



Dean K. Matsuura
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2013 JAN 30 P 3:39

PUBLIC UTILITIES
COMMISSION

January 30, 2013

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 December 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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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 December 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 December 31, 2012):

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

Hawaiian Electric did not have any contingency reserve actions for the month of December. MECO and HELCO do not operate with contingency reserve requirements. Therefore, Attachment 3 is not being provided for this reporting period.

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

Hawaiian Electric, MECO, and HELCO did not have any under frequency load shed events for the month of December. Therefore, Attachment 4 is not being provided for this reporting period.

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 December 31, 2012):

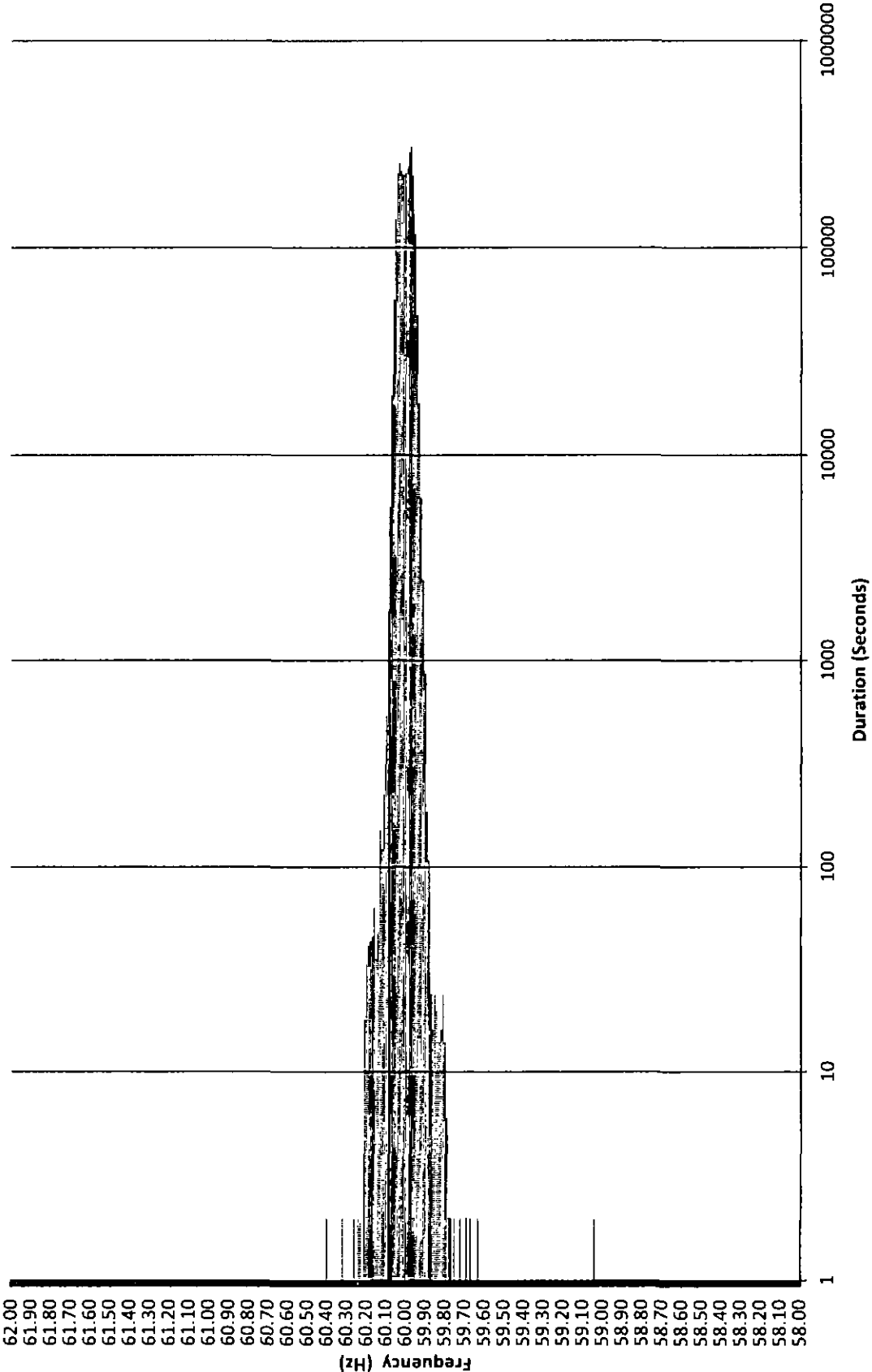
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

