August 30, 2012

Dean K. Matsuura
Manager
Regulatory Affairs

FILED
2012 AUG 30 P 2:35
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] monthly report for July 2012 on (1) system frequency control performance during month; (2) significant system events during month; and (3) curtailment of non-dispatchable renewable resources.

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,

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".

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(Docket No. 2011-0206)

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SERVICE LIST
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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 July 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 July 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.
Hawaiian Electric did not have any under frequency load shed events for the month of July.

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 events 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.

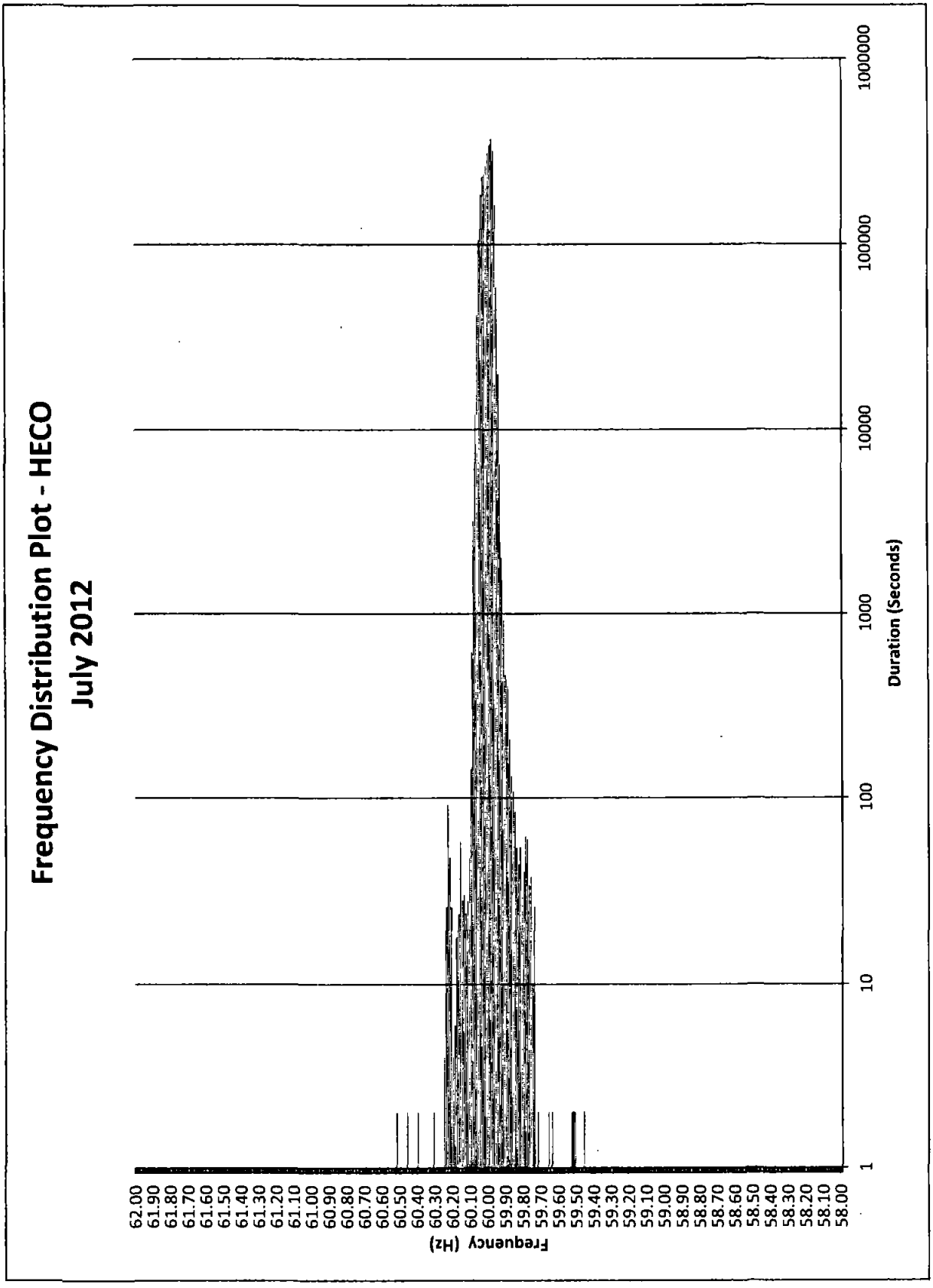
The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending July 31, 2012):

