



Dean K. Matsuura
Manager
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PUBLIC UTILITIES
COMMISSION

November 30, 2012

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 October 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 a compact disc ("CD") containing the electronic files to both the Commission and the Consumer Advocate. Copies of the CD 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.

Very truly yours,

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)

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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 October 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 October 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 October.

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 October 31, 2012):

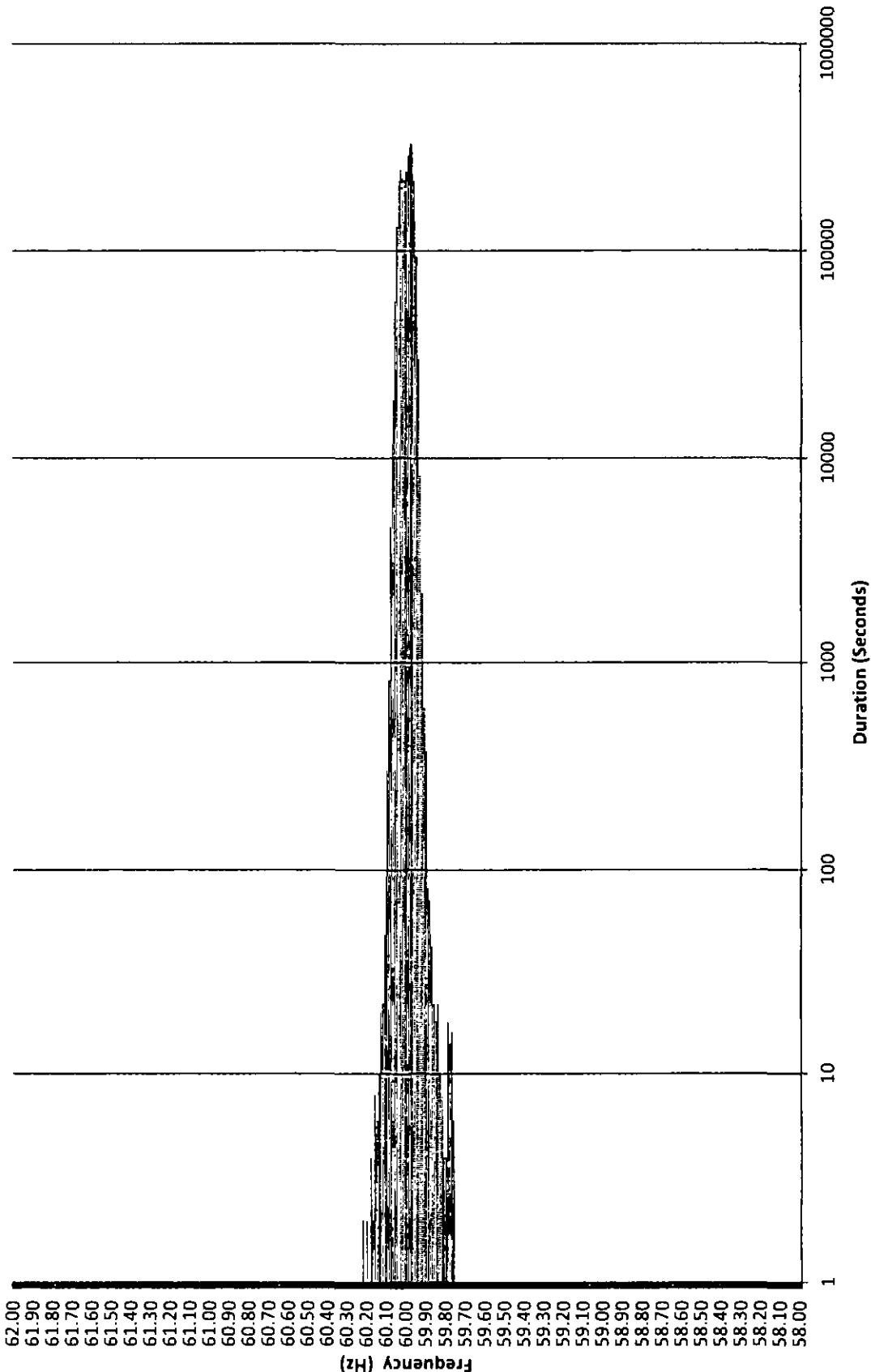
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