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

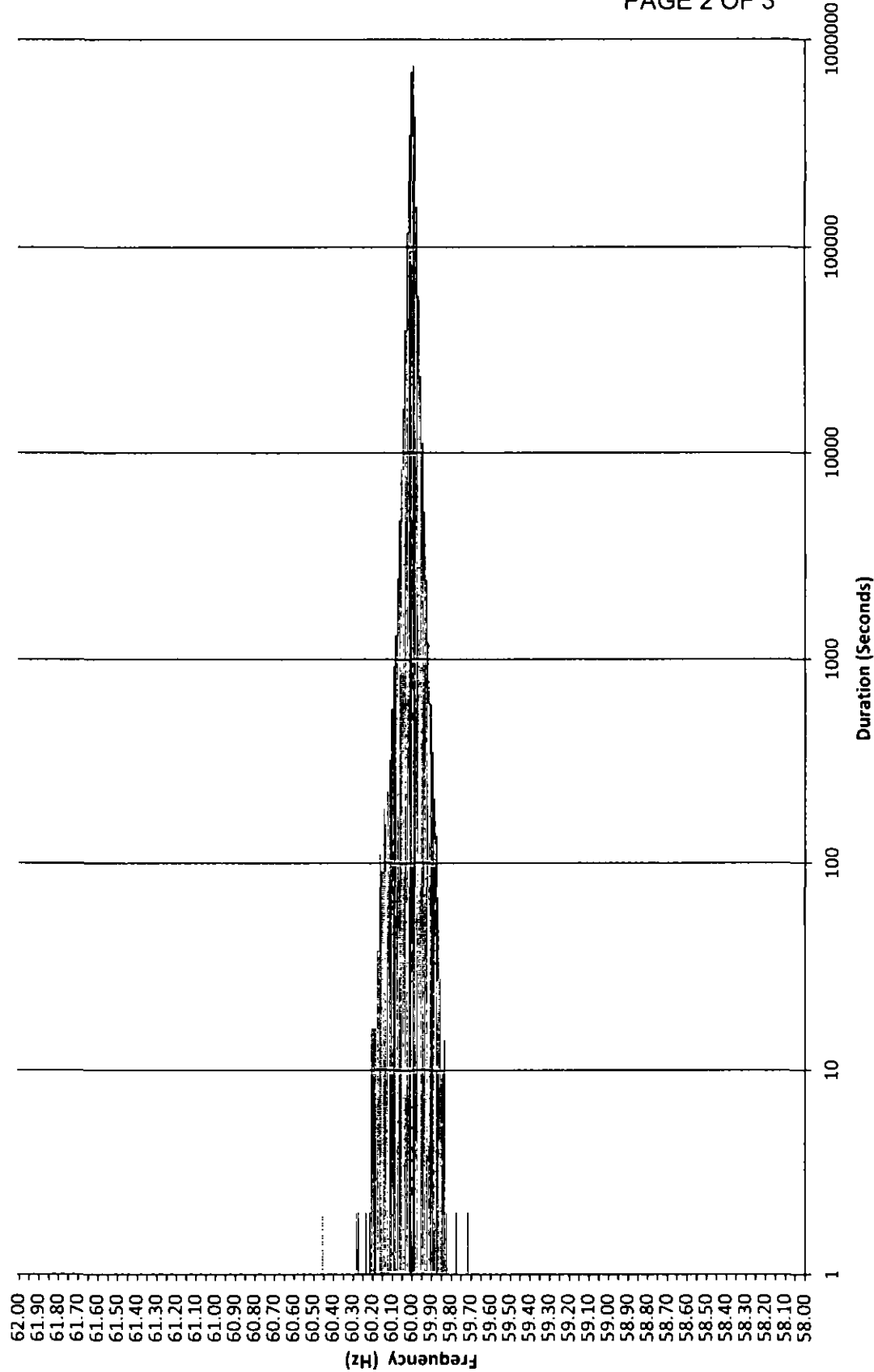
3b) Total MWh of non-dispatchable renewable resources curtailed for the month:

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.

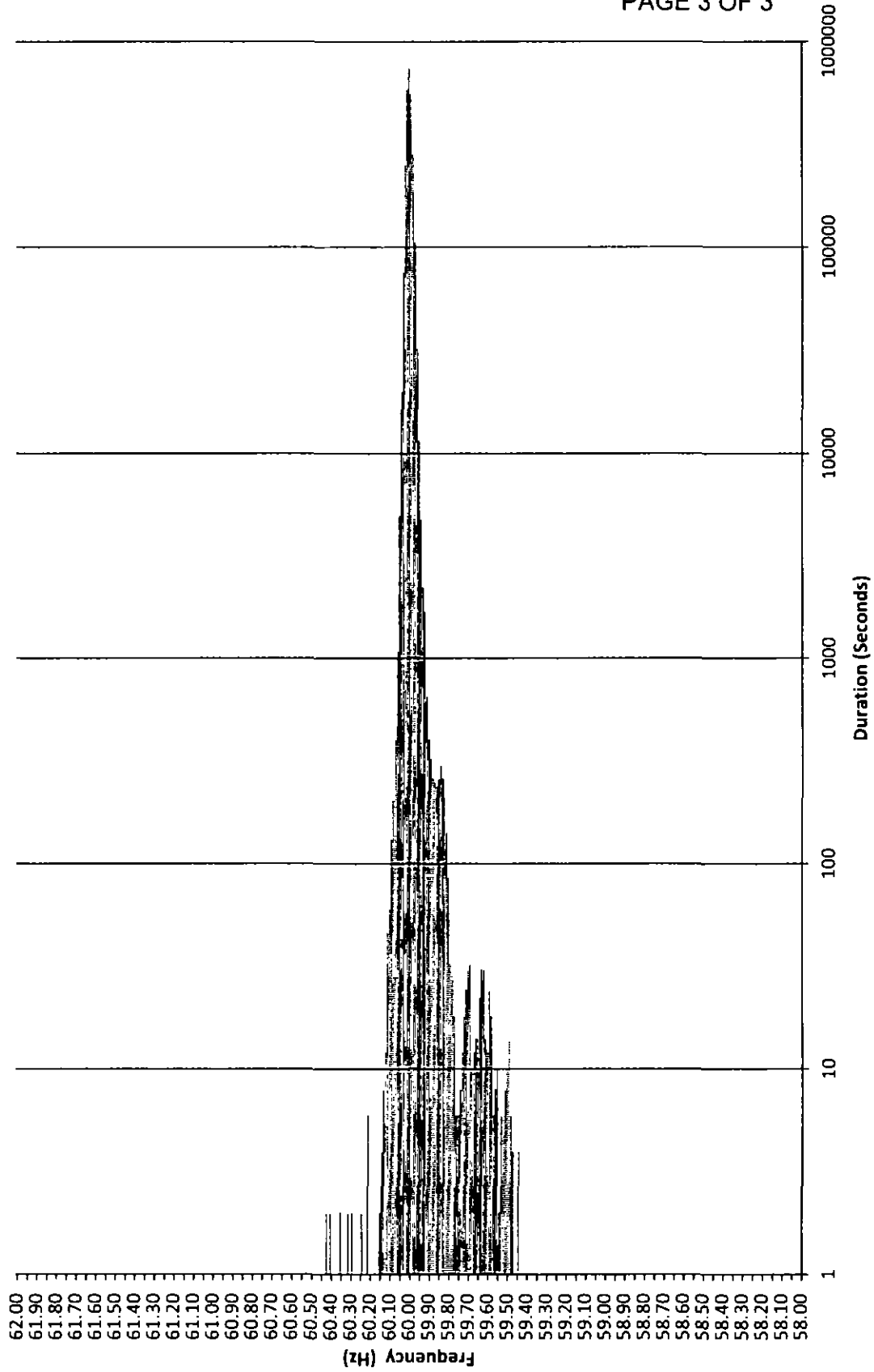
Frequency Distribution Plot - HECO December 2012



