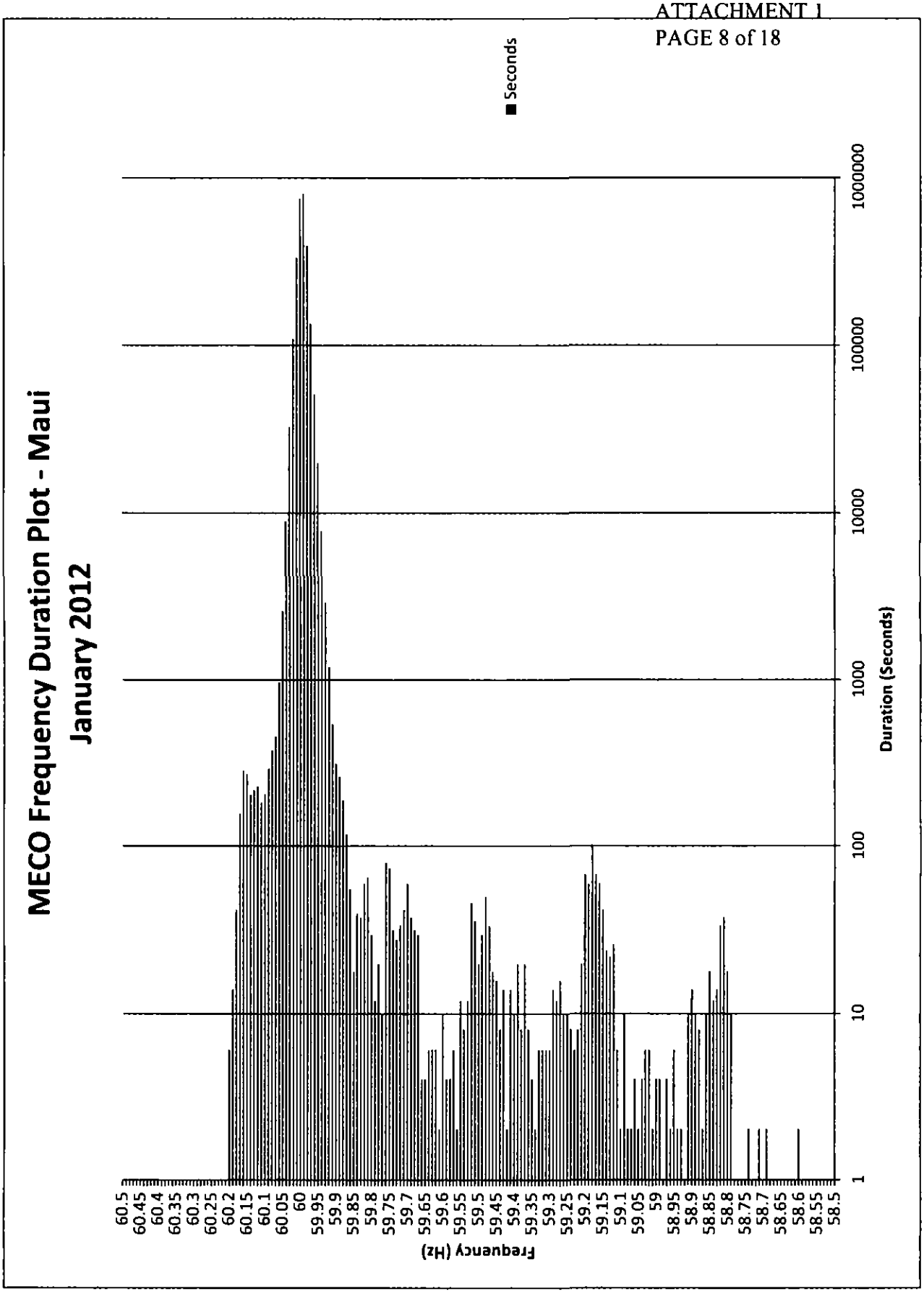

Frequency Distribution Plot - HECO
February 2012
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00

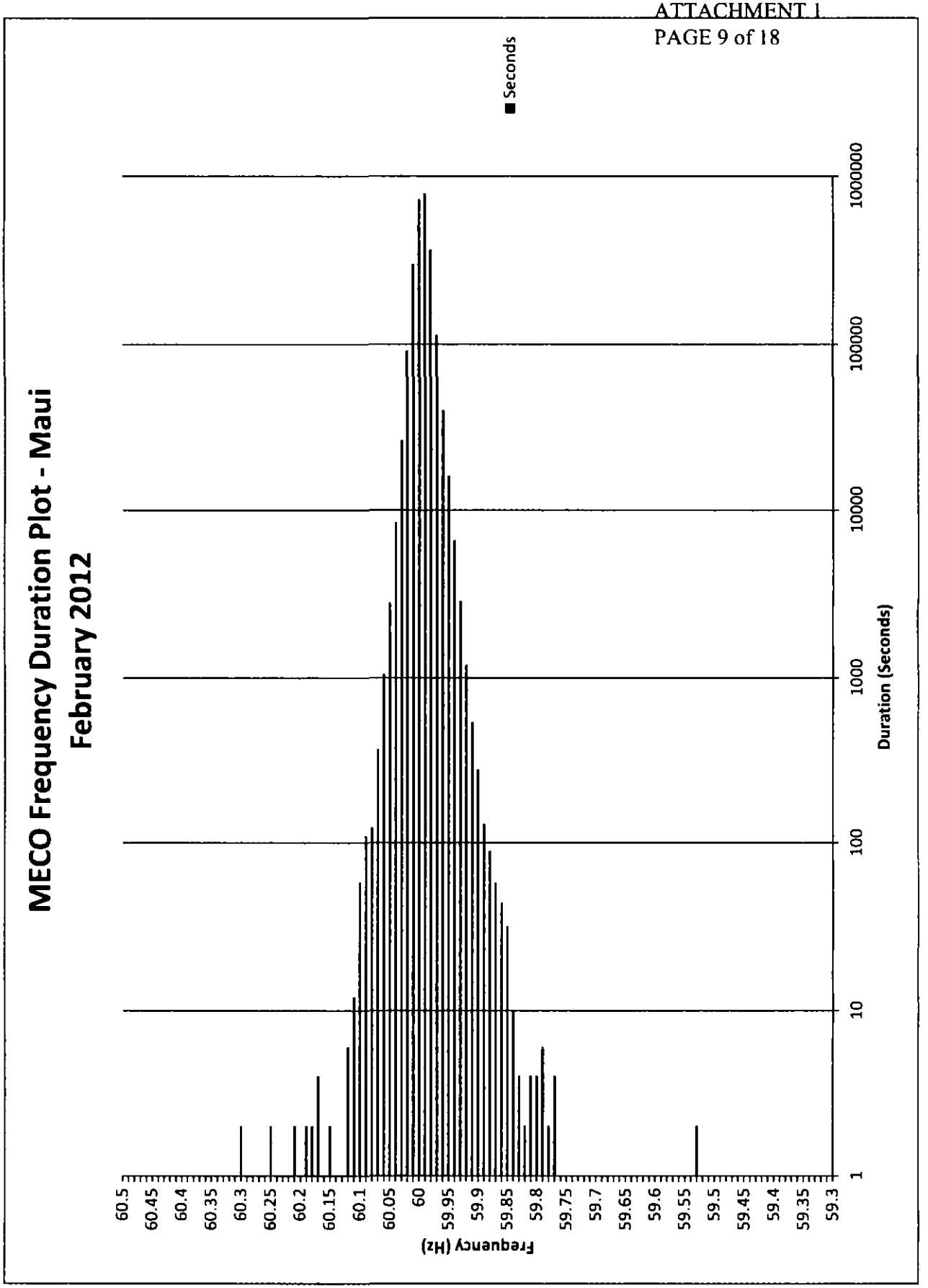

Frequency Distribution Plot - HECO
March 2012
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00

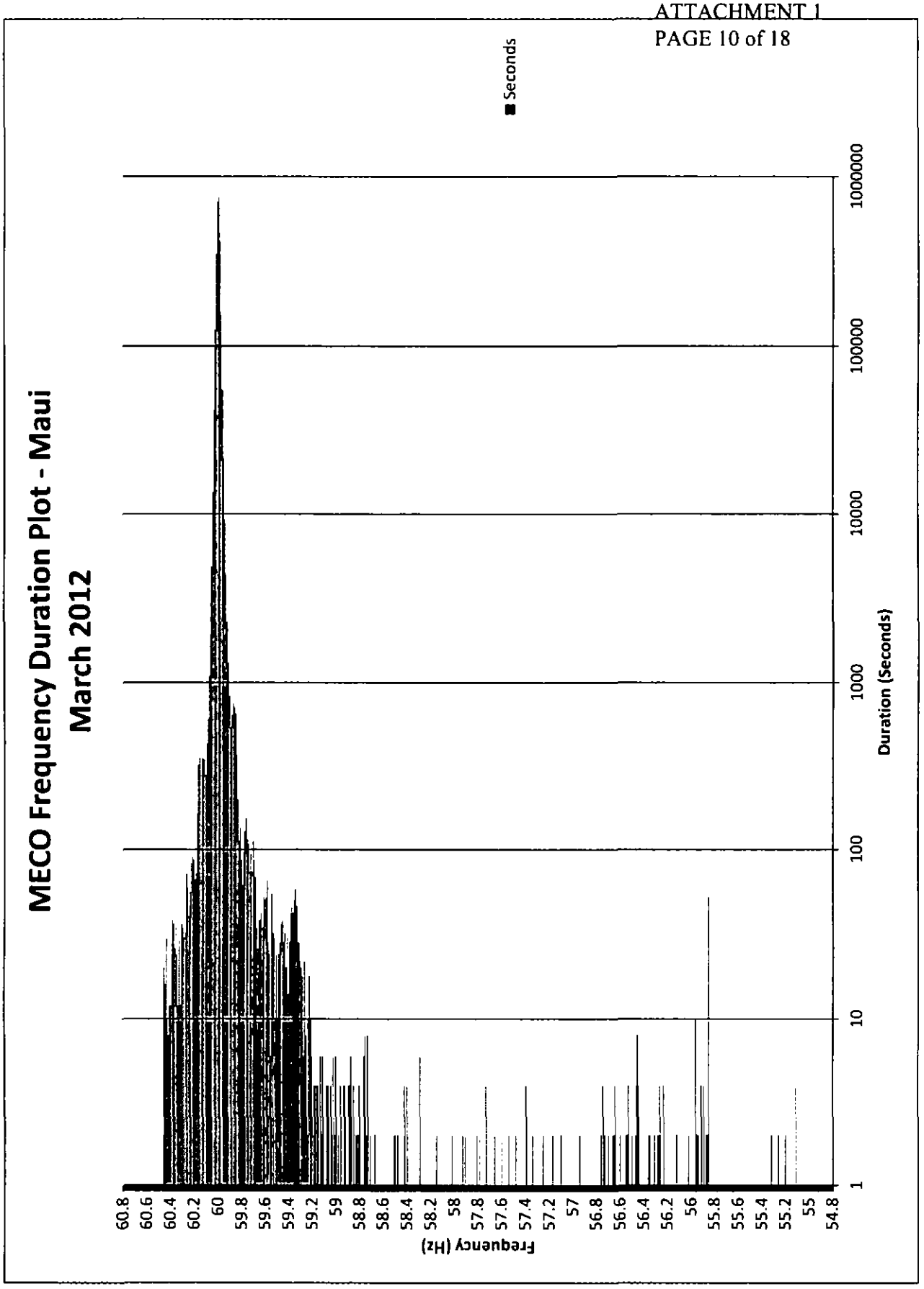

Frequency Distribution Plot - HECO
April 2012
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00

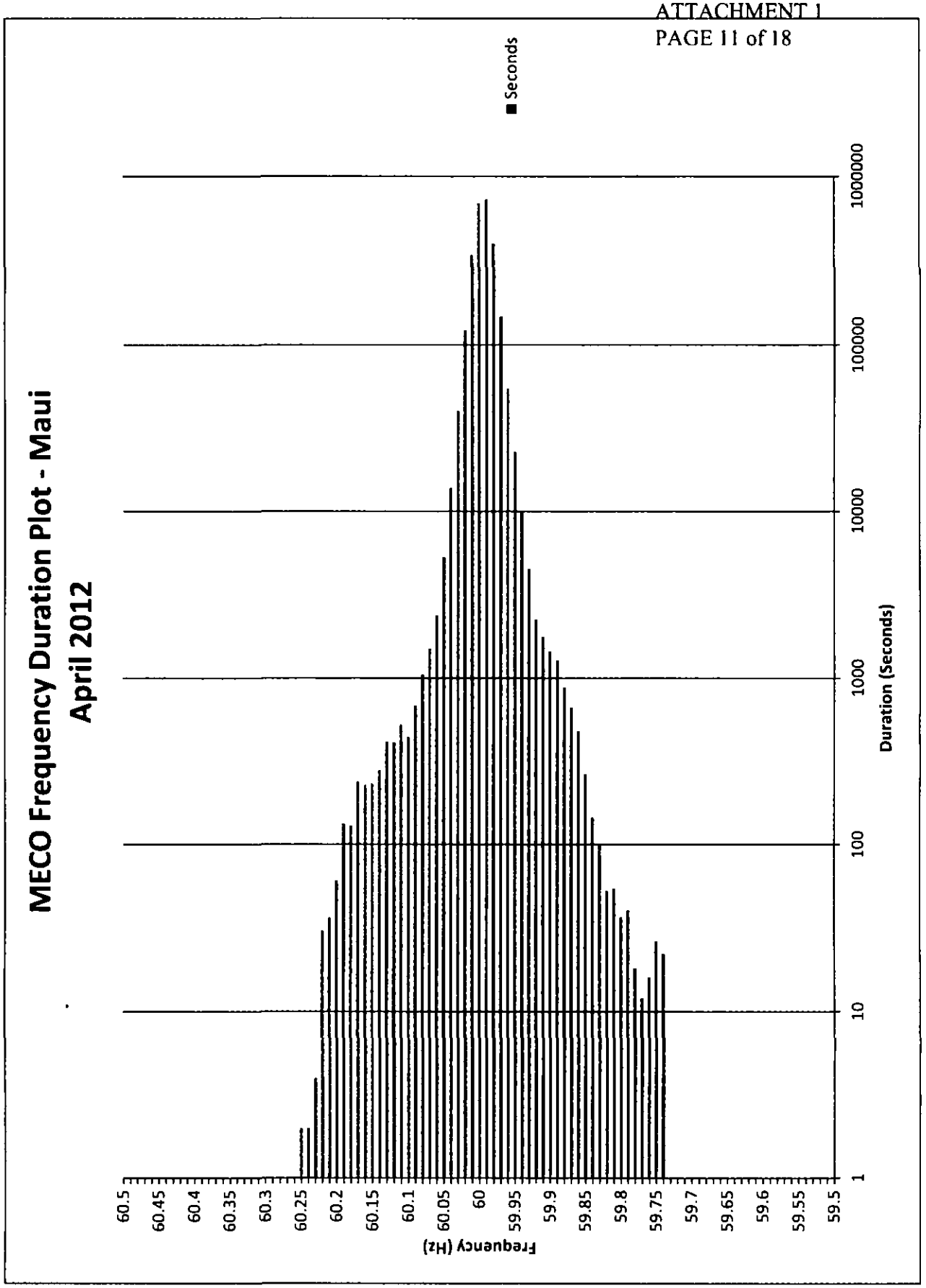

Frequency Distribution Plot - HECO
May 2012
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00

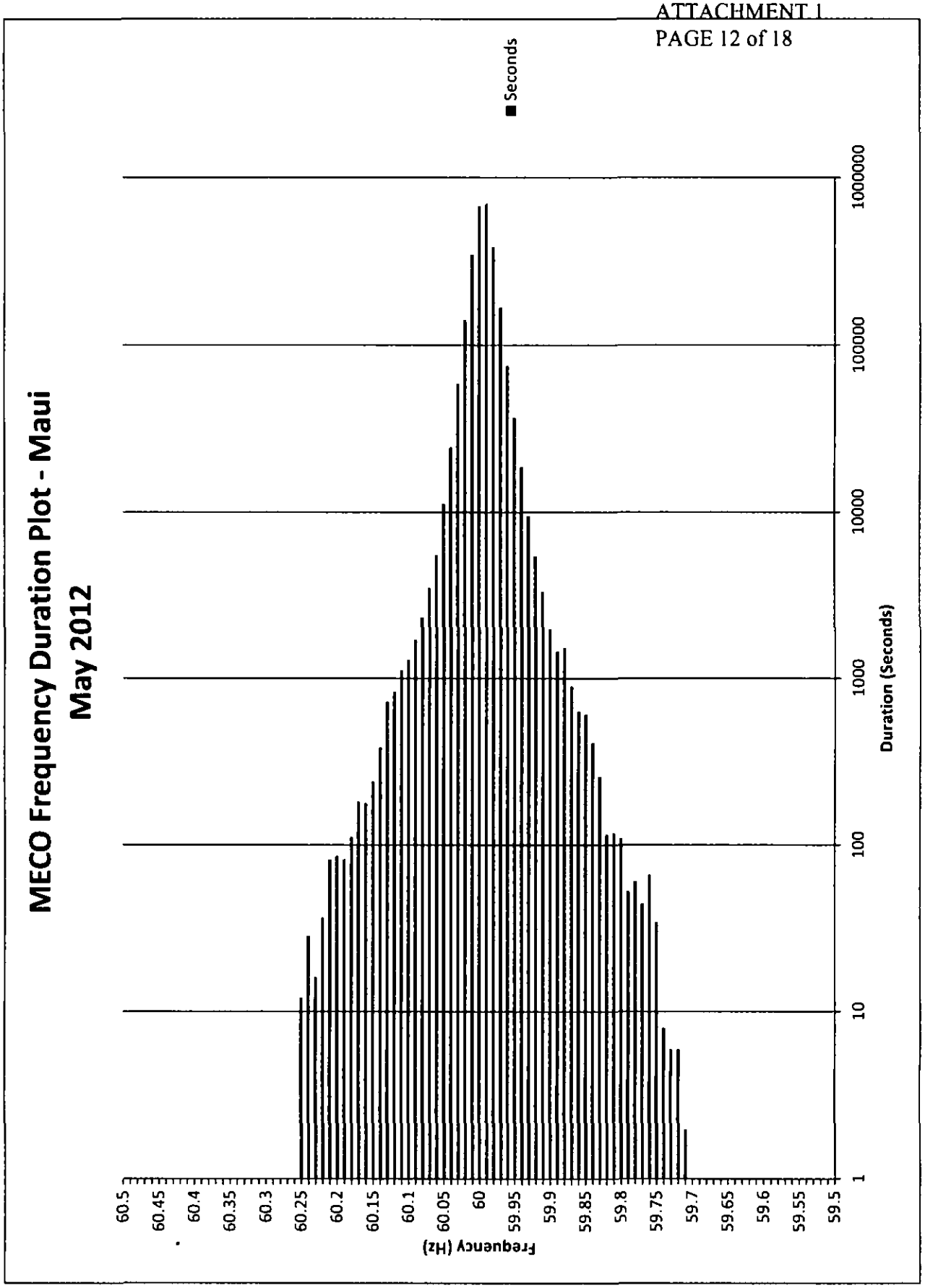

MECO Frequency Duration Plot - Maui
December 2011
Seconds
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
60.8
60.75
60.7
60.65
60.6
60.55
60.5
60.45
60.4
60.35
60.3
60.25
60.2
60.15
60.1
60.05
60
59.95
59.9
59.85
59.8
59.75
59.7
59.65
59.6
59.55
59.5
59.45
59.4
59.35
59.3
59.25
59.2