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
July 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
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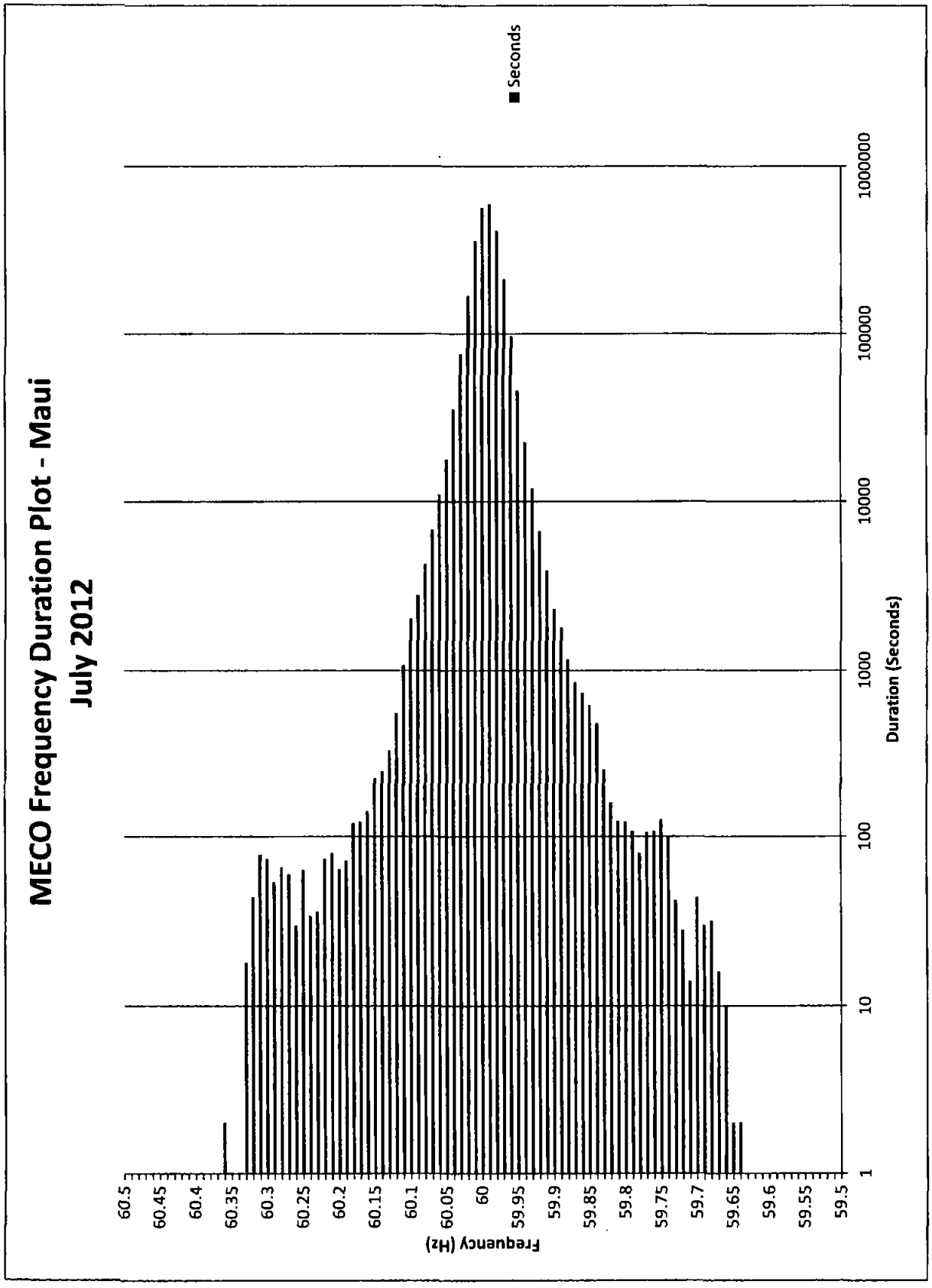
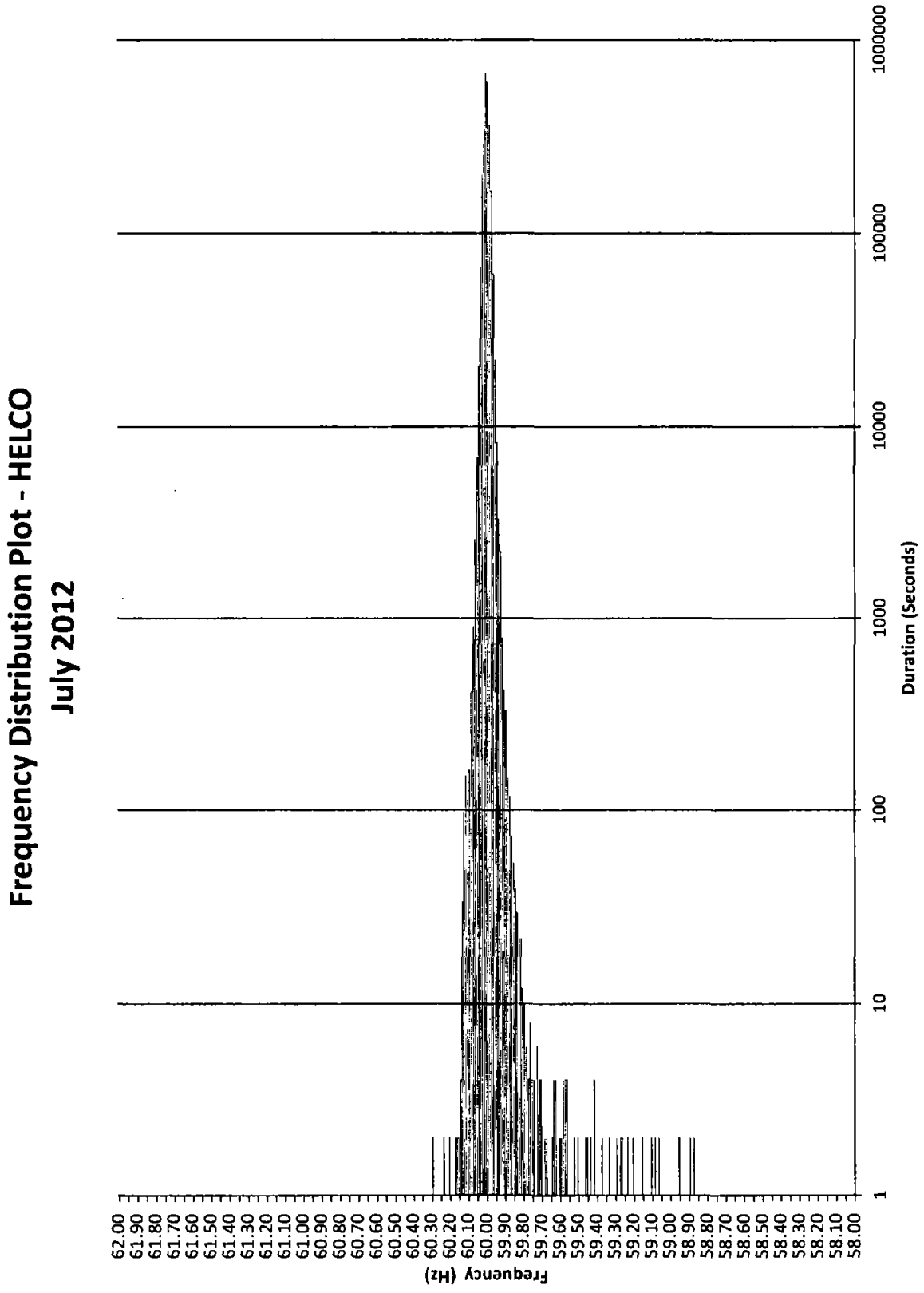
58.50
58.40
58.30
58.20
58.10
58.00