MECO Frequency Distribution Plot - Maui December 2012



Frequency Distribution Plot - HELCO December 2012



HECO Frequency Excursion Statistics December 2012		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	5550	6127
Maximum Duration (sec)	1204	634
Maximum Deviation (Hz)	59.039	60.401
Total Duration of Excursions (sec)	121400	137226

MECO Frequency Excursion Statistics December 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	3859	705
Maximum Duration (sec)	558	610
Maximum Deviation (Hz)	59.70703	60.44629
Total Duration of Excursions (sec)	45480	11190

HELCO Frequency Excursion Statistics December 2012		
	<59.95 Hz	>60.05 Hz
Number of Excursions	1687	683
Maximum Duration (sec)	1374	68
Maximum Deviation (Hz)	59.43652	60.42285
Total Duration of Excursions (sec)	17124	3550

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HECO Curtailment Report December 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
12/02/12 06:19	0.0	0.00	12/02/12 07:58	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/02/12 06:26	0.0	7.00	12/02/12 07:58	0	*	Mauka	Wahiawa Transformer #3 repairs
12/02/12 10:37	0.0	9.00	12/02/12 10:56	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/03/12 06:43	0.0	2.20	12/03/12 07:34	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/04/12 19:01	0.0	0.00	12/04/12 20:32	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/10/12 05:27	0.0	2.30	12/10/12 05:57	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/10/12 18:50	0.0	7.30	12/10/12 19:09	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/12/12 07:23	0.0	17.00	12/12/12 08:04	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/12/12 16:06	0.0	10.00	12/12/12 17:18	0	*	Makai	Pole replacement on Koolau-Kahuku 46kV line
12/14/12 01:30	0.0	16.00	12/12/12 06:00	0	*	Makai	System Minimum Load Curtailment/Pole replacement on Koolau-Kahuku 46kV line
12/14/12 01:51	25.0	42.00	12/14/12 04:42	25	*	Mauka	System Minimum Load Curtailment
12/19/12 06:16	0.0	19.90	12/19/12 18:16	0	*	Mauka	Pole replacement on Wahiawa-Waiakua 1 46kV line
12/20/12 02:32	0.0	22.90	12/20/12 04:01	0	*	Mauka	System Minimum Load Curtailment
12/28/12 07:15	0.0	1.00	12/28/12 08:11	0	*	Makai	Pole repairs on Koolau-Kahuku 46kV line

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/or Kawaioloa Wind Farm, and HECO does not make any representations as to its accuracy

* Data has not been provided by IPP.

MECO-Maui Curtailment Report December 2012

Start Date/Time	Duration (dd hh:mm)	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
12/3/12 0:58	00:04:35	KWP	27.360	8.330	Excess Energy and maintain Regulating Reserve
12/3/12 1:59	00:02:03	5A	No data available	No data available	Excess Energy
12/3/12 2:00	00:05:00	Makila	No data available	No data available	Excess Energy
12/3/12 2:02	00:00:14	KWP	No data available	No data available	Excess Energy
12/3/12 2:20	00:00:01	KWP	No data available	No data available	Excess Energy
12/3/12 2:28	00:00:03	KWP	No data available	No data available	Excess Energy
12/3/12 2:33	00:00:29	KWP	No data available	No data available	Excess Energy
12/3/12 3:04	00:00:07	KWP	No data available	No data available	Excess Energy
12/3/12 3:29	00:00:02	KWP	No data available	No data available	Excess Energy
12/3/12 3:35	00:00:01	KWP	No data available	No data available	Excess Energy
12/4/12 22:49	00:00:10	KWP	10.300	2.080	Maintain Regulating Reserve
12/7/12 19:47	00:00:07	KWP	5.610	0.430	Automatic Curtailment Controls
12/7/12 23:17	00:00:04	KWP	6.310	0.660	Automatic Curtailment Controls
12/8/12 20:06	00:00:18	KWP	No data available	No data available	Automatic Curtailment Controls
12/8/12 20:45	00:10:59	KWP	119.600	16.850	Maintaining regulating reserve
12/9/12 0:00	00:04:20	5A	No data available	No data available	Maintain Regulating Reserve
12/9/12 0:08	00:01:15	KWP	21.747	27.910	Automatic Curtailment Controls
12/9/12 1:27	00:02:49	KWP	49.003	27.910	Automatic Curtailment Controls
12/9/12 4:42	00:00:33	5A	No data available	No data available	Maintain Regulating Reserve
12/9/12 4:42	00:00:25	KWP	7.019	18.440	Automatic Curtailment Controls
12/9/12 5:10	00:00:02	KWP	0.562	No data available	Automatic Curtailment Controls
12/9/12 8:01	00:00:54	KWP	9.420	9.290	Maintaining regulating reserve
12/9/12 9:00	00:00:02	KWP	No data available	No data available	Automatic Curtailment Controls
12/10/12 6:44	00:10:21	KWP	99.270	20.610	Automatic Curtailment Controls, maintain regulating reserve, and Excess Energy
12/10/12 12:34	00:00:02	KWP	No data available	No data available	high wind manual control
12/10/12 13:47	00:00:07	KWP	No data available	No data available	high wind manual control
12/10/12 18:49	00:13:52	KWP	131.090	20.430	Automatic Curtailment Controls, maintain regulating reserve, and Excess Energy
12/11/12 0:09	00:04:54	KWP	91.060	29.800	Excess Energy
12/11/12 6:49	00:01:44	KWP	No data available	No data available	Excess Energy
12/12/12 0:56	00:05:05	KWP	70.820	22.330	Automatic Curtailment Controls
12/13/12 1:55	00:00:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/13/12 6:42	00:00:15	KWP	1.170	20.940	Automatic Curtailment Controls
12/13/12 11:14	00:00:18	KWP	No data available	No data available	Automatic Curtailment Controls
12/13/12 22:30	00:00:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/13/12 22:43	00:01:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/13/12 23:55	00:02:28	KWP	20.430	17.840	Automatic Curtailment Controls
12/14/12 3:49	00:00:07	KWP	No data available	No data available	Automatic Curtailment Controls
12/14/12 4:17	00:00:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/14/12 10:47	00:00:24	KWP	1.290	20.380	Automatic Curtailment Controls
12/14/12 11:52	00:00:13	KWP	No data available	No data available	Maintain Regulating Reserve
12/14/12 12:17	00:04:14	KWP	41.490	14.190	Automatic Curtailment Controls
12/14/12 17:31	00:00:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/14/12 21:25	00:02:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/14/12 23:35	00:00:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/14/12 23:43	00:00:03	KWP	No data available	No data available	Automatic Curtailment Controls
12/14/12 23:52	00:00:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/15/12 0:03	00:00:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/15/12 0:07	00:04:56	KWP	70.470	20.550	Automatic Curtailment Controls
12/15/12 5:08	00:00:57	KWP	No data available	No data available	Excess Energy
12/15/12 14:20	00:00:09	KWP	No data available	No data available	Automatic Curtailment Controls
12/15/12 14:35	00:00:04	KWP	No data available	No data available	Maintain Regulating Reserve
12/15/12 15:48	00:00:12	KWP	No data available	No data available	Automatic Curtailment Controls
12/15/12 21:06	00:00:48	KWP	0.280	20.260	Automatic Curtailment Controls
12/15/12 21:59	00:00:50	KWP	No data available	No data available	Automatic Curtailment Controls
12/15/12 23:03	00:06:56	KWP	No data available	No data available	Automatic Curtailment Controls
12/16/12 1:59	00:00:09	5A	No data available	No data available	Excess Energy
12/16/12 2:24	00:00:07	KWP	No data available	No data available	Requested by First Wind
12/16/12 2:32	00:02:39	5A	No data available	No data available	Excess Energy
12/16/12 2:50	00:00:11	KWP	No data available	No data available	Automatic Curtailment Controls
12/16/12 3:02	00:00:06	KWP	No data available	No data available	Automatic Curtailment Controls
12/16/12 6:45	00:00:07	KWP	No data available	No data available	Maintaining regulating reserve
12/16/12 7:41	00:00:09	KWP	No data available	No data available	Maintain Regulating Reserve
12/16/12 7:41	00:00:09	KWP	No data available	No data available	Maintain Regulating Reserve
12/16/12 9:02	00:00:07	KWP	No data available	No data available	Maintain Regulating Reserve
12/16/12 10:45	00:11:49	KWP	67.040	21.080	Maintain Regulating Reserve
12/16/12 23:45	00:00:15	KWP	0.410	20.420	Maintaining regulating reserve and Automatic Curtailment Controls
12/17/12 7:42	00:00:40	KWP	0.540	20.330	Maintain Regulating Reserve
12/17/12 14:23	00:00:10	KWP	No data available	No data available	Automatic Curtailment Controls
12/17/12 14:42	00:00:07	KWP	No data available	No data available	Maintaining regulating reserve
12/18/12 10:04	00:02:44	KWP	10.870	20.220	Maintain Regulating Reserve
12/18/12 14:13	01:20:21	AWE	No data available	No data available	Automatic Curtailment Controls, maintain regulating reserve, and self curtailment high wind gusts
12/19/12 1:16	00:06:17	Makila	No data available	No data available	Maintain Regulating Reserve

