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PUBLIC UTILITIES  
COMMISSION



June 23, 2014

The Honorable Chair and Members  
of the Hawai'i Public Utilities Commission  
Kekuanaoa Building, 1st Floor  
465 South King Street  
Honolulu, Hawai'i 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'<sup>1</sup> monthly report for May 2014 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](mailto: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,

Daniel G. Brown  
Manager  
Regulatory Non-Rate Proceedings

Enclosure

cc: Service List

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<sup>1</sup> Hawaiian Electric Company, Inc., Hawai'i 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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(Docket No. 2011-0206)

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**SERVICE LIST**  
**(Docket No. 2011-0206)**

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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 May 31, 2014):

**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, Maui Electric (Maui Division) and Hawai'i Electric Light 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, Maui Electric (Maui Division) and Hawai'i Electric Light are provided in Attachment 2, and the enclosed Excel files. Refer to the electronic files for the individual data points because the information is voluminous and does not translate well to a hard copy.

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

The following provides information with respect to items 2a) through 2c) – (all statements are current as of the month ending May 31, 2014):

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

Hawaiian Electric did not have any contingency reserve activations in the month of May. Maui Electric and Hawai'i Electric Light 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, Maui Electric, and Hawai'i Electric Light did not have any under frequency load shed events for the month of May. 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 did not have any demand response activations for system events for the month of May. Hawai'i Electric Light currently does not have demand response program. Maui Electric has implemented the Fast Demand Response pilot program on a limited basis. Hawai'i Electric Light plans to use the findings of Maui Electric's pilot program to help in the evaluation and development of future demand response programs. Maui Electric executes a weekly testing protocol which measures customer participation. This program is not currently used in response to actual system events. Therefore, Attachment 5 is not being provided for this reporting period.

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

The following provides information with respect to items 3a) through 3b) – (all statements are current as of the month ending May 31, 2014):

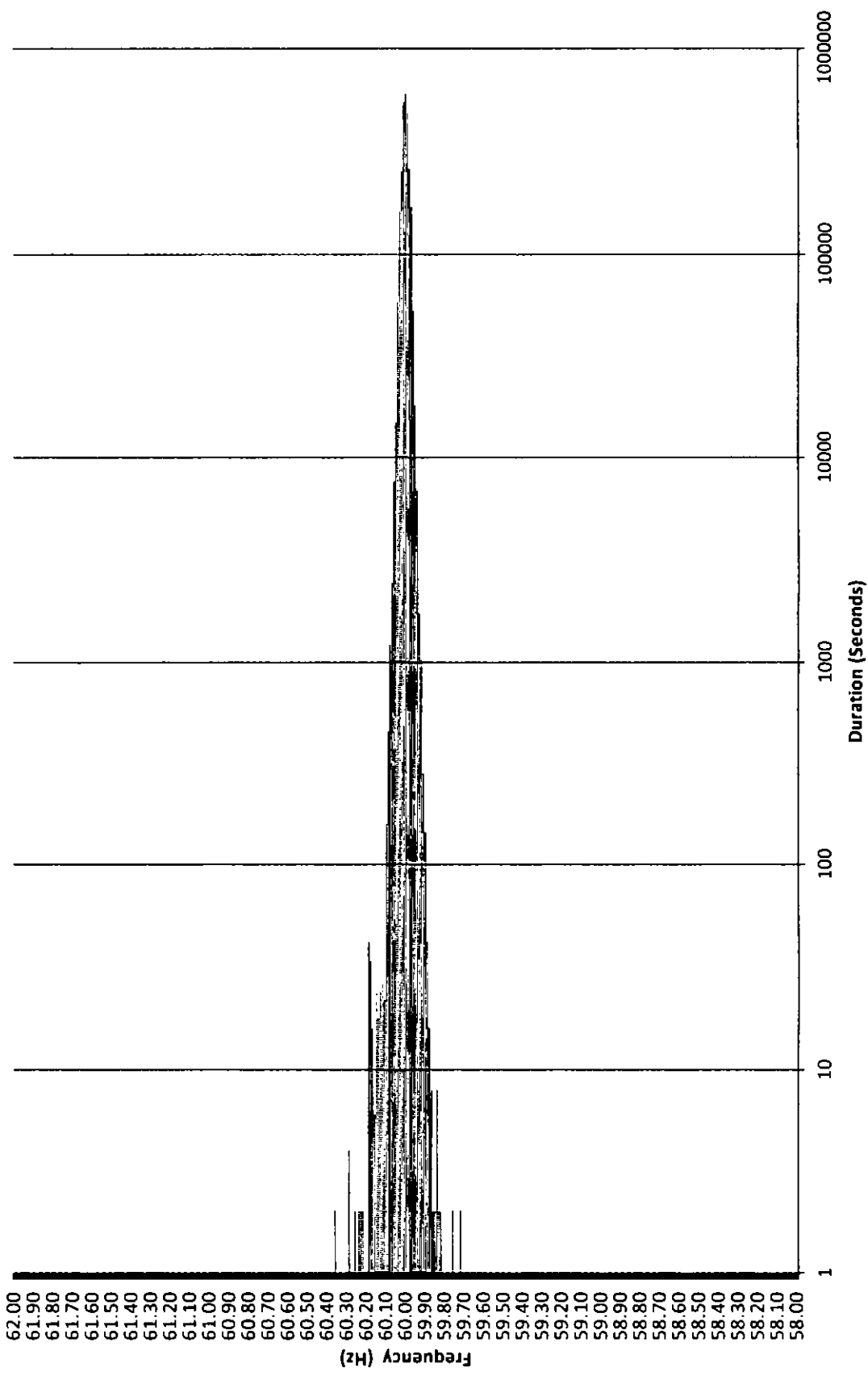
**3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:**