MECO Frequency Duration Plot - Maui
July 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
July 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
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60.00
59.90
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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 July 2012		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	2957	4808
Maximum Duration (sec)	694	1600
Maximum Deviation (Hz)	59.457	60.519
Total Duration of Excursions (sec)	52950	99864

MECO Frequency Excursion Statistics July 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	50073	15228
Maximum Duration (sec)	2226	1318
Maximum Deviation (Hz)	59.63672	60.35645
Total Duration of Excursions (sec)	100146	30456

HELCO Frequency Excursion Statistics July 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	3818	1132
Maximum Duration (sec)	144	412
Maximum Deviation (Hz)	58.87012	60.28613
Total Duration of Excursions (sec)	24194	6912

HAWAIIAN ELECTRIC COMPANY, INC.
CONTINGENCY RESERVE ACTIVATION EVENTS
JULY 2012

Event #	Date & Time	Frequency (Hz)			Spinning Reserve Shortfall (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	07/03/12 17:59	60.036	59.513	NA	-50.16	0:19	Kalaeloa CT2 tripped while carrying ~80 MW due to a stator ground fault.. W10 and CIP CT-1 were brought online to cover the spinning reserve shortfall.
2	07/05/12 14:25	59.990	59.761	NA	-86.35	0:56	K3 tripped while carrying 44 MW due to equipment failure (loss of instrument air). Both W10 and CIP CT-1 were brought online to cover the spinning reserve shortfall.
3	07/29/12 16:59	59.982	59.457	NA	-40.68	0:15	Kalaeloa CT1 tripped while carrying ~81.4 MW due to a fuel pump motor failure. W10 and CIP CT-1 were brought online to cover the spinning reserve shortfall.
4							