MECO-Maui Curtailment Report December 2012

Start Date/Time	Duration (dd:hh:mm)	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
12/19/12 1:57	00 00:13	KWP	No data available	No data available	Automatic Curtailment Controls
12/19/12 2:34	00:00:07	KWP	No data available	No data available	Automatic Curtailment Controls
12/19/12 2:43	00:00:18	KWP	No data available	No data available	Automatic Curtailment Controls
12/19/12 9 25	00:00:50	KWP	No data available	No data available	self curtailment high wind gusts
12/19/12 20:52	00:00 10	KWP/II	No data available	No data available	Maintain Regulating Reserve
12/19/12 21:05	00:16 39	KWP/II	156.310	19.910	Maintain Regulating Reserve
12/20/12 2 59	00:01:14	5A	No data available	No data available	Maintain Regulating Reserve
12/20/12 3 00	00:04 25	Makila	No data available	No data available	Maintain Regulating Reserve
12/20/12 3 06	00:01:14	KWP	9 583	22 574	Automatic Curtailment Controls, Excess Energy
12/20/12 10 40	00:03:59	AWE	No data available	No data available	Maintaining regulating reserve and Automatic Curtailment Controls
12/20/12 15 15	00:02 47	KWP/II	10 060	20.310	Maintain Regulating Reserve
12/20/12 20 25	00:21 32	KWP/II	No data available	No data available	Maintain Regulating Reserve
12/21/12 0:55	00:06 23	5A	No data available	No data available	Excess Energy
12/21/12 0:58	00:04 12	Makila	No data available	No data available	Excess Energy
12/21/12 0:58	00:04 07	KWP	39 016	25.529	Automatic Curtailment Controls, Excess Energy
12/21/12 8:22	00 00:39	AWE	No data available	No data available	Automatic Curtailment Controls and testing
12/21/12 9:05	00 00:27	AWE	No data available	No data available	Maintaining regulating reserve and testing
12/21/12 9 40	00 00:04	AWE	No data available	No data available	Maintaining regulating reserve
12/21/12 9 48	00 00:21	AWE	No data available	No data available	Maintaining regulating reserve
12/21/12 10:30	00 00:54	AWE	No data available	No data available	Maintaining regulating reserve and testing
12/21/12 11:29	00 00:03	AWE	No data available	No data available	Testing
12/21/12 11:36	00:00:05	AWE	No data available	No data available	Testing
12/21/12 11:47	00:00 42	AWE	No data available	No data available	Testing
12/21/12 12:17	00:00:13	KWP	1 348	21 798	Testing
12/21/12 12:43	00:01 35	AWE	No data available	No data available	Testing and Automatic Curtailment Controls
12/21/12 14:23	00:01 26	AWE	No data available	No data available	Automatic Curtailment Controls and testing
12/21/12 14:32	00:01 53	KWP	No data available	No data available	Testing
12/21/12 16:17	00 00 01	AWE	No data available	No data available	Testing
12/21/12 16:21	00:00 08	AWE	No data available	No data available	Testing
12/21/12 16:26	00:01 08	KWP	No data available	No data available	Testing
12/21/12 16:32	00:00 05	AWE	No data available	No data available	Testing
12/21/12 16:40	00:00 01	AWE	No data available	No data available	Testing
12/21/12 16:43	00:00:27	AWE	No data available	No data available	Testing
12/21/12 17:13	00:00:04	AWE	No data available	No data available	Testing
12/21/12 17:19	00:00:02	AWE	No data available	No data available	Testing
12/21/12 17 24	00:00:03	AWE	No data available	No data available	Testing
12/21/12 17 29	00 00:03	AWE	No data available	No data available	Testing
12/21/12 17:35	00 00:07	AWE	No data available	No data available	Testing
12/21/12 17:36	00 00:12	KWP	No data available	No data available	Testing
12/21/12 17 44	00:00 24	AWE	No data available	No data available	Testing and Automatic Curtailment Controls
12/21/12 17:52	00:00 01	KWP	No data available	No data available	Testing
12/21/12 18 09	00 13 25	AWE	No data available	No data available	Automatic Curtailment Controls and maintaining regulating reserve
12/21/12 19 04	00:11 49	KWP/II	156 840	20.280	Maintaining regulating reserve
12/22/12 0 27	00 04 25	5A	No data available	No data available	Excess Energy
12/22/12 0 29	00 07 02	Makila	No data available	No data available	Excess Energy
12/22/12 0 31	00 04 08	KWP	No data available	No data available	Automatic Curtailment Controls, Excess Energy
12/22/12 4 41	00 00:08	KWP	No data available	No data available	Excess Energy
12/22/12 7 38	00 00:02	AWE	No data available	No data available	Maintaining regulating reserve
12/22/12 9 59	00 00:12	AWE	0.690	No data available	Automatic Curtailment Controls
12/22/12 10 17	00 00:03	AWE	0.020	No data available	Automatic Curtailment Controls
12/22/12 21 56	00 00:01	AWE	0.040	No data available	Automatic Curtailment Controls
12/22/12 22 05	00 00:02	AWE	0 040	No data available	Automatic Curtailment Controls
12/23/12 2 00	00 00:01	AWE	0.020	No data available	Automatic Curtailment Controls
12/23/12 2:46	00 00:35	AWE	2 630	No data available	Automatic Curtailment Controls
12/23/12 3 37	00 00:08	AWE	0.180	No data available	Automatic Curtailment Controls
12/23/12 10 08	00 00:05	AWE	No data available	No data available	Automatic Curtailment Controls