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

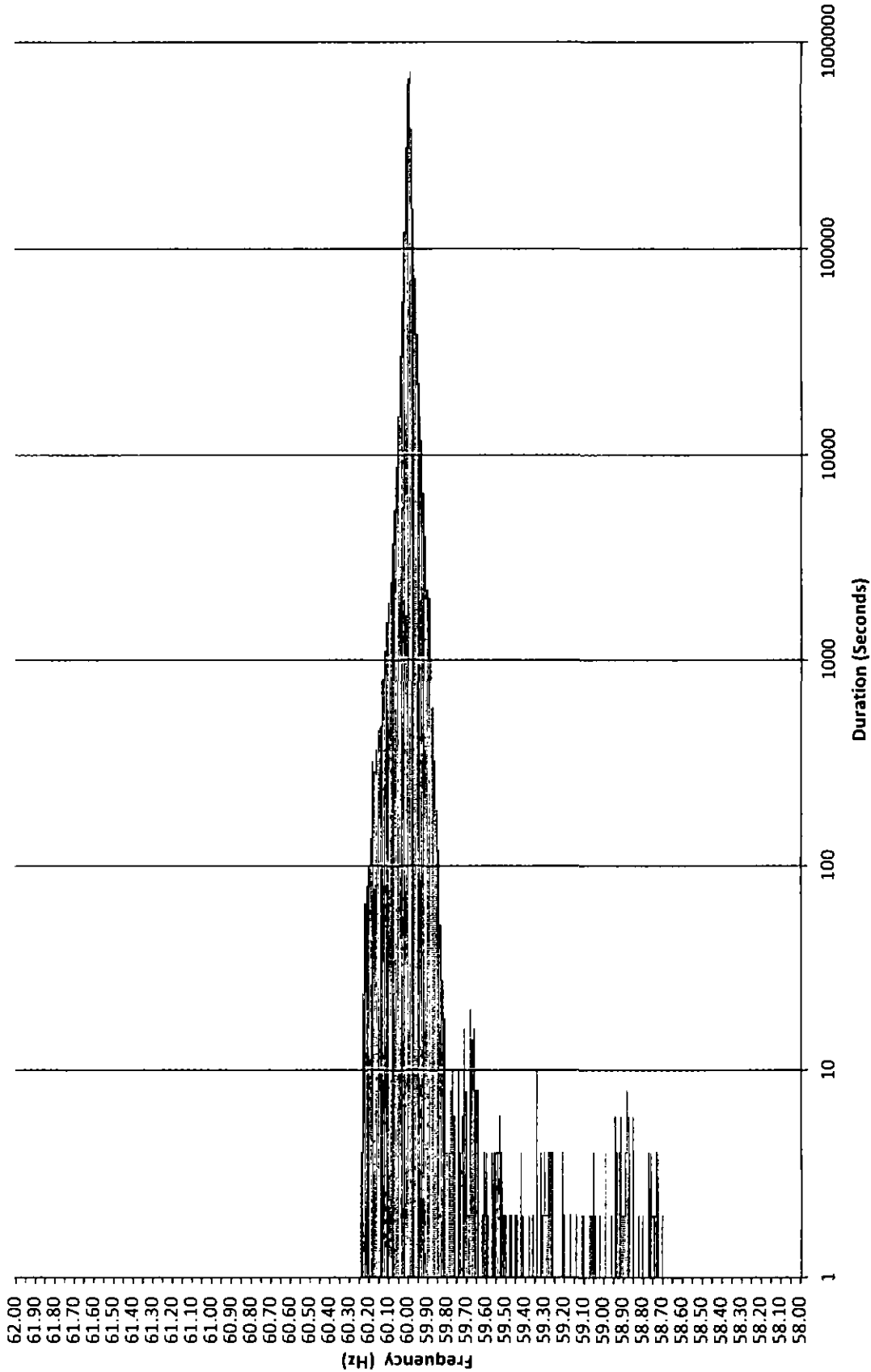
3b) Total MWh of non-dispatchable renewable resources curtailed for the month:

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.