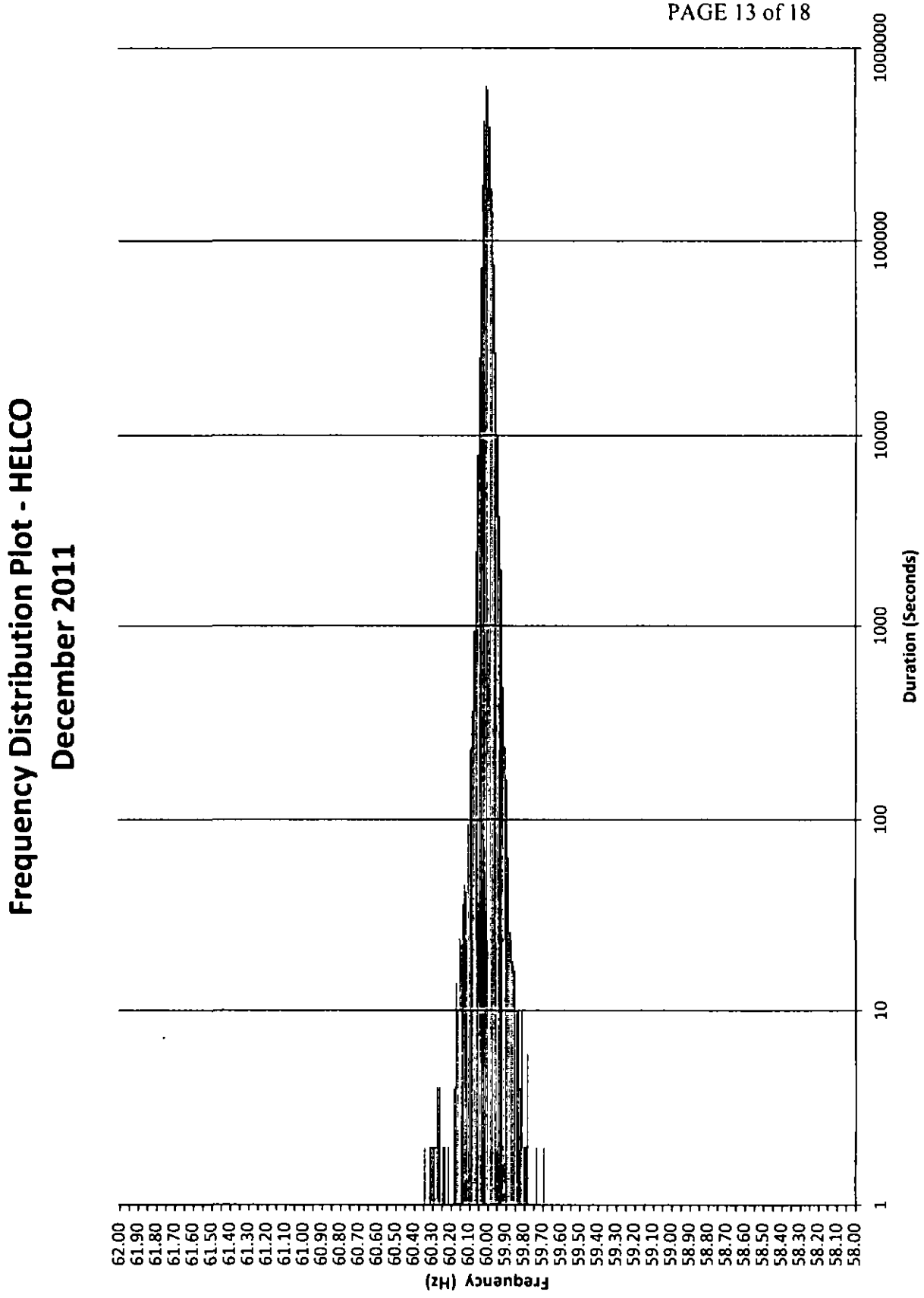

MECO Frequency Duration Plot - Maui
January 2012
Seconds
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
60.5
60.45
60.4
60.35
60.3
60.25
60.2
60.15
60.1
60.05
60
59.95
59.9
59.85
59.8
59.75
59.7
59.65
59.6
59.55
59.5
59.45
59.4
59.35
59.3
59.25
59.2
59.15
59.1
59.05
59
58.95
58.9
58.85
58.8
58.75
58.7
58.65
58.6
58.55
58.5

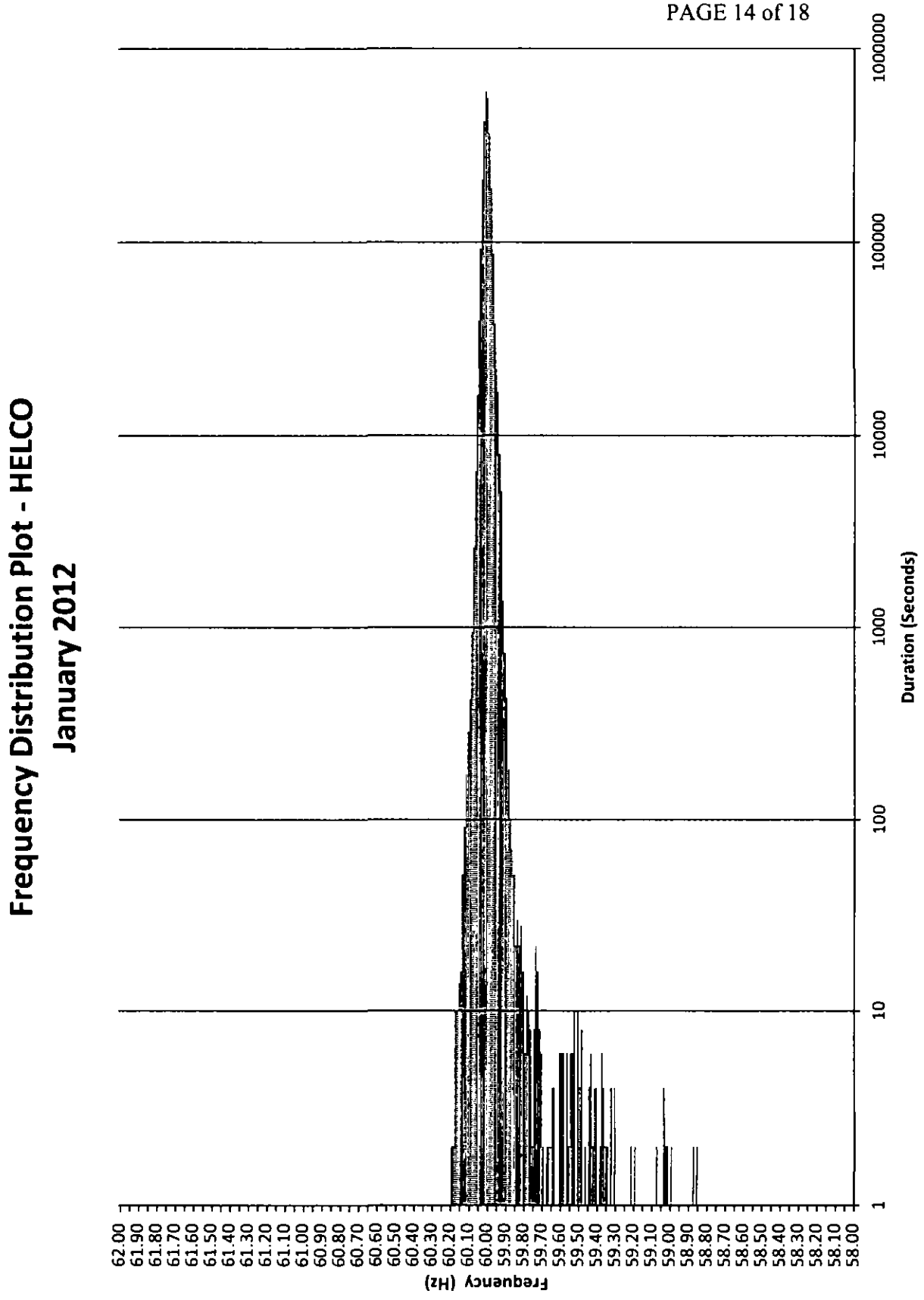

MECO Frequency Duration Plot - Maui
February 2012
Seconds
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
60.5
60.45
60.4
60.35
60.3
60.25
60.2
60.15
60.1
60.05
60
59.95
59.9
59.85
59.8
59.75
59.7
59.65
59.6
59.55
59.5
59.45
59.4
59.35
59.3

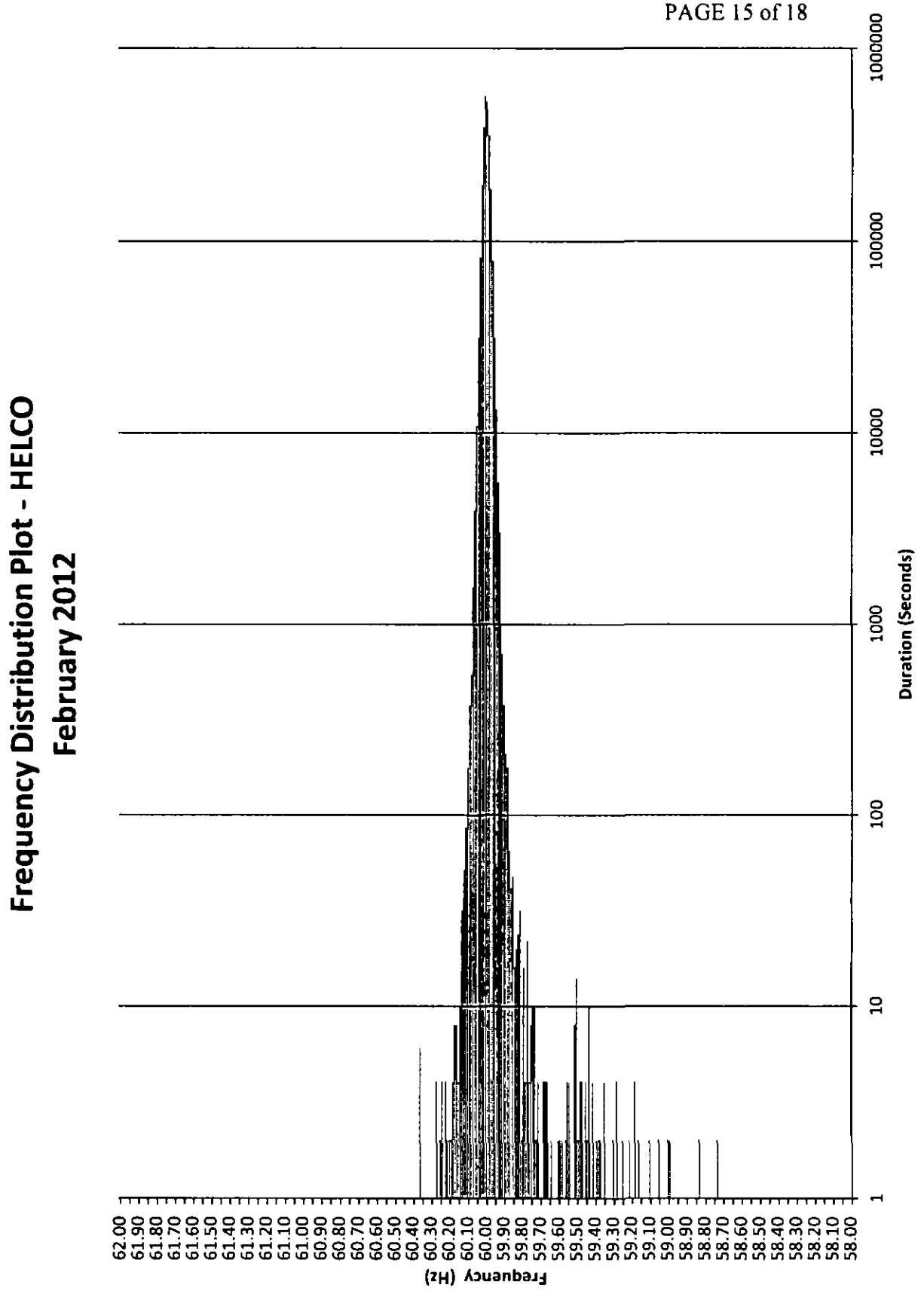

MECO Frequency Duration Plot - Maui
March 2012
Seconds
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
60.8
60.6
60.4
60.2
60
59.8
59.6
59.4
59.2
59
58.8
58.6
58.4
58.2
58
57.8
57.6
57.4
57.2
57
56.8
56.6
56.4
56.2
56
55.8
55.6
55.4
55.2
55
54.8

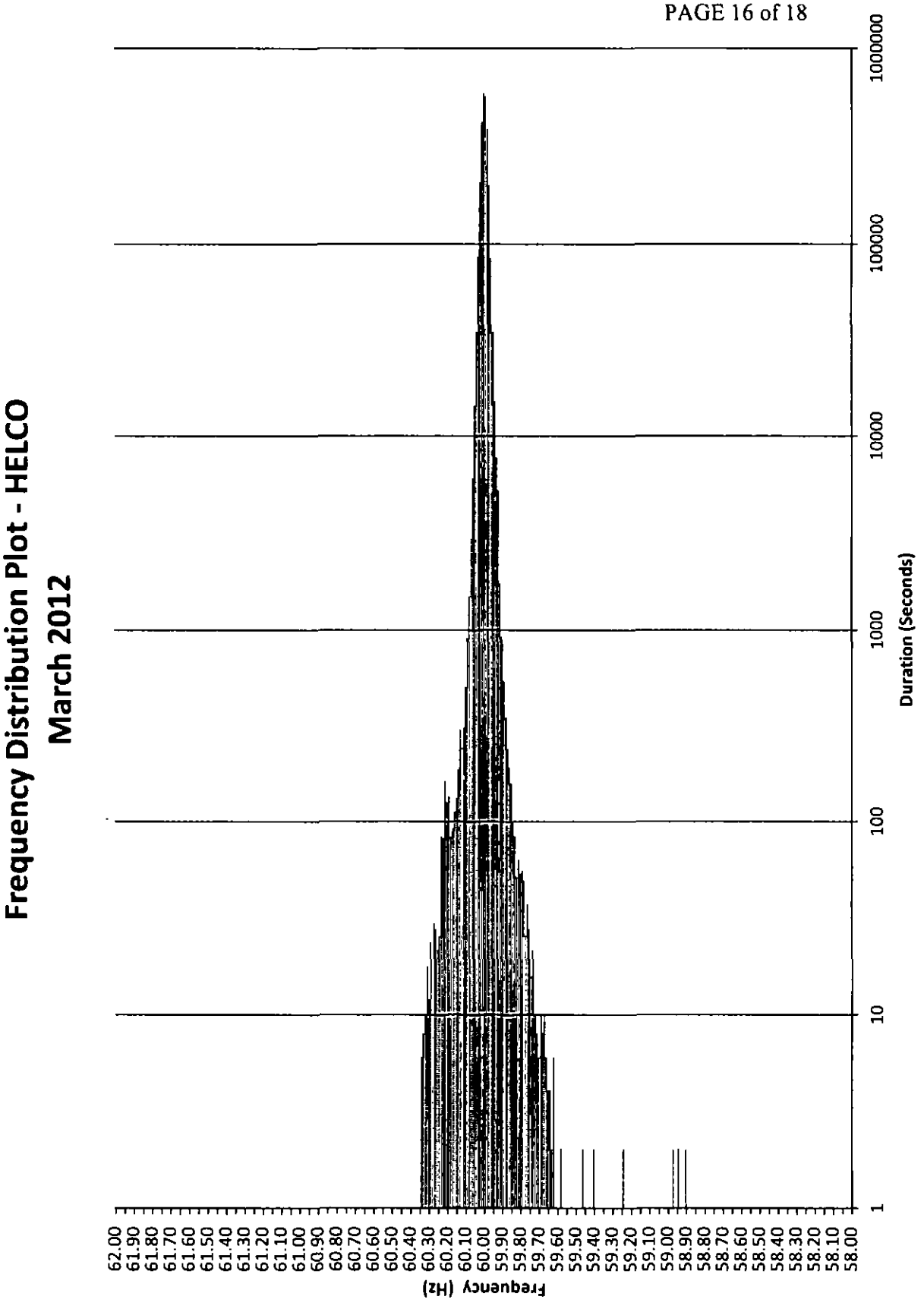

MECO Frequency Duration Plot - Maui
April 2012
Seconds
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
60.5
60.45
60.4
60.35
60.3
60.25
60.2
60.15
60.1
60.05
60
59.95
59.9
59.85
59.8
59.75
59.7
59.65
59.6
59.55
59.5