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:**

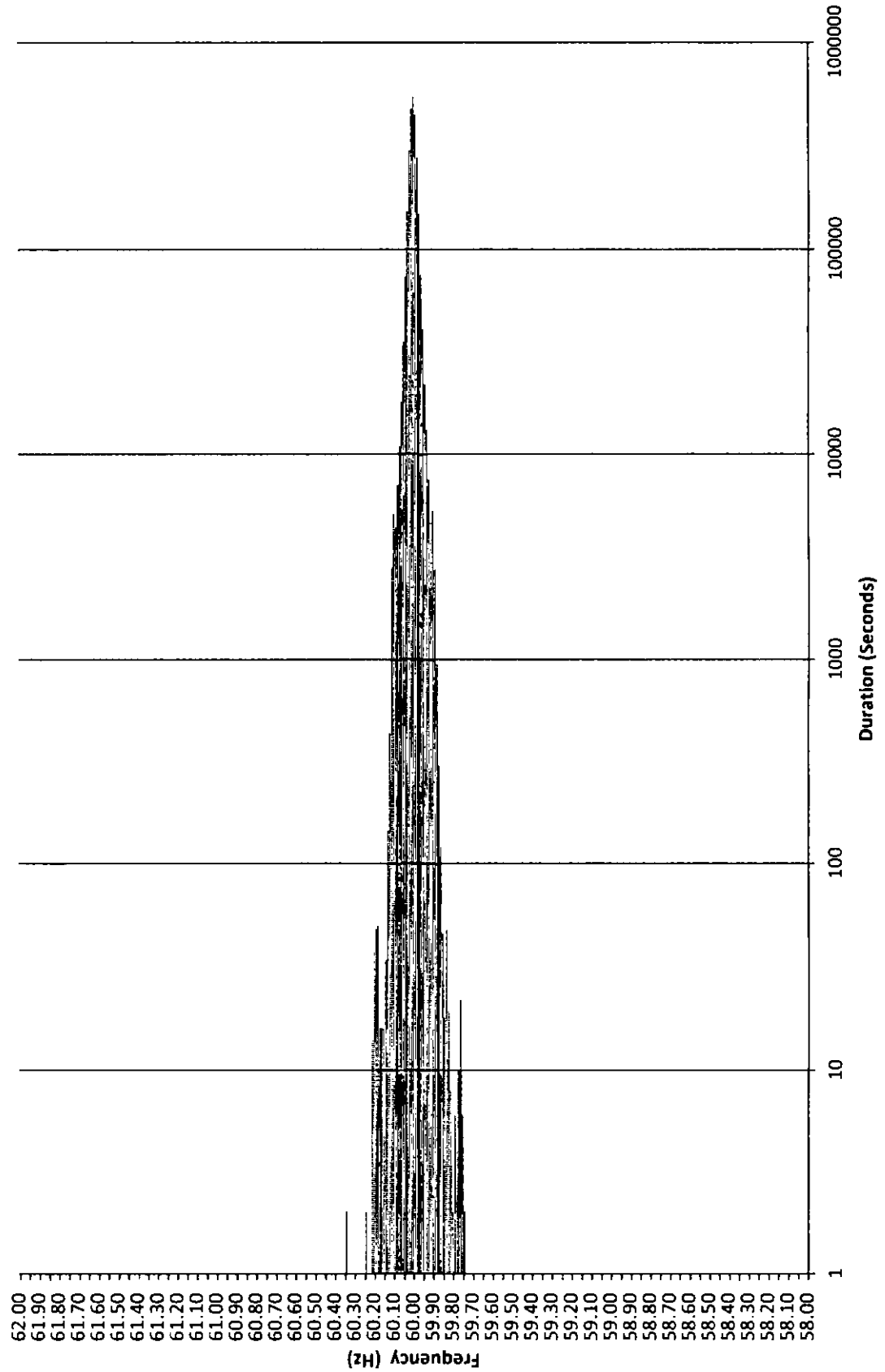
Curtailed MWh from non-dispatchable resources are difficult to determine due to the variability of the resource during curtailment periods. In some cases, the curtailed MWh estimates were provided by the IPPs under curtailment. Hawai'i Electric Light is not providing an estimate of curtailed MWh, as this information is not provided to Hawai'i Electric Light 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 - Hawaiian Electric May 2014

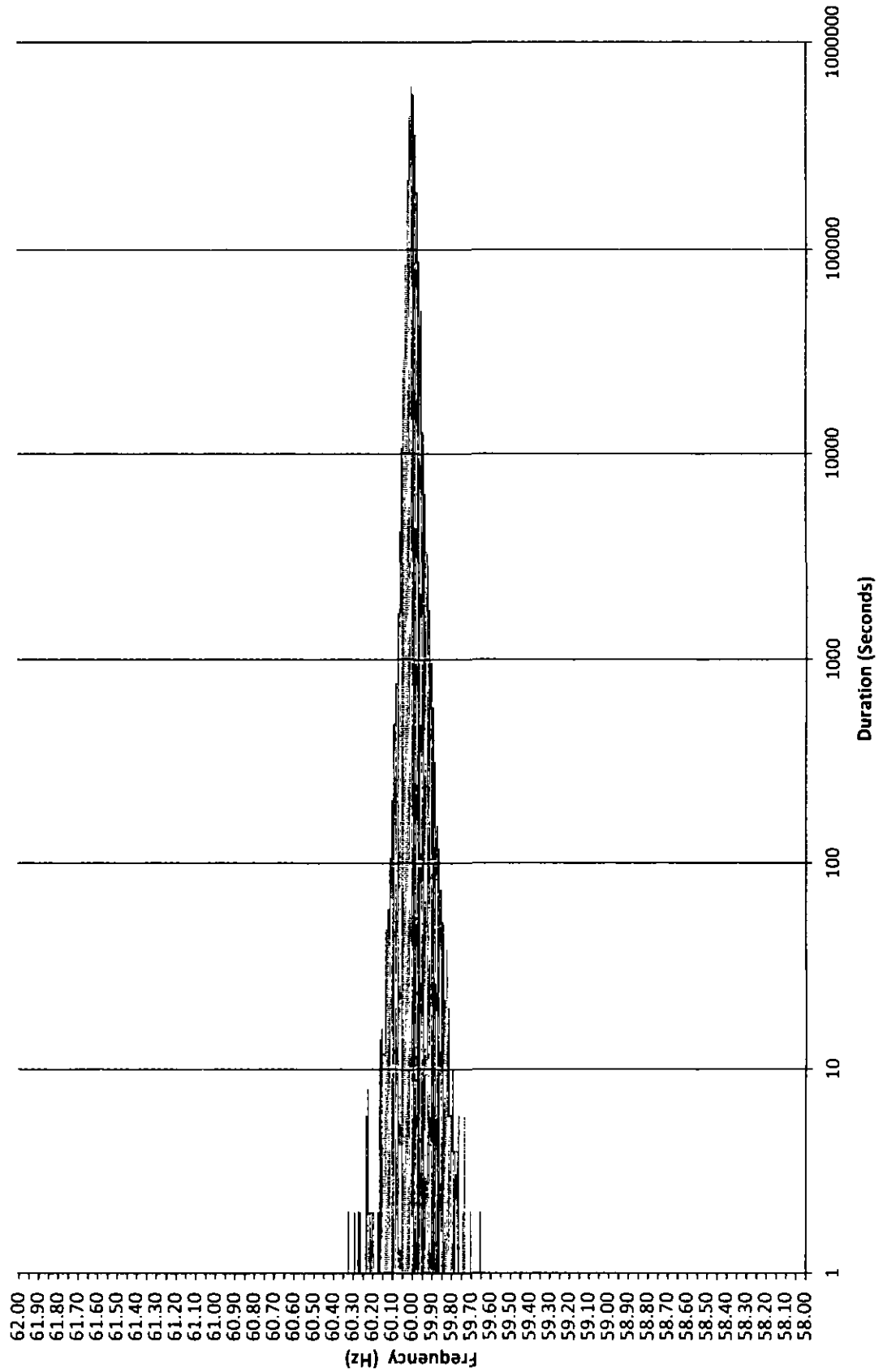




# Maui Electric Frequency Distribution Plot - Maui May 2014



# Frequency Distribution Plot - Hawai'i Electric Light May 2014



Hawaiian Electric Frequency Excursion Statistics May 2014		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	1308	1087
Maximum Duration (sec)	580	516
Maximum Deviation (Hz)	59.716	60.363
Total Duration of Excursions (sec)	15998	17294