MAUI ELECTRIC COMPANY, LTD
UNDERFREQUENCY LOADSHEDDING EVENTS
JULY 2012

Island	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Levels UFLS Occurred			
Lanai	7/13/2012 12:20 PM	59.939	58.33	58.70	0.09	0:07	A system frequency depression of 58.3 Hz occurred when Unit 4 at Miki Basin PP tripped off line, due to high engine temperature.
Molokai	7/27/2012 7:33 AM	59.956	57.71	58.70	0.83	0:21	CB 110B at Sub 81 Palaau relayed open when unit 9 generation dropped from 1800KW to 800KW.

HAWAII ELECTRIC LIGHT COMPANY, INC.
UNDERFREQUENCY LOAD SHEDDING EVENTS
July 2012

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Level UFLS Occurred			
1	7/12/2012 1022hrs	59.979	58.78	58.80	7.52	0:05	Kamaoa Windfarm (KWF) tripped offline while generating 14.2MW.
2	7/17/2012 1329hrs	59.962	58.76	58.80	11.81	0:04	Kamaoa Windfarm (KWF) tripped offline while generating 9.0 MW.

HAWAIIAN ELECTRIC COMPANY, INC.
DEMAND RESPONSE EVENTS
JULY 2012

Event #	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
		Prior to Event	Nadir	Trigger			
1	07/03/12 17:59	60.036	59.513	59.70	14.00	0:03	Kalaeloa CT2 tripped while carrying ~80 MW due to a stator ground fault.. W10 and CIP CT-1 were brought online to cover the spinning reserve shortfall.
2	07/29/12 16:59	59.982	59.457	59.70	11.40	0:05	Kalaeloa CT1 tripped while carrying ~81.4 MW due to a fuel pump motor failure. W10 and CIP CT-1 were brought online to cover the spinning reserve shortfall.

HECO Curtailment Report July 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
07/03/12 04:42	0.0	1.59	07/03/12 20:30	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/05/12 04:56	0.0	11.64	07/05/12 19:57	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/06/12 04:44	0.0	22.03	07/07/12 02:04	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/07/12 04:47	0.0	25.89	07/07/12 20:22	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/08/12 06:43	0.0	21.20	07/08/12 19:08	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/09/12 05:08	0.0	20.02	07/09/12 20:56	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/10/12 05:12	0.0	12.04	07/10/12 22:29	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/11/12 05:10	0.0	8.10	07/11/12 21:36	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/12/12 05:00	0.0	10.62	07/12/12 22:19	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/13/12 05:00	0.0	12.57	07/13/12 18:52	0	*	KWF	Waialua-Kahipa 46kV ckt upgrades
07/17/12 05:17	0.0	22.62	07/17/12 07:24	0	*	KWF	Waiau-Wahiawa 138kV ckt upgrades
07/17/12 15:42	0.0	19.78	07/17/12 17:07	0	*	KWF	Waiau-Wahiawa 138kV ckt upgrades
07/30/12 07:16	0.0	12.72	07/30/12 16:52	0	*	KWF	Helemano Sub Tsf 2 LTC overhaul

KWF = Kahuku Wind Farm

(1) The estimted MWh of energy curtailed during the event is supplied by Kahuku Wind Farm, and HECO representations as to its accuracy, does not make any

* Data has not been provided by KWF.