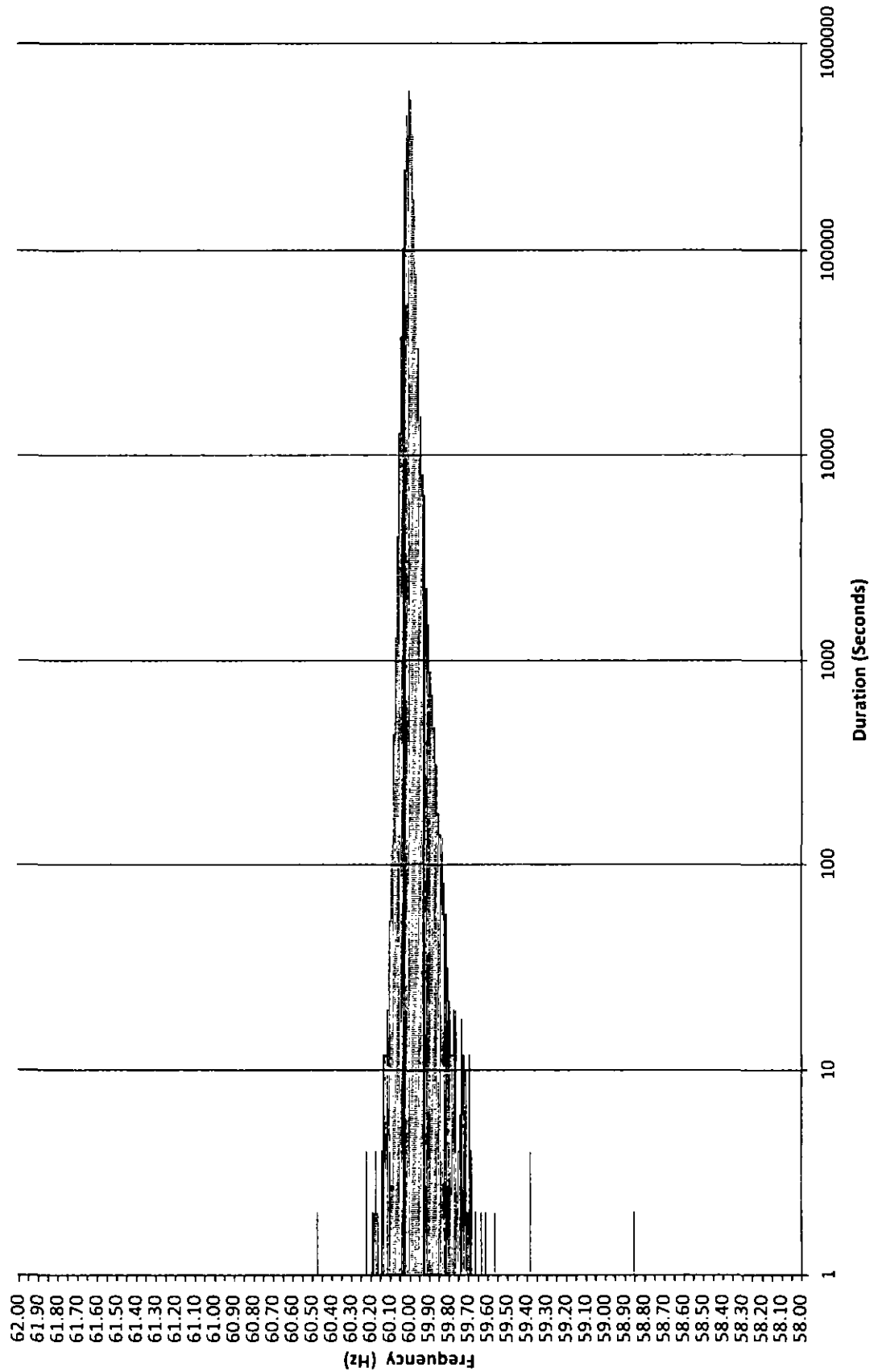
**Frequency Distribution Plot - HECO
October 2012**