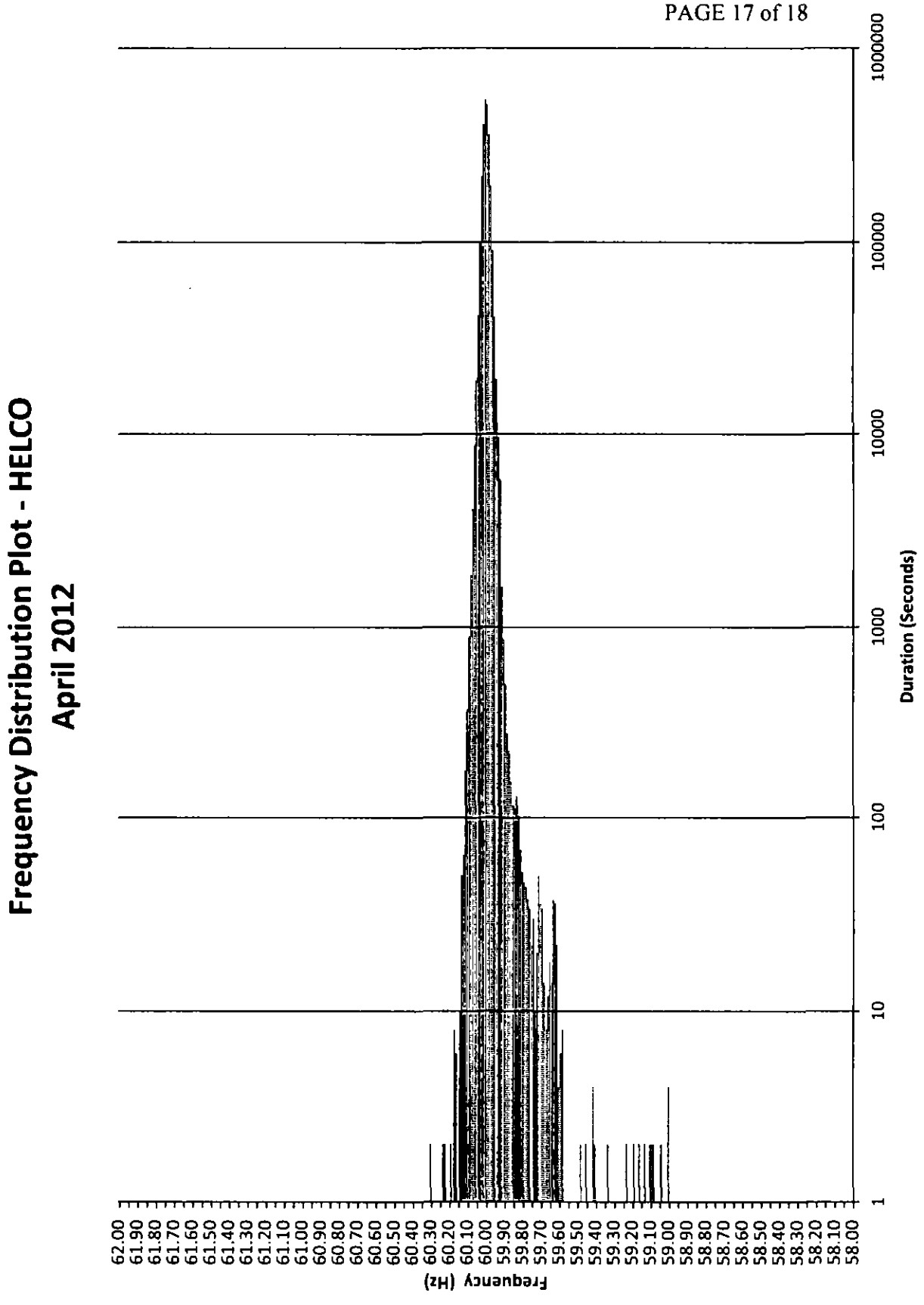

MECO Frequency Duration Plot - Maui
May 2012
Seconds
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
60.5
60.45
60.4
60.35
60.3
60.25
60.2
60.15
60.1
60.05
60
59.95
59.9
59.85
59.8
59.75
59.7
59.65
59.6
59.55
59.5

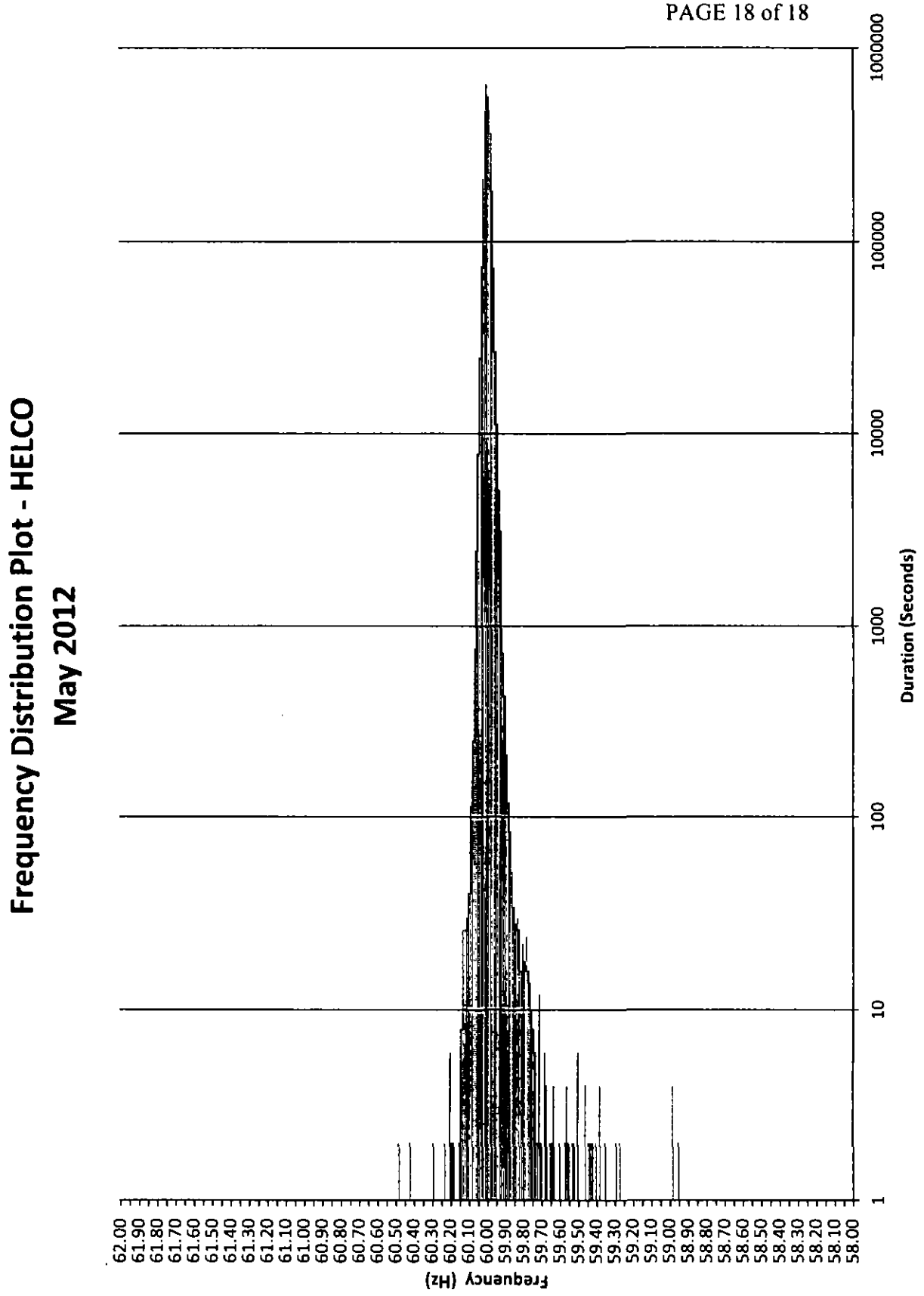

Frequency Distribution Plot - HELCO
December 2011
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00


Frequency Distribution Plot - HELCO
January 2012
Duration (Seconds)
1000000
100000
10000
1000
100
10
1
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00


Frequency Distribution Plot - HELCO
February 2012
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00


Frequency Distribution Plot - HELCO
March 2012
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00


Frequency Distribution Plot - HELCO
April 2012
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00


Frequency Distribution Plot - HELCO
May 2012
Duration (Seconds)
1
10
100
1000
10000
100000
1000000
Frequency (Hz)
62.00
61.90
61.80
61.70
61.60
61.50
61.40
61.30
61.20
61.10
61.00
60.90
60.80
60.70
60.60
60.50
60.40
60.30
60.20
60.10
60.00
59.90
59.80
59.70
59.60
59.50
59.40
59.30
59.20
59.10
59.00
58.90
58.80
58.70
58.60
58.50
58.40
58.30
58.20
58.10
58.00

HECO Frequency Excursion Statistics December 2011		
	<59.95 Hz	>60.05 Hz
Number of Excursions	977	2170
Maximum Duration (sec)	2114	1890
Maximum Deviation (Hz)	57.993	60.27
Total Duration of Excursions (sec)	27404	48584

HECO Frequency Excursion Statistics January 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	805	2125
Maximum Duration (sec)	1880	856
Maximum Deviation (Hz)	58	60.618
Total Duration of Excursions (sec)	21506	53882

HECO Frequency Excursion Statistics February 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	1280	2646
Maximum Duration (sec)	644	472
Maximum Deviation (Hz)	59.276	60.214
Total Duration of Excursions (sec)	26212	53822

HECO Frequency Excursion Statistics March 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	2442	5542
Maximum Duration (sec)	1016	1434
Maximum Deviation (Hz)	59.009	60.923
Total Duration of Excursions (sec)	43090	133766

HECO Frequency Excursion Statistics April 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	2482	4529
Maximum Duration (sec)	410	722
Maximum Deviation (Hz)	59.707	60.248
Total Duration of Excursions (sec)	42790	92570

HECO Frequency Excursion Statistics May 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	3578	4836
Maximum Duration (sec)	470	474
Maximum Deviation (Hz)	59.153	60.123
Total Duration of Excursions (sec)	61398	109332

MECO Frequency Excursion Statistics December 2011		
	<59.95 Hz	>60.05 Hz
Number of Excursions	12435	1608
Maximum Duration (sec)	10204	1282
Maximum Deviation (Hz)	59.35644531	60.50683594
Total Duration of Excursions (sec)	24870	3216

MECO Frequency Excursion Statistics January 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	17633	1943
Maximum Duration (sec)	1578	826
Maximum Deviation (Hz)	58.59748077	60.19713593
Total Duration of Excursions (sec)	35266	3886

MECO Frequency Excursion Statistics February 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	13975	873
Maximum Duration (sec)	248	112
Maximum Deviation (Hz)	59.5272789	60.29711533
Total Duration of Excursions (sec)	27950	1746

MECO Frequency Excursion Statistics March 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	23374	3803
Maximum Duration (sec)	2850	738
Maximum Deviation (Hz)	55.10822296	60.45708084
Total Duration of Excursions (sec)	46748	7606

MECO Frequency Excursion Statistics April 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	23521	4395
Maximum Duration (sec)	826	690
Maximum Deviation (Hz)	59.73723602	60.24712753
Total Duration of Excursions (sec)	47042	8790

MECO Frequency Excursion Statistics May 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	41235	8338
Maximum Duration (sec)	916	696
Maximum Deviation (Hz)	59.70724106	60.24712753
Total Duration of Excursions (sec)	82470	16676

HELCO Frequency Excursion Statistics December 2011		
	<59.05 Hz	>60.05 Hz
Number of Excursions	4457	1300
Maximum Duration (sec)	120	108
Maximum Deviation (Hz)	59.685547	60.344727
Total Duration of Excursions (sec)	26804	7126

HELCO Frequency Excursion Statistics January 2012		
	<59.05 Hz	>60.05 Hz
Number of Excursions	6801	2861
Maximum Duration (sec)	318	208
Maximum Deviation (Hz)	58.850586	60.193359
Total Duration of Excursions (sec)	48468	17398

HELCO Frequency Excursion Statistics February 2012		
	<59.05 Hz	>60.05 Hz
Number of Excursions	5516	1777
Maximum Duration (sec)	180	84
Maximum Deviation (Hz)	58.733398	60.359375
Total Duration of Excursions (sec)	35926	10880

HELCO Frequency Excursion Statistics March 2012		
	<59.05 Hz	>60.05 Hz
Number of Excursions	6242	2771
Maximum Duration (sec)	318	536
Maximum Deviation (Hz)	58.899414	60.344727
Total Duration of Excursions (sec)	46790	19678

HELCO Frequency Excursion Statistics April 2012		
	<59.05 Hz	>60.05 Hz
Number of Excursions	9695	4583
Maximum Duration (sec)	886	146
Maximum Deviation (Hz)	59.001953	60.295898
Total Duration of Excursions (sec)	56240	24026

HELCO Frequency Excursion Statistics May 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	4888	1295
Maximum Duration (sec)	192	62
Maximum Deviation (Hz)	58.948242	60.476563
Total Duration of Excursions (sec)	32000	6532

HAWAIIAN ELECTRIC COMPANY, INC.
CONTINGENCY RESERVE ACTIVATION EVENTS
DEC 2011 - MAY 2012

Event #	Date & Time	Frequency (Hz)			Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	01/05/12 08:50	59.991	58.000	NA	-119.5	0:51	W7 tripped followed by AES for a total loss of 225 MW of generation (45+180 respectively). Block I shed when frequency hit 58.0 Hz (no delay).
2	03/06/12 17:04	59.969	59.661	NA	-20	0:25	Kahe-Halawa 2, Kahe-Halawa 1, Kahe-Waiau and Halawa-Iwilei 138kV transmission lines tripped at 16:56, followed by HPower trip, then H8 trip. Large lightning storm on this day. A total of 157 MW was dropped (DR UF and voltage sensitive equipment) due to the multiple transmission line outages. Frequency initially spiked to 60.677 Hz after the loads were dropped, followed by two generators tripping off-line. Maximum shortage was 20 MW and duration of negative XSR was about 25 minutes.
3	03/07/12 21:53	60.008	59.010	NA	-138.00	0:45	A fault affecting the Waiau A Bus at Waiau Power Plant and the Waiau-Koolau 2 138 kV line caused AES to become unstable and the unit declined in output from 180 MW to about 107 MW at 21:45. It seemed stable at that point for a little while; unit then declined further and tripped off-line at 21:53. Kicker Block was triggered in addition to CIDLC. CIP CT1 was brought on to cover the shortage in spinning reserve at 22:05.
4	05/08/12 10:09	60.036	59.606	NA	-64.50	0:40	K6 tripped while carrying 55 MW; initially carrying about 104 MW when unit started having problems ...unit was being brought down but unit tripped when it was at 55 MW.

HAWAIIAN ELECTRIC COMPANY, INC.
UNDERFREQUENCY LOAD SHEDDING EVENTS
DEC 2011 - MAY 2012

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	01/05/12 08:50	59.992	58.000	58.00	~100	0:18-1:45	W7 tripped followed by AES for a total loss of 225 MW of generation (45+180 respectively). Block 1 shed when frequency hit 58.0 Hz (no delay).
2	01/05/12 08:50	59.271	59.544	58.50	~45	0:18-1:45	Kicker block shed (after 10 second delay, set at 58.5 Hz)
3	01/05/12 08:55	58.871	58.973	Manual LS	~35	1.04-2.44	K1 went off-line after inially picking up an additional 23 MW of load. Unit peaked at around 71 MW and declined down to 0 MW over the next 4.5 minutes. Manual load shedding was initiated.
4	03/07/12 21:53	60.008	59.010	58.50	23.90	0:07	A fault affecting the Waiau A Bus at Waiau Power Plant and the Waiau-Koolau 2 138 kV line caused AES to become unstable and the unit declined in output from 180 MW to about 107 MW at 21:45. It seemed stable at that point for a little while; unit then declined further and tripped off-line at 21:53. Kicker Block was triggered in addition to CIDLC. CIP CT1 was brought on to cover the shortage in spinning reserve at 22:05.

MAUI ELECTRIC COMPANY LTD.
UNDERFREQUENCY LOAD SHEDDING EVENTS
JAN 2012 - MAY 2012

Island	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Levels UFLS Occurred			
Maui	1/18/2012	60.008	58.50	59.30, 58.70, 58.50	12.65	0:13	A system frequency depression of 58.5Hz occurred when Generator M16 at Maalaea Power Plant tripped off line, due to a low fuel discharge pressure.
Molokai	1/24/2012	59.987	N/A	N/A	0.31	1:13	CB 110B at Sub 81 Palaau relayed open as part of the load shed scheme, due to the failure of Generator 9 at the Palaau Power Plant.
Maui	1/26/2012	60.007	58.70	59.30, 58.70	19.42	0:30	Due to a Fuel Valve Driver Fault to Generator M14 at Sub 101 Maalaea, M14 tripped off line causing system frequency depression of 58.7 Hz initiating load shed at CB's 1223 & 1398 at Sub 34 Lahaina, CB 1379 at Sub 43 Waiehu, CB's 1282 & 2486 at Sub 117 Pukalani, and CB 1238 at Sub 13 Kula.
Maui	3/1/2012	60.007	52.83	59.30, 58.70, 58.50, 58.0	67.52	3:25	A system frequency depression of 52.83Hz. occurred when generator M16 at Maalaea Power Plant tripped off line causing the automatic load shed scheme to operate. Additional load was manually shed due to the extreme generation deficit.
Maui	3/9/2012	60.009	58.70	59.30, 58.70	5.75	0:08	A system frequency depression of 58.7Hz., occurred when Generator M10 at MPP tripped off line, due to a crank case oil mist detector operating.

HAWAII ELECTRIC LIGHT COMPANY, INC.
UNDERFREQUENCY LOADSHEDDING EVENTS
DEC 2011 - MAY 2012

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	1/9/2012 1524hrs	59.332	data not available	58.80, 59.30	8.38	0:08	While Puna Geothermal Ventures (PGV) ramped down unexpectedly from 32 MW down to 14 MW, then Keahole Diesel Generator D-22 unexpectedly tripped offline while generating 2 MW.
2	2/17/2012 1410hrs	59.979	58.658	58.80	12.18		Keahole CT-5 tripped offline while in 1CTSC mode and generating 19.9 MW.
3	2/23/2012 1637hrs	59.979	58.696	58.80	10.68	0:06	Keahole CT-4 tripped offline while in 1CTSC mode and generating 19.0 MW.
4	3/20/2012 2149hrs	59.997	58.772	58.80	11.85	0:11	Hamakua Energy Partners (HEP) CT tripped while in 1CTCC mode, reducing generation from 27.9 MW down to 7.5 MW.
5	3/21/2012 1350hrs	59.979	58.734	58.80	12.08	0:04	Hamakua Energy Partners (HEP) CT tripped while in 1CTCC mode, reducing generation from 28.6 MW down to 6.2 MW.
6	4/13/2012 1526hrs	60.009	58.995	59.30	3.90	0:30	Puna Steam unit tripped offline while generating 8.7 MW.
7	5/10/2012 1105hrs	59.990	58.787	58.80	6.94	0:02	Puna Geothermal Ventures (PGV) experienced problems and reduced generation from 25 MW down to 5 MW.