12/23/12 10 16	00 01 07	AWE	No data available	No data available	Automatic Curtailment Controls
12/23/12 11 27	00 00 18	AWE	No data available	No data available	Automatic Curtailment Controls
12/23/12 11:52	00 00 02	AWE	No data available	No data available	Automatic Curtailment Controls
12/23/12 12 14	00 00 01	AWE	0.010	No data available	Automatic Curtailment Controls
12/23/12 13 01	00 00 01	AWE	No data available	No data available	Automatic Curtailment Controls
12/23/12 13 06	00 00 01	AWE	No data available	No data available	Automatic Curtailment Controls
12/23/12 13 12	00 00 01	AWE	0.050	No data available	Automatic Curtailment Controls
12/23/12 15 17	00 00:01	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 5:36	00 00:02	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 5 41	00 00:18	AWE	0 480	No data available	Automatic Curtailment Controls
12/24/12 6 04	00 00:02	AWE	0.130	No data available	Automatic Curtailment Controls
12/24/12 6 13	00 00 01	AWE	0.060	No data available	Automatic Curtailment Controls
12/24/12 7:11	00 00:02	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 9:50	00 00:08	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 10 02	00 00:04	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 10:32	00 00:12	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 10 48	00 00 14	AWE	1 680	No data available	Automatic Curtailment Controls
12/24/12 21 31	00:00 01	AWE	No data available	No data available	Automatic Curtailment Controls

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Start Date/Time	Duration (dd:hh:mm)	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
12/24/12 23:22	00:00:02	AWE	No data available	No data available	Automatic Curtailment Controls
12/24/12 23:37	00:00:37	AWE	No data available	No data available	Automatic Curtailment Controls
12/25/12 0 15	00:00:38	AWE	No data available	No data available	Maintaining regulating reserve and Automatic Curtailment Controls
12/25/12 0:57	00 00:15	AWE	No data available	No data available	Maintaining regulating reserve and Automatic Curtailment Controls
12/25/12 1:17	00 00:03	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 1:22	00 00:30	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 1:54	00:00:20	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 2:46	00:00:03	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 2:51	00:01:24	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 4:17	00:00:05	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 4:25	00:00:32	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 4:59	00:00:12	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 14:27	00:00:01	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 16 10	00:01:47	AWE	No data available	No data available	Maintaining regulating reserve
12/25/12 18:00	00:00:03	AWE	No data available	No data available	Maintaining regulating reserve
12/26/12 0 34	00:00:01	AWE	0 040	No data available	Automatic Curtailment Controls
12/26/12 0 55	00:07:28	KWP II	103 150	11.410	Automatic Curtailment Controls
12/26/12 1:04	00:08:06	AWE	No data available	No data available	Automatic Curtailment Controls
12/26/12 1:19	00:04:24	5A	No data available	No data available	Excess Energy
12/26/12 1:21	00:04:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/26/12 5 24	00:00:03	KWP	No data available	No data available	Automatic Curtailment Controls
12/26/12 23:51	03:03:45	KWP II	No data available	No data available	Automatic Curtailment Controls
12/27/12 0 21	00:02:51	5A	No data available	No data available	Excess Energy
12/27/12 0 23	00:00:03	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 0 36	00 00:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 0 38	00 00:02	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 0:42	00:01:00	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 0:43	00:00:06	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 1:51	00:00:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 1:53	00:00:21	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 2:16	00 00:03	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 2:40	00 00:15	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 2:57	00 00:03	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 4 34	00 00:14	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 5 01	00 00:01	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 7 02	00 00:05	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 7 09	00 00:15	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 7:42	00 00:08	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 7:52	00 00:03	KWP	No data available	No data available	Automatic Curtailment Controls
12/27/12 7:57	00 00:02	KWP	No data available	No data available	Automatic Curtailment Controls
12/30/12 1:37	00 00:49	KWP II	No data available	No data available	Maintain Regulating Reserve