MECO-Maui Curtailment Report July 2012

Start Date/Time	Duration (HH:MM)	IPP Curtailed	FW Estimated curtailed energy during event (MWh)	FW Peak MW Curtailed	Reason for Curtailment
7/1/12 1:41	3:52	KWP	No Data Available	No Data Available	Excess Energy
7/2/12 16:06	2:45	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/2/12 18:58	20:09	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve and testing and operating conditions on Company's System
7/3/12 0:47	11:14	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/3/12 1:57	3:18	KWP	No Data Available	No Data Available	Excess Energy
7/4/12 0:35	4:35	KWP	No Data Available	No Data Available	Excess Energy
7/4/12 16:30	4:38	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve and testing
7/4/12 21:54	17:09	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/5/12 0:37	4:29	5A	No Data Available	No Data Available	Excess Energy
7/5/12 0:38	4:28	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/5/12 20:42	0:19	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/5/12 21:26	0:18	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/5/12 22:17	15:51	KWPII	No Data Available	No Data Available	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
7/6/12 0:56	4:06	KWP	20.23	No Data Available	Excess Energy
7/6/12 14:25	19:03	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/7/12 1:04	4:01	5A	No Data Available	No Data Available	Excess Energy
7/7/12 1:04	4:01	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/7/12 1:26	3:38	KWP	16.24	No Data Available	Excess Energy
7/7/12 10:33	21:26	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/8/12 1:03	4:46	5A	No Data Available	No Data Available	Excess Energy
7/8/12 1:13	4:35	KWP	No Data Available	No Data Available	Excess Energy
7/8/12 13:12	6:38	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/9/12 0:01	5:57	5A	No Data Available	No Data Available	Excess Energy
7/9/12 0:03	5:53	KWP	No Data Available	No Data Available	Excess Energy
7/9/12 20:48	22:08	KWPII	No Data Available	No Data Available	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
7/10/12 0:38	4:33	5A	No Data Available	No Data Available	Excess Energy
7/10/12 0:41	4:30	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/10/12 0:44	4:25	KWP	No Data Available	No Data Available	Excess Energy
7/10/12 23:44	6:06	5A	No Data Available	No Data Available	Excess Energy and operating condition on Company's System
7/10/12 23:48	5:50	KWP	53.95	No Data Available	Excess Energy and operating condition on Company's System
7/11/12 22:09	11:11	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/12/12 0:43	4:32	5A	No Data Available	No Data Available	Excess Energy

MECO-Maui Curtailment Report July 2012

Start Date/Time	Duration (HH:MM)	IPP Curtailed	FW Estimated curtailed energy during event (MWh)	FW Peak MW Curtailed	Reason for Curtailment
7/12/12 0:45	4:30	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/12/12 0:49	4:23	KWP	17.52	No Data Available	Excess Energy
7/12/12 21:17	22:13	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/13/12 0:31	4:40	5A	No Data Available	No Data Available	Excess Energy
7/13/12 0:34	4:37	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/13/12 0:36	4:30	KWP	31.27	No Data Available	Excess Energy
7/13/12 21:26	20:52	KWPII	No Data Available	No Data Available	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
7/14/12 1:27	3:51	KWP	21.83	No Data Available	Excess Energy
7/14/12 20:37	21:15	KWPII	No Data Available	No Data Available	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
7/15/12 0:53	4:56	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/15/12 1:01	4:47	KWP	135.17	No Data Available	Excess Energy
7/15/12 21:03	21:19	KWPII	No Data Available	No Data Available	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
7/16/12 1:20	3:11	KWP	No Data Available	No Data Available	Excess Energy
7/16/12 21:54	12:18	KWPII	No Data Available	No Data Available	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
7/17/12 0:57	4:04	5A	No Data Available	No Data Available	Excess Energy
7/17/12 0:59	4:02	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/17/12 1:05	3:54	KWP	17.89	No Data Available	Excess Energy
7/17/12 13:02	2:11	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve and testing
7/17/12 15:54	4:03	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/17/12 20:53	18:25	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/18/12 0:54	4:02	5A	No Data Available	No Data Available	Excess Energy
7/18/12 0:55	4:01	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/18/12 1:00	3:55	KWP	18.19	No Data Available	Excess Energy
7/18/12 23:48	5:16	5A	No Data Available	No Data Available	Excess Energy
7/18/12 23:51	5:13	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/18/12 21:21	17:59	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/19/12 0:50	4:11	KWP	22.70	No Data Available	Excess Energy
7/19/12 22:07	7:16	KWPII	No Data Available	No Data Available	Excess Energy
7/20/12 3:25	0:46	5A	No Data Available	No Data Available	Excess Energy
7/20/12 3:27	0:44	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/20/12 3:28	0:40	KWP	No Data Available	No Data Available	Excess Energy
7/20/12 5:35	1:58	KWPII	No Data Available	No Data Available	Excess Energy

