



FILED

2014 MAY 30 P 3:18

PUBLIC UTILITIES
COMMISSION

May 30, 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'¹ monthly report for April 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 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

¹ 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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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 April 30, 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 April 30, 2014):

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

Hawaiian Electric contingency reserve activations are provided in Attachment 3. Maui Electric and Hawai'i Electric Light do not operate with contingency reserve requirements.

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

The tabulation of under frequency load shed events is provided in Attachment 4. Hawaiian Electric did not have any under frequency load shed events for the month of April.

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 is provided in Attachment 5. 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.

- (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 April 30, 2014):

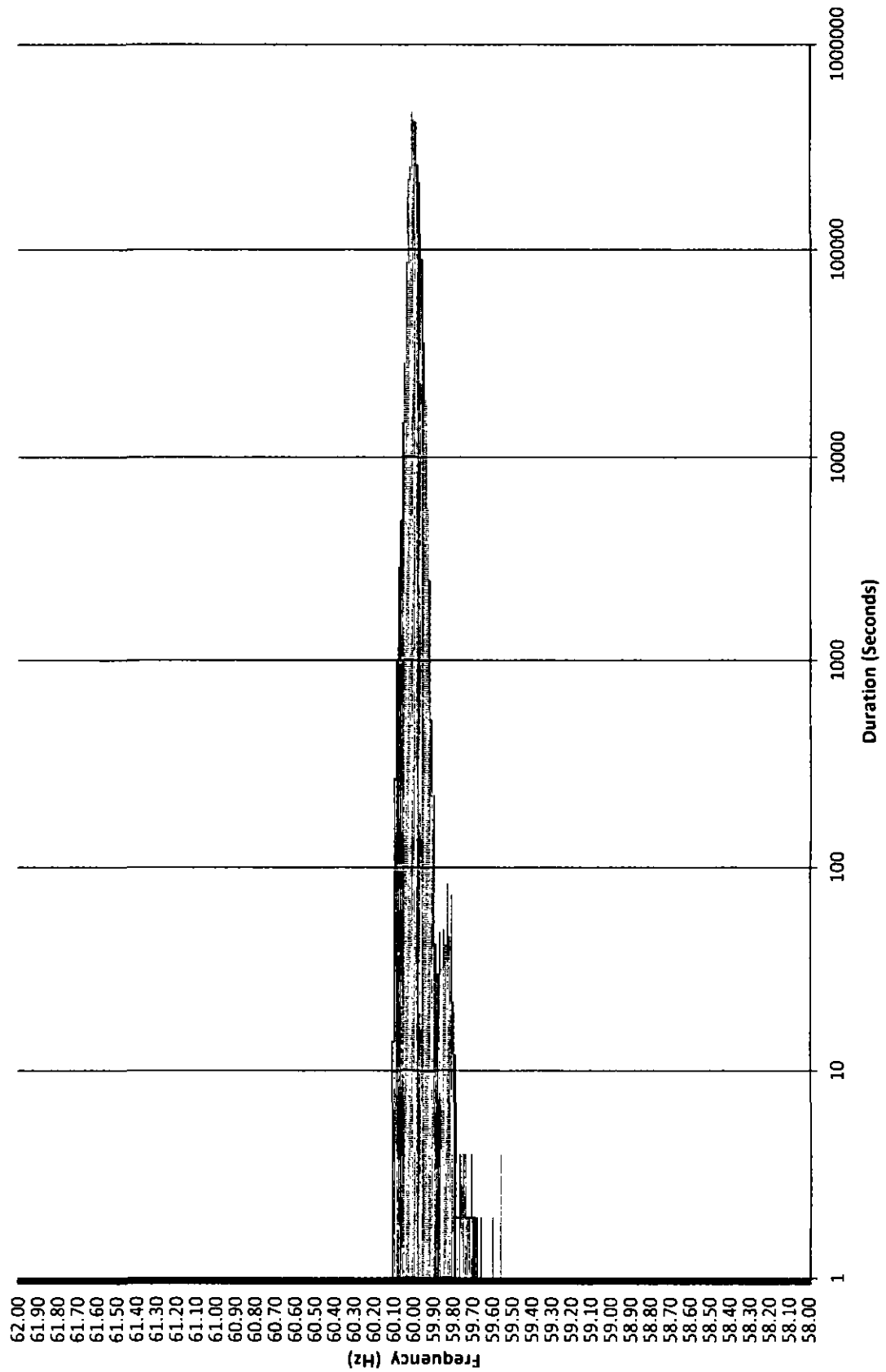
3a) Tabulation of each curtailment event for each resource including the starting date and time, duration, megawatt hours curtailed, peak MW curtailed, and reason for curtailment:

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

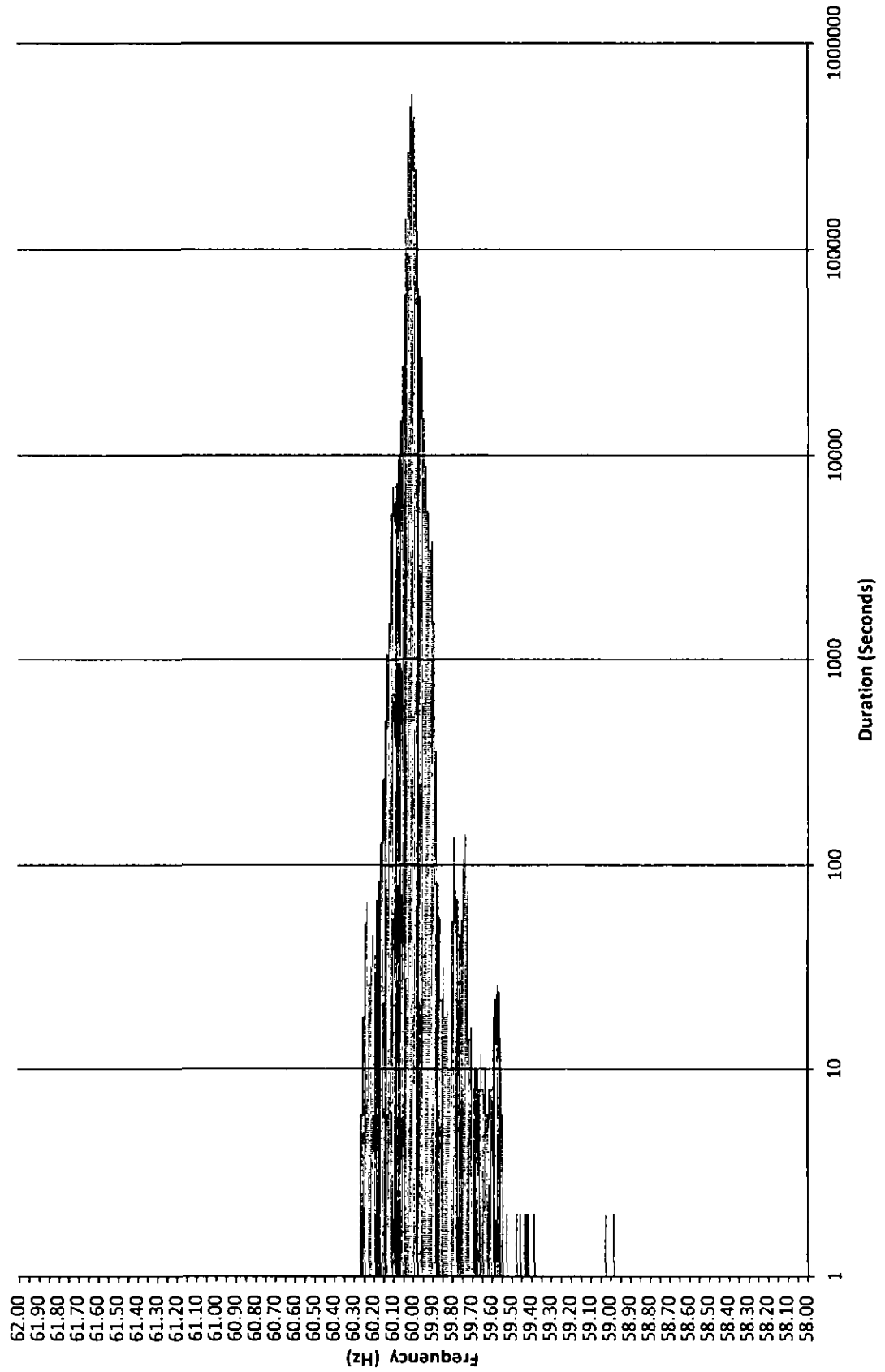
3b) Total MWh of non-dispatchable renewable resources curtailed for the month:

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.

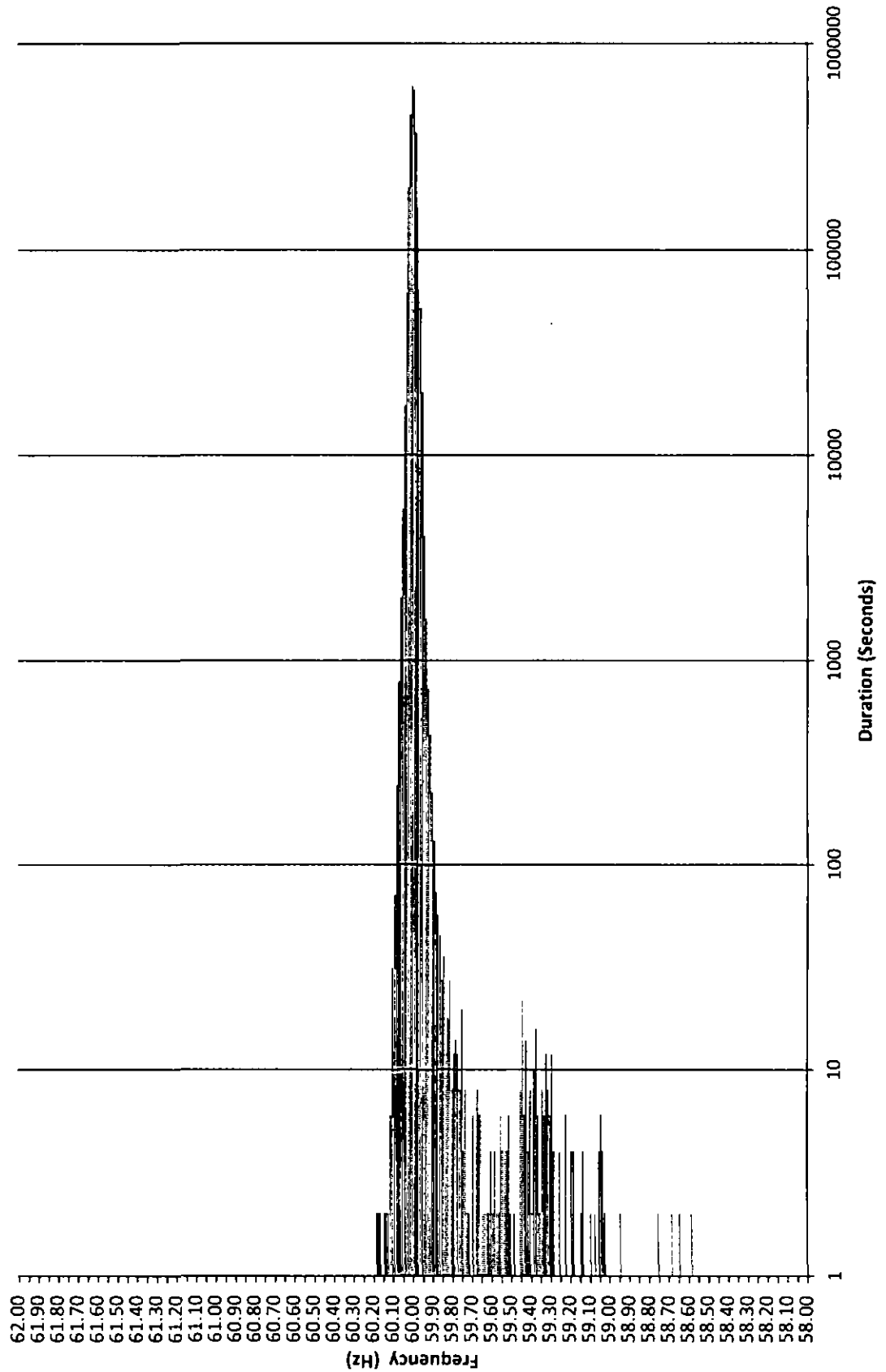
Frequency Distribution Plot - Hawaiian Electric April 2014