Maui Electric Frequency Excursion Statistics May 2014		
	<59.95 Hz	>60.05 Hz
Number of Excursions	6784	5044
Maximum Duration (sec)	630	1702
Maximum Deviation (Hz)	59.739	60.3415
Total Duration of Excursions (sec)	74470	63138

Hawai'i Electric Light Frequency Excursion Statistics May 2014		
	<59.95 Hz	>60.05 Hz
Number of Excursions	8661	2545
Maximum Duration (sec)	154	30
Maximum Deviation (Hz)	59.652	60.316
Total Duration of Excursions (sec)	54298	11630

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Hawaiian Electric Curtailment Report May 2014

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
05/01/14 09:13	0.0	0.00	05/01/14 10:36	0	*	KREP	Maintenance work
05/01/14 16:27	0.0	2.50	05/01/14 17:17	0	*	KREP	Maintenance work
05/02/14 06:33	0.0	0.30	05/02/14 07:40	0	*	KREP	Maintenance work
05/02/14 17:17	0.0	0.50	05/02/14 19:36	0	*	KREP	Maintenance work
05/05/14 07:05	0.0	0.60	05/05/14 07:20	0	*	KREP	Maintenance work
05/06/14 09:12	0.0	2.70	05/06/14 09:29	0	*	KREP	Maintenance work
05/08/14 07:06	0.0	0.50	05/08/14 07:27	0	*	KREP	Maintenance work
05/20/14 07:13	0.0	0.90	05/20/14 08:13	0	*	KREP	Replacement work
05/20/14 17:19	0.0	0.00	05/20/14 18:07	0	*	KREP	Replacement work

KLS2 = Kalaheo Solar 2 PV Farm  
KREP = Kalaheo Renewable Energy Park  
KWF = Kahuku Wind Farm  
Makai = Kawaiioe Makai Wind Farm  
Maui = Kawaiioe Maui Wind Farm