HAWAIIAN ELECTRIC COMPANY, INC.
DEMAND RESPONSE EVENTS
DEC 2011 - MAY 2012

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	12/07/11 07:30	59.914	59.667	59.70	18.60	0:03	Kahe 4 tripped while carrying 81.8 MW of load; RDLC activated
2	01/05/12 08:50	59.991	58.000	59.7/59.5	91.1 (1)	0:31	Waiau 7 tripped followed by AES for a total loss of 225 MW (45 + 180 respectively); RDLC (59.7 Hz) & CIDLC (59.5 Hz) activated. UFLS also triggered. (1) MW dropped is inlcuded with UF load shed.
3	03/05/12 05:35	60.035	59.573	59.70	16.80	0:04	Kahe 6 tripped while carrying 71 MW; RDLC activated
4	03/06/12 17:04	59.969	59.661	59.70	3.1 (2)	0:12	Kahe-Halawa 2, Kahe-Halawa 1, Kahe-Waiau and Halawa-Iwilei 138kV transmission lines tripped at 16:56, followed by HPower trip, then H8 trip. Large lightning storm on this day. (2) A total of 157 MW was dropped (DR UF and voltage sensitive equipment) due to the multiple transmission line outages. Frequency initially spiked to 60.677 Hz after the DR, UF and voltage sensitive equipment were dropped, followed by both HPower and Honolulu 8 tripping off-line.
5	03/07/12 21:36	59.964	59.600	59.70	11.3 (3)	0:24	Waiau-Koolau 2 138kV line tripped as well as the A-bus at Waiau PP. (3) Sudden loss of load (~200 MW ..mostly voltage sensitive equipment) caused frequency to spike to 60.923 Hz. HPower tripped almost immediately followed by W8 9 minutes later. DR (RDLC) is included in the ~200 MW of voltage sensitive equipment.
6	03/07/12 21:53	60.008	59.010	59 50	23.90	0:07	After the previous event, AES went unstable and declined in output from 180 MW to about 107 MW at 21:45. AES seemed stable at that point for a little while; unit then declined further and tripped off-line at 21:53. CIDLC was triggered.
7	03/27/12 06:37	60.002	59.446	59.70	18.10	0 02	Kalaeloa CT2 tripped while carrying 95 MW; RDLC activated (14.40 MW), CIDLC activated (3.7 MW)
8	04/14/12 20:50	60.031	59.670	59.70	22.08	0:01	Kalaeloa CT1 tripped while carrying 168 MW; RDLC activated
9	04/21/12 16:52	59.978	59.707	59.70	14.60	0:01	HRRV tripped while carrying ~40 MW; RDLC activated
10	05/08/12 10:09	60.036	59.606	59.70	11.40	0:02	K6 tripped while carrying 55 MW; initially carrying about 104 MW when unit started having problems ...unit was being brought down but unit tripped when it was at 55 MW; RDLC activated

HAWAIIAN ELECTRIC COMPANY, INC.
CURTAILMENT REPORT
DEC 2011 - MAY 2012

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
12/01/11 06:30	0.0	0.67	12/01/11 07:32	0	2.22	KWF	line work on Koolau-Kahuku 46kV line
12/01/11 14:53	0.0	1.53	12/01/11 15:37	4.52	3.48	KWF	line work on Koolau-Kahuku 46kV line (note: data missing from 15:10-15:37)
12/02/11 05:18	0.0	0.00	12/02/11 16:30	0	38.56	KWF	line work on Koolau-Kahuku 46kV line
12/02/11 16:47	0.0	3.84	12/02/11 17:54	0		KWF	line work on Koolau-Kahuku 46kV line
12/04/11 10:35	15.0	14.21	12/04/11 11:00	9.57	0.48	KWF	138kV line work
12/07/11 06:34	0.0	10.81	12/07/11 12:01	0	71.46	KWF	line work on Wahiawa-Waialua 46kV line
12/07/11 16:09	0.0	17.51	12/07/11 18:48	0	32.87	KWF	line work on Wahiawa-Waialua 46kV line
12/09/11 06:13	0.0	15.83	12/09/11 07:42	0	21.95	KWF	line work on Koolau-Kahuku 46kV line
12/09/11 06:03	0.0	14.00	12/09/11 17:25	0	16.26	KWF	line work on Koolau-Kahuku 46kV line
12/13/11 07:20	0.0	5.35	12/13/11 19:13	0	124.93	KWF	line work on Waialua-Kahuku 46kV line
12/14/11 06:19	0.0	2.47	12/14/11 18:08	0	112.03	KWF	work at Helemano Sub
12/15/11 06:53	0.0	2.05	12/15/11 17:35	0	82.98	KWF	work at Helemano Sub
12/16/11 05:37	0.0	1.69	12/16/11 06:56	0	3.25	KWF	line work on Wahiawa-Waialua 46kV line
12/16/11 17:43	0.0	12.40	12/16/11 19:10	0	16.40	KWF	line work on Wahiawa-Waialua 46kV line
12/17/11 05:01	0.0	14.77	12/17/11 07:18	0	38.09	KWF	line work on Koolau-Kahuku 46kV line
12/17/11 09:52	0.0	20.06	12/17/11 11:02	0	20.21	KWF	line work on Koolau-Kahuku 46kV line
12/20/11 06:39	0.0	24.20	12/20/11 16:03	0	210.16	KWF	substation work at Waimea (tsf 1 LTC overhaul)
12/26/11 05:54	15.0	27.02	12/26/11 06:26	14.67	0.04	KWF	curtailed to 15 MW; high frequency
01/04/12 05:22	0.0	0.88	01/04/12 06:22	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/04/12 15:56	0.0	10.22	01/04/12 16:25	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/06/12 05:18	0.0	7.82	01/06/12 16:41	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/09/12 04:54	0.0	4.57	01/09/12 06:05	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/09/12 16:42	0.0	2.15	01/09/12 17:33	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/10/12 05:18	0.0	7.87	01/10/12 06:09	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/10/12 12:31	0.0	4.55	01/10/12 15:16	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/10/12 16:10	0.0	2.14	01/10/12 16:44	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/11/12 04:45	0.0	3.47	01/11/12 05:32	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/11/12 21:00	0.0	0.00	01/11/12 21:16	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/13/12 06:22	0.0	1.49	01/13/12 07:01	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/13/12 16:29	0.0	3.58	01/13/12 17:02	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/18/12 05:18	0.0	3.58	01/18/12 06:03	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/18/12 17:09	0.0	0.53	01/18/12 17:19	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/23/12 07:44	0.0	0.00	01/23/12 16:57	0	*	KWF	work at Waimea Sub
01/24/12 07:40	0.0	0.00	01/24/12 14:24	0	*	KWF	work at Waimea Sub
01/25/12 06:11	0.0	5.56	01/25/12 15:42	0	*	KWF	work at Waimea Sub
01/26/12 09:30	0.0	0.00	01/26/12 16:49	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/27/12 06:12	0.0	0.78	01/27/12 07:07	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/27/12 15:28	0.0	0.18	01/27/12 16:23	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/28/12 05:37	0.0	0.00	01/28/12 13:19	0	*	KWF	line work on Waialua-Kahuku 46kV line
01/30/12 05:25	0.0	15.80	01/30/12 06:17	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/30/12 18:02	0.0	12.84	01/30/12 18:45	0	*	KWF	line work on Koolau-Kahuku 46kV line
01/31/12 08:02	0.0	4.31	01/31/12 08:57	0	*	KWF	line work on Waialua-Kahuku 46kV line
01/31/12 14:16	0.0	5.22	01/31/12 15:03	0	*	KWF	line work on Waialua-Kahuku 46kV line
02/04/12 06:31	0.0	3.40	02/04/12 07:26	0	*	KWF	line work on Waialua-Kahuku 46kV line
02/15/12 07:15	0.0	0.36	02/15/12 08:24	0	*	KWF	line work on Wahiawa-Waialua 46kV line
02/15/12 16:46	0.0	7.05	02/15/12 17:46	0	*	KWF	line work on Wahiawa-Waialua 46kV line
02/24/12 05:12	0.0	4.03	02/24/12 06:03	0	*	KWF	line work on Koolau-Kahuku 46kV line
02/24/12 15:28	0.0	6.13	02/24/12 15:43	0	*	KWF	line work on Koolau-Kahuku 46kV line
02/26/12 09:16	0.0	20.13	02/26/12 09:48	0	*	KWF	line work on Koolau-Kahuku 46kV line
02/27/12 06:08	0.0	11.57	02/27/12 06:39	0	*	KWF	line work on Koolau-Kahuku 46kV line

HAWAIIAN ELECTRIC COMPANY, INC.
CURTAILMENT REPORT
DEC 2011 - MAY 2012

Start Date/Time	Curtailment Set Point	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Estimated MWh of curtailed energy during event (1)	IPP	Reason for Curtailment
02/27/12 16:35	0.0	13.49	02/27/12 16:54	0	*	KWF	line work on Koolau-Kahuku 46kV line
02/28/12 10:03	0.0	4.75	02/28/12 16:14	0	*	KWF	comm work
03/07/12 08:25	0.0	10.84	03/07/12 10:00	0	*	KWF	work at Waialua Sub
03/08/12 00:26	0.0	15.52	03/08/12 01:43	0	*	KWF	line work / switching
03/16/12 06:54	0.0	29.26	03/16/12 08:47	0	*	KWF	line work on Koolau-Kahuku 46kV line
03/16/12 17:54	0.0	19.42	03/16/12 18:26	0	*	KWF	line work on Koolau-Kahuku 46kV line
03/19/12 07:02	0.0	13.67	03/19/12 20:46	0	*	KWF	work at Wahiawa Sub
03/20/12 06:25	0.0	1.79	03/20/12 20:29	0	*	KWF	work at Waialua Sub
03/27/12 03:50	5.0	2.41	03/27/12 04:02	3.63	*	KWF	per customer's request; charge battery
03/27/12 05:11	5.0	5.43			*	KWF	per customer's request; charge battery
03/27/12 07:09	0.0	3.13	03/29/12 15:10	0	*	KWF	line work on Wahiawa-Waialua 46kV line
04/03/12 06:38	0.0	6.57	04/03/12 07:56	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/03/12 16:00	0.0	8.19	04/03/12 16:18	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/05/12 16:12	0.0	12.93	04/05/12 16:53	4.86	*	KWF	per customer's request
04/10/12 09:40	0.0	12.18	04/10/12 10:23	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/10/12 18:43	0.0	13.16	04/10/12 19:49	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/11/12 06:43	0.0	11.20	04/11/12 08:04	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/11/12 15:30	0.0	14.09	04/11/12 17:26	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/18/12 06:22	0.0	24.48	04/18/12 07:11	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/18/12 15:17	0.0	19.87	04/18/12 16:20	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/20/12 05:26	0.0	8.98	04/20/12 05:50	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/20/12 14:50	0.0	8.20	04/20/12 15:30	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/23/12 08:03	5.0	29.09	04/23/12 08:15	4.46	*	KWF	curtailment setpoint 5 MW but customer to 0 MW; per customer's request
04/24/12 03:48	20.0	25.66	04/24/12 07:58	19.96	*	KWF	curtailed down to 20 MW; per customer's request
04/26/12 06:35	0.0	9.14	04/26/12 08:11	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/26/12 15:00	0.0	6.10	04/26/12 16:05	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/27/12 06:48	0.0	6.02	04/27/12 07:07	0	*	KWF	line work on Koolau-Kahuku 46kV line
04/27/12 15:19	0.0	12.39	04/27/12 16:03	0	*	KWF	line work on Koolau-Kahuku 46kV line
05/06/12 06:44	0.0	16.40	05/06/12 12:47	0	*	KWF	line outage
05/07/12 07:25	0.0	14.31	05/08/12 15:43	0	*	KWF	install new poles for Kawailoa Wind Farm
05/08/12 08:32	0.0	7.62	05/08/12 19:26	0	*	KWF	install new poles for Kawailoa Wind Farm
05/09/12 05:38	0.0	15.34	05/09/12 18:52	0	*	KWF	install new poles for Kawailoa Wind Farm
05/10/12 05:39	0.0	5.39	05/10/12 20:37	0	*	KWF	install new poles for Kawailoa Wind Farm
05/11/12 05:49	0.0	6.44	05/11/12 15.24	0	*	KWF	install new poles for Kawailoa Wind Farm
05/14/12 07:29	0.0	0.00	05/14/12 16:29	0	*	KWF	install new poles for Kawailoa Wind Farm
05/15/12 07:36	0.0	0.00	05/15/12 17:51	0	*	KWF	install new poles for Kawailoa Wind Farm
05/16/12 06:54	0.0	0.00	05/16/12 16:01	0	*	KWF	work at Waialua Sub
05/21/12 06:05	0.0	9.98	05/21/12 07:37	0	*	KWF	pole upgrades on Koolau-Kahuku 46kV line
05/21/12 16:42	0.0	18.15	05/21/12 17:11	0	*	KWF	pole upgrades on Koolau-Kahuku 46kV line
05/24/12 06:58	0.0	28.14	05/24/12 16:21	0	*	KWF	upgrade steel poles for Kawailoa Wind Farm
05/29/12 06:59	0.0	29.93	05/29/12 20:08	0	*	KWF	install new poles for Kawailoa Wind Farm
05/30/12 08:50	0.0	29.12	05/30/12 09:47	0	*	KWF	line work on Koolau-Kahuku 46kV line
05/30/12 11:38	0.0	22.40	05/30/12 12:14	0	*	KWF	line work on Koolau-Kahuku 46kV line
05/31/12 07:15	0.0	10.94	05/31/12 07:30	0	*	KWF	line work on Koolau-Kahuku 46kV line
05/31/12 15:18	0.0	12.87	05/31/12 18:46	0	*	KWF	line work on Koolau-Kahuku 46kV line

KWF = Kahuku Wind Farm
(1) The estimted MWh of energy curtailed during the event is supplied by Kahuku Wind Farm, and HECO does not make any representations as to its accuracy.
* Data has not been provided by KWF.

Kaheawa Curtailment Report December 2011

Start Date/Time	Duration	Estimated curtailed energy during event (MWh)	Peak MW Curtailed	Reason for curtailment
12/3/2011 0:18	5:57	0.45	1.33	excess energy
12/3/2011 12:27	16:59	70.94	24.61	excess energy
12/5/2011 0:19	5:21	53.89	18.12	excess energy
12/6/2011 0:25	4:47	72.16	24.46	excess energy
12/7/2011 0:01	5:47	23.92	28.94	excess energy
12/7/2011 23:20	6:24	187.37	29.99	excess energy
12/8/2011 23:19	6:41	202.89	30	excess energy
12/9/2011 23:24	7:46	215.36	28.5	excess energy
12/10/2011 23:44	8:57	233.15	28.5	excess energy and MECO maintenance
12/11/2011 8:10	5:49	867.38	30	excess energy and MECO maintenance
12/14/2011 3:08	1:39	35.27	23.81	excess energy
12/16/2011 23:23	7:45	225.15	30	excess energy
12/17/2011 23:37	7:39	222.34	28.5	excess energy
12/18/2011 23:41	5:56	166.5	27	excess energy
12/19/2011 22:50	7:08	193	27	excess energy
12/20/2011 23:46	6:22	167	28.5	excess energy
12/21/2011 23:22	6:46	194.32	28.5	excess energy
12/22/2011 23:28	6:46	208.22	30	excess energy
12/24/2011 0:14	6:28	189.49	28.5	excess energy
12/25/2011 0:18	6:14	173.84	27	excess energy
12/25/2011 23:52	6:23	180.15	28.5	excess energy
12/26/2011 23:53	6:15	180	28.5	excess energy
12/27/2011 23:49	6:07	161	27	excess energy
12/28/2011 23:59	6:00	169.54	28.5	excess energy
12/30/2011 1:09	3:00	61.06	25.24	excess energy
	Total:	4454.39		

Note: During curtailment events set point for Kaheawa is adjusted to ensure maximum energy contribution. "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind. Makila Hydro receives a curtailment signal for excess energy at approximately the same start and stop times as Kaheawa (if Makila Hydro is online.) Estimated curtailed energy during curtailment events is not available for Makila Hydro. Makila Hydro's actual hours of operation are typically manually controlled by the project.

Kaheawa Curtailment Report January 2012

Start Date/Time	Duration	Estimated curtailed energy during event (MWh)	Peak MW Curtailed	Reason for curtailment
1/4/2012 1:28	3:33	54.5	20.0	excess energy
1/5/2012 0:46	4:51	115.5	27.2	excess energy
1/5/2012 23:45	6:06	155.1	30.3	excess energy
1/7/2012 0:50	2:53	21.7	17.3	excess energy
1/9/2012 0:06	5:21	103.4	23.4	excess energy
1/10/2012 1:23	4:01	78.2	23.2	excess energy
1/11/2012 0:27	5:07	78.4	22.7	excess energy
1/13/2012 2:32	2:07	23.1	11.8	excess energy
1/15/2012 3:11	0:57	6.9	8.9	excess energy
1/16/2012 1:49	2:51	46.4	15.9	excess energy
1/17/2012 0:50	4:09	55.5	19.7	excess energy
1/18/2012 2:11	2:43	41.9	17.5	excess energy
1/20/2012 0:43	4:20	57.7	20.3	excess energy
1/21/2012 1:25	4:41	112.1	28.0	excess energy
1/21/2012 23:41	7:04	215.8	30.4	excess energy
1/28/2012 0:40	4:45	145.0	30.3	excess energy
1/29/2012 0:40	5:04	140.7	27.3	excess energy
1/30/2012 0:10	5:20	131.9	25.7	excess energy
1/31/2012 4:35	0:50	20.5	26.0	excess energy
	Total:	1604.0		

Notes:
- During curtailment events set point for Kaheawa is adjusted to ensure maximum energy contribution. "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind.
- Makila Hydro receives a curtailment signal for excess energy at approximately the same start and stop times as Kaheawa (if Makila Hydro is online.) Estimated curtailed energy during curtailment events is not available for Makila Hydro.
- Makila Hydro's actual hours of operation are typically manually controlled by the project.

Kaheawa Curtailment Report February 2012

Start Date/Time	Duration	Estimated curtailed energy during event (MWh)	Peak MW Curtailed	Reason for curtailment
2/2/2012 0:43	4:29	139.4	30.29	excess energy
2/7/2012 1:22	3:50	100.76	29.37	excess energy
2/9/2012 0:47	4:08	64.21	18.82	excess energy
2/10/2012 0:18	4:44	106.59	27	excess energy
2/12/2012 2:10	2:42	37.63	21.42	excess energy
2/13/2012 2:32	1:59	31.72	20.14	excess energy
2/16/2012 1:33	3:47	91.98	28.53	excess energy
2/17/2012 1:02	4:21	117.24	28.76	excess energy
2/18/2012 0:27	5:12	176.7	30.33	excess energy
2/18/2012 23:50	6:34	206.82	30.36	excess energy
2/20/2012 0:41	5:20	130.75	29.84	excess energy
2/21/2012 3:00	2:20	56.52	26.54	excess energy
2/21/2012 23:32	4:37	31.99	30.28	excess energy
2/23/2012 0:04	5:26	132.88	29.94	excess energy
2/27/2012 1:03	2:06	50.98	29.78	excess energy
2/28/2012 8:18	8:02	4.75	1.54	KWP transmission line maintenance
	Total:	1480.92		

Notes:
- During curtailment events set point for Kaheawa is adjusted to ensure maximum energy contribution. "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind.
- Makila Hydro receives a curtailment signal for excess energy at approximately the same start and stop times as Kaheawa (if Makila Hydro is online.) Estimated curtailed energy during curtailment events is not available for Makila Hydro.
- Makila Hydro's actual hours of operation are typically manually controlled by the project.