Maui Electric Frequency Distribution Plot - Maui April 2014



Frequency Distribution Plot - Hawai'i Electric Light April 2014



Hawaiian Electric Frequency Excursion Statistics April 2014		
Data Rounded to the nearest	<59.95 Hz	>60.05 Hz
Number of Excursions	3104	2510
Maximum Duration (sec)	658	508
Maximum Deviation (Hz)	59.561	60.113
Total Duration of Excursions (sec)	40990	34266

Maui Electric Frequency Excursion Statistics April 2014		
	<59.95 Hz	>60.05 Hz
Number of Excursions	4900	4001
Maximum Duration (sec)	822	1474
Maximum Deviation (Hz)	58.98	60.259
Total Duration of Excursions (sec)	51994	63168

Hawai'i Electric Light Frequency Excursion Statistics April 2014		
	<59.95 Hz	>60.05 Hz
Number of Excursions	2726	961
Maximum Duration (sec)	260	78
Maximum Deviation (Hz)	58.582	60.184
Total Duration of Excursions (sec)	17736	5214

Hawaiian Electric Curtailment Report April 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
04/01/14 07:29	0.0	16.00	04/01/14 14:32	0	*	KWF	Relay upgrades on the Kahipa-Kahuku 461V line
04/06/14 12:18	0.0	5.10	04/06/14 12:33	0	*	KWF	Pole replacement on Koolau-Kahuku 461V line
04/06/14 12:19	0.0	4.10	04/06/14 12:34	0	*	Maka	Pole replacement on Koolau-Kahuku 461V line
04/06/14 20:35	0.0	3.70	04/06/14 21:06	0	*	Maka	Pole replacement on Koolau-Kahuku 461V line
04/06/14 20:36	0.0	17.00	04/06/14 21:04	0	*	KWF	Pole replacement on Koolau-Kahuku 461V line
04/19/14 10:27	0.0	18.20	04/19/14 11:18	0	*	KWF	Pole replacement on Wahiawa-Waiailua 1 461V line
04/19/14 10:28	0.0	52.00	04/19/14 17:05	0	*	Mauka	Pole replacement on Wahiawa-Waiailua 1 461V line
04/19/14 10:29	0.0	15.00	04/19/14 11:18	0	*	Maka	Pole replacement on Wahiawa-Waiailua 1 461V line
04/19/14 16:28	0.0	18.70	04/19/14 17:08	0	*	Maka	Pole replacement on Wahiawa-Waiailua 1 461V line
04/19/14 16:28	0.0	5.50	04/19/14 17:04	0	*	KWF	Pole replacement on Wahiawa-Waiailua 1 461V line
04/29/14 06:32	0.0	0.00	04/29/14 07:35	0	*	KREP	Switch upgrades at Iwa Beach substation
04/29/14 18:15	0.0	0.00	04/29/14 18:52	0	*	KREP	Switch upgrades at Iwa Beach substation
04/30/14 06:47	0.0	0.00	04/30/14 07:20	0	*	KREP	Switch upgrades at Iwa Beach substation
04/30/14 20:30	0.0	0.00	04/30/14 20:56	0	*	KREP	Switch upgrades at Iwa Beach substation