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

\* Data has not been provided by IPP

RSWG Maui Curtailment Report May 2014

Start Date and Time	Duration	PP Curtailment	Estimated Curtailment (MW)	Peak MW Curtailment	AGC MAVG - calculated	Reasons for Curtailment
5/1/2014 0:00	0:06	KWPII	0.234	19.063	AGC MAVG - calculated	
5/1/2014 0:10	0:01	KWPII	0.001	18.847	AGC MAVG - calculated	
5/1/2014 0:13	0:07	KWPII	0.144	19.185	AGC MAVG - calculated	
5/1/2014 0:24	0:13	KWPII	0.305	19.174	AGC MAVG - calculated	
5/1/2014 0:38	0:02	KWPII	0.023	19.170	AGC MAVG - calculated	
5/1/2014 0:41	0:02	KWPII	0.045	19.152	AGC MAVG - calculated	
5/1/2014 0:44	0:07	KWPII	0.202	19.161	AGC MAVG - calculated	
5/1/2014 0:52	4:21	KWPII	45.400	19.192	AGC MAVG - calculated	
5/1/2014 3:34	0:01	AWE	0.011	3.500	AGC MAVG - calculated	
5/1/2014 6:33	0:01	KWPII	0.006	19.164	AGC MAVG - calculated	
5/1/2014 7:45	0:01	AWE	0.003	0.200	AGC MAVG - calculated	
5/1/2014 11:29	0:02	KWPII	0.028	20.891	AGC MAVG - calculated	
5/1/2014 11:36	0:02	KWPII	0.028	20.061	AGC MAVG - calculated	
5/1/2014 11:43	0:02	KWPII	0.028	20.493	AGC MAVG - calculated	
5/1/2014 11:50	0:01	KWPII	0.010	20.423	AGC MAVG - calculated	
5/1/2014 11:58	0:02	KWPII	0.028	20.385	AGC MAVG - calculated	
5/1/2014 12:10	0:03	AWE	0.153	18.200	AGC MAVG - calculated and Testing	
5/1/2014 12:15	0:52	AWE	6.650	19.800	AGC MAVG - calculated and Testing	
5/1/2014 13:10	0:01	KWPII	0.001	19.879	AGC MAVG - calculated and Testing	
5/1/2014 13:12	0:02	KWPII	0.075	19.895	AGC MAVG - calculated and Testing	
5/1/2014 13:36	0:01	KWPII	0.002	19.371	AGC MAVG - calculated and Testing	
5/1/2014 14:07	0:01	KWPII	0.005	20.051	AGC MAVG - calculated and Testing	
5/1/2014 14:42	0:01	KWPII	0.014	20.498	AGC MAVG - calculated and Testing	
5/1/2014 21:36	0:05	KWPII	0.082	19.450	AGC MAVG - calculated	
5/1/2014 23:00	0:16	KWPII	0.738	20.483	AGC MAVG - calculated	
5/1/2014 23:17	0:18	KWPII	1.098	18.348	AGC MAVG - calculated	
5/1/2014 23:36	0:16	KWPII	0.839	17.052	AGC MAVG - calculated	
5/1/2014 23:58	5:10	KWPII	0.236	11.843	AGC MAVG - calculated	
5/2/2014 0:09	0:01	KWPII	0.018	10.875	AGC MAVG - calculated	
5/2/2014 0:11	0:20	KWPII	0.807	12.589	AGC MAVG - calculated	
5/2/2014 2:08	0:01	KWPII	0.001	0.057	AGC MAVG - calculated	
5/2/2014 3:30	0:22	KWPII	1.311	6.420	AGC MAVG - calculated	
5/2/2014 3:21	0:02	AWE	0.013	20.000	AGC MAVG - calculated	
5/2/2014 3:25	0:04	AWE	0.087	17.800	AGC MAVG - calculated	
5/2/2014 3:31	0:07	AWE	0.219	16.800	AGC MAVG - calculated	
5/2/2014 4:08	0:01	KWPII	0.002	0.444	AGC MAVG - calculated	
5/2/2014 4:11	0:02	AWE	0.030	21.000	AGC MAVG - calculated	
5/2/2014 4:12	0:29	KWPII	4.430	13.973	AGC MAVG - calculated	
5/2/2014 4:14	0:03	AWE	0.026	21.000	AGC MAVG - calculated	
5/2/2014 4:18	0:01	AWE	0.018	21.000	AGC MAVG - calculated	
5/2/2014 4:20	0:06	AWE	0.152	20.900	AGC MAVG - calculated	
5/2/2014 4:27	0:01	AWE	0.027	16.900	AGC MAVG - calculated	
5/2/2014 4:30	0:04	AWE	0.080	20.100	AGC MAVG - calculated	
5/2/2014 4:35	0:02	AWE	0.019	19.700	AGC MAVG - calculated	
5/2/2014 4:42	0:01	KWPII	0.000	1.823	AGC MAVG - calculated	
5/2/2014 4:44	0:06	KWPII	0.226	6.557	AGC MAVG - calculated	
5/2/2014 4:58	0:03	KWPII	0.018	8.120	AGC MAVG - calculated	
5/2/2014 12:35	0:01	KWP	0.001	0.032	AGC MAVG - calculated	
5/2/2014 14:28	0:01	KWP	0.002	0.112	AGC MAVG - calculated	
5/2/2014 14:31	0:11	KWP	0.001	0.031	AGC MAVG - calculated	
5/2/2014 15:00	0:01	KWP	0.001	0.064	AGC MAVG - calculated	
5/4/2014 1:40	0:02	KWP	0.001	0.016	AGC MAVG - calculated	
5/4/2014 1:45	0:02	KWP	0.001	0.016	AGC MAVG - calculated	
5/4/2014 1:48	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/4/2014 1:53	0:01	KWP	0.001	0.032	AGC MAVG - calculated	
5/4/2014 2:08	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/4/2014 6:04	0:01	KWP	0.001	0.032	AGC MAVG - calculated	
5/4/2014 6:07	0:01	KWP	0.001	0.032	AGC MAVG - calculated	
5/4/2014 7:46	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/4/2014 7:48	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/4/2014 14:08	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/6/2014 15:40	0:01	KWP	0.000	0.016	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/8/2014 4:58	0:01	KWPII	0.002	0.130	AGC MAVG - calculated	
5/8/2014 11:28	0:01	KWP	0.000	0.008	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/8/2014 12:41	0:04	AWE	0.049	20.300	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/8/2014 13:48	0:05	KWPII	0.247	6.238	AGC MAVG - calculated and Operating Conditions on Company's System	
5/8/2014 17:27	0:01	KWP	0.001	0.032	AGC MAVG - calculated and Operating Conditions on Company's System	
5/8/2014 17:27	0:01	AWE	0.001	0.032	AGC MAVG - calculated and Operating Conditions on Company's System	
5/10/2014 4:55	0:02	KWP	0.001	0.048	AGC MAVG - calculated	
5/10/2014 4:55	0:02	AWE	0.001	0.048	AGC MAVG - calculated	
5/10/2014 13:04	0:01	KWP	0.000	0.016	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/10/2014 13:04	0:01	AWE	0.000	0.016	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/10/2014 13:10	0:01	KWP	0.001	0.080	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/10/2014 13:10	0:01	AWE	0.001	0.080	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/10/2014 13:40	0:01	KWP	0.000	0.016	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/10/2014 13:40	0:01	AWE	0.000	0.016	AGC MAVG - calculated and Good Engineering and Operating Practices	
5/10/2014 23:08	0:01	KWPII	0.000	0.027	AGC MAVG - calculated	
5/11/2014 5:22	0:01	KWPII	0.008	14.135	AGC MAVG - calculated	
5/11/2014 5:24	0:05	KWPII	0.048	13.861	AGC MAVG - calculated	
5/11/2014 5:40	0:02	KWPII	0.025	12.510	AGC MAVG - calculated	
5/11/2014 11:35	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/11/2014 11:35	0:01	AWE	0.000	0.016	AGC MAVG - calculated	
5/11/2014 11:37	0:01	KWP	0.000	0.016	AGC MAVG - calculated	
5/11/2014 11:37	0:01	AWE	0.000	0.016	AGC MAVG - calculated	
5/12/2014 0:25	0:01	KWPII	0.005	18.732	AGC MAVG - calculated	
5/12/2014 0:27	0:02	KWPII	0.019	18.718	AGC MAVG - calculated	
5/12/2014 0:35	0:01	KWPII	0.008	18.986	AGC MAVG - calculated	
5/12/2014 23:48	0:03	KWPII	0.003	20.708	AGC MAVG - calculated	
5/12/2014 23:48	0:01	KWPII	0.010	20.708	AGC MAVG - calculated	
5/12/2014 23:51	0:13	KWPII	0.342	20.708	AGC MAVG - calculated	
5/13/2014 0:05	1:31	KWPII	8.217	20.708	AGC MAVG - calculated	
5/13/2014 1:37	0:01	KWPII	0.013	20.608	AGC MAVG - calculated	
5/13/2014 1:48	1:25	KWPII	10.362	20.700	AGC MAVG - calculated	
5/13/2014 3:24	0:01	KWPII	0.023	19.097	AGC MAVG - calculated	
5/13/2014 3:27	0:06	KWPII	0.198	20.643	AGC MAVG - calculated	
5/13/2014 3:36	0:01	KWPII	0.028	20.319	AGC MAVG - calculated	
5/13/2014 3:38	0:22	KWPII	1.516	20.830	AGC MAVG - calculated	
5/13/2014 4:01	0:06	KWPII	0.234	20.993	AGC MAVG - calculated	
5/13/2014 4:10	0:08	KWPII	0.295	20.534	AGC MAVG - calculated	
5/13/2014 4:19	0:13	KWPII	0.362	20.564	AGC MAVG - calculated	
5/13/2014 4:32	0:02	KWPII	0.024	20.483	AGC MAVG - calculated	
5/13/2014 4:36	0:06	KWPII	0.221	20.845	AGC MAVG - calculated	
5/13/2014 4:48	0:01	KWPII	0.022	20.544	AGC MAVG - calculated	
5/13/2014 4:48	0:01	KWPII	0.011	20.535	AGC MAVG - calculated	
5/13/2014 15:43	0:01	KWPII	0.004	20.867	AGC MAVG - calculated	
5/13/2014 23:58	0:10	KWPII	0.328	16.990	AGC MAVG - calculated	
5/14/2014 6:28	0:18	KWPII	0.523	17.957	AGC MAVG - calculated	
5/14/2014 6:43	0:02	KWPII	0.051	17.081	AGC MAVG - calculated	
5/14/2014 6:50	0:03	KWPII	0.074	16.889	AGC MAVG - calculated	
5/14/2014 6:54	0:06	KWPII	0.130	15.977	AGC MAVG - calculated	
5/14/2014 1:01	0:01	KWPII	0.002	13.469	AGC MAVG - calculated	