Kaheawa Curtailment Report March 2012

Start Date/Time	Duration	Estimated curtailed energy during event (MWh)	Peak MW Curtailed	Reason for curtailment
3/7/2012 0:47	0:33	9.3	17.3	excess energy
3/8/2012 0:17	5:04	72.9	21.6	excess energy
3/8/2012 23:21	4:42	70.9	27.9	excess energy
3/10/2012 0:00	7:02	168.8	30.3	excess energy
3/10/2012 23:31	6:59	213.2	30.4	excess energy
3/11/2012 23:24	5:56	157.9	27.3	excess energy
3/12/2012 23:09	6:58	189.5	27.3	excess energy
3/13/2012 23:20	6:50	191.8	30.1	excess energy
3/14/2012 23:08	7:37	216.1	28.7	excess energy
3/15/2012 23:04	8:33	260.9	30.4	excess energy
3/16/2012 23:47	6:29	188.0	30.2	excess energy
3/18/2012 1:16	3:54	34.6	17.6	excess energy
3/20/2012 23:26	6:32	179.8	30.1	excess energy
3/21/2012 23:16	6:41	206.2	30.3	excess energy
3/22/2012 23:23	6:34	197.8	30.4	excess energy
3/23/2012 23:34	6:58	191.9	30.3	excess energy
3/24/2012 23:40	7:01	206.7	29.9	excess energy
3/25/2012 23:16	6:50	192.7	29.8	excess energy
3/26/2012 23:20	6:40	186.7	28.6	excess energy
3/27/2012 23:10	6:49	188.1	29.8	excess energy
3/28/2012 23:46	6:06	116.9	24.9	excess energy
3/29/2012 23:33	6:21	180.9	28.8	excess energy
3/31/2012 0:55	6:08	175.5	30.3	excess energy
	Total:	3796.9		

Notes:
- During curtailment events set point for Kaheawa is adjusted to ensure maximum energy contribution. "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind.
- AAAAA Rent-A-Space Maui LTD and Makila Hydro receive curtailment signals for excess energy at approximately the same start and stop times as Kaheawa (if Makila Hydro is online.) Estimated curtailed energy during curtailment events is not available for Makila Hydro or AAAAA Rent-A-Space Maui LTD.
- Makila Hydro's actual hours of operation are typically manually controlled by the project.
- AAAAA Rent-A-Space Maui LTD installed curtailment controls in late February and started to be curtailed by the Maui System Operator in March. AAAAA Rent-A-Space Maui LTD was working on their curtailment control through May and was offline for periods due to additional programming work, communication failures, etc... - those events are not recorded above.

Kaheawa Curtailment Report April 2012

Start Date/Time	Duration	Estimated curtailed energy during event (MWh)	Peak MW Curtailed	Reason for curtailment
4/3/2012 1:46	3:34	67.7	22.4	excess energy
4/5/2012 3:14	1:53	36.6	17.8	excess energy
4/6/2012 0:08	6:07	141.1	27.9	excess energy
4/7/2012 0:21	5:35	117.1	30.1	excess energy
4/8/2012 0:06	6:00	179.8	30.3	excess energy
4/8/2012 23:41	6:08	180.9	30.3	excess energy
4/9/2012 23:20	6:37	176.3	28.1	excess energy
4/10/2012 23:21	5:50	121.7	27.1	excess energy
4/15/2012 2:33	3:08	86.0	27.7	excess energy
4/16/2012 0:17	5:01	148.4	28.8	excess energy
4/17/2012 1:20	3:03	100.9	30.3	excess energy
4/18/2012 1:00	3:40	110.3	28.8	excess energy
4/19/2012 1:08	3:42	119.7	30.3	excess energy
4/20/2012 1:19	3:57	88.7	26.3	excess energy
4/21/2012 3:08	1:51	56.9	27.7	excess energy
4/22/2012 1:30	3:40	110.3	28.8	excess energy
4/23/2012 1:16	4:52	143.9	28.8	excess energy and high wind conditions
4/23/2012 22:54	7:12	190.5	27.3	excess energy
4/24/2012 22:54	8:39	206.1	30.3	excess energy & breaker operations
4/29/2012 2:48	3:45	83.1	29.6	excess energy
4/30/2012 0:01	5:23	162.3	28.8	excess energy and high wind conditions
4/30/2012 23:43	4:57	107.1	30.2	excess energy
	Total:	2735.4		

Notes:
- During curtailment events set point for Kaheawa is adjusted to ensure maximum energy contribution. "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind.
- AAAAA Rent-A-Space Maui LTD and Makila Hydro receive curtailment signals for excess energy at approximately the same start and stop times as Kaheawa (if Makila Hydro is online.) Estimated curtailed energy during curtailment events is not available for Makila Hydro or AAAAA Rent-A-Space Maui LTD.
- Makila Hydro's actual hours of operation are typically manually controlled by the project.
- AAAAA Rent-A-Space Maui LTD installed curtailment controls in late February and started to be curtailed by the Maui System Operator in March. AAAAA Rent-A-Space Maui LTD was working on their curtailment control through May and was offline for periods due to additional programming work, communication failures, etc... - those events are not recorded above.
- AAAAA Rent-A-Space Maui LTD was curtailed on 4/23 due to operator error. MECO compensated AAAAA Rent-A-Space Maui LTD for the estimated production for the duration of the erroneous curtailment.

Kaheawa Curtailment Report May 2012

Start Date/Time	Duration	Estimated curtailed energy during event (MWh)	Peak MW Curtailed	Reason for curtailment
5/2/2012 0:38	4:53	108.8	30.3	excess energy
5/7/2012 0:33	4:34	139.5	30.3	excess energy
5/8/2012 0:42	4:33	138.5	30.3	excess energy
5/9/2012 0:33	4:36	134.0	30.1	excess energy
5/10/2012 0:51	4:16	111.8	29.7	excess energy
5/11/2012 0:36	4:28	118.1	26.2	excess energy
5/12/2012 0:50	4:34	116.0	28.3	excess energy
5/16/2012 2:13	1:15	23.6	23.8	excess energy
5/17/2012 0:53	4:11	116.5	27.3	excess energy
5/19/2012 1:11	4:31	91.2	26.2	excess energy
5/20/2012 0:31	4:59	118.3	27.5	excess energy
5/21/2012 1:13	4:02	88.7	24.6	excess energy
5/22/2012 0:27	4:48	148.3	30.2	excess energy
5/23/2012 0:45	3:23	111.3	30.4	excess energy and high wind conditions
5/25/2012 1:24	3:11	95.4	27.7	excess energy
5/27/2012 2:02	2:53	72.2	24.3	excess energy
5/28/2012 0:12	5:36	146.5	30.3	excess energy and high wind conditions
5/29/2012 0:50	16:46	167.7	30.3	excess energy, and high wind conditions, & KWP substation maintenance
5/30/2012 0:50	16:51	154.3	27.3	excess energy, high wind conditions & KWP substation maintenance
5/31/2012 0:51	16:59	123.8	26.7	excess energy & KWP substation maintenance
	Total:	2324.6		

Notes:
- During curtailment events set point for Kaheawa is adjusted to ensure maximum energy contribution. "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind.
- AAAAA Rent-A-Space Maui LTD and Makila Hydro receive curtailment signals for excess energy at approximately the same start and stop times as Kaheawa (if Makila Hydro is online.) Estimated curtailed energy during curtailment events is not available for Makila Hydro or AAAAA Rent-A-Space Maui LTD.
- Makila Hydro's actual hours of operation are typically manually controlled by the project.
- AAAAA Rent-A-Space Maui LTD installed curtailment controls in late February and started to be curtailed by the Maui System Operator in March. AAAAA Rent-A-Space Maui LTD was working on their curtailment control through May and was offline for periods due to additional programming work, communication failures, etc... - those events are not recorded above.