KLS2 = Kalaheo Solar 2 PV Farm

KREP = Kalaheo Renewable Energy Park

KWF = Kahuku Wind Farm

Maka = Kawaihoa Makai Wind Farm

Mauka = Kawaihoa Mauka Wind Farm

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

* Data has not been provided by IPP



R8WG Maul Curtailment Report April 2014

Table with columns: Start Date and Time, Duration, WIPP Curtailment, Estimated Curtailment MWH, Peak MW Curtailment, and Reasons for Curtailment. Contains detailed data for various dates from 4/9/2014 to 4/13/2014, including reasons like 'AGC MAVG - calculated' and 'Good Engineering and Operating Practices'.



RSWG Maui Curtailment Report April 2014

Start Date and Time	Duration	ICPP Curtailed	Estimated Curtailed MWH	Peak MW Curtailed	Reasons for Curtailment
4/26/2014 16:06	0:03	KWPII	0.015	19.975	AGC MAVG - calculated
4/26/2014 16:11	0:01	KWPII	0.002	20.183	AGC MAVG - calculated
4/26/2014 16:13	0:01	KWPII	0.007	20.418	AGC MAVG - calculated
4/26/2014 16:15	0:01	KWPII	0.004	20.848	AGC MAVG - calculated
4/26/2014 21:57	2:47	KWPII	40.700	20.708	AGC MAVG - calculated
4/26/2014 23:20	0:02	AWE	0.027	21.008	AGC MAVG - calculated
4/26/2014 23:23	0:01	AWE	0.021	21.000	AGC MAVG - calculated
4/26/2014 23:28	0:05	AWE	0.188	21.000	AGC MAVG - calculated
4/26/2014 23:37	0:12	AWE	0.538	19.800	AGC MAVG - calculated
4/26/2014 23:55	0:01	AWE	0.030	19.800	AGC MAVG - calculated
4/27/2014 0:00	0:29	AWE	2.221	20.000	AGC MAVG - calculated
4/27/2014 0:33	0:03	AWE	0.110	19.100	AGC MAVG - calculated
4/27/2014 0:37	0:02	AWE	0.040	15.700	AGC MAVG - calculated
					AGC MAVG - calculated AGC MAVG - entered - Maintaining Regulating Reserves AGC MAVG - calculated
					AGC MAVG - entered - Maintaining Regulating Reserves AGC MAVG - entered - Excess Energy, and AGC
4/27/2014 0:46	5:55	KWPII	100.942	20.842	MAVG - calculated
4/27/2014 0:49	0:11	AWE	0.487	17.800	AGC MAVG - calculated
4/27/2014 1:09	0:01	AWE	0.004	13.000	AGC MAVG - calculated
					AGC MAVG - calculated AGC MAVG - entered - Maintaining Regulating Reserves AGC MAVG - calculated
					AGC MAVG - entered - Maintaining Regulating Reserves AGC MAVG - entered - Excess Energy, and AGC
4/27/2014 1:08	5:27	AWE	85.958	20.000	MAVG - calculated
4/27/2014 2:55	1:39	MH	Date is not available	Date is not available	AGC MAVG - entered - Maintaining Regulating Reserves and AGC MAVG - entered - Excess Energy
4/27/2014 2:58	0:50	KWP	2.553	22.480	AGC MAVG - entered - Excess Energy
4/27/2014 3:49	0:03	KWP	0.098	21.184	AGC MAVG - entered - Excess Energy
4/27/2014 3:53	0:02	KWP	0.036	19.984	AGC MAVG - entered - Excess Energy
4/27/2014 3:56	0:01	KWP	0.026	19.536	AGC MAVG - entered - Excess Energy
4/27/2014 3:58	0:01	KWP	0.025	19.712	AGC MAVG - entered - Excess Energy
4/27/2014 4:00	0:11	KWP	0.312	21.424	AGC MAVG - entered - Excess Energy
4/27/2014 4:17	0:02	KWP	0.036	21.440	AGC MAVG - entered - Excess Energy
4/27/2014 4:18	0:02	KWP	0.040	21.712	AGC MAVG - entered - Excess Energy
4/27/2014 4:20	0:01	KWP	0.018	21.056	AGC MAVG - entered - Excess Energy
4/27/2014 4:24	0:03	KWP	0.041	21.232	AGC MAVG - entered - Excess Energy
4/27/2014 4:28	0:01	KWP	0.003	20.288	AGC MAVG - entered - Excess Energy
4/27/2014 6:44	0:02	KWPII	0.016	9.895	AGC MAVG - calculated
4/27/2014 6:47	0:01	KWPII	0.008	9.245	AGC MAVG - calculated
4/28/2014 10:19	0:01	KWPII	0.001	0.048	AGC MAVG - calculated and Testing
4/28/2014 13:33	0:01	KWP	0.000	0.018	AGC MAVG - calculated and Testing
4/28/2014 14:51	0:01	KWP	0.002	0.144	AGC MAVG - calculated and Testing
4/28/2014 23:51	0:01	KWP	0.005	0.288	AGC MAVG - calculated
4/29/2014 8:47	0:01	AWE	0.003	0.200	AGC MAVG - calculated
4/29/2014 14:52	0:01	AWE	0.002	0.100	AGC MAVG - calculated
4/29/2014 15:00	0:01	AWE	0.002	0.100	AGC MAVG - calculated
4/30/2014 3:00	0:01	AWE	0.003	0.200	AGC MAVG - calculated
4/30/2014 3:41	0:01	AWE	0.003	0.200	AGC MAVG - calculated
4/30/2014 8:10	0:01	AWE	0.003	0.200	AGC MAVG - calculated