MECO-Maui Curtailment Report July 2012

Start Date/Time	Duration (HH:MM)	IPP Curtailed	FW Estimated curtailed energy during event (MWh)	FW Peak MW Curtailed	Reason for Curtailment
7/23/12 4:01	1:13	KWPII	No Data Available	No Data Available	Excess Energy
7/23/12 7:46	0:06	KWPII	No Data Available	No Data Available	Excess Energy
7/23/12 8:38	0:58	KWPII	No Data Available	No Data Available	Excess Energy
7/23/12 23:25	11:14	KWPII	No Data Available	No Data Available	Excess Energy
7/24/12 3:17	1:31	KWP	39.43	No Data Available	Excess Energy
7/24/12 3:20	1:43	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/24/12 12:15	0:12	KWPII	No Data Available	No Data Available	Excess Energy
7/24/12 12:57	6:12	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/24/12 22:51	12:15	KWPII	No Data Available	No Data Available	Excess Energy and System Emergency
7/25/12 0:04	13:38	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/25/12 0:05	5:15	5A	No Data Available	No Data Available	Excess Energy
7/25/12 1:14	3:56	KWP	39.43	No Data Available	Excess Energy
7/25/12 12:28	0:09	KWPII	No Data Available	No Data Available	Excess Energy and operating condition on Company's System
7/25/12 13:21	7:09	KWPII	No Data Available	No Data Available	Excess Energy and operating condition on Company's System
7/25/12 21:02	12:47	KWPII	No Data Available	No Data Available	Excess Energy
7/26/12 1:38	3:31	5A	No Data Available	No Data Available	Excess Energy
7/26/12 1:54	3:13	KWP	12.48	No Data Available	Excess Energy
7/26/12 10:24	5:33	KWPII	No Data Available	No Data Available	Excess Energy
7/26/12 17:01	16:43	KWPII	No Data Available	No Data Available	Excess Energy and operating condition on Company's System
7/26/12 1:11	6:10	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/26/12 1:14	3:49	5A	No Data Available	No Data Available	Excess Energy
7/27/12 10:03	0:51	KWPII	No Data Available	No Data Available	Excess Energy
7/27/12 17:06	0:11	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/27/12 17:26	1:00	KWPII	No Data Available	No Data Available	Maintain Regulating Reserve
7/27/12 21:37	11:55	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/28/12 1:03	4:12	5A	No Data Available	No Data Available	Excess Energy
7/28/12 1:06	7:08	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/28/12 1:14	3:58	KWP	14.40	No Data Available	Excess Energy
7/28/12 15:43	11:43	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/29/12 1:01	4:24	5A	No Data Available	No Data Available	Excess Energy
7/29/12 1:08	8:41	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/29/12 1:11	4:12	KWP	No Data Available	No Data Available	Excess Energy

MECO-Maui Curtailment Report July 2012

Start Date/Time	Duration (HH:MM)	IPP Curtailed	FW Estimated curtailed energy during event (MWh)	FW Peak MW Curtailed	Reason for Curtailment
7/30/12 0:58	5:36	5A	No Data Available	No Data Available	Excess Energy
7/30/12 1:08	12:46	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/30/12 1:13	2:11	KWP	8.86	No Data Available	Excess Energy
7/30/12 5:24	8:56	KWPII	No Data Available	No Data Available	Excess Energy and operating condition on Company's System
7/30/12 5:24	1:10	KWP	6.49	No Data Available	Excess Energy and operating condition on Company's System
7/30/12 15:27	0:14	KWPII	No Data Available	No Data Available	Excess Energy
7/30/12 16:15	0:31	KWPII	No Data Available	No Data Available	Excess Energy
7/30/12 17:06	0:39	KWPII	No Data Available	No Data Available	Excess Energy
7/30/12 20:08	16:10	KWPII	No Data Available	No Data Available	Excess Energy and maintain Regulating Reserve
7/31/12 1:24	3:12	5A	No Data Available	No Data Available	Excess Energy
7/31/12 1:35	7:47	Makila Hydro	No Data Available	No Data Available	Excess Energy
7/31/12 1:38	2:56	KWP	6.10	No Data Available	Excess Energy
7/31/12 13:07	0:11	KWPII	No Data Available	No Data Available	Excess Energy
7/31/12 19:56	16:11	KWPII	No Data Available	No Data Available	Excess Energy and operating condition on Company's System

Notes:
- During curtailment events the set point for Kaheawa Wind Power ("KWP") and Kaheawa Wind Power II ("KWPII") are adjusted to ensure maximum energy contribution. KWP and KWPII "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by First Wind, and MECO does not make any representation as to its accuracy.
- Makila Hydro's actual hours of operation are typically manually controlled by the project.
- Estimated curtailed energy during curtailment events is not available for Makila Hydro or AAAAA Rent-A-Space Maui LTD.
- KWPII achieved Commercial Operations Date on 7/2/12