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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MW <sup>1</sup>	Peak MW Curtailed	Reasons for Curtailment
5/14/2014 17:47	0:01	KWPII	0.005	20.296	AGC MAVG - calculated
5/15/2014 12:28	0:01	KWPII	0.001	0.041	AGC MAVG - calculated and Good Engineering and Operating Practices
5/15/2014 12:28	0:01	AWE	0.001	0.041	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 2:46	0:01	KWPII	0.002	0.096	AGC MAVG - calculated
5/16/2014 9:53	0:01	KWPII	0.000	0.014	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 10:28	0:01	AWE	0.000	0.014	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 10:28	0:01	KWPII	0.000	0.027	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 10:35	0:01	AWE	0.000	0.027	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 10:35	0:01	KWPII	0.000	0.015	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 10:35	0:01	AWE	0.000	0.015	AGC MAVG - calculated and Good Engineering and Operating Practices
5/16/2014 13:53	0:01	KWPII	0.000	0.020	AGC MAVG - calculated
5/16/2014 13:53	0:01	AWE	0.000	0.020	AGC MAVG - calculated
5/17/2014 22:57	0:01	KWPII	0.002	0.096	AGC MAVG - calculated
5/20/2014 11:31	0:01	KWPII	0.000	0.016	AGC MAVG - calculated
5/22/2014 10:54	0:01	KWPII	0.001	0.080	AGC MAVG - calculated
5/22/2014 19:16	0:01	KWPII	0.000	0.016	AGC MAVG - calculated
5/23/2014 10:26	0:01	KWPII	0.000	0.076	AGC MAVG - calculated and Good Engineering and Operating Practices
5/24/2014 10:58	0:01	KWPII	0.001	0.046	AGC MAVG - calculated
5/26/2014 4:39	0:01	KWPII	0.001	0.064	AGC MAVG - calculated
5/26/2014 5:57	0:01	KWPII	0.000	0.016	AGC MAVG - calculated
5/26/2014 10:17	0:43	KWPII	7.587	20.333	AGC MAVG - calculated
5/26/2014 10:29	0:02	AWE	0.028	21.000	AGC MAVG - calculated
5/26/2014 11:01	0:01	KWPII	0.011	17.937	AGC MAVG - calculated
5/26/2014 11:06	0:05	KWPII	0.112	19.791	AGC MAVG - calculated
5/26/2014 11:14	0:02	KWPII	0.027	20.096	AGC MAVG - calculated
5/26/2014 11:20	0:01	KWPII	0.002	20.222	AGC MAVG - calculated
5/26/2014 11:23	0:08	KWPII	0.177	20.580	AGC MAVG - calculated
5/26/2014 11:33	0:05	KWPII	0.067	20.142	AGC MAVG - calculated
5/26/2014 17:50	0:01	KWPII	0.004	20.628	AGC MAVG - calculated
5/26/2014 22:29	0:18	KWPII	1.597	20.702	AGC MAVG - calculated and Good Engineering and Operating Practices
5/26/2014 22:48	0:01	KWPII	0.015	20.564	AGC MAVG - calculated
5/26/2014 22:56	0:22	KWPII	0.186	20.960	AGC MAVG - calculated
5/26/2014 23:27	4:11	KWPII	56.310	20.703	AGC MAVG - calculated
5/27/2014 2:05	0:01	AWE	0.006	19.600	AGC MAVG - calculated
5/27/2014 7:07	0:18	AWE	0.488	21.000	AGC MAVG - calculated
5/27/2014 2:27	0:01	AWE	0.007	17.300	AGC MAVG - calculated
5/27/2014 2:29	0:04	AWE	0.036	18.300	AGC MAVG - calculated
5/27/2014 2:35	0:42	AWE	2.313	21.000	AGC MAVG - calculated
5/27/2014 3:18	0:01	AWE	0.032	18.300	AGC MAVG - calculated
5/27/2014 3:21	0:13	AWE	0.272	19.100	AGC MAVG - calculated
5/27/2014 3:49	0:35	KWPII	10.904	20.708	AGC MAVG - calculated
5/27/2014 3:46	0:11	AWE	0.282	21.000	AGC MAVG - calculated
5/27/2014 3:58	0:12	AWE	0.188	21.000	AGC MAVG - calculated
5/27/2014 4:18	1:23	KWPII	13.821	20.708	AGC MAVG - calculated
5/27/2014 5:45	0:02	KWPII	0.018	20.618	AGC MAVG - calculated
5/27/2014 6:30	0:08	KWPII	0.173	20.635	AGC MAVG - calculated
5/27/2014 6:54	0:01	KWPII	0.002	20.674	AGC MAVG - calculated
5/27/2014 6:58	0:02	KWPII	0.008	20.514	AGC MAVG - calculated
5/27/2014 7:00	0:01	KWPII	0.001	20.618	AGC MAVG - calculated
5/27/2014 7:28	0:01	KWPII	0.007	20.708	AGC MAVG - calculated
5/27/2014 7:41	0:01	KWPII	0.003	20.704	AGC MAVG - calculated
5/27/2014 7:45	0:03	KWPII	0.012	20.708	AGC MAVG - calculated
5/27/2014 7:49	0:11	KWPII	0.010	20.708	AGC MAVG - calculated
5/27/2014 8:34	0:01	KWPII	0.003	20.690	AGC MAVG - calculated
5/27/2014 9:08	0:05	KWPII	0.001	20.445	AGC MAVG - calculated
5/27/2014 9:54	0:01	KWPII	0.000	20.708	AGC MAVG - calculated
5/27/2014 9:56	0:02	KWPII	0.016	20.708	AGC MAVG - calculated
5/27/2014 10:00	0:02	KWPII	0.021	20.702	AGC MAVG - calculated
5/27/2014 10:19	0:03	KWPII	0.037	20.703	AGC MAVG - calculated
5/27/2014 10:23	0:01	KWPII	0.006	20.676	AGC MAVG - calculated
5/27/2014 10:26	0:01	KWPII	0.007	20.703	AGC MAVG - calculated
5/27/2014 10:28	0:10	KWPII	0.145	20.708	AGC MAVG - calculated
5/27/2014 10:41	0:01	KWPII	0.007	20.687	AGC MAVG - calculated
5/27/2014 10:45	0:05	KWPII	0.051	20.708	AGC MAVG - calculated
5/27/2014 10:57	0:04	KWPII	0.033	20.703	AGC MAVG - calculated
5/27/2014 11:03	0:01	KWPII	0.002	20.669	AGC MAVG - calculated
5/27/2014 11:07	0:01	KWPII	0.006	20.670	AGC MAVG - calculated
5/27/2014 11:10	0:02	KWPII	0.012	20.688	AGC MAVG - calculated
5/27/2014 11:29	0:01	KWPII	0.002	20.660	AGC MAVG - calculated
5/27/2014 11:34	0:01	KWPII	0.003	20.690	AGC MAVG - calculated
5/27/2014 12:30	0:01	KWPII	0.010	20.292	AGC MAVG - calculated
5/27/2014 12:32	0:01	KWPII	0.028	20.050	AGC MAVG - calculated
5/27/2014 22:24	0:28	KWPII	1.280	20.708	AGC MAVG - calculated
5/27/2014 22:58	4:19	KWPII	60.730	20.708	AGC MAVG - calculated
5/28/2014 0:43	0:01	AWE	0.006	21.000	AGC MAVG - calculated
5/28/2014 0:52	0:01	AWE	0.007	20.600	AGC MAVG - calculated
5/28/2014 1:06	0:01	AWE	0.012	17.800	AGC MAVG - calculated
5/28/2014 1:58	0:01	AWE	0.000	13.800	AGC MAVG - calculated
5/28/2014 2:16	0:02	AWE	0.018	14.600	AGC MAVG - calculated
5/28/2014 2:24	0:04	AWE	0.097	14.800	AGC MAVG - calculated
5/28/2014 2:29	0:35	AWE	2.658	21.000	AGC MAVG - calculated
5/28/2014 3:08	0:04	AWE	0.111	15.800	AGC MAVG - calculated
5/28/2014 3:19	1:29	KWPII	26.134	20.963	AGC MAVG - calculated
5/28/2014 3:48	0:18	AWE	0.682	18.900	AGC MAVG - calculated
5/28/2014 4:03	0:27	AWE	1.254	20.400	AGC MAVG - calculated
5/28/2014 4:31	0:01	AWE	0.002	17.000	AGC MAVG - calculated
5/28/2014 4:33	0:02	AWE	0.032	16.900	AGC MAVG - calculated
5/28/2014 4:49	1:03	KWPII	13.801	20.708	AGC MAVG - calculated
5/28/2014 4:50	0:03	AWE	0.012	19.200	AGC MAVG - calculated
5/28/2014 5:54	0:27	KWPII	2.564	20.708	AGC MAVG - calculated
5/28/2014 6:55	0:04	KWPII	0.038	20.703	AGC MAVG - calculated
5/28/2014 7:18	0:03	KWPII	0.030	20.682	AGC MAVG - calculated
5/28/2014 7:22	0:01	KWPII	0.015	20.696	AGC MAVG - calculated
5/28/2014 7:38	0:02	KWPII	0.024	20.563	AGC MAVG - calculated
5/28/2014 7:45	0:02	KWPII	0.008	20.630	AGC MAVG - calculated
5/28/2014 11:00	0:01	KWPII	0.004	20.307	AGC MAVG - calculated
5/28/2014 11:03	0:02	KWPII	0.018	20.570	AGC MAVG - calculated
5/28/2014 11:20	0:01	KWPII	0.023	19.791	AGC MAVG - calculated
5/28/2014 12:53	0:01	KWPII	0.004	20.179	AGC MAVG - calculated
5/28/2014 13:48	0:05	KWPII	0.113	20.632	AGC MAVG - calculated and Testing
5/28/2014 13:58	0:01	KWPII	0.004	19.756	AGC MAVG - calculated and Testing
5/28/2014 14:52	0:03	KWPII	0.039	20.567	AGC MAVG - calculated and Testing
5/28/2014 15:02	0:01	KWPII	0.008	20.633	AGC MAVG - calculated and Testing
5/28/2014 22:14	0:03	KWPII	0.029	20.645	AGC MAVG - calculated
5/28/2014 22:19	0:01	KWPII	0.013	20.651	AGC MAVG - calculated
5/28/2014 22:33	0:02	KWPII	0.012	20.677	AGC MAVG - calculated
5/28/2014 22:37	0:01	KWPII	0.004	20.648	AGC MAVG - calculated
5/28/2014 22:40	0:01	KWPII	0.011	20.667	AGC MAVG - calculated
5/28/2014 22:58	0:36	KWPII	2.025	20.708	AGC MAVG - calculated
5/28/2014 23:36	0:06	KWPII	0.172	20.708	AGC MAVG - calculated
5/28/2014 23:45	0:02	KWPII	0.033	20.652	AGC MAVG - calculated