**MECO Frequency Distribution Plot - Maui
October 2012**



Frequency Distribution Plot - HELCO October 2012



HECO Frequency Excursion Statistics October 2012		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	4335	5850
Maximum Duration (sec)	1624	364
Maximum Deviation (Hz)	59.759	60.217
Total Duration of Excursions (sec)	76242	133468

MECO Frequency Excursion Statistics October 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	7151	1667
Maximum Duration (sec)	1116	1514
Maximum Deviation (Hz)	58.69727	60.23633
Total Duration of Excursions (sec)	89810	28166

HELCO Frequency Excursion Statistics October 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	6330	2291
Maximum Duration (sec)	504	52
Maximum Deviation (Hz)	58.85059	60.4668
Total Duration of Excursions (sec)	50284	10624

MAUI ELECTRIC COMPANY, LIMITED
 UNDERFREQUENCY LOADSHEDDING EVENTS
 October 2012

Event #	IR #	Island	Date & Time	Frequency (Hz)			Load Shed (MW)	Duration (HH:MM)	Description
				Prior to Event	Nadir	Levels UFLS Occurred			
1	678	Maui	10/5/2012	59.987	58.70	58.7	5.75	0:39	A system frequency depression of 58.7Hz., occurred when Generator M16 at MPP tripped off line, due to a water driver valve failure.
2	685	Molokai	10/7/2012	59.970	0.00	58.7, 58.2, 57.7, 57.2	3.40	8:24	CB 106B Hoolehua and CB 107B Plant Tie at Sub 81 Palaau Power Plant relayed open due to a fault at the Palaau Power Plant Substation due to fire on pole W-4. Generator Units 7, 8 and 9 subsequently relay tripped off line causing an island wide power outage

HECO Curtailment Report October 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
10/27/12 21:01	0.0	0.00	10/28/12 01:11	0	*	Mauka	Tsunami warning
10/27/12 21:01	0.0	0.00	10/28/12 01:11	0	*	Makai	Tsunami warning

KWF = Kahuku Wind Farm

Makai = Kawaioloa Makai Wind Farm

Mauka = Kawaioloa Mauka Wind Farm

(1) The estimated 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 IPP.