Notes

- Curtailment for KWP, Auwahi, and KWP II is now controlled automatically as required by the Maui Operating Measures.
- "Estimated curtailed energy during event" and "Peak MW curtailed" information is provided by the IPP's, and MECO does not make any representation as to its accuracy.
- The Makila Hydro curtailment period is usually controlled by the facility. MECO can usually accept Makila Hydro generation at the same time that 5A is uncurtailed.
- "Estimated curtailed energy during event" and "Peak MW curtailed" is not available for Makila Hydro, or AAAAA Rent-A-Space Maui LTD

MECO-Lanai Curtailment Report December 2012

Start Date/Time	Stop Date/Time	Duration (dd:hh:mm)	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
12/1/12 9:01	12/1/12 9:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 10:00	12/1/12 10:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 11:00	12/1/12 11:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 12:00	12/1/12 12:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 13:02	12/1/12 13:14	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 14:01	12/1/12 14:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 15:00	12/1/12 15:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 16:00	12/1/12 16:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/1/12 17:00	12/1/12 17:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 9:00	12/2/12 9:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 10:02	12/2/12 10:14	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 11:00	12/2/12 11:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 12:00	12/2/12 12:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 13:00	12/2/12 13:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 14:01	12/2/12 14:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 15:01	12/2/12 15:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/2/12 16:00	12/2/12 16:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 9:00	12/3/12 9:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 10:00	12/3/12 10:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 11:00	12/3/12 11:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 12:00	12/3/12 12:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 13:00	12/3/12 13:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 14:00	12/3/12 14:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 15:00	12/3/12 15:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/3/12 16:00	12/3/12 16:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 9:00	12/4/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 10:00	12/4/12 10:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 11:01	12/4/12 11:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 12:00	12/4/12 12:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 13:00	12/4/12 13:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 14:00	12/4/12 14:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 15:00	12/4/12 15:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/4/12 16:00	12/4/12 16:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/5/12 9:00	12/5/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/5/12 10:00	12/5/12 10:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/5/12 11:00	12/5/12 11:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/5/12 12:00	12/5/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/5/12 13:00	12/5/12 13:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/5/12 14:00	12/5/12 14:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 9:01	12/6/12 9:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 10:00	12/6/12 10:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 11:00	12/6/12 11:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 12:01	12/6/12 12:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 13:02	12/6/12 13:15	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 14:00	12/6/12 14:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 15:00	12/6/12 15:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 16:01	12/6/12 16:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/6/12 17:00	12/6/12 17:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 9:00	12/7/12 9:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 10:01	12/7/12 10:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 11:01	12/7/12 11:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 12:01	12/7/12 12:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 13:01	12/7/12 13:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 14:01	12/7/12 14:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 15:01	12/7/12 15:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 16:01	12/7/12 16:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/7/12 17:01	12/7/12 17:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 9:00	12/8/12 9:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 10:02	12/8/12 10:16	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 11:01	12/8/12 11:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 12:00	12/8/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 13:01	12/8/12 13:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 14:02	12/8/12 14:14	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 15:00	12/8/12 15:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 16:01	12/8/12 16:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/8/12 17:01	12/8/12 17:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 9:00	12/9/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 10:00	12/9/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 11:00	12/9/12 11:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 12:00	12/9/12 12:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 13:00	12/9/12 13:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation

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Start Date/Time	Stop Date/Time	Duration (dd:hh:mm)	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
12/9/12 14:00	12/9/12 14:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 15:00	12/9/12 15:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 16:00	12/9/12 16:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/9/12 17:00	12/9/12 17:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 9:00	12/10/12 9:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 10:00	12/10/12 10:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 11:00	12/10/12 11:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 12:00	12/10/12 12:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 13:01	12/10/12 13:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 14:00	12/11/12 14:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 15:01	12/10/12 15:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/10/12 16:01	12/10/12 16:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 9:00	12/11/12 9:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 10:00	12/11/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 11:00	12/11/12 11:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 12:00	12/11/12 12:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 13:02	12/11/12 13:17	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 14:02	12/11/12 14:17	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 15:01	12/11/12 15:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 16:01	12/11/12 16:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/11/12 17:00	12/11/12 17:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 9:00	12/12/12 9:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 10:01	12/12/12 10:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 11:01	12/12/12 11:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 12:01	12/12/12 12:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 13:00	12/12/12 13:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 14:01	12/12/12 14:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 15:01	12/12/12 15:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 16:01	12/12/12 16:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/12/12 17:01	12/12/12 17:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 9:00	12/13/12 9:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 10:00	12/13/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 11:01	12/13/12 11:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 12:00	12/13/12 12:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 13:00	12/13/12 13:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 14:00	12/13/12 14:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 15:00	12/13/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 16:00	12/13/12 16:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/13/12 17:01	12/13/12 17:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 9:00	12/14/12 9:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 10:00	12/14/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 11:00	12/14/12 11:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 12:00	12/14/12 12:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 13:00	12/14/12 13:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 14:00	12/14/12 14:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 15:00	12/14/12 15:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 16:00	12/14/12 16:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/14/12 17:00	12/14/12 17:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 9:00	12/15/12 9:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 10:00	12/15/12 10:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 11:00	12/15/12 11:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 12:00	12/15/12 12:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 13:00	12/15/12 13:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 14:00	12/15/12 14:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 15:00	12/15/12 15:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 16:00	12/15/12 16:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/15/12 17:00	12/15/12 17:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 9:00	12/16/12 9:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 10:00	12/16/12 10:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 11:00	12/16/12 11:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 12:01	12/16/12 12:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 13:01	12/16/12 13:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 14:02	12/16/12 14:14	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 15:00	12/16/12 15:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 16:00	12/16/12 16:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/16/12 17:00	12/16/12 17:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 9:00	12/17/12 9:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 10:00	12/17/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 11:01	12/17/12 11:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 12:01	12/17/12 12:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 13:02	12/17/12 13:15	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation

MECO-Lanai Curtailment Report December 2012

Start Date/Time	Stop Date/Time	Duration (dd:hh:mm)	IPP Curtailed	Estimated Curtailed		Reasons for curtailment
				MWH	Peak MW Curtailed	
12/17/12 14:01	12/17/12 14:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 15:03	12/17/12 15:16	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 16:00	12/17/12 16:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/17/12 17:01	12/17/12 17:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 9:00	12/18/12 9:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 10:02	12/18/12 10:17	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 11:00	12/18/12 11:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 12:00	12/18/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 13:01	12/18/12 13:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 14:02	12/18/12 14:13	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 15:00	12/18/12 15:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 16:00	12/18/12 16:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/18/12 17:00	12/18/12 17:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 9:00	12/19/12 9:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 10:01	12/19/12 10:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 11:00	12/19/12 11:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 12:00	12/19/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 13:01	12/19/12 13:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 14:01	12/19/12 14:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 15:01	12/19/12 15:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 16:00	12/19/12 16:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/19/12 17:00	12/19/12 17:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 9:00	12/20/12 9:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 10:01	12/20/12 10:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 11:00	12/20/12 11:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 12:00	12/20/12 12:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 13:01	12/20/12 13:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 14:02	12/20/12 14:15	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 15:00	12/20/12 15:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 16:00	12/20/12 16:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/20/12 17:00	12/20/12 17:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 9:00	12/21/12 9:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 10:00	12/21/12 10:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 11:00	12/21/12 11:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 12:00	12/21/12 12:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 13:01	12/21/12 13:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 14:00	12/21/12 14:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 15:00	12/21/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/21/12 16:01	12/21/12 16:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 9:01	12/22/12 9:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 10:01	12/22/12 10:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 11:01	12/22/12 11:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 12:01	12/22/12 12:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 13:00	12/22/12 13:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 14:01	12/22/12 14:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 15:01	12/22/12 15:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/22/12 16:00	12/22/12 16:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 9:00	12/23/12 9:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 10:00	12/23/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 11:00	12/23/12 11:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 12:01	12/23/12 12:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 13:00	12/23/12 13:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 14:00	12/23/12 14:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 15:00	12/23/12 15:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 16:01	12/23/12 16:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/23/12 17:00	12/23/12 17:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 9:00	12/24/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 10:00	12/24/12 10:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 11:00	12/24/12 11:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 12:00	12/24/12 12:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 13:00	12/24/12 13:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 14:00	12/24/12 14:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 15:00	12/24/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/24/12 16:00	12/24/12 16:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 9:00	12/25/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 10:00	12/25/12 10:11	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 11:02	12/25/12 11:14	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 12:00	12/25/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 13:01	12/25/12 13:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 14:01	12/25/12 14:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/25/12 15:00	12/25/12 15:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation

MECO-Lanai Curtailment Report December 2012

Start Date/Time	Stop Date/Time	Duration (dd:hh:mm)	IPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for curtailment
12/26/12 9:01	12/26/12 9:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 10:00	12/26/12 10:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 11:03	12/26/12 11:15	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 12:02	12/26/12 12:14	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 13:01	12/26/12 13:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 14:00	12/26/12 14:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 15:01	12/26/12 15:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 16:01	12/26/12 16:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/26/12 17:01	12/26/12 17:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 9:00	12/27/12 9:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 10:00	12/27/12 10:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 11:01	12/27/12 11:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 12:00	12/27/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 13:01	12/27/12 13:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 14:01	12/27/12 14:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 15:01	12/27/12 15:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 16:01	12/27/12 16:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/27/12 17:01	12/27/12 17:15	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 9:00	12/28/12 9:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 10:00	12/28/12 10:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 11:00	12/28/12 11:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 12:00	12/28/12 12:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 13:00	12/28/12 13:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 14:00	12/28/12 14:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 15:00	12/28/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 16:00	12/28/12 16:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/28/12 17:00	12/28/12 17:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 9:00	12/29/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 10:01	12/29/12 10:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 11:01	12/29/12 11:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 12:00	12/29/12 12:14	0:14	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 13:01	12/29/12 13:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 14:00	12/29/12 14:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 15:00	12/29/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 16:00	12/29/12 16:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/29/12 17:00	12/29/12 17:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 9:00	12/30/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 10:01	12/30/12 10:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 11:01	12/30/12 11:12	0:11	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 12:00	12/30/12 12:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 13:01	12/30/12 13:13	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 14:00	12/30/12 14:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 15:01	12/30/12 15:16	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 16:01	12/30/12 16:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/30/12 17:01	12/30/12 17:14	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 9:00	12/31/12 9:12	0:12	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 10:00	12/31/12 10:13	0:13	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 11:00	12/31/12 11:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 12:00	12/31/12 12:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 13:00	12/31/12 13:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 14:00	12/31/12 14:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 15:00	12/31/12 15:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 16:00	12/31/12 16:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation
12/31/12 17:00	12/31/12 17:15	0:15	LSR-La Ola PV	No data	No data	Ramp rate mitigation

Note: On June 27, 2012, MECO notified LSR that although LSR has not operated in compliance with the revised ramp rate of 360 kW/minute, MECO would conditionally allow LSR to operate at the allowed capacity of 1.2 MW while the MECO-Lanai Diesel Operator was in the control room.