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
12/01/11 23:55	19.2 MW	12/02/11 05:50	8.6 MW	Tawhiri Group B curtailed - excess energy
12/02/11 03:03	1.8 MW	12/02/11 05:12	0.2 MW	HRD curtailed - excess energy
12/02/11 03:02	24.2 MW	12/02/11 04:49	22.2 MW	PGV curtailed - excess energy
12/02/11 23:16	19.7 MW	12/03/11 06:48	19.8 MW	Tawhiri Group B curtailed - excess energy
12/03/11 00:09	4.5 MW	12/03/11 05:54	6.5 MW	HRD curtailed - excess energy
12/03/11 00:30	27.2 MW	12/03/11 05:10	22.2 MW	PGV curtailed - excess energy
12/03/11 01:25	5.5 MW	12/03/11 05:00	1.0 MW	Wailuku curtailed - excess energy
12/03/11 22:59	19.7 MW	12/04/11 06:52	19.3 MW	Tawhiri Group B curtailed - excess energy
12/03/11 23:55	6.7 MW	12/04/11 06:04	5.0 MW	HRD curtailed - excess energy
12/04/11 00:16	27.0 MW	12/04/11 05:22	22.2 MW	PGV curtailed - excess energy
12/04/11 01:50	2.9 MW	12/04/11 05:20	0.9 MW	Wailuku curtailed - excess energy
12/04/11 23:06	19.8 MW	12/05/11 05:31	15.7 MW	Tawhiri Group B curtailed - excess energy
12/05/11 00:11	4.1 MW	12/05/11 05:08	1.2 MW	HRD curtailed - excess energy
12/05/11 00:56	26.4 MW	12/05/11 04:14	22.0 MW	PGV curtailed - excess energy
12/05/11 23:33	19.7 MW	12/06/11 05:12	16.6 MW	Tawhiri Group B curtailed - excess energy
12/06/11 00:35	6.6 MW	12/06/11 04:25	3.5 MW	HRD curtailed - excess energy
12/06/11 23:45	18.9 MW	12/07/11 05:14	16.8 MW	Tawhiri Group B curtailed - excess energy
12/07/11 01:08	2.0 MW	12/07/11 04:10	0.0 MW	HRD curtailed - excess energy
12/07/11 01:44	27.1 MW	12/07/11 04:03	24.3 MW	PGV curtailed - excess energy
12/07/11 05:29	15.6 MW	12/07/11 05:59	15.7 MW	Tawhiri Total curtailed - emergency
12/07/11 23:07	19.6 MW	12/08/11 04:59	4.8 MW	Tawhiri Group B curtailed - excess energy
12/08/11 00:05	4.1 MW	12/08/11 04:33	1.6 MW	HRD curtailed - excess energy
12/08/11 00:56	26.6 MW	12/08/11 04:06	22.2 MW	PGV curtailed - excess energy
12/08/11 22:31	19.7 MW	12/08/11 22:52	9.8 MW	Tawhiri Total curtailed - emergency
12/08/11 23:02	19.8 MW	12/09/11 05:35	18.9 MW	Tawhiri Group B curtailed - excess energy
12/09/11 00:20	7.1 MW	12/09/11 05:03	4.7 MW	HRD curtailed - excess energy
12/09/11 01:20	27.1 MW	12/09/11 04:11	23.2 MW	PGV curtailed - excess energy
12/10/11 00:20	9.3 MW	12/10/11 04:47	0.7 MW	Tawhiri Group B curtailed - excess energy
12/10/11 01:02	3.8 MW	12/10/11 04:32	1.3 MW	HRD curtailed - excess energy
12/10/11 22:52	18.8 MW	12/11/11 06:27	0.0 MW	Tawhiri Group B curtailed - excess energy
12/10/11 23:35	7.6 MW	12/11/11 05:36	8.1 MW	HRD curtailed - excess energy
12/11/11 00:28	26.9 MW	12/11/11 04:32	24.5 MW	PGV curtailed - excess energy
12/11/11 01:03	11.2 MW	12/11/11 04:05	4.9 MW	Wailuku curtailed - excess energy
12/12/11 00:29	2.5 MW	12/12/11 05:14	8.7 MW	Tawhiri Group B curtailed - excess energy
12/12/11 00:32	7.5 MW	12/12/11 05:04	7.8 MW	HRD curtailed - excess energy
12/12/11 01:35	26.6 MW	12/12/11 04:28	22.0 MW	PGV curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
12/12/11 23:39	13.0 MW	12/13/11 04:34	0.2 MW	Tawhiri Group B curtailed - excess energy
12/12/11 23:56	0.0 MW	12/13/11 04:27	0.0 MW	HRD curtailed - excess energy
12/13/11 00:23	27.1 MW	12/13/11 04:10	21.7 MW	PGV curtailed - excess energy
12/13/11 01:49	11.2 MW	12/13/11 03:51	5.8 MW	Wailuku curtailed - excess energy
12/13/11 22:38	19.8 MW	12/14/11 06:02	18.4 MW	Tawhiri Group B curtailed - excess energy
12/13/11 23:40	0.6 MW	12/14/11 05:12	0.3 MW	HRD curtailed - excess energy
12/13/11 23:45	27.5 MW	12/14/11 04:53	21.9 MW	PGV curtailed - excess energy
12/14/11 00:13	10.6 MW	12/14/11 04:39	1.0 MW	Wailuku curtailed - excess energy
12/14/11 22:53	19.8 MW	12/15/11 05:59	15.9 MW	Tawhiri Group B curtailed - excess energy
12/14/11 23:52	1.1 MW	12/15/11 05:33	2.5 MW	HRD curtailed - excess energy
12/15/11 00:02	26.8 MW	12/15/11 05:06	21.9 MW	PGV curtailed - excess energy
12/15/11 00:35	11.2 MW	12/15/11 04:32	0.9 MW	Wailuku curtailed - excess energy
12/15/11 09:32	18.6 MW	12/15/11 10:04	15.9 MW	Tawhiri Total curtailed - reclose 8600 line
12/15/11 23:38	11.5 MW	12/16/11 06:02	14.0 MW	Tawhiri Group B curtailed - excess energy
12/16/11 00:01	1.2 MW	12/16/11 05:39	2.3 MW	HRD curtailed - excess energy
12/16/11 00:03	26.7 MW	12/16/11 05:11	22.0 MW	PGV curtailed - excess energy
12/16/11 00:30	11.2 MW	12/16/11 04:42	2.8 MW	Wailuku curtailed - excess energy
12/16/11 23:25	14.2 MW	12/17/11 06:45	15.1 MW	Tawhiri Group B curtailed - excess energy
12/17/11 00:00	4.8 MW	12/17/11 05:46	2.0 MW	HRD curtailed - excess energy
12/17/11 00:25	26.9 MW	12/17/11 05:29	21.9 MW	PGV curtailed - excess energy
12/17/11 01:30	7.8 MW	12/17/11 05:03	1.0 MW	Wailuku curtailed - excess energy
12/17/11 09:16	5.8 MW	12/17/11 11:12	6.9 MW	Wailuku curtailed - curtail controls testing
12/17/11 22:49	19.8 MW	12/18/11 07:12	15.7 MW	Tawhiri Group B curtailed - excess energy
12/17/11 23:44	7.6 MW	12/18/11 06:16	7.6 MW	HRD curtailed - excess energy
12/18/11 00:34	27.3 MW	12/18/11 05:39	22.1 MW	PGV curtailed - excess energy
12/18/11 01:25	6.0 MW	12/18/11 04:50	0.9 MW	Wailuku curtailed - excess energy
12/18/11 22:44	19.2 MW	12/19/11 06:30	19.5 MW	Tawhiri Group B curtailed - excess energy
12/18/11 23:42	7.6 MW	12/19/11 05:33	6.0 MW	HRD curtailed - excess energy
12/19/11 00:19	26.9 MW	12/19/11 04:57	22.0 MW	PGV curtailed - excess energy
12/19/11 00:55	6.8 MW	12/19/11 04:35	1.0 MW	Wailuku curtailed - excess energy
12/19/11 22:59	19.3 MW	12/20/11 06:20	17.9 MW	Tawhiri Group B curtailed - excess energy
12/19/11 23:46	6.5 MW	12/20/11 05:41	5.3 MW	HRD curtailed - excess energy
12/20/11 00:12	27.4 MW	12/20/11 05:12	22.0 MW	PGV curtailed - excess energy
12/20/11 00:42	9.6 MW	12/20/11 04:45	1.0 MW	Wailuku curtailed - excess energy
12/20/11 23:26	13.3 MW	12/21/11 06:18	13.8 MW	Tawhiri Group B curtailed - excess energy
12/20/11 23:38	6.5 MW	12/21/11 05:45	6.0 MW	HRD curtailed - excess energy
12/21/11 00:04	27.3 MW	12/21/11 05:02	22.1 MW	PGV curtailed - excess energy
12/21/11 00:33	11.2 MW	12/21/11 04:38	1.0 MW	Wailuku curtailed - excess energy
12/21/11 00:47	6.7 MW	12/21/11 01:01	6.6 MW	Tawhiri Group A curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
12/21/11 22:59	18.6 MW	12/22/11 06:10	7.7 MW	Tawhiri Group B curtailed - excess energy
12/21/11 23:49	7.6 MW	12/22/11 05:42	3.2 MW	HRD curtailed - excess energy
12/22/11 00:20	27.3 MW	12/22/11 05:05	21.9 MW	PGV curtailed - excess energy
12/22/11 00:45	11.2 MW	12/22/11 04:46	0.9 MW	Wailuku curtailed - excess energy
12/22/11 11:26	17.2 MW	12/22/11 14:50	16.7 MW	Tawhiri - High wind curtail at Tawhiri request.
12/22/11 23:16	17.4 MW	12/23/11 06:33	17.1 MW	Tawhiri Group B curtailed - excess energy
12/23/11 00:10	2.2 MW	12/23/11 05:53	5.6 MW	HRD curtailed - excess energy
12/23/11 00:15	27.1 MW	12/23/11 05:05	22.4 MW	PGV curtailed - excess energy
12/23/11 00:43	11.3 MW	12/23/11 05:02	6.2 MW	Wailuku curtailed - excess energy
12/23/11 22:56	19.8 MW	12/24/11 07:27	18.6 MW	Tawhiri Group B curtailed - excess energy
12/23/11 23:45	6.8 MW	12/24/11 06:45	6.5 MW	HRD curtailed - excess energy
12/24/11 00:17	27.9 MW	12/24/11 05:46	22.4 MW	PGV curtailed - excess energy
12/24/11 01:46	11.2 MW	12/24/11 05:00	10.2 MW	Wailuku curtailed - excess energy
12/24/11 22:56	18.6 MW	12/25/11 08:06	16.2 MW	Tawhiri Group B curtailed - excess energy
12/24/11 23:46	7.6 MW	12/25/11 07:18	6.8 MW	HRD curtailed - excess energy
12/25/11 00:20	27.0 MW	12/25/11 06:22	22.0 MW	PGV curtailed - excess energy
12/25/11 00:52	11.3 MW	12/25/11 05:06	5.7 MW	Wailuku curtailed - excess energy
12/25/11 11:16	14.5 MW	12/25/11 13:58	15.5 MW	Tawhiri - High wind curtail at Tawhiri request.
12/25/11 22:46	18.5 MW	12/26/11 07:46	17.8 MW	Tawhiri Group B curtailed - excess energy
12/25/11 23:20	8.1 MW	12/26/11 06:46	8.2 MW	HRD curtailed - excess energy
12/25/11 23:49	27.4 MW	12/26/11 05:19	22.3 MW	PGV curtailed - excess energy
12/26/11 00:41	10.5 MW	12/26/11 05:03	5.7 MW	Wailuku curtailed - excess energy
12/26/11 22:42	19.8 MW	12/27/11 07:02	18.6 MW	Tawhiri Group B curtailed - excess energy
12/26/11 23:30	6.5 MW	12/27/11 06:02	8.2 MW	HRD curtailed - excess energy
12/27/11 00:04	27.5 MW	12/27/11 05:00	22.2 MW	PGV curtailed - excess energy
12/27/11 00:27	11.2 MW	12/27/11 04:00	4.3 MW	Wailuku curtailed - excess energy
12/27/11 09:54	18.5 MW	12/27/11 11:32	17.7 MW	Tawhiri - High wind curtail at Tawhiri request.
12/27/11 23:07	19.6 MW	12/28/11 06:24	18.8 MW	Tawhiri Group B curtailed - excess energy
12/28/11 00:06	7.0 MW	12/28/11 05:46	6.4 MW	HRD curtailed - excess energy
12/28/11 00:36	10.4 MW	12/28/11 05:07	4.8 MW	Wailuku curtailed - excess energy
12/28/11 22:48	19.6 MW	12/29/11 06:52	18.9 MW	Tawhiri Group B curtailed - excess energy
12/28/11 23:37	6.7 MW	12/29/11 06:18	8.3 MW	HRD curtailed - excess energy
12/29/11 00:08	27.1 MW	12/29/11 05:12	22.1 MW	PGV curtailed - excess energy
12/29/11 00:33	10.7 MW	12/29/11 04:57	5.6 MW	Wailuku curtailed - excess energy
12/29/11 06:55	18.8 MW	12/29/11 10:12	17.7 MW	Tawhiri - High wind curtail at Tawhiri request.
12/30/11 00:02	7.9 MW	12/30/11 06:00	8.0 MW	Tawhiri Group B curtailed - excess energy
12/30/11 00:46	3.1 MW	12/30/11 05:35	1.3 MW	HRD curtailed - excess energy
12/30/11 00:53	27.0 MW	12/30/11 05:06	22.2 MW	PGV curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
12/30/11 01:56	7.6 MW	12/30/11 04:44	5.7 MW	Wailuku curtailed - excess energy
12/31/11 00:25	12.0 MW	12/31/11 05:26	1.4 MW	Tawhiri Group B curtailed - excess energy
12/31/11 01:40	0.0 MW	12/31/11 05:20	0.0 MW	HRD curtailed - excess energy
12/31/11 01:42	26.2 MW	12/31/11 05:02	22.6 MW	PGV curtailed - excess energy
01/01/12 02:41	3.9 MW	01/01/12 05:55	5.1 MW	Tawhiri Group B curtailed - excess energy
01/01/12 02:42	2.5 MW	01/01/12 05:20	0.0 MW	HRD curtailed - excess energy
01/01/12 03:08	27.0 MW	01/01/12 05:12	22.0 MW	PGV curtailed - excess energy
01/01/12 23:42	6.7 MW	01/02/12 06:39	17.0 MW	Tawhiri Group B curtailed - excess energy
01/02/12 00:39	0.0 MW	01/02/12 05:15	0.0 MW	HRD curtailed - excess energy
01/02/12 00:42	27.0 MW	01/02/12 05:01	22.0 MW	PGV curtailed - excess energy
01/02/12 02:11	3.8 MW	01/02/12 04:22	3.8 MW	Wailuku curtailed - excess energy
01/02/12 23:37	3.2 MW	01/03/12 04:43	0.5 MW	Tawhiri Group B curtailed - excess energy
01/03/12 00:04	0.0 MW	01/03/12 04:17	0.0 MW	HRD curtailed - excess energy
01/03/12 00:16	26.0 MW	01/03/12 04:12	21.9 MW	PGV curtailed - excess energy
01/03/12 23:19	19.1 MW	01/04/12 05:38	9.0 MW	Tawhiri Group B curtailed - excess energy
01/04/12 00:15	6.0 MW	01/04/12 04:58	3.6 MW	HRD curtailed - excess energy
01/04/12 00:55	27.1 MW	01/04/12 04:06	22.1 MW	PGV curtailed - excess energy
01/04/12 02:56	2.6 MW	01/04/12 03:43	2.6 MW	Wailuku curtailed - excess energy
01/04/12 23:24	19.5 MW	01/05/12 05:54	13.5 MW	Tawhiri Group B curtailed - excess energy
01/05/12 00:25	6.4 MW	01/05/12 05:25	6.0 MW	HRD curtailed - excess energy
01/05/12 00:44	28.7 MW	01/05/12 04:13	21.9 MW	PGV curtailed - excess energy
01/05/12 23:12	19.3 MW	01/06/12 06:00	17.2 MW	Tawhiri Group B curtailed - excess energy
01/05/12 23:48	7.1 MW	01/06/12 05:05	7.1 MW	HRD curtailed - excess energy
01/06/12 00:24	26.9 MW	01/06/12 03:53	22.2 MW	PGV curtailed - excess energy
01/07/12 00:23	10.5 MW	01/07/12 06:05	8.5 MW	Tawhiri Group B curtailed - excess energy
01/07/12 00:56	1.6 MW	01/07/12 05:29	1.9 MW	HRD curtailed - excess energy
01/07/12 01:07	27.2 MW	01/07/12 04:55	22.4 MW	PGV curtailed - excess energy
01/08/12 00:02	12.9 MW	01/08/12 06:15	13.1 MW	Tawhiri Group B curtailed - excess energy
01/08/12 01:30	0.9 MW	01/08/12 05:16	0.2 MW	HRD curtailed - excess energy
01/08/12 01:52	27.0 MW	01/08/12 05:02	22.2 MW	PGV curtailed - excess energy
01/09/12 00:01	10.0 MW	01/09/12 05:08	6.8 MW	Tawhiri Group B curtailed - excess energy
01/09/12 00:29	0.4 MW	01/09/12 04:42	2.6 MW	HRD curtailed - excess energy
01/09/12 00:34	26.8 MW	01/09/12 04:11	22.0 MW	PGV curtailed - excess energy
01/09/12 23:22	19.8 MW	01/10/12 05:05	1.7 MW	Tawhiri Group B curtailed - excess energy
01/10/12 00:13	2.7 MW	01/10/12 04:55	0.5 MW	HRD curtailed - excess energy
01/10/12 01:04	27.6 MW	01/10/12 04:06	22.0 MW	PGV curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
01/11/12 00:51	6.3 MW	01/11/12 05:28	12.4 MW	Tawhiri Group B curtailed - excess energy
01/11/12 01:27	2.5 MW	01/11/12 05:02	2.9 MW	HRD curtailed - excess energy
01/11/12 23:39	17.6 MW	01/12/12 05:46	17.2 MW	Tawhiri Group B curtailed - excess energy
01/12/12 01:15	0.0 MW	01/12/12 04:54	0.0 MW	HRD curtailed - excess energy
01/12/12 01:25	27.0 MW	01/12/12 04:44	23.1 MW	PGV curtailed - excess energy
01/14/12 23:55	16.7 MW	01/15/12 06:01	9.3 MW	Tawhiri Group B curtailed - excess energy
01/15/12 01:15	1.2 MW	01/15/12 05:21	0.0 MW	HRD curtailed - excess energy
01/15/12 01:24	27.0 MW	01/15/12 04:58	24.4 MW	PGV curtailed - excess energy
01/15/12 07:13	10.4 MW	01/15/12 07:21	8.8 MW	Tawhiri Total curtailed - reclose 9600 line
01/16/12 01:59	3.0 MW	01/16/12 04:36	3.1 MW	Tawhiri Group B curtailed - excess energy
01/17/12 00:24	15.6 MW	01/17/12 04:55	5.9 MW	Tawhiri Group B curtailed - excess energy
01/18/12 00:55	12.2 MW	01/18/12 05:09	3.4 MW	Tawhiri Group B curtailed - excess energy
01/19/12 01:05	7.1 MW	01/19/12 04:30	5.6 MW	Tawhiri Group B curtailed - excess energy
01/20/12 00:11	6.7 MW	01/20/12 05:27	13.1 MW	Tawhiri Group B curtailed - excess energy
01/20/12 00:40	6.4 MW	01/20/12 05:10	4.0 MW	HRD curtailed - excess energy
01/20/12 01:37	27.0 MW	01/20/12 04:11	22.0 MW	PGV curtailed - excess energy
01/20/12 23:42	19.7 MW	01/21/12 06:32	18.7 MW	Tawhiri Group B curtailed - excess energy
01/21/12 00:42	6.7 MW	01/21/12 05:22	0.0 MW	HRD curtailed - excess energy
01/21/12 01:41	27.0 MW	01/21/12 05:05	24.0 MW	PGV curtailed - excess energy
01/21/12 23:18	19.6 MW	01/22/12 07:32	19.8 MW	Tawhiri Group B curtailed - excess energy
01/22/12 00:29	6.7 MW	01/22/12 06:11	6.3 MW	HRD curtailed - excess energy
01/22/12 02:01	26.5 MW	01/22/12 05:09	21.8 MW	PGV curtailed - excess energy
01/22/12 08:02	19.4 MW	01/22/12 12:24	18.7 MW	Tawhiri - High wind curtail at Tawhiri request.
01/23/12 00:20	12.9 MW	01/23/12 05:30	14.0 MW	Tawhiri Group B curtailed - excess energy
01/23/12 02:27	1.0 MW	01/23/12 05:01	0.2 MW	HRD curtailed - excess energy
01/23/12 02:29	26.7 MW	01/23/12 04:39	21.5 MW	PGV curtailed - excess energy
01/23/12 23:42	18.5 MW	01/24/12 05:38	14.2 MW	Tawhiri Group B curtailed - excess energy
01/24/12 01:29	0.0 MW	01/24/12 04:57	0.0 MW	HRD curtailed - excess energy
01/24/12 01:32	26.5 MW	01/24/12 04:25	26.6 MW	PGV curtailed - excess energy
01/25/12 00:08	17.8 MW	01/25/12 05:12	16.8 MW	Tawhiri Group B curtailed - excess energy
01/25/12 01:58	0.0 MW	01/25/12 04:35	0.0 MW	HRD curtailed - excess energy
01/25/12 02:04	26.4 MW	01/25/12 04:06	21.5 MW	PGV curtailed - excess energy
01/26/12 00:43	10.5 MW	01/26/12 04:51	10.6 MW	Tawhiri Group B curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
01/26/12 01:40	1.4 MW	01/26/12 04:30	0.0 MW	HRD curtailed - excess energy
01/26/12 02:06	27.0 MW	01/26/12 04:21	23.9 MW	PGV curtailed - excess energy
01/27/12 01:23	5.0 MW	01/27/12 04:49	6.5 MW	Tawhiri Group B curtailed - excess energy
01/27/12 02:15	0.0 MW	01/27/12 04:36	0.0 MW	HRD curtailed - excess energy
01/27/12 02:14	27.1 MW	01/27/12 04:32	25.1 MW	PGV curtailed - excess energy
01/27/12 23:37	19.0 MW	01/28/12 06:48	17.8 MW	Tawhiri Group B curtailed - excess energy
01/28/12 00:27	7.2 MW	01/28/12 05:32	6.5 MW	HRD curtailed - excess energy
01/28/12 03:14	27.0 MW	01/28/12 04:55	25.1 MW	PGV curtailed - excess energy
01/28/12 08:45	18.7 MW	01/28/12 09:08	13.3 MW	Tawhiri Total curtailed - reclose 8600 line
01/28/12 23:06	19.7 MW	01/29/12 07:28	17.2 MW	Tawhiri Group B curtailed - excess energy
01/29/12 00:07	7.6 MW	01/29/12 06:16	8.1 MW	HRD curtailed - excess energy
01/29/12 01:39	26.7 MW	01/29/12 04:44	22.0 MW	PGV curtailed - excess energy
01/29/12 23:02	19.5 MW	01/30/12 05:40	17.1 MW	Tawhiri Group B curtailed - excess energy
01/30/12 00:09	8.1 MW	01/30/12 04:55	4.1 MW	HRD curtailed - excess energy
01/30/12 01:05	26.7 MW	01/30/12 04:05	25.2 MW	PGV curtailed - excess energy
01/30/12 23:42	15.2 MW	01/31/12 05:20	15.2 MW	Tawhiri Group B curtailed - excess energy
01/31/12 00:32	5.1 MW	01/31/12 04:24	0.0 MW	HRD curtailed - excess energy
01/31/12 01:53	26.6 MW	01/31/12 04:00	24.0 MW	PGV curtailed - excess energy
02/01/12 00:00	19.7 MW	02/01/12 05:41	18.4 MW	Tawhiri Group B curtailed - excess energy
02/01/12 00:52	1.1 MW	02/01/12 04:40	2.4 MW	HRD curtailed - excess energy
02/01/12 02:03	26.8 MW	02/01/12 03:53	24.6 MW	PGV curtailed - excess energy
02/01/12 23:47	18.5 MW	02/02/12 05:59	16.8 MW	Tawhiri Group B curtailed - excess energy
02/02/12 00:16	6.8 MW	02/02/12 04:21	7.6 MW	HRD curtailed - excess energy
02/03/12 00:06	15.4 MW	02/03/12 05:15	14.1 MW	Tawhiri Group B curtailed - excess energy
02/03/12 01:52	0.1 MW	02/03/12 04:19	0.1 MW	HRD curtailed - excess energy
02/03/12 01:54	26.9 MW	02/03/12 03:56	24.1 MW	PGV curtailed - excess energy
02/07/12 00:28	12.8 MW	02/07/12 05:23	14.0 MW	Tawhiri Group B curtailed - excess energy
02/07/12 02:08	2.6 MW	02/07/12 04:36	2.2 MW	HRD curtailed - excess energy
02/07/12 14:11	17.0 MW	02/07/12 14:36	11.8 MW	Tawhiri Total curtailed - reclose 8600 line
02/07/12 23:30	19.8 MW	02/08/12 05:29	0.1 MW	Tawhiri Group B curtailed - excess energy
02/08/12 00:29	5.6 MW	02/08/12 05:08	4.5 MW	HRD curtailed - excess energy
02/09/12 00:31	3.3 MW	02/09/12 04:03	0.5 MW	Tawhiri Group B curtailed - excess energy
02/09/12 00:41	4.0 MW	02/09/12 03:59	1.9 MW	HRD curtailed - excess energy
02/09/12 23:39	19.7 MW	02/10/12 05:22	16.1 MW	Tawhiri Group B curtailed - excess energy
02/10/12 02:00	6.1 MW	02/10/12 04:11	1.3 MW	HRD curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
02/11/12 00:59	19.3 MW	02/11/12 05:57	17.4 MW	Tawhiri Group B curtailed - excess energy
02/12/12 00:21	18.6 MW	02/12/12 06:00	18.5 MW	Tawhiri Group B curtailed - excess energy
02/13/12 00:26	19.2 MW	02/13/12 05:10	11.9 MW	Tawhiri Group B curtailed - excess energy
02/13/12 23:43	19.9 MW	02/14/12 05:16	17.6 MW	Tawhiri Group B curtailed - excess energy
02/14/12 01:12	1.1 MW	02/14/12 04:24	0.0 MW	HRD curtailed - excess energy
02/14/12 02:04	27.1 MW	02/14/12 04:03	25.2 MW	PGV curtailed - excess energy
02/15/12 00:09	18.9 MW	02/15/12 05:12	12.8 MW	Tawhiri Group B curtailed - excess energy
02/15/12 04:51	1.1 MW	02/15/12 04:57	1.0 MW	HRD curtailed - excess energy
02/15/12 15:55	19.9 MW	02/15/12 16:23	20.6 MW	Tawhiri Total curtailed - reclose 8600 line
02/15/12 23:19	19.8 MW	02/16/12 05:20	14.8 MW	Tawhiri Group B curtailed - excess energy
02/16/12 00:30	6.1 MW	02/16/12 04:44	3.3 MW	HRD curtailed - excess energy
02/17/12 00:28	19.4 MW	02/17/12 05:03	19.7 MW	Tawhiri Group B curtailed - excess energy
02/17/12 23:51	19.8 MW	02/18/12 06:02	17.9 MW	Tawhiri Group B curtailed - excess energy
02/18/12 01:28	5.7 MW	02/18/12 05:02	1.6 MW	HRD curtailed - excess energy
02/18/12 02:48	26.8 MW	02/18/12 04:02	24.1 MW	PGV curtailed - excess energy
02/18/12 07:50	13.5 MW	02/18/12 12:09	18.6 MW	Tawhiri Total curtailed - reclose 8600 line
02/18/12 23:04	18.6 MW	02/19/12 07:25	16.2 MW	Tawhiri Group B curtailed - excess energy
02/19/12 00:16	7.4 MW	02/19/12 06:29	8.3 MW	HRD curtailed - excess energy
02/19/12 01:20	26.9 MW	02/19/12 05:26	24.1 MW	PGV curtailed - excess energy
02/19/12 02:30	4.3 MW	02/19/12 04:37	1.9 MW	Wailuku curtailed - excess energy
02/19/12 03:05	3.3 MW	02/19/12 03:26	0.0 MW	Tawhiri Group A curtailed - excess energy
02/19/12 22:40	16.3 MW	02/20/12 07:01	13.7 MW	Tawhiri Group B curtailed - excess energy
02/19/12 23:29	6.4 MW	02/20/12 05:49	8.3 MW	HRD curtailed - excess energy
02/20/12 00:02	27.1 MW	02/20/12 04:55	21.9 MW	PGV curtailed - excess energy
02/20/12 00:24	11.1 MW	02/20/12 04:30	2.1 MW	Wailuku curtailed - excess energy
02/20/12 22:55	18.6 MW	02/21/12 06:07	15.9 MW	Tawhiri Group B curtailed - excess energy
02/20/12 23:47	4.3 MW	02/21/12 05:40	4.9 MW	HRD curtailed - excess energy
02/20/12 23:59	26.1 MW	02/21/12 05:00	21.8 MW	PGV curtailed - excess energy
02/21/12 00:16	9.5 MW	02/21/12 04:49	5.6 MW	Wailuku curtailed - excess energy
02/21/12 22:18	18.7 MW	02/22/12 06:16	16.9 MW	Tawhiri Group B curtailed - excess energy
02/21/12 23:07	8.4 MW	02/22/12 05:40	5.9 MW	HRD curtailed - excess energy
02/21/12 23:32	23.7 MW	02/22/12 05:01	21.9 MW	PGV curtailed - excess energy
02/21/12 23:48	11.3 MW	02/22/12 04:34	7.0 MW	Wailuku curtailed - excess energy
02/22/12 22:34	18.6 MW	02/23/12 06:16	19.1 MW	Tawhiri Group B curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
02/22/12 23:22	3.5 MW	02/23/12 05:31	6.2 MW	HRD curtailed - excess energy
02/22/12 23:38	26.9 MW	02/23/12 04:51	22.1 MW	PGV curtailed - excess energy
02/23/12 00:09	11.3 MW	02/23/12 04:18	6.1 MW	Wailuku curtailed - excess energy
02/23/12 23:31	11.6 MW	02/24/12 05:27	6.7 MW	Tawhiri Group B curtailed - excess energy
02/23/12 23:56	2.0 MW	02/24/12 05:20	0.5 MW	HRD curtailed - excess energy
02/24/11 00:11	26.6 MW	02/24/11 05:00	22.0 MW	PGV curtailed - excess energy
02/24/12 00:57	7.8 MW	02/24/12 04:43	4.9 MW	Wailuku curtailed - excess energy
02/24/12 22:49	19.8 MW	02/25/12 07:08	14.8 MW	Tawhiri Group B curtailed - excess energy
02/24/12 23:44	0.0 MW	02/25/12 05:56	0.0 MW	HRD curtailed - excess energy
02/24/11 23:50	26.8 MW	02/25/12 05:20	21.9 MW	PGV curtailed - excess energy
02/25/12 00:21	11.3 MW	02/25/12 04:15	5.9 MW	Wailuku curtailed - excess energy
02/25/12 22:37	19.8 MW	02/26/12 07:20	6.8 MW	Tawhiri Group B curtailed - excess energy
02/25/12 23:42	3.4 MW	02/26/12 07:13	7.5 MW	HRD curtailed - excess energy
02/26/12 00:16	26.9 MW	02/26/12 05:48	21.9 MW	PGV curtailed - excess energy
02/26/12 00:35	9.6 MW	02/26/12 04:55	6.0 MW	Wailuku curtailed - excess energy
02/26/12 07:20	6.8 MW	02/26/12 08:16	17.3 MW	Tawhiri Total curtailed - 8600 line switching
02/26/12 15:29	19.8 MW	02/26/12 16:19	18.6 MW	Tawhiri Total curtailed - reclose 8600 line
02/26/12 22:34	19.7 MW	02/27/12 06:11	15.9 MW	Tawhiri Group B curtailed - excess energy
02/26/12 23:17	5.2 MW	02/27/12 05:44	5.8 MW	HRD curtailed - excess energy
02/26/12 23:41	26.9 MW	02/27/12 05:12	22.0 MW	PGV curtailed - excess energy
02/27/12 00:01	11.2 MW	02/27/12 04:56	6.1 MW	Wailuku curtailed - excess energy
02/27/12 23:00	19.7 MW	02/28/12 06:36	17.4 MW	Tawhiri Group B curtailed - excess energy
02/27/12 23:52	3.5 MW	02/28/12 05:39	4.5 MW	HRD curtailed - excess energy
02/28/12 00:08	27.1 MW	02/28/12 05:01	22.1 MW	PGV curtailed - excess energy
02/28/12 00:25	6.9 MW	02/28/12 05:00	0.9 MW	Wailuku curtailed - excess energy
02/28/12 22:27	19.8 MW	02/29/12 06:39	19.2 MW	Tawhiri Group B curtailed - excess energy
02/28/12 23:16	6.8 MW	02/29/12 05:43	7.3 MW	HRD curtailed - excess energy
02/28/12 23:43	26.7 MW	02/29/12 05:04	22.2 MW	PGV curtailed - excess energy
02/29/12 00:01	11.2 MW	02/29/12 05:00	6.0 MW	Wailuku curtailed - excess energy
02/29/12 22:39	19.7 MW	03/01/12 06:46	18.6 MW	Tawhiri Group B curtailed - excess energy
02/29/12 23:15	6.0 MW	03/01/12 05:45	4.3 MW	HRD curtailed - excess energy
02/29/12 23:40	27.1 MW	03/01/12 05:05	22.0 MW	PGV curtailed - excess energy
03/01/12 00:02	11.2 MW	03/01/12 04:52	5.6 MW	Wailuku curtailed - excess energy
03/01/12 23:04	19.3 MW	03/02/12 06:15	19.0 MW	Tawhiri Group B curtailed - excess energy
03/02/12 00:02	1.4 MW	03/02/12 05:18	0.9 MW	HRD curtailed - excess energy
03/02/12 00:10	26.9 MW	03/02/12 05:05	22.0 MW	PGV curtailed - excess energy
03/02/12 00:31	11.2 MW	03/02/12 04:38	5.9 MW	Wailuku curtailed - excess energy
03/03/12 00:52	19.7 MW	03/03/12 05:34	17.9 MW	Tawhiri Group B curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
03/04/12 01:29	7.8 MW	03/04/12 05:06	10.7 MW	Tawhiri Group B curtailed - excess energy
03/04/12 02:14	1.3 MW	03/04/12 04:29	0.8 MW	HRD curtailed - excess energy
03/04/12 22:47	19.8 MW	03/05/12 06:29	17.8 MW	Tawhiri Group B curtailed - excess energy
03/04/12 23:20	3.0 MW	03/05/12 05:44	0.3 MW	HRD curtailed - excess energy
03/04/12 23:35	27.4 MW	03/05/12 05:10	22.0 MW	PGV curtailed - excess energy
03/05/12 00:03	11.2 MW	03/05/12 04:48	5.9 MW	Wailuku curtailed - excess energy
03/05/12 22:47	19.7 MW	03/06/12 06:01	5.0 MW	Tawhiri Group B curtailed - excess energy
03/05/12 23:42	0.0 MW	03/06/12 05:29	0.0 MW	HRD curtailed - excess energy
03/05/12 23:51	26.7 MW	03/06/12 05:18	22.1 MW	PGV curtailed - excess energy
03/06/12 00:19	9.6 MW	03/06/12 04:45	9.1 MW	Wailuku curtailed - excess energy
03/07/12 00:00	10.6 MW	03/07/12 05:44	12.9 MW	Tawhiri Group B curtailed - excess energy
03/07/12 00:02	0.0 MW	03/07/12 05:34	0.0 MW	HRD curtailed - excess energy
03/07/12 00:21	26.6 MW	03/07/12 05:08	21.9 MW	PGV curtailed - excess energy
03/07/12 01:05	6.2 MW	03/07/12 04:59	4.8 MW	Wailuku curtailed - excess energy
03/07/12 22:55	19.8 MW	03/08/12 05:37	6.6 MW	Tawhiri Group B curtailed - excess energy
03/07/12 23:56	5.0 MW	03/08/12 05:22	0.0 MW	HRD curtailed - excess energy
03/08/12 00:02	24.1 MW	03/08/12 05:00	22.0 MW	PGV curtailed - excess energy
03/08/12 01:12	8.0 MW	03/08/12 04:30	2.2 MW	Wailuku curtailed - excess energy
03/08/12 22:55	19.7 MW	03/09/12 06:19	18.3 MW	Tawhiri Group B curtailed - excess energy
03/08/12 23:46	5.9 MW	03/09/12 05:37	4.1 MW	HRD curtailed - excess energy
03/09/12 00:09	26.8 MW	03/09/12 05:07	22.2 MW	PGV curtailed - excess energy
03/09/12 00:44	5.7 MW	03/09/12 04:59	4.8 MW	Wailuku curtailed - excess energy
03/09/12 10:28	17.1 MW	03/09/12 10:43	17.2 MW	Tawhiri - High wind curtail at Tawhiri request.
03/09/12 10:46	19.0 MW	03/09/12 15:11	19.8 MW	Tawhiri - High wind curtail at Tawhiri request.
03/09/12 22:54	19.7 MW	03/10/12 07:23	19.8 MW	Tawhiri Group B curtailed - excess energy
03/09/12 23:47	7.5 MW	03/10/12 06:12	6.4 MW	HRD curtailed - excess energy
03/10/12 00:35	26.9 MW	03/10/12 05:21	21.6 MW	PGV curtailed - excess energy
03/10/12 01:00	6.1 MW	03/10/12 05:02	3.8 MW	Wailuku curtailed - excess energy
03/10/12 08:20	19.8 MW	03/10/12 15:08	18.7 MW	Tawhiri - High wind curtail at Tawhiri request.
03/10/12 22:39	13.1 MW	03/11/12 07:51	18.3 MW	Tawhiri Group B curtailed - excess energy
03/10/12 23:18	7.5 MW	03/11/12 07:10	9.5 MW	HRD curtailed - excess energy
03/10/12 23:48	26.9 MW	03/11/12 05:24	21.6 MW	PGV curtailed - excess energy
03/11/12 00:41	0.0 MW	03/11/12 01:01	0.0 MW	Tawhiri GrA - High wind curtail at Tawhiri req.
03/11/12 01:09	10.1 MW	03/11/12 05:15	5.7 MW	Wailuku curtailed - excess energy
03/11/12 01:26	5.9 MW	03/11/12 07:17	6.2 MW	Tawhiri GrA - High wind curtail at Tawhiri req.
03/11/12 08:00	18.9 MW	03/11/12 11:13	19.6 MW	Tawhiri - High wind curtail at Tawhiri request.
03/11/12 23:01	8.4 MW	03/12/12 06:06	13.5 MW	Tawhiri Group B curtailed - excess energy
03/11/12 23:22	5.8 MW	03/12/12 05:28	5.0 MW	HRD curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
03/11/12 23:44	27.0 MW	03/12/12 05:01	21.9 MW	PGV curtailed - excess energy
03/12/12 00:34	5.4 MW	03/12/12 04:36	4.9 MW	Wailuku curtailed - excess energy
03/12/12 22:31	19.8 MW	03/13/12 06:26	19.6 MW	Tawhiri Group B curtailed - excess energy
03/12/12 23:05	8.6 MW	03/13/12 06:01	6.0 MW	HRD curtailed - excess energy
03/12/12 23:44	26.6 MW	03/13/12 05:18	22.2 MW	PGV curtailed - excess energy
03/13/12 00:12	8.0 MW	03/13/12 04:42	5.2 MW	Wailuku curtailed - excess energy
03/13/12 22:43	18.1 MW	03/14/12 06:12	19.2 MW	Tawhiri Group B curtailed - excess energy
03/13/12 23:45	6.6 MW	03/14/12 05:39	1.6 MW	HRD curtailed - excess energy
03/14/12 00:06	26.8 MW	03/14/12 05:12	22.4 MW	PGV curtailed - excess energy
03/14/12 00:40	5.6 MW	03/14/12 04:55	5.6 MW	Wailuku curtailed - excess energy
03/14/12 23:46	10.2 MW	03/15/12 05:37	11.2 MW	Tawhiri Group B curtailed - excess energy
03/15/12 00:21	7.6 MW	03/15/12 04:47	5.4 MW	HRD curtailed - excess energy
03/15/12 23:03	18.6 MW	03/16/12 06:08	18.0 MW	Tawhiri Group B curtailed - excess energy
03/16/12 02:58	0.0 MW	03/16/12 05:03	8.1 MW	HRD curtailed - excess energy
03/16/12 23:39	18.6 MW	03/17/12 06:20	18.5 MW	Tawhiri Group B curtailed - excess energy
03/17/12 00:59	7.1 MW	03/17/12 05:29	8.6 MW	HRD curtailed - excess energy
03/17/12 22:56	18.5 MW	03/18/12 07:10	6.8 MW	Tawhiri Group B curtailed - excess energy
03/17/12 23:55	7.5 MW	03/18/12 06:15	7.2 MW	HRD curtailed - excess energy
03/18/12 02:33	6.8 MW	03/18/12 04:01	5.3 MW	Tawhiri Group A curtailed - excess energy
03/18/12 00:36	27.1 MW	03/18/12 05:18	22.1 MW	PGV curtailed - excess energy
03/18/12 01:32	1.7 MW	03/18/12 05:01	1.5 MW	Wailuku curtailed - excess energy
03/18/12 07:10	6.8 MW	03/18/12 08:14	17.0 MW	Tawhiri Total curtailed - 8600 line switching
03/18/12 14:34	18.6 MW	03/18/12 15:01	17.0 MW	Tawhiri Total curtailed - 8600 line switching
03/18/12 22:46	18.6 MW	03/19/12 06:04	15.0 MW	Tawhiri Group B curtailed - excess energy
03/18/12 23:28	3.2 MW	03/19/12 05:30	0.6 MW	HRD curtailed - excess energy
03/18/12 23:50	26.1 MW	03/19/12 05:13	22.2 MW	PGV curtailed - excess energy
03/19/12 00:09	7.8 MW	03/19/12 04:47	3.9 MW	Wailuku curtailed - excess energy
03/19/12 01:28	6.7 MW	03/19/12 03:36	5.2 MW	Tawhiri Group A curtailed - excess energy
03/19/12 23:22	18.7 MW	03/20/12 05:41	18.0 MW	Tawhiri Group B curtailed - excess energy
03/20/12 00:21	0.0 MW	03/20/12 05:08	0.0 MW	HRD curtailed - excess energy
03/20/12 00:22	27.0 MW	03/20/12 05:00	23.0 MW	PGV curtailed - excess energy
03/20/12 01:15	3.8 MW	03/20/12 04:26	1.9 MW	Wailuku curtailed - excess energy
03/21/12 00:30	17.1 MW	03/21/12 06:02	15.7 MW	Tawhiri Group B curtailed - excess energy
03/21/12 01:28	3.3 MW	03/21/12 05:03	1.5 MW	HRD curtailed - excess energy
03/21/12 02:12	27.1 MW	03/21/12 04:35	22.7 MW	PGV curtailed - excess energy
03/21/12 02:14	2.6 MW	03/21/12 03:16	2.0 MW	Wailuku curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
03/21/12 22:51	17.8 MW	03/22/12 06:00	12.0 MW	Tawhiri Group B curtailed - excess energy
03/21/12 23:21	7.1 MW	03/22/12 05:38	8.7 MW	HRD curtailed - excess energy
03/22/12 00:06	26.4 MW	03/22/12 05:08	22.2 MW	PGV curtailed - excess energy
03/22/12 00:27	8.7 MW	03/22/12 04:30	5.5 MW	Wailuku curtailed - excess energy
03/22/12 22:36	15.7 MW	03/23/12 06:14	9.8 MW	Tawhiri Group B curtailed - excess energy
03/22/12 23:04	8.5 MW	03/23/12 06:01	7.8 MW	HRD curtailed - excess energy
03/22/12 23:45	27.1 MW	03/23/12 05:06	22.4 MW	PGV curtailed - excess energy
03/23/12 00:27	11.2 MW	03/23/12 04:25	5.5 MW	Wailuku curtailed - excess energy
03/23/12 22:40	17.2 MW	03/24/12 07:23	15.3 MW	Tawhiri Group B curtailed - excess energy
03/23/12 23:19	7.5 MW	03/24/12 06:39	7.1 MW	HRD curtailed - excess energy
03/24/12 00:05	26.3 MW	03/24/12 05:43	22.4 MW	PGV curtailed - excess energy
03/24/12 00:17	11.1 MW	03/24/12 05:03	5.6 MW	Wailuku curtailed - excess energy
03/24/12 22:30	17.2 MW	03/25/12 07:45	17.0 MW	Tawhiri Group B curtailed - excess energy
03/24/12 23:05	8.1 MW	03/25/12 06:46	8.1 MW	HRD curtailed - excess energy
03/24/12 23:33	27.3 MW	03/25/12 05:44	22.4 MW	PGV curtailed - excess energy
03/25/12 00:03	11.1 MW	03/25/12 04:23	5.7 MW	Wailuku curtailed - excess energy
03/25/12 22:34	17.2 MW	03/26/12 06:54	16.5 MW	Tawhiri Group B curtailed - excess energy
03/25/12 23:00	9.1 MW	03/26/12 05:46	4.3 MW	HRD curtailed - excess energy
03/25/12 23:37	26.7 MW	03/26/12 05:10	22.0 MW	PGV curtailed - excess energy
03/26/12 00:05	10.8 MW	03/26/12 04:50	6.0 MW	Wailuku curtailed - excess energy
03/26/12 23:18	10.6 MW	03/27/12 05:03	1.3 MW	Tawhiri Group B curtailed - excess energy
03/27/12 01:24	0.0 MW	03/27/12 04:41	0.0 MW	HRD curtailed - excess energy
03/26/12 23:52	24.3 MW	03/27/12 04:16	22.0 MW	PGV curtailed - excess energy
03/27/12 00:03	11.2 MW	03/27/12 04:03	4.2 MW	Wailuku curtailed - excess energy
03/27/12 22:25	18.6 MW	03/28/12 05:53	6.7 MW	Tawhiri Group B curtailed - excess energy
03/27/12 23:03	9.1 MW	03/28/12 05:32	2.0 MW	HRD curtailed - excess energy
03/27/12 23:41	26.7 MW	03/28/12 05:11	21.6 MW	PGV curtailed - excess energy
03/28/12 00:05	10.2 MW	03/28/12 05:08	5.8 MW	Wailuku curtailed - excess energy
03/28/12 22:39	18.7 MW	03/29/12 05:37	9.0 MW	Tawhiri Group B curtailed - excess energy
03/28/12 23:29	6.2 MW	03/29/12 05:19	0.0 MW	HRD curtailed - excess energy
03/29/12 00:06	26.7 MW	03/29/12 05:00	21.9 MW	PGV curtailed - excess energy
03/29/12 01:00	6.9 MW	03/29/12 04:35	6.2 MW	Wailuku curtailed - excess energy
03/30/12 00:02	0.0 MW	03/30/12 05:36	2.5 MW	Tawhiri Group B curtailed - excess energy
03/30/12 00:06	6.7 MW	03/30/12 05:33	8.8 MW	HRD curtailed - excess energy
03/30/12 00:39	27.1 MW	03/30/12 05:56	22.2 MW	PGV curtailed - excess energy
03/30/12 01:44	4.9 MW	03/30/12 04:27	2.0 MW	Wailuku curtailed - excess energy
03/30/12 15:32	19.9 MW	03/31/12 17:12	16.9 MW	Tawhiri - High wind curtail at Tawhiri request