MECO-Maui Curtailment Report October 2012

Start Date/Time	Stop Date/Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
10/10/2012 17:54	10/10/2012 18:26	0:32	KWP/II	0.469	19.26	Maintain Regulating Reserve
10/11/2012 5:20	10/11/2012 10:17	4:57	KWP/II	37.995	20.954	Maintain Regulating Reserve
10/11/2012 19:56	10/12/2012 6:40	10:44	KWP/II	160.473	20.957	Excess Energy, maintain Regulating Reserve, and testing
10/11/2012 23:58	10/12/2012 5:01	5:03	5A	No data available	No data available	Excess Energy
10/12/2012 0:13	10/12/2012 4:56	4:43	KWP	20.830	29.61	Excess Energy
10/12/2012 18:04	10/13/2012 12:32	18:28	KWP/II	247.761	20.957	Excess Energy and maintain Regulating Reserve
10/13/2012 1:08	10/13/2012 5:42	4:34	5A	No data available	No data available	Excess Energy
10/13/2012 1:11	10/13/2012 5:40	4:29	KWP	18.260	29.6	Excess Energy
10/13/2012 13:47	10/14/2012 10:10	20:23	KWP/II	160.879	20.957	Excess Energy and maintain Regulating Reserve
10/14/2012 0:44	10/14/2012 5:59	5:15	KWP	30.293	29.94	Excess Energy
10/14/2012 12:28	10/14/2012 12:52	0:24	KWP/II	1.795	20.761	Maintain Regulating Reserve
10/14/2012 15:50	10/15/2012 10:29	18:39	KWP/II	266.227	20.957	Excess Energy and maintain Regulating Reserve
10/15/2012 0:30	10/15/2012 5:40	5:10	KWP	32.773	29.01	Excess Energy
10/15/2012 14:57	10/15/2012 19:01	4:04	KWP/II	19.891	20.956	Maintain Regulating Reserve
10/15/2012 20:37	10/16/2012 6:04	9:27	KWP/II	46.113	20.94	Excess Energy and maintain regulating reserve
10/16/2012 0:55	10/16/2012 1:15	0:20	KWP	0.000	29.07	Excess Energy
10/16/2012 12:07	10/16/2012 14:05	1:58	KWP/II	9.282	16.578	Maintain Regulating Reserve
10/19/2012 4:15	10/19/2012 5:37	1:22	KWP/II	0.000	0	Maintain Regulating Reserve
10/19/2012 4:17	10/19/2012 5:23	1:06	KWP	0.000	17.78	Maintain Regulating Reserve
10/19/2012 6:27	10/19/2012 10:31	4:04	KWP/II	36.000	19.571	Maintain Regulating Reserve
10/19/2012 10:58	10/19/2012 11:47	0:49	KWP/II	2.820	20.101	Maintain Regulating Reserve and operating conditions on Company's System
10/19/2012 15:42	10/20/2012 4:41	12:59	KWP/II	101.494	20.952	Excess Energy and maintain Regulating Reserve
10/20/2012 0:17	10/20/2012 1:16	0:59	5A	No data available	No data available	Excess Energy and maintain Regulating Reserve
10/20/2012 0:19	10/20/2012 9:47	9:28	Makila Hydro	No data available	No data available	Excess Energy and maintain Regulating Reserve
10/20/2012 1:31	10/20/2012 4:40	3:09	KWP	0.177	22.19	Excess Energy and maintain Regulating Reserve
10/20/2012 5:44	10/20/2012 6:35	0:51	KWP/II	3.561	11.6	Maintain Regulating Reserve
10/20/2012 11:05	10/20/2012 11:13	0:08	KWP/II	0.309	17.823	Maintain Regulating Reserve and testing
10/20/2012 11:26	10/20/2012 11:36	0:10	KWP/II	0.443	15.377	Maintain Regulating Reserve and testing
10/20/2012 14:08	10/20/2012 18:56	4:48	KWP/II	24.383	20.957	Maintain Regulating Reserve
10/20/2012 19:14	10/21/2012 8:41	13:27	KWP/II	187.634	20.957	Excess Energy, maintain Regulating Reserve, and operating condition on Company's System
10/21/2012 0:46	10/21/2012 5:40	4:54	5A	No data available	No data available	Excess Energy and maintain Regulating Reserve
10/21/2012 0:49	10/21/2012 0:00	10:03	Makila Hydro	No data available	No data available	Excess Energy and maintain Regulating Reserve
10/21/2012 0:59	10/21/2012 5:38	4:39	KWP	23.035	29.44	Excess Energy
10/21/2012 20:15	10/22/2012 4:12	7:57	KWP/II	89.659	20.803	Excess Energy and maintain Regulating Reserve
10/22/2012 0:18	10/22/2012 3:40	3:22	5A	No data available	No data available	Excess Energy and maintain Regulating Reserve
10/22/2012 0:19	10/22/2012 7:20	5:40	Makila Hydro	No data available	No data available	Excess Energy and maintain Regulating Reserve
10/22/2012 0:21	10/22/2012 4:10	3:49	KWP	4.818	29.39	Excess Energy
10/27/2012 17:37	10/27/2012 18:04	0:27	KWP/II	1.231	20.153	Maintain Regulating Reserve and testing and operating conditions on Company's System
10/27/2012 18:55	10/28/2012 7:43	12:48	KWP/II	197.122	20.957	Maintain Regulating Reserve, operating conditions on Company's System, and system emergency
10/28/2012 6:03	10/28/2012 6:10	0:07	5A	No data available	No data available	Maintain Regulating Reserve
10/28/2012 6:31	10/28/2012 8:48	0:17	KWP/II	0.408	18.772	Maintain Regulating Reserve
10/28/2012 16:07	10/28/2012 16:38	0:31	KWP/II	0.373	20.893	Maintain Regulating Reserve
10/28/2012 18:35	10/29/2012 10:10	15:35	KWP/II	188.657	20.857	Excess Energy and maintain Regulating Reserve
10/29/2012 0:55	10/29/2012 5:10	4:15	5A	No data available	No data available	Excess Energy
10/29/2012 1:01	10/29/2012 7:46	6:47	Makila Hydro	No data available	No data available	Excess Energy
10/29/2012 1:16	10/29/2012 5:08	3:50	KWP	19.711	46.18	Excess Energy