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Start Date and Time	Duration	IPP Curtailed	Estimated Curtailed MWh	Peak MW Curtailed	Reasons for Curtailment
5/28/2014 23:48	0:03	KWPH	0.084	20 871	AGC MAVG - calculated
5/28/2014 23:52	3:27	KWPH	48.263	20 708	AGC MAVG - calculated
5/29/2014 1:21	0:08	AWE	0.121	18 769	AGC MAVG - calculated
5/29/2014 1:49	0:01	AWE	0.002	14 000	AGC MAVG - calculated
5/29/2014 2:19	0:01	AWE	0.001	13 200	AGC MAVG - calculated
5/29/2014 2:21	0:05	AWE	0.110	14 800	AGC MAVG - calculated
5/29/2014 2:57	0:19	AWE	0.755	16 500	AGC MAVG - calculated
5/29/2014 3:21	1:26	KWPH	23.404	20 708	AGC MAVG - calculated
5/29/2014 3:23	0:01	AWE	0.003	10 700	AGC MAVG - calculated
5/29/2014 4:29	0:06	AWE	0.194	16 500	AGC MAVG - calculated
5/29/2014 4:36	0:01	AWE	0.031	17 200	AGC MAVG - calculated
5/29/2014 4:38	0:01	AWE	0.005	15 500	AGC MAVG - calculated
5/29/2014 4:42	0:01	AWE	0.007	15 200	AGC MAVG - calculated
5/29/2014 4:48	0:40	KWPH	6.813	20 708	AGC MAVG - calculated
5/29/2014 5:31	0:08	KWPH	0.243	20 707	AGC MAVG - calculated
5/29/2014 5:47	0:01	KWPH	0.011	20 708	AGC MAVG - calculated
5/29/2014 5:50	0:02	KWPH	0.034	20 708	AGC MAVG - calculated
5/29/2014 5:58	0:02	KWPH	0.035	20 708	AGC MAVG - calculated
5/29/2014 6:01	0:08	KWPH	0.351	20 708	AGC MAVG - calculated
5/29/2014 6:12	0:01	KWPH	0.018	20 704	AGC MAVG - calculated
5/29/2014 6:18	0:01	KWPH	0.011	20 704	AGC MAVG - calculated
5/29/2014 6:23	0:18	KWPH	0.540	20 708	AGC MAVG - calculated
5/29/2014 6:46	0:02	KWPH	0.005	20 707	AGC MAVG - calculated
5/29/2014 6:19	0:01	KWPH	0.007	20 704	AGC MAVG - calculated
5/29/2014 6:21	0:01	KWPH	0.008	20 702	AGC MAVG - calculated
5/29/2014 6:30	0:01	KWPH	0.001	20 707	AGC MAVG - calculated
5/29/2014 6:35	0:01	KWPH	0.003	20 707	AGC MAVG - calculated
5/29/2014 6:40	0:01	KWPH	0.004	20 708	AGC MAVG - calculated
5/29/2014 6:42	0:01	KWPH	0.003	20 705	AGC MAVG - calculated
5/29/2014 9:00	0:02	KWPH	0.012	20 830	AGC MAVG - calculated and Testing
5/29/2014 9:13	0:02	KWPH	0.018	20 854	AGC MAVG - calculated and Testing
5/29/2014 9:18	0:15	KWPH	0.508	20 708	AGC MAVG - calculated and Testing
5/29/2014 9:34	0:04	KWPH	0.118	20 708	AGC MAVG - calculated and Testing
5/29/2014 9:39	0:32	KWPH	1.429	20 707	AGC MAVG - calculated and Testing
5/29/2014 10:13	0:01	KWPH	0.014	20 831	AGC MAVG - calculated and Testing
5/29/2014 10:20	0:01	KWPH	0.004	20 830	AGC MAVG - calculated
5/29/2014 10:25	0:02	KWPH	0.021	20 818	AGC MAVG - calculated
5/29/2014 23:26	0:08	KWPH	0.191	20 708	AGC MAVG - calculated
5/29/2014 23:38	0:03	KWPH	0.038	20 708	AGC MAVG - calculated
5/29/2014 23:43	0:09	KWPH	0.284	20 708	AGC MAVG - calculated
5/30/2014 0:26	4:37	KWPH	69.597	20 708	AGC MAVG - calculated
5/30/2014 1:51	0:18	AWE	0.841	21 000	AGC MAVG - calculated
5/30/2014 2:13	0:03	AWE	0.023	16 800	AGC MAVG - calculated
5/30/2014 2:25	0:13	AWE	0.520	21 000	AGC MAVG - calculated
5/30/2014 2:41	0:02	AWE	0.121	20 400	AGC MAVG - calculated
5/30/2014 2:43	0:03	AWE	0.067	20 000	AGC MAVG - calculated
5/30/2014 2:49	0:01	AWE	0.012	20 100	AGC MAVG - calculated
5/30/2014 2:57	0:02	AWE	0.029	16 800	AGC MAVG - calculated
5/30/2014 3:01	0:07	AWE	0.180	16 100	AGC MAVG - calculated
5/30/2014 3:15	0:33	AWE	3.489	21 000	AGC MAVG - calculated
5/30/2014 4:00	0:14	AWE	0.370	19 100	AGC MAVG - calculated
5/30/2014 4:24	0:02	AWE	0.032	14 400	AGC MAVG - calculated
5/30/2014 4:28	0:30	AWE	1.527	21 000	AGC MAVG - calculated
5/30/2014 5:00	0:01	AWE	0.018	17 100	AGC MAVG - calculated