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
03/30/12 23:05	16.7 MW	03/31/12 07:32	16.6 MW	Tawhiri Group B curtailed - excess energy
03/31/12 00:06	7.6 MW	03/31/12 06:13	7.5 MW	HRD curtailed - excess energy
03/31/12 00:53	27.3 MW	03/31/12 05:30	22.1 MW	PGV curtailed - excess energy
03/31/12 01:41	4.1 MW	03/31/12 05:03	0.9 MW	Wailuku curtailed - excess energy
03/31/12 23:14	19.8 MW	04/01/12 07:20	15.5 MW	Tawhiri Group B curtailed - excess energy
04/01/12 00:16	1.0 MW	04/01/12 05:49	0.7 MW	HRD curtailed - excess energy
04/01/12 00:22	26.2 MW	04/01/12 05:23	22.0 MW	PGV curtailed - excess energy
04/01/12 00:51	5.0 MW	04/01/12 05:04	4.0 MW	Wailuku curtailed - excess energy
04/02/12 00:31	4.7 MW	04/02/12 05:23	10.2 MW	Tawhiri Group B curtailed - excess energy
04/02/12 00:35	0.6 MW	04/02/12 05:19	0.6 MW	HRD curtailed - excess energy
04/02/12 01:00	27.0 MW	04/02/12 05:04	22.5 MW	PGV curtailed - excess energy
04/02/12 02:24	5.1 MW	04/02/12 04:38	0.9 MW	Wailuku curtailed - excess energy
04/03/12 01:28	13.5 MW	04/03/12 04:18	8.4 MW	Tawhiri Group B curtailed - excess energy
04/04/12 02:34	14.3 MW	04/04/12 04:40	15.1 MW	Tawhiri Group B curtailed - excess energy
04/05/12 00:01	19.2 MW	04/05/12 05:08	14.4 MW	Tawhiri Group B curtailed - excess energy
04/05/12 01:46	6.1 MW	04/05/12 04:07	6.1 MW	HRD curtailed - excess energy
04/06/12 00:42	19.7 MW	04/06/12 04:58	17.5 MW	Tawhiri Group B curtailed - excess energy
04/06/12 23:52	15.8 MW	04/07/12 07:10	15.9 MW	Tawhiri Group B curtailed - excess energy
04/07/12 00:12	6.3 MW	04/07/12 06:01	5.3 MW	HRD curtailed - excess energy
04/07/12 00:38	27.5 MW	04/07/12 05:14	23.2 MW	PGV curtailed - excess energy
04/07/12 02:10	4.0 MW	04/07/12 05:04	3.8 MW	Wailuku curtailed - excess energy
04/07/12 22:40	18.8 MW	04/07/12 22:57	16.6 MW	Tawhiri Total curtailed - System Upset
04/08/12 23:23	19.8 MW	04/09/12 05:43	17.2 MW	Tawhiri Group B curtailed - excess energy
04/09/12 00:21	7.6 MW	04/09/12 04:52	7.5 MW	HRD curtailed - excess energy
04/10/12 00:30	19.8 MW	04/10/12 04:15	19.8 MW	Tawhiri Group B curtailed - excess energy
04/11/12 00:22	19.8 MW	04/11/12 04:29	18.8 MW	Tawhiri Group B curtailed - excess energy
04/13/12 00:01	18.6 MW	04/13/12 05:15	13.2 MW	Tawhiri Group B curtailed - excess energy
04/13/12 02:29	0.0 MW	04/13/12 03:58	0.0 MW	HRD curtailed - excess energy
04/14/12 00:16	12.6 MW	04/14/12 06:38	14.1 MW	Tawhiri Group B curtailed - excess energy
04/14/12 02:00	0.0 MW	04/14/12 05:32	0.0 MW	HRD curtailed - excess energy
04/14/12 02:01	26.1 MW	04/14/12 05:19	24.3 MW	PGV curtailed - excess energy
04/14/12 02:24	8.4 MW	04/14/12 05:01	8.3 MW	Wailuku curtailed - excess energy
04/14/12 23:34	18.6 MW	04/15/12 05:47	9.9 MW	Tawhiri Group B curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
04/15/12 00:47	3.5 MW	04/15/12 05:17	2.1 MW	HRD curtailed - excess energy
04/15/12 02:14	27.0 MW	04/15/12 04:19	25.6 MW	PGV curtailed - excess energy
04/15/12 02:38	5.6 MW	04/15/12 04:13	5.6 MW	Wailuku curtailed - excess energy
04/15/12 22:49	18.7 MW	04/16/12 06:09	18.7 MW	Tawhiri Group B curtailed - excess energy
04/15/12 23:34	7.6 MW	04/16/12 05:19	10.1 MW	HRD curtailed - excess energy
04/16/12 00:23	27.0 MW	04/16/12 04:58	26.9 MW	PGV curtailed - excess energy
04/16/12 00:41	5.4 MW	04/16/12 01:31	5.6 MW	Wailuku curtailed - excess energy
04/16/12 01:59	3.9 MW	04/16/12 02:13	4.0 MW	Wailuku curtailed - excess energy
04/16/12 22:57	15.7 MW	04/17/12 05:49	14.4 MW	Tawhiri Group B curtailed - excess energy
04/16/12 23:36	7.7 MW	04/17/12 05:27	6.4 MW	HRD curtailed - excess energy
04/17/12 00:09	27.0 MW	04/17/12 04:53	22.1 MW	PGV curtailed - excess energy
04/17/12 00:55	3.4 MW	04/17/12 04:29	1.9 MW	Wailuku curtailed - excess energy
04/17/12 22:57	18.7 MW	04/18/12 06:01	17.4 MW	Tawhiri Group B curtailed - excess energy
04/18/12 00:00	7.4 MW	04/18/12 05:15	9.0 MW	HRD curtailed - excess energy
04/18/12 00:43	27.1 MW	04/18/12 04:33	22.1 MW	PGV curtailed - excess energy
04/18/12 02:16	2.7 MW	04/18/12 03:45	1.4 MW	Wailuku curtailed - excess energy
04/18/12 23:17	18.4 MW	04/19/12 05:58	10.8 MW	Tawhiri Group B curtailed - excess energy
04/19/12 00:00	7.6 MW	04/19/12 04:59	4.5 MW	HRD curtailed - excess energy
04/19/12 00:47	27.2 MW	04/19/12 04:33	22.3 MW	PGV curtailed - excess energy
04/19/12 02:07	2.4 MW	04/19/12 03:59	1.7 MW	Wailuku curtailed - excess energy
04/19/12 23:08	18.6 MW	04/20/12 06:05	16.3 MW	Tawhiri Group B curtailed - excess energy
04/20/12 00:03	3.3 MW	04/20/12 05:28	2.5 MW	HRD curtailed - excess energy
04/20/12 00:35	26.4 MW	04/20/12 04:57	21.8 MW	PGV curtailed - excess energy
04/20/12 01:36	4.1 MW	04/20/12 04:31	3.9 MW	Wailuku curtailed - excess energy
04/20/12 23:02	15.1 MW	04/21/12 06:30	10.8 MW	Tawhiri Group B curtailed - excess energy
04/21/12 01:06	1.6 MW	04/21/12 05:12	1.3 MW	HRD curtailed - excess energy
04/21/12 00:04	27.2 MW	04/21/12 04:39	22.8 MW	PGV curtailed for sound survey (at their request) and excess energy
04/21/12 22:42	17.7 MW	04/22/12 07:41	17.2 MW	Tawhiri Group B curtailed - excess energy
04/21/12 23:30	7.3 MW	04/22/12 06:12	9.0 MW	HRD curtailed - excess energy
04/22/12 00:08	27.2 MW	04/22/12 05:06	22.1 MW	PGV curtailed - excess energy
04/22/12 00:43	3.2 MW	04/22/12 04:04	1.9 MW	Wailuku curtailed - excess energy
04/22/12 22:46	17.5 MW	04/23/12 06:07	14.3 MW	Tawhiri Group B curtailed - excess energy
04/22/12 23:35	7.5 MW	04/23/12 05:19	7.5 MW	HRD curtailed - excess energy
04/23/12 00:09	27.3 MW	04/23/12 04:51	22.1 MW	PGV curtailed - excess energy
04/23/12 00:31	2.1 MW	04/23/12 04:20	1.9 MW	Wailuku curtailed - excess energy
04/23/12 02:24	6.9 MW	04/23/12 04:01	2.0 MW	Tawhiri Group A curtailed - excess energy
04/23/12 22:33	18.0 MW	04/24/12 05:41	2.2 MW	Tawhiri Group B curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
04/23/12 23:05	9.7 MW	04/24/12 05:20	6.3 MW	HRD curtailed - excess energy
04/23/12 23:40	26.9 MW	04/24/12 05:00	22.9 MW	PGV curtailed - excess energy
04/23/12 23:56	7.3 MW	04/24/12 04:29	6.7 MW	Wailuku curtailed - excess energy
04/24/12 22:54	18.5 MW	04/25/12 05:37	13.8 MW	Tawhiri Group B curtailed - excess energy
04/25/12 00:07	5.3 MW	04/25/12 04:46	0.4 MW	HRD curtailed - excess energy
04/25/12 00:50	27.1 MW	04/25/12 04:36	27.1 MW	PGV curtailed - excess energy
04/25/12 00:53	5.1 MW	04/25/12 04:18	3.5 MW	Wailuku curtailed - excess energy
04/25/12 23:08	16.0 MW	04/26/12 05:56	14.8 MW	Tawhiri Group B curtailed - excess energy
04/25/12 23:51	3.9 MW	04/26/12 05:32	6.7 MW	HRD curtailed - excess energy
04/26/12 00:31	27.0 MW	04/26/12 04:57	22.9 MW	PGV curtailed - excess energy
04/26/12 01:18	3.7 MW	04/26/12 04:17	1.8 MW	Wailuku curtailed - excess energy
04/26/12 23:14	15.6 MW	04/27/12 05:56	5.3 MW	Tawhiri Group B curtailed - excess energy
04/26/12 23:55	1.1 MW	04/27/12 05:17	2.1 MW	HRD curtailed - excess energy
04/27/12 00:50	27.0 MW	04/27/12 05:05	21.8 MW	PGV curtailed - excess energy
04/27/12 00:59	5.0 MW	04/27/12 04:59	5.7 MW	Wailuku curtailed - excess energy
04/27/12 23:48	18.1 MW	04/28/12 06:55	15.5 MW	Tawhiri Group B curtailed - excess energy
04/28/12 00:14	6.0 MW	04/28/12 05:21	4.8 MW	HRD curtailed - excess energy
04/28/12 01:22	27.3 MW	04/28/12 05:04	23.7 MW	PGV curtailed - excess energy
04/28/12 03:40	7.3 MW	04/28/12 04:53	6.2 MW	Wailuku curtailed - excess energy
04/28/12 23:34	18.6 MW	04/29/12 06:45	18.5 MW	Tawhiri Group B curtailed - excess energy
04/29/12 00:27	7.3 MW	04/29/12 05:20	6.7 MW	HRD curtailed - excess energy
04/29/12 02:25	27.0 MW	04/29/12 04:44	27.0 MW	PGV curtailed - excess energy
04/29/12 02:45	3.5 MW	04/29/12 04:03	3.2 MW	Wailuku curtailed - excess energy
04/29/12 22:46	18.6 MW	04/30/12 05:50	18.5 MW	Tawhiri Group B curtailed - excess energy
04/29/12 23:42	7.0 MW	04/30/12 05:22	6.3 MW	HRD curtailed - excess energy
04/30/12 00:32	26.9 MW	04/30/12 04:50	22.0 MW	PGV curtailed - excess energy
04/30/12 00:38	9.6 MW	04/30/12 04:45	6.2 MW	Wailuku curtailed - excess energy
04/30/12 23:04	18.6 MW	05/01/12 05:29	11.9 MW	Tawhiri Group B curtailed - excess energy
05/01/12 00:03	6.9 MW	05/01/12 05:00	0.2 MW	HRD curtailed - excess energy
05/01/12 00:47	26.7 MW	05/01/12 04:41	26.8 MW	PGV curtailed - excess energy
05/01/12 00:53	10.3 MW	05/01/12 04:13	5.8 MW	Wailuku curtailed - excess energy
05/01/12 22:43	15.7 MW	05/02/12 05:20	15.9 MW	Tawhiri Group B curtailed - excess energy
05/01/12 23:29	6.9 MW	05/02/12 04:21	4.6 MW	HRD curtailed - excess energy
05/03/12 00:35	18.6 MW	05/03/12 03:06	11.1 MW	Tawhiri Group B curtailed - excess energy
05/04/12 00:26	9.0 MW	05/04/12 05:02	11.9 MW	Tawhiri Group B curtailed - excess energy
05/04/12 00:40	7.0 MW	05/04/12 04:35	1.9 MW	HRD curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
05/05/12 00:03	16.3 MW	05/05/12 05:56	13.8 MW	Tawhiri Group B curtailed - excess energy
05/05/12 00:57	6.9 MW	05/05/12 05:18	3.7 MW	HRD curtailed - excess energy
05/06/12 00:08	13.5 MW	05/06/12 05:41	9.3 MW	Tawhiri Group B curtailed - excess energy
05/06/12 23:32	18.1 MW	05/07/12 05:23	18.5 MW	Tawhiri Group B curtailed - excess energy
05/07/12 01:00	6.8 MW	05/07/12 04:40	5.3 MW	HRD curtailed - excess energy
05/07/12 23:08	18.7 MW	05/08/12 05:08	11.2 MW	Tawhiri Group B curtailed - excess energy
05/08/12 01:40	5.1 MW	05/08/12 04:45	4.3 MW	HRD curtailed - excess energy
05/09/12 00:19	18.5 MW	05/09/12 05:51	14.4 MW	Tawhiri Group B curtailed - excess energy
05/09/12 00:42	4.5 MW	05/09/12 05:13	2.1 MW	HRD curtailed - excess energy
05/09/12 23:57	12.7 MW	05/10/12 05:31	14.6 MW	Tawhiri Group B curtailed - excess energy
05/10/12 02:03	3.6 MW	05/10/12 04:48	4.1 MW	HRD curtailed - excess energy
05/10/12 23:32	18.2 MW	05/11/12 05:41	14.2 MW	Tawhiri Group B curtailed - excess energy
05/11/12 00:25	5.0 MW	05/11/12 04:56	3.8 MW	HRD curtailed - excess energy
05/12/12 00:16	17.0 MW	05/12/12 05:41	11.1 MW	Tawhiri Group B curtailed - excess energy
05/14/12 01:50	8.0 MW	05/14/12 03:30	5.3 MW	Tawhiri Group B curtailed - excess energy
05/15/12 02:02	10.3 MW	05/15/12 04:24	11.2 MW	Tawhiri Group B curtailed - excess energy
05/16/12 00:27	17.1 MW	05/16/12 05:13	9.1 MW	Tawhiri Group B curtailed - excess energy
05/17/12 00:20	17.1 MW	05/17/12 05:00	12.8 MW	Tawhiri Group B curtailed - excess energy
05/17/12 01:33	7.1 MW	05/17/12 04:12	2.8 MW	HRD curtailed - excess energy
05/18/12 03:01	11.6 MW	05/18/12 04:23	7.1 MW	Tawhiri Group B curtailed - excess energy
05/19/12 02:00	10.8 MW	05/19/12 05:17	13.4 MW	Tawhiri Group B curtailed - excess energy
05/20/12 02:23	11.0 MW	05/20/12 05:47	16.1 MW	Tawhiri Group B curtailed - excess energy
05/20/12 23:50	17.2 MW	05/21/12 05:20	16.9 MW	Tawhiri Group B curtailed - excess energy
05/21/12 01:40	5.9 MW	05/21/12 04:25	5.3 MW	HRD curtailed - excess energy
05/22/12 00:20	17.1 MW	05/22/12 05:06	17.1 MW	Tawhiri Group B curtailed - excess energy
05/22/12 23:37	15.7 MW	05/23/12 05:05	15.4 MW	Tawhiri Group B curtailed - excess energy
05/23/12 23:33	17.1 MW	05/24/12 05:24	16.7 MW	Tawhiri Group B curtailed - excess energy
05/24/12 00:33	7.7 MW	05/24/12 04:44	7.5 MW	HRD curtailed - excess energy