MECO-Maui Curtailment Report October 2012

Start Date/Time	Stop Date/Time	Duration	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
10/29/2012 12:25	10/29/2012 12:39	0:14	KWPII	0.524	20.714	Maintain regulating reserve
10/29/2012 13:03	10/29/2012 13:28	0:25	KWPII	1.101	20.951	Maintain regulating reserve
10/29/2012 13:36	10/29/2012 14:06	0:30	KWPII	1.128	20.951	Maintain Regulating Reserve
10/29/2012 14:23	10/29/2012 16:20	1:57	KWPII	7.640	20.957	Maintain Regulating Reserve
10/29/2012 16:23	10/29/2012 16:33	2:10	KWPII	10.708	20.957	Maintain Regulating Reserve
10/29/2012 16:47	10/30/2012 7:12	12:25	KWPII	149.741	20.957	Excess Energy and maintain Regulating Reserve
10/30/2012 0:13	10/30/2012 4:48	4:35	SA	No data available	No data available	Excess Energy
10/30/2012 0:23	10/30/2012 4:45	4:22	KWP	17.220	27.12	Excess Energy
10/30/2012 1:21	10/30/2012 7:21	6:00	Makula Hydro	No data available	No data available	Excess Energy
10/30/2012 1:28	10/30/2012 4:45	3:17	KWP	17.220	27.12	Excess Energy
10/30/2012 11:55	10/30/2012 12:45	0:50	KWPII	2.577	19.557	Testing
10/30/2012 20:18	10/30/2012 20:37	0:19	KWPII	0.328	19.561	Maintain Regulating Reserve
10/30/2012 20:57	10/31/2012 2:33	5:36	KWPII	51.792	20.845	Excess Energy and maintain Regulating Reserve
10/31/2012 1:52	10/31/2012 2:17	0:25	SA	No data available	No data available	Excess Energy
10/31/2012 9:41	10/31/2012 9:48	0:07	KWPII	0.304	18.001	Maintain Regulating Reserve
10/31/2012 15:49	10/31/2012 17:16	1:27	KWPII	4.264	20.914	Maintain Regulating Reserve and operating conditions on Company's System
10/31/2012 17:25	10/31/2012 22:05	4:40	KWPII	26.372	20.95	Maintain Regulating Reserve and operating conditions 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 "Estimated curtailment energy during event" and "Peak MW curtailed" information is provided by First Wind, and MECO does not make any representation as to its accuracy.						
- The Makula Hydro curtailment period and time is usually controlled by the facility. MECO can usually accept Makula Hydro generation at the same time that SA is uncurtailed, which is before the facility commits its generator.						
- Estimated curtailed MWH during curtailment events for Kaheawa Wind Power II, LLC is based on information provided by Kaheawa Wind Power II, LLC. Maui Electric Company, Limited does not make any representation as to its accuracy.						
- Estimated curtailed MWH during curtailment events is not available for Makula Hydro, or AAAAA Rent-A-Space Maui LTD.						
- Curtailed peak energy during curtailment events is not available for Makula Hydro or AAAAA Rent-A-Space Maui LTD.						