Notes

Curtailment for Kaheewa Wind Power ("KWP"), Makila Hydroelectric ("MH"), AAAAA Rent-A-Space Maui LTD ("SA"), Boraal Solar, LLC ("BS"), Aupohi Wind Energy ("AWE"), and Kaheewa Wind Power II ("KWPII") may now be controlled by Maui Electric's Automatic Generation Control of 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 Makila Hydroelectric ("MH") facility to Net Zero Prohibit and uncurtailment of the MH facility without opening and closing the Maui Electric and MH interconnection circuit breaker.

On November 22, 2013, Maui Electric established Boraal Solar, LLC ("BS") curtailment control. BS is in the same curtailment seniority 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.



Lana's Curtailment Report April 2014

Start Date/Time	Stop Date/Time	Duration (h mm)	IPP Curtailed	Estimated MWh Curtailed	Peak MW Curtailed	Reasons for Curtailment
4/26/2014 13:59	4/26/2014 13:59	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/26/2014 15:28	4/26/2014 15:28	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/26/2014 16:04	4/26/2014 16:14	0:11	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/26/2014 16:20	4/26/2014 16:22	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/26/2014 16:25	4/26/2014 16:26	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/26/2014 16:29	4/26/2014 16:37	0:09	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 7:38	4/27/2014 7:38	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 7:41	4/27/2014 7:41	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 7:51	4/27/2014 7:55	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 7:57	4/27/2014 7:58	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:00	4/27/2014 8:04	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:12	4/27/2014 8:12	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:17	4/27/2014 8:17	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:36	4/27/2014 8:40	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:42	4/27/2014 8:42	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:45	4/27/2014 8:45	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:52	4/27/2014 8:54	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 8:57	4/27/2014 8:57	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:00	4/27/2014 9:00	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:03	4/27/2014 9:06	0:07	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:14	4/27/2014 9:17	0:04	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:19	4/27/2014 9:19	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:26	4/27/2014 9:26	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:34	4/27/2014 9:35	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 9:37	4/27/2014 10:30	0:54	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 10:38	4/27/2014 10:39	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 10:46	4/27/2014 10:48	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 10:51	4/27/2014 11:09	0:19	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 11:14	4/27/2014 11:15	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 11:58	4/27/2014 12:18	0:23	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 12:30	4/27/2014 12:34	0:05	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 12:38	4/27/2014 12:38	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 13:23	4/27/2014 13:33	0:11	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 14:04	4/27/2014 14:34	0:31	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 14:43	4/27/2014 15:40	0:58	