5/30/2014 5:06	1:11	KWPH	9.309	20 400	AGC MAVG - calculated
5/30/2014 6:18	0:08	KWPH	0.552	18 859	AGC MAVG - calculated
5/30/2014 6:27	0:35	KWPH	3.893	19 749	AGC MAVG - calculated
5/30/2014 7:03	0:01	KWPH	0.007	15 340	AGC MAVG - calculated
5/30/2014 11:08	0:02	KWPH	0.028	16 747	AGC MAVG - calculated
5/30/2014 11:28	0:07	KWPH	0.135	20 523	AGC MAVG - calculated
5/30/2014 11:48	0:01	KWPH	0.011	20 457	AGC MAVG - calculated
5/30/2014 11:55	0:01	KWPH	0.034	20 130	AGC MAVG - calculated
5/30/2014 12:03	0:02	KWPH	0.033	20 252	AGC MAVG - calculated
5/30/2014 12:10	0:01	KWPH	0.030	19 829	AGC MAVG - calculated
5/30/2014 12:12	0:01	KWPH	0.039	19 737	AGC MAVG - calculated
5/30/2014 12:28	0:02	KWPH	0.018	20 475	AGC MAVG - calculated
5/30/2014 12:33	0:03	KWPH	0.106	20 502	AGC MAVG - calculated
5/30/2014 12:38	0:02	KWPH	0.057	20 370	AGC MAVG - calculated
5/30/2014 12:41	0:01	KWPH	0.032	19 811	AGC MAVG - calculated
5/30/2014 12:43	0:04	KWPH	0.185	20 492	AGC MAVG - calculated
5/30/2014 12:48	0:02	KWPH	0.087	20 589	AGC MAVG - calculated
5/30/2014 12:54	0:03	KWPH	0.043	20 490	AGC MAVG - calculated
5/30/2014 12:54	0:01	KWPH	0.013	20 547	AGC MAVG - calculated
5/30/2014 13:01	0:01	KWPH	0.023	20 539	AGC MAVG - calculated
5/30/2014 13:03	0:01	KWPH	0.029	20 627	AGC MAVG - calculated
5/30/2014 13:11	0:01	KWPH	0.000	20 339	AGC MAVG - calculated
5/30/2014 13:15	0:02	KWPH	0.018	20 363	AGC MAVG - calculated
5/30/2014 13:18	0:02	KWPH	0.053	20 553	AGC MAVG - calculated
5/30/2014 23:35	0:01	KWPH	0.020	7 735	AGC MAVG - calculated
5/30/2014 23:39	0:01	KWPH	0.018	6 691	AGC MAVG - calculated
5/30/2014 23:45	0:05	KWPH	0.163	16 397	AGC MAVG - calculated
5/31/2014 0:02	0:01	KWPH	0.005	13 815	AGC MAVG - calculated
5/31/2014 0:08	1:24	KWPH	18.328	20 209	AGC MAVG - calculated
5/31/2014 0:43	0:08	AWE	0.042	17 200	AGC MAVG - calculated
5/31/2014 1:11	0:12	AWE	0.213	17 100	AGC MAVG - calculated
5/31/2014 1:25	0:01	AWE	0.006	14 700	AGC MAVG - calculated
5/31/2014 1:34	5:26	KWPH	68.777	20 633	AGC MAVG - calculated
5/31/2014 1:40	0:01	AWE	0.015	12 500	AGC MAVG - calculated
5/31/2014 1:44	0:02	AWE	0.017	12 600	AGC MAVG - calculated
5/31/2014 1:47	0:02	AWE	0.034	13 300	AGC MAVG - calculated
5/31/2014 1:50	0:02	AWE	0.016	12 300	AGC MAVG - calculated
5/31/2014 1:54	0:01	AWE	0.010	11 800	AGC MAVG - calculated
5/31/2014 1:56	0:01	AWE	0.000	12 800	AGC MAVG - calculated
5/31/2014 2:11	0:07	AWE	0.084	12 800	AGC MAVG - calculated
5/31/2014 2:16	0:02	AWE	0.026	12 000	AGC MAVG - calculated
5/31/2014 2:23	0:01	AWE	0.024	11 800	AGC MAVG - calculated
5/31/2014 2:29	2:55	AWE	14.324	16 800	AGC MAVG - calculated
5/31/2014 5:25	0:01	AWE	0.005	16 400	AGC MAVG - calculated
5/31/2014 5:27	0:01	AWE	0.001	16 100	AGC MAVG - calculated
5/31/2014 5:29	0:01	AWE	0.012	17 400	AGC MAVG - calculated
5/31/2014 5:32	0:08	AWE	0.193	19 100	AGC MAVG - calculated
5/31/2014 5:41	0:01	AWE	0.018	16 900	AGC MAVG - calculated
5/31/2014 5:46	0:10	AWE	0.170	19 200	AGC MAVG - calculated
5/31/2014 5:55	0:02	AWE	0.053	19 300	AGC MAVG - calculated
5/31/2014 6:08	0:04	AWE	0.051	21 000	AGC MAVG - calculated
5/31/2014 6:13	0:15	AWE	0.317	21 000	AGC MAVG - calculated
5/31/2014 6:29	0:02	AWE	0.044	21 000	AGC MAVG - calculated
5/31/2014 6:32	0:03	AWE	0.021	21 000	AGC MAVG - calculated
5/31/2014 6:37	0:01	AWE	0.002	21 000	AGC MAVG - calculated
5/31/2014 6:41	0:01	AWE	0.003	21 000	AGC MAVG - calculated
5/31/2014 6:47	0:03	AWE	0.010	21 000	AGC MAVG - calculated