HELCO Curtailment Report December 2011 to May 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
05/25/12 00:02	18.6 MW	05/25/12 05:14	17.4 MW	Tawhiri Group B curtailed - excess energy
05/25/12 09:52	16.7 MW	05/25/12 12:29	15.0 MW	Tawhiri - High wind curtail at Tawhiri request.
05/26/12 02:40	18.6 MW	05/26/12 04:44	18.2 MW	Tawhiri Group B curtailed - excess energy
05/27/12 20:05	15.7 MW	05/27/12 23:02	15.0 MW	Tawhiri - High wind curtail at Tawhiri request.
05/27/12 23:08	18.6 MW	05/28/12 12:19	16.7 MW	Tawhiri - High wind curtail at Tawhiri request.
05/28/12 00:21	16.7 MW	05/28/12 05:37	16.7 MW	Tawhiri Group B curtailed - excess energy
05/28/12 15:55	15.7 MW	05/28/12 16:07	14.6 MW	Tawhiri - High wind curtail at Tawhiri request.
05/28/12 16:12	18.6 MW	05/28/12 18:17	18.6 MW	Tawhiri - High wind curtail at Tawhiri request.
05/29/12 00:24	18.5 MW	05/29/12 04:16	16.0 MW	Tawhiri Group B curtailed - excess energy
05/30/12 01:00	18.6 MW	05/30/12 05:40	18.6 MW	Tawhiri Group B curtailed - excess energy
05/30/12 01:45	7.6 MW	05/30/12 04:42	8.1 MW	HRD curtailed - excess energy
05/31/12 00:01	18.6 MW	05/31/12 05:34	18.5 MW	Tawhiri Group B curtailed - excess energy