MECO-Lanai Curtailment Report October 2012

Start Date/Time	Curtailment Event Duration	IPP Curtailed	MWH Curtailed	Peak MW Curtailed	Reason for Curtailment
10/1/12 9:01	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 10:02	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 11:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 12:04	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 13:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 14:02	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 15:20	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 16:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/1/12 17:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 9:04	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 10:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 11:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 12:02	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 13:06	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 14:03	0:17	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 15:10	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 16:07	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/2/12 17:05	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 9:01	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 10:06	0:09	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 11:07	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 12:01	0:19	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 13:10	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 14:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 15:20	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 16:05	0:09	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/3/12 17:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 9:06	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 10:02	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 11:07	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 12:09	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 13:11	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation

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Start Date/Time	Curtailment Event Duration	IPP Curtailed	MWH Curtailed	Peak MW Curtailed	Reason for Curtailment
10/4/12 14:01	0:19	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 15:13	0:17	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 16:10	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/4/12 17:06	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 9:07	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 10:09	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 11:12	0:08	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 12:11	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 13:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 14:10	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 15:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 16:01	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/5/12 17:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 9:03	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 10:09	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 11:11	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 12:05	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 13:10	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 14:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 15:12	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 16:06	0:09	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/6/12 17:05	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 9:10	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 10:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 11:07	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 12:01	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 13:07	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 14:05	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 15:10	0:20	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 16:06	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/7/12 17:04	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 9:00	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 10:06	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation

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Start Date/Time	Curtailment Event Duration	IPP Curtailed	MWH Curtailed	Peak MW Curtailed	Reason for Curtailment
10/8/12 11:07	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 12:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 13:10	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 14:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 16:08	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/8/12 17:07	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 9:07	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 10:00	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 11:09	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 12:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 13:08	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 14:01	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 15:15	0:16	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 16:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/9/12 17:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 9:10	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 10:09	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 11:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 12:06	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 13:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 14:02	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 15:12	0:18	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 16:07	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/10/12 17:01	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 9:00	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 10:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 11:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 12:06	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 13:09	0:16	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 14:06	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 15:13	0:17	LSR-La Ola PV	No data	No data	Ramp rate mitigation

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Start Date/Time	Curtailment Event Duration	IPP Curtailed	MWH Curtailed	Peak MW Curtailed	Reason for Curtailment
10/11/12 16:03	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/11/12 17:01	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 9:05	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 10:09	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 11:06	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 12:01	0 14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 13:10	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 14:05	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 15:13	0:19	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 16:10	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/12/12 17:01	0:16	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 9:06	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 10:05	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 11:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 12:00	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 13:06	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 14:09	0:16	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 15:15	0:20	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 16:04	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/13/12 17:03	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 9:03	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 10:00	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 11:09	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 12:06	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 13:02	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 14:05	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 15:20	0:17	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 16:10	0:10	LSR-La Ola PV	No data	No data	Ramp rate mitigation
10/14/12 17:08	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation

HELCO Curtailment Report October 2012

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
10/25/12 07:14	19.7 MW	10/25/12 07:30	15.9 MW	Tawhiri curtailed - test SCADA control of 69kV breakers after rewiring.
10/29/12 01:08	16.1 MW	10/29/12 04:24	15.3 MW	Tawhiri Group B curtailed for excess energy.
10/30/12 07:32	18.5 MW	10/30/12 09:49	17.1 MW	Tawhiri curtailed - install new transmission pole