RSWG Maui Curtailment Report May 2014



Event Date and Time	Duration	WPP Curtailed	Estimated Curtailed MWh	Peak MW Curtailed	AGC MAVG - Calculated	Reasons for Curtailment
5/31/2014 6:51	0:02	AWE	0.013	21.000	AGC MAVG - calculated	
5/31/2014 6:54	0:01	AWE	0.007	21.000	AGC MAVG - calculated	
5/31/2014 7:07	0:36	KWPII	0.074	20.188	AGC MAVG - calculated	
5/31/2014 7:45	0:01	KWPII	0.005	18.967	AGC MAVG - calculated	
5/31/2014 7:48	0:07	KWPII	0.188	19.419	AGC MAVG - calculated	
5/31/2014 7:58	0:01	KWPII	0.032	19.355	AGC MAVG - calculated	
5/31/2014 8:01	0:17	KWPII	1.116	20.392	AGC MAVG - calculated	
5/31/2014 8:19	0:08	KWPII	0.192	19.995	AGC MAVG - calculated	
5/31/2014 8:28	0:02	KWPII	0.080	19.423	AGC MAVG - calculated	
5/31/2014 8:32	0:30	KWPII	2.137	19.128	AGC MAVG - calculated	
5/31/2014 9:04	0:01	KWPII	0.004	18.782	AGC MAVG - calculated	

- Notes
- Curtailment for Kehehe Wind Power ("KWP"), Maui Hydroelectric ("MH"), AAAAA Rent-A-Space Maui LTD ("SA"), Bioreal Solar, LLC ("BS"), Awehā Wind Energy ("AWE") and Kehehe Wind Power II ("KWPII") may now be controlled by Maui Electric's Automatic Generation Control System ("AGC") or a Maui Electric operator-entered curtailment limit. The AGC curtailment control automatically calculates the amount of Maximum Allowable Variable Generation ("MAVG") that Maui Electric can accept into the Maui system based on the system current available variable generation ("CAVG"), regulating reserve down requirement ("RRDR"), and available regulating reserve down ("ARRD"). Thus, the AGC MAVG - calculated is equal to CAVG less (RRDR less ARRD). Additionally, the AGC curtailment control allows the Maui Electric operator to enter an AGC MAVG value. The AGC curtailment control will employ the lesser of the AGC MAVG - calculated and AGC MAVG - entered values in the control logic.
  - Maui Electric upgraded the SCADA controls to permit the curtailment of the Makūia Hydroelectric ("MH") facility to Net Zero Protocol and uncurtailment of the MH facility without opening and closing the Maui Electric and MH interconnection output breaker.
  - On November 22, 2013, Maui Electric established Bioreal Solar, LLC ("BS") curtailment control. BS is in the same curtailment priority group as AAAAA Rent-A-Space Maui LTD ("SA").
  - The Estimated Curtailed MWh and Peak MW Curtailed are calculated with information provided by AWE, KWP, and KWPII. Maui Electric does not make any representation as to its accuracy.
  - The data to calculate the Estimated Curtailed MWh and Peak MW Curtailed is not provided by SA, BS, or MH.
  - Curtailment signals sent to SA or BS during nighttime hours are not recorded as curtailment events because no energy generation is possible during that time.



















Lanae Curtailment Report May 2014

Start Date/Time	Stop Date/Time	Duration (h:mm)	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
5/29/2014 14:21	5/29/2014 14:22	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 14:25	5/29/2014 14:26	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 15:04	5/29/2014 15:04	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 15:06	5/29/2014 15:06	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 15:08	5/29/2014 15:43	0:36	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 15:45	5/29/2014 15:54	0:10	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 15:56	5/29/2014 16:22	0:27	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 16:24	5/29/2014 16:27	0:04	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 16:30	5/29/2014 16:30	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 16:32	5/29/2014 16:34	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/29/2014 16:36	5/29/2014 16:40	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 7:45	5/30/2014 8:43	0:59	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 9:07	5/30/2014 9:11	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 9:13	5/30/2014 9:15	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 9:17	5/30/2014 9:17	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 9:19	5/30/2014 11:40	2:22	LSR	Data is not available	Data is not available	Testing
5/30/2014 11:42	5/30/2014 11:45	0:04	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 11:47	5/30/2014 11:47	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:00	5/30/2014 12:00	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:11	5/30/2014 12:17	0:07	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:29	5/30/2014 12:34	0:06	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:38	5/30/2014 12:42	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:48	5/30/2014 12:49	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:51	5/30/2014 12:51	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 12:57	5/30/2014 13:02	0:06	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 13:04	5/30/2014 13:07	0:04	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 13:10	5/30/2014 13:10	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 13:20	5/30/2014 13:25	0:06	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 13:30	5/30/2014 13:37	0:08	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 13:41	5/30/2014 13:41	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 14:12	5/30/2014 14:21	0:10	LSR	Data is not available	Data is not available	Testing
5/30/2014 14:31	5/30/2014 14:40	0:10	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 14:45	5/30/2014 14:46	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/30/2014 15:01	5/30/2014 15:01	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 7:20	5/31/2014 8:02	0:43	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 9:17	5/31/2014 9:01	0:45	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 9:11	5/31/2014 9:17	0:07	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 9:21	5/31/2014 9:27	0:07	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 9:39	5/31/2014 9:53	0:15	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 9:55	5/31/2014 10:08	0:14	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 10:12	5/31/2014 10:28	0:18	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 11:00	5/31/2014 11:01	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 11:41	5/31/2014 11:45	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 11:50	5/31/2014 11:54	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 11:56	5/31/2014 11:56	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 12:02	5/31/2014 12:02	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 12:08	5/31/2014 12:09	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 12:22	5/31/2014 12:22	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 13:15	5/31/2014 13:15	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 13:27	5/31/2014 13:33	0:07	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 13:37	5/31/2014 13:45	0:09	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 13:50	5/31/2014 14:07	0:18	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:10	5/31/2014 14:11	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:13	5/31/2014 14:18	0:06	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:20	5/31/2014 14:24	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:28	5/31/2014 14:29	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:34	5/31/2014 14:40	0:07	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:44	5/31/2014 14:57	0:14	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
5/31/2014 14:59	5/31/2014 15:00	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices

Notes

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

LSR possible output data is not available. Therefore, Maui Electric assumes LSR is curtailed if the LSR curtailment set point is less than 1,200 kW and LSR's output is within 50 kW of the curtailment set point.

Hawai'i Electric Light Company Curtailment Report May 2014

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
05/06/14 07:16	19.0 MW	05/06/14 07:37	15.9 MW	Tawhiri curtailed - switching at Kealia station.
05/06/14 13:59	19.5 MW	05/06/14 14:17	10.0 MW	Tawhiri curtailed - switching at Kealia station.
05/27/14 06:50	4.8 MW	05/27/14 19:36	5.9 MW	Tawhiri request self-curtailment. Tawhiri performed work on fiber optic communication line