



# Kaua'i Island Utility Cooperative

Your Touchstone Energy® Cooperative



3/11/16

GEN FILE

C: SG, MEC, DP,  
MLR

2016 MAR 11 P 2:42

PUBLIC UTILITIES  
COMMISSION  
OF HAWAII

RECEIVED  
MAY 11 2016  
P 2:42

March 10, 2016

The Honorable Chairman and Members of the  
Hawaii Public Utilities Commission  
Kekuanaoa Building, First Floor  
465 South King Street  
Honolulu, HI 96813

Subject: KIUC 2015 Annual Service Reliability Report

Dear Mr. Iwase:

Attached for the Commission's information is a copy of KIUC's 2015 Annual Service Reliability Report. If you have any questions regarding the attached report please contact Tim Blume at (808) 246-8274.

Very truly yours,

*for*  
Michael V. Yamane, P.E.  
Chief of Operations

Enclosures

cc: Consumer Advocate  
Tom Lovas

*The power of human connections.*

4463 Pahe'e Street, Suite 1 • Lihue, Kaua'i, HI 96766-2000 • (808) 246-4300 • [www.kiuc.coop](http://www.kiuc.coop)

KIUC is an equal opportunity provider and employer.



**ANNUAL SERVICE RELIABILITY REPORT**

**2015**

Prepared  
March 2, 2016

## CONTENTS

Introduction.....	3
Definition of Terms.....	4
Reliability Indices.....	6
Sustained Interruption Causes.....	9
Interruption List.....	Attachment A

## INTRODUCTION

This is the 2015 Annual Service Reliability Report ("Report") of the Kaua'i Island Utility Cooperative ("KIUC"). The Report contains a five-year history of standard industry reliability indices in order to depict the quality of electrical service provided to the cooperative consumer/member. These reliability indices are calculated using the data from all sustained (i.e. one minute or longer) system interruptions.

If data normalization is required, it is done using the guidelines specified in the report entitled, "Methodology for Determining Reliability Indices for HECO Utilities," dated December 1990. That report indicates that normalization is allowed for "abnormal" situations such as hurricane, tsunami, earthquake, flood, catastrophic equipment failure, and single outages that cascade into a loss of load greater than 10% of the system peak. Such normalizations are made because good engineering design – while accounting for safety, reliability, utility industry standards, and economics – cannot and should not always account for catastrophic events.

The Report also contains a detailed breakdown of interruption causes, which is used to determine steps to be taken to prevent recurrence of such interruptions.

## DEFINITION OF TERMS

### CUSTOMER INTERRUPTION

One interruption of one customer. Interruptions to customers at their request (e.g. customer maintenance) are not considered.

### INTERRUPTION

The loss of service to one or more consumers and is a result of one or more component outages.

### INTERRUPTION DURATION

The period from the initiation of an interruption to a consumer until service has been restored to that consumer.

### MOMENTARY INTERRUPTION

An interruption that has duration limited to the period required to restore service by automatic or supervisory-controlled switching operations or by manual switching at locations where an operator is immediately available. Such switching operations must be completed in a specific time not to exceed one minute.

### SUSTAINED INTERRUPTION

Any interruption not classified as a momentary interruption (i.e. greater than one minute in duration). Only this type of interruption is included in the reliability indices within this report.

### RELIABILITY INDICES

Measurements used to indicate electrical service reliability. The indices used in this report conform to Institute of Electrical and Electronics Engineers (IEEE) standards. Four indices that convey a meaningful representation of the level of reliability were selected and are presented in this report. These reliability indices are as follows:

#### 1. AVERAGE SERVICE AVAILABILITY (ASA)

Total customer hours actually served as a percentage of total customer hours possible during the year. This indicates the extent to which electrical service was available to all customers. This index has been commonly referred to as the "Index of Reliability."

#### 2. CUSTOMER AVERAGE INTERRUPTION DURATION INDEX (CAIDI)

The interruption duration per customer interrupted during the year. This index indicates the average duration of an interruption for those customers affected by a sustained interruption.

**3. SYSTEM AVERAGE INTERRUPTION DURATION INDEX (SAIDI)**

The interruption duration per customer served during the year. This index indicates the average interruption time experienced by all customers serviced on the system.

**4. SYSTEM AVERAGE INTERRUPTION FREQUENCY INDEX (SAIFI)**

The number of customer interruptions per customer served during the year. This index indicates the average number of sustained interruptions experienced by all customers serviced on the system.

The reliability indices are related to each other in a few ways. For example, the product of CAIDI and SAIFI is SAIDI. SAIDI can then be used to find ASA, since SAIDI represents the time during a period without service, while ASA represents the percent of time during that same period with service. The reliability indices can be thought of more simply as:

1. The percent of time electrical service is available (ASA)
2. The amount of time electrical service is NOT available (SAIDI)
3. How long an interruption lasts (CAIDI)
4. How often an interruption occurs (SAIFI)

**Table 1: 2011 – 2015 KIUC RELIABILITY INDICES**

	2011	2012	2013	2014	2015
System Peak, MW	72.05	73.06	72.96	72.90	74.92
Customers, #	36,222	36,473	36,704	36,831	36,832
ASA, %	99.976	99.963	99.977	99.980	99.932
SAIFI, #	5.80	4.36	3.23	2.70	6.28
CAIDI, minutes	21.53	44.20	36.62	38.56	56.57
SAIDI, minutes	124.97	192.72	118.32	104.04	355.02

Note:

- None of the above data has been normalized.

**2015 Outages of Significant Magnitude:**

1. Interruption Report 2015-001, 1/1/15, 12:22:43 AM – Kapaia Power Station (KPS) CT tripped due to a faulty protective relay. KPS had been carrying close to 70% of the island load. Units D7 and D8 at the Port Allen Station were also on line, but tripped due to “stall” condition logic which basically indicates that frequency is too low to be on line. At this point the island was completely black. Restoration took longer than desired due to multiple unit trips on start up. Power was restored to all customers by 5:40 AM or about five and half hours later.
2. Interruption Report 2015-023, 1/5/15, 11:48:52 AM – Breakers 5702 and 5712, transmission breakers feeding the west side of the island, opened due to a broken cross arm. A transient caused by the fault led the Koloa solar farm to trip a load of 11 MW. A load shed occurred due to the loss of the solar farm. Loads affected by the PV farm trip were restored in about 12 minutes or less. The loads directly affected by the transmission outage were fully restored in 11.5 hours.
3. Interruption Report 2015-115, 4/27/15, 7:43:27 PM – Multiple trips on units GT1 and GT2 at the Port Allen Generating Station occurred due to fuel system issues. Both GT's are fed by a common fuel skid. This resulted in multiple outages over a four hour period. No customers were out of power more than two hours. Once the fuel problem was corrected, all customers were restored. The island primary unit, KPS CT1, was down for maintenance.

**Fig. 1: ASA (higher is better)**