HELCO Curtailment Report December 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
12/01/12 02:43	19.8 MW	12/01/12 04:39	17.2 MW	Tawhiri Group B curtailed for excess energy.
12/01/12 07:35	15.5 MW	12/01/12 08:16	12.3 MW	Tawhiri curtailed - switching at 9600 line
12/01/12 16:13	3.7 MW	12/01/12 16:43	2.4 MW	Tawhiri curtailed - switching at 9600 line
12/02/12 08:33	0.0 MW	12/02/12 08:43	0.0 MW	Tawhiri curtailed - switching at 9600 line
12/02/12 16:16	9.1 MW	12/02/12 16:44	9.0 MW	Tawhiri curtailed - switching at 9600 line
12/03/12 08:10	1.6 MW	12/03/12 08:36	2.2 MW	Tawhiri curtailed - switching at 9600 line
12/03/12 16:22	2.2 MW	12/03/12 16:33	2.2 MW	Tawhiri curtailed - switching at 9600 line
12/06/12 01:16	19.7 MW	12/06/12 04:57	16.5 MW	Tawhiri Group B curtailed for excess energy.
12/07/12 08:28	11.8 MW	12/07/12 09:26	8.5 MW	Tawhiri curtailed - switching at 9600 line
12/07/12 16:04	12.0 MW	12/07/12 16:32	10.0 MW	Tawhiri curtailed - switching at 9600 line
12/08/12 07:47	19.8 MW	12/08/12 08:30	16.8 MW	Tawhiri curtailed - switching at 9600 line
12/08/12 16:28	19.8 MW	12/08/12 17:01	9.9 MW	Tawhiri curtailed - switching at 9600 line
12/09/12 01:14	19.8 MW	12/09/12 04:59	19.8 MW	Tawhiri Group B curtailed for excess energy.
12/09/12 07:50	19.4 MW	12/09/12 08:35	19.8 MW	Tawhiri curtailed - switching at 9600 line
12/09/12 16:27	19.9 MW	12/09/12 16:57	19.8 MW	Tawhiri curtailed - switching at 9600 line
12/10/12 01:18	19.7 MW	12/10/12 03:52	19.2 MW	Tawhiri Group B curtailed for excess energy.
12/11/12 00:35	19.8 MW	12/11/12 04:32	19.8 MW	Tawhiri Group B curtailed for excess energy.
12/11/12 06:45	19.8 MW	12/11/12 07:06	9.9 MW	Tawhiri curtailed - switching 8600 line relay upgrade
12/11/12 18:12	9.0 MW	12/12/12 06:37	16.5 MW	Tawhiri - switching 8600 line relay upgrade (until 19:28), and high wind curtailment at Tawhiri's request (until next day).
12/11/12 22:33	16.5 MW	12/12/12 05:06	16.5 MW	Tawhiri Group B curtailed for excess energy.
12/12/12 01:51	7.6 MW	12/12/12 04:22	7.6 MW	HRD curtailed for excess energy
12/12/12 07:04	19.9 MW	12/12/12 08:42	19.8 MW	Tawhiri - High wind curtail at Tawhiri's request.
12/12/12 09:24	19.8 MW	12/12/12 09:49	16.4 MW	Tawhiri curtailed - switching 8600 line relay upgrade
12/12/12 09:59	17.1 MW	12/13/12 15:37	15.2 MW	Tawhiri - High wind curtail at Tawhiri's request, and switching 8600 line relay upgrade (12/12/12 @ 14:35 to 14:53), and high wind self-curtail (until next day).
12/13/12 00:00	14.9 MW	12/13/12 05:06	12.8 MW	Tawhiri Group B curtailed for excess energy.
12/13/12 01:00	7.8 MW	12/13/12 04:04	7.6 MW	HRD curtailed for excess energy
12/13/12 15:39	17.2 MW	12/17/12 16:21	16.0 MW	Tawhiri - High wind curtail at Tawhiri's request.
12/14/12 00:20	15.7 MW	12/14/12 02:21	5.0 MW	Tawhiri Group B curtailed for excess energy.
12/15/12 00:20	15.7 MW	12/15/12 05:39	15.7 MW	Tawhiri Group B curtailed for excess energy.
12/15/12 01:47	7.5 MW	12/15/12 04:57	3.9 MW	HRD curtailed for excess energy
12/16/12 00:33	15.8 MW	12/16/12 06:04	15.7 MW	Tawhiri Group B curtailed for excess energy.
12/16/12 02:36	7.6 MW	12/16/12 05:21	7.8 MW	HRD curtailed for excess energy
12/16/12 06:57	15.7 MW	12/16/12 07:57	13.5 MW	Tawhiri curtailed - switching at 9600 line
12/16/12 23:31	15.8 MW	12/17/12 05:13	13.8 MW	Tawhiri Group B curtailed for excess energy.
12/17/12 00:27	7.5 MW	12/17/12 04:15	7.6 MW	HRD curtailed for excess energy

HELCO Curtailment Report December 2012				
Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
12/17/12 16:21	16.0 MW	12/19/12 08:26	16.6 MW	Tawhiri - High wind curtail at Tawhiri's request.
12/17/12 23:25	16.7 MW	12/18/12 05:20	16.6 MW	Tawhiri Group B curtailed for excess energy.
12/18/12 00:39	7.5 MW	12/18/12 04:25	6.9 MW	HRD curtailed for excess energy
12/19/12 00:03	16.7 MW	12/19/12 04:42	8.7 MW	Tawhiri Group B curtailed for excess energy.
12/19/12 01:03	7.4 MW	12/19/12 04:09	0.3 MW	HRD curtailed for excess energy
12/19/12 23:00	18.6 MW	12/20/12 05:09	6.7 MW	Tawhiri Group B curtailed for excess energy.
12/20/12 00:08	7.6 MW	12/20/12 04:11	0.5 MW	HRD curtailed for excess energy
12/20/12 13:06	18.6 MW	12/20/12 15:40	17.0 MW	Tawhiri - High wind curtail at Tawhiri's request.
12/21/12 00:06	18.6 MW	12/21/12 04:27	6.7 MW	Tawhiri Group B curtailed for excess energy.
12/21/12 15:34	19.8 MW	12/21/12 18:04	18.0 MW	Tawhiri - High wind curtail at Tawhiri's request.
12/22/12 00:01	19.8 MW	12/22/12 06:05	19.0 MW	Tawhiri Group B curtailed for excess energy.
12/22/12 01:20	6.8 MW	12/22/12 05:21	1.5 MW	HRD curtailed for excess energy
12/23/12 01:35	13.5 MW	12/23/12 05:55	15.7 MW	Tawhiri Group B curtailed for excess energy.
12/24/12 00:24	19.8 MW	12/24/12 05:17	17.4 MW	Tawhiri Group B curtailed for excess energy.
12/25/12 01:05	18.6 MW	12/25/12 05:40	17.7 MW	Tawhiri Group B curtailed for excess energy.
12/25/12 03:07	4.2 MW	12/25/12 05:01	1.0 MW	HRD curtailed for excess energy
12/26/12 00:26	18.5 MW	12/26/12 05:16	18.5 MW	Tawhiri Group B curtailed for excess energy.
12/26/12 01:57	6.6 MW	12/26/12 04:29	5.4 MW	HRD curtailed for excess energy
12/27/12 01:50	15.8 MW	12/27/12 04:20	15.2 MW	Tawhiri Group B curtailed for excess energy.
12/28/12 01:07	19.6 MW	12/28/12 05:17	19.3 MW	Tawhiri Group B curtailed for excess energy.