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 15:42	4/27/2014 15:49	0:08	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 15:51	4/27/2014 15:52	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 15:54	4/27/2014 15:55	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 15:58	4/27/2014 16:24	0:27	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 16:28	4/27/2014 16:30	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 16:33	4/27/2014 16:34	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 16:37	4/27/2014 17:08	0:32	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 17:10	4/27/2014 17:52	0:43	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/27/2014 17:55	4/27/2014 17:56	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:53	4/28/2014 6:54	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:14	4/28/2014 6:15	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:23	4/28/2014 6:25	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:48	4/28/2014 6:48	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:55	4/28/2014 6:55	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:04	4/28/2014 6:06	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 6:57	4/28/2014 6:57	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 9:58	4/28/2014 9:58	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 10:01	4/28/2014 10:03	0:03	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 10:32	4/28/2014 10:37	0:06	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 11:52	4/28/2014 11:53	0:02	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 12:11	4/28/2014 12:11	0:01	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/28/2014 16:22	4/28/2014 16:29	0:08	LSR	Data is not available	Data is not available	Good Engineering and Operating Practices
4/29/2014 7:33	4/29/2014 7:35	0:03	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 12 MW while the Maui Electric-Lana 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 April 2014

Start Date/Time	MW output prior to start of curtailment	End Date/Time	MW output after curtailment released	Reason for Curtailment
04/01/14 01:56	19.7 MW	04/01/14 04:14	18.8 MW	Tawhiri Group B curtailed for excess energy.
04/02/14 00:54	19.8 MW	04/02/14 04:31	18.8 MW	Tawhiri Group B curtailed for excess energy.
04/02/14 22:04	18.7 MW	04/02/14 22:54	16.1 MW	High wind curtailment at Tawhiri's request.
04/03/14 01:29	18.7 MW	04/03/14 04:22	18.7 MW	Tawhiri Group B curtailed for excess energy.
04/03/14 09:14	18.6 MW	04/03/14 16:37	17.0 MW	High wind curtailment at Tawhiri's request.
04/13/14 01:25	14.7 MW	04/13/14 02:54	14.9 MW	Tawhiri Group B curtailed for excess energy.
04/13/14 06:58	16.0 MW	04/13/14 11:10	17.7 MW	High wind curtailment at Tawhiri's request.
04/13/14 12:11	19.8 MW	04/13/14 17:42	17.9 MW	High wind curtailment at Tawhiri's request.
04/21/14 08:25	18.5 MW	04/21/14 18:37	18.4 MW	High wind curtailment at Tawhiri's request.
04/22/14 09:00	18.6 MW	04/22/14 09:23	17.0 MW	High wind curtailment at Tawhiri's request.
04/22/14 09:38	19.8 MW	04/22/14 15:21	17.9 MW	High wind curtailment at Tawhiri's request.
04/24/14 08:58	19.6 MW	04/24/14 13:52	19.3 MW	High wind curtailment at Tawhiri's request.
04/25/14 09:59	18.6 MW	04/25/14 12:17	18.1 MW	High wind curtailment at Tawhiri's request.
04/25/14 12:24	19.9 MW	04/25/14 14:54	19.7 MW	High wind curtailment at Tawhiri's request.
04/26/14 01:56	19.8 MW	04/26/14 04:00	17.8 MW	High wind curtailment at Tawhiri's request.
04/26/14 08:32	19.9 MW	04/26/14 17:01	19.6 MW	High wind curtailment at Tawhiri's request.