La Ola PV Farm (Lanai) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
7/1/12	Unknown	7/1/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/2/12	Unknown	7/2/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/3/12	Unknown	7/3/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/4/12	Unknown	7/4/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/5/12	Unknown	7/5/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/6/12	Unknown	7/6/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/7/12 7:16	0.71	7/7/2012 7:21	0.55	One Operator, set max output to 1MW
7/7/12 8:12	0.52	7/7/2012 8:18	0.59	One Operator, set max output to 1MW
7/7/12 9:08	0.80	7/7/2012 9:18	0.10	One Operator, set max output to 1MW
7/7/12 10:10	0.48	7/7/2012 10:17	0.20	One Operator, set max output to 1MW
7/7/12 11:08	0.40	7/7/2012 11:20	0.38	One Operator, set max output to 1MW
7/7/12 12:09	0.50	7/7/2012 12:21	0.33	One Operator, set max output to 1MW
7/7/12 13:07	0.42	7/7/2012 13:15	0.34	One Operator, set max output to 1MW
7/7/12 14:08	0.41	7/7/2012 14:20	0.35	One Operator, set max output to 1MW
7/7/12 15:15	0.98	7/7/2012 15:22	0.90	One Operator, set max output to 1MW
7/7/12 16:12	0.18	7/7/2012 16:20	0.10	One Operator, set max output to 1MW
7/7/12 17:05	0.82	7/7/2012 17:15	0.75	One Operator, set max output to 1MW
7/7/12 18:07	0.99	7/7/2012 18:15	0.60	One Operator, set max output to 1MW
7/8/12 9:00	0.99	7/1/2012 9:00	0.91	One Operator, set max output to 1MW
7/9/12 9:00	1.00	7/1/2012 9:00	0.93	One Operator, set max output to 1MW

La Ola PV Farm (Lanai) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
7/10/12	Unknown	7/10/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/11/12	Unknown	7/11/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/12/12	Unknown	7/12/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/13/12	Unknown	7/13/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/14/12	Unknown	7/14/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/15/12	Unknown	7/15/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/16/12	Unknown	7/16/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/17/12	Unknown	7/17/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/18/12 9:00	0.40	7/18/12 9:09	0.30	One Operator, set max output to 1MW
7/18/12 10:02	0.18	7/18/12 10:15	0.50	One Operator, set max output to 1MW
7/18/12 11:09	0.19	7/18/12 11:20	0.30	One Operator, set max output to 1MW
7/18/12 12:11	1.00	7/18/12 12:22	0.80	One Operator, set max output to 1MW
7/18/12 13:13	0.24	7/18/12 13:23	0.35	One Operator, set max output to 1MW
7/18/12 14:10	0.50	7/18/12 14:22	0.70	One Operator, set max output to 1MW
7/18/12 15:22	1.20	7/18/12 15:30	1.00	One Operator, set max output to 1MW
7/18/12 16:05	0.80	7/18/12 16:20	0.90	One Operator, set max output to 1MW
7/18/12 17:10	0.30	7/18/12 17:20	0.44	One Operator, set max output to 1MW
7/18/12 18:02	0.42	7/18/12 18:15	0.41	One Operator, set max output to 1MW
7/19/12 9:02	0.90	7/19/12 9:12	1.00	One Operator, set max output to 1MW

La Ola PV Farm (Lanai) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
7/19/12 10:03	0.80	7/19/12 10:09	1.00	One Operator, set max output to 1MW
7/19/12 11:09	0.80	7/19/12 11:20	0.90	One Operator, set max output to 1MW
7/19/12 12:01	0.80	7/19/12 12:15	0.85	One Operator, set max output to 1MW
7/19/12 13:06	1.20	7/19/12 13:15	1.00	One Operator, set max output to 1MW
7/19/12 14:00	1.20	7/19/12 14:10	1.20	One Operator, set max output to 1MW
7/19/12 15:09	1.00	7/19/12 15:21	1.00	One Operator, set max output to 1MW
7/19/12 16:07	1.00	7/19/12 16:20	1.00	One Operator, set max output to 1MW
7/19/12 17:10	0.80	7/19/12 17:17	0.70	One Operator, set max output to 1MW
7/19/12 18:03	0.60	7/19/12 18:15	0.80	One Operator, set max output to 1MW
7/20/12 9:06	0.80	7/20/12 9:15	0.60	One Operator, set max output to 1MW
7/20/12 10:02	0.10	7/20/12 10:18	0.90	One Operator, set max output to 1MW
7/20/12 11:07	0.50	7/20/12 11:18	1.00	One Operator, set max output to 1MW
7/20/12 12:01	0.70	7/20/12 12:15	0.80	One Operator, set max output to 1MW
7/20/12 13:05	0.20	7/20/12 13:15	0.30	One Operator, set max output to 1MW
7/20/12 14:07	0.34	7/20/12 14:17	0.50	One Operator, set max output to 1MW
7/20/12 15:09	0.09	7/20/12 15:21	0.30	One Operator, set max output to 1MW
7/20/12 16:01	0.50	7/20/12 16:15	0.60	One Operator, set max output to 1MW
7/20/12 17:10	0.80	7/20/12 17:21	0.60	One Operator, set max output to 1MW
7/20/12 18:03	0.40	7/20/12 18:15	0.30	One Operator, set max output to 1MW
7/21/12 9:07	0.98	7/21/12 9:15	0.80	One Operator, set max output to 1MW
7/21/12 10:01	1.00	7/21/12 10:09	1.00	One Operator, set max output to 1MW
7/21/12 11:06	1.00	7/21/12 11:20	1.00	One Operator, set max output to 1MW
7/21/12 12:05	0.82	7/21/12 12:14	0.90	One Operator, set max output to 1MW

La Ola PV Farm (Lanai) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
7/21/12 13:01	0.88	7/21/12 13:12	0.70	One Operator, set max output to 1MW
7/21/12 14:06	0.73	7/21/12 14:14	0.70	One Operator, set max output to 1MW
7/21/12 15:10	0.60	7/21/12 15:21	0.60	One Operator, set max output to 1MW
7/21/12 16:07	0.75	7/21/12 16:15	0.80	One Operator, set max output to 1MW
7/21/12 17:12	0.80	7/21/12 17:21	0.70	One Operator, set max output to 1MW
7/21/12 18:06	0.50	7/21/12 18:15	0.40	One Operator, set max output to 1MW
7/22/12 9:00	1.00	7/22/12 9:09	0.90	One Operator, set max output to 1MW
7/22/12 10:03	1.00	7/22/12 10:13	0.90	One Operator, set max output to 1MW
7/22/12 11:10	1.00	7/22/12 11:20	1.00	One Operator, set max output to 1MW
7/22/12 12:02	0.90	7/22/12 12:11	0.90	One Operator, set max output to 1MW
7/22/12 13:05	0.98	7/22/12 13:16	0.70	One Operator, set max output to 1MW
7/22/12 14:01	1.00	7/22/12 14:15	0.80	One Operator, set max output to 1MW
7/22/12	0.20	7/22/12	Unknown	One Operator, set max output to 1MW Unable to reset to 1.2 MW.
7/22/12	Unknown	7/22/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/22/12	Unknown	7/22/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/23/12	Unknown	7/23/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/24/12	Unknown	7/24/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/25/12	Unknown	7/25/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/26/12	Unknown	7/26/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.

La Ola PV Farm (Lanai) Curtailment Report

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for curtailment
7/27/12	Unknown	7/27/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/28/12	Unknown	7/28/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/29/12	Unknown	7/29/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/30/12	Unknown	7/30/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.
7/31/12	Unknown	7/31/12	Unknown	MECO is unable to curtail La Ola. La Ola curtailment limit set earlier at 1MW.

Note: In April the testing period to increase the La Ola PV Farm's output to 1200kW began. The low system demand and increased output from the solar farm has required that the solar farm's output to be curtailed to 1000kW when a single operator is on shift. Additionally, the dispatch of conventional fleet has been modified to accommodate the increased generation from the PV farm.

HELCO Curtailment Report July 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
07/02/12 13:31	12.1 MW	07/02/12 14:54	14.2 MW	Tawhiri curtailed - reclose switch on 8600 line.
07/05/12 02:12	18.6 MW	07/05/12 05:02	17.7 MW	Tawhiri Group B curtailed - excess energy
07/06/12 01:31	18.6 MW	07/06/12 05:01	18.3 MW	Tawhiri Group B curtailed - excess energy
07/08/12 00:32	18.6 MW	07/08/12 05:22	15.0 MW	Tawhiri Group B curtailed - excess energy
07/11/12 02:20	18.6 MW	07/11/12 04:26	17.1 MW	Tawhiri Group B curtailed - excess energy
07/12/12 18:50	6.1 MW	--	--	Tawhiri request to self-curtail to 9.0 MW until resolution of fiber optic communication problem which caused trips on 7/12/12 & 7/17/12. Since it is limited to single microwave communication path, Tawhiri limited its production to 9.0 MW until redundance in communication is re-established.
07/19/12 08:37	9.0 MW	07/19/12 15:34	5.3 MW	Tawhiri request to self-curtail further down to 5.0 MW limit to trouble shoot breaker trip issues. At the end of this curtailment, Tawhiri request to return back to 9.0 MW limit for previous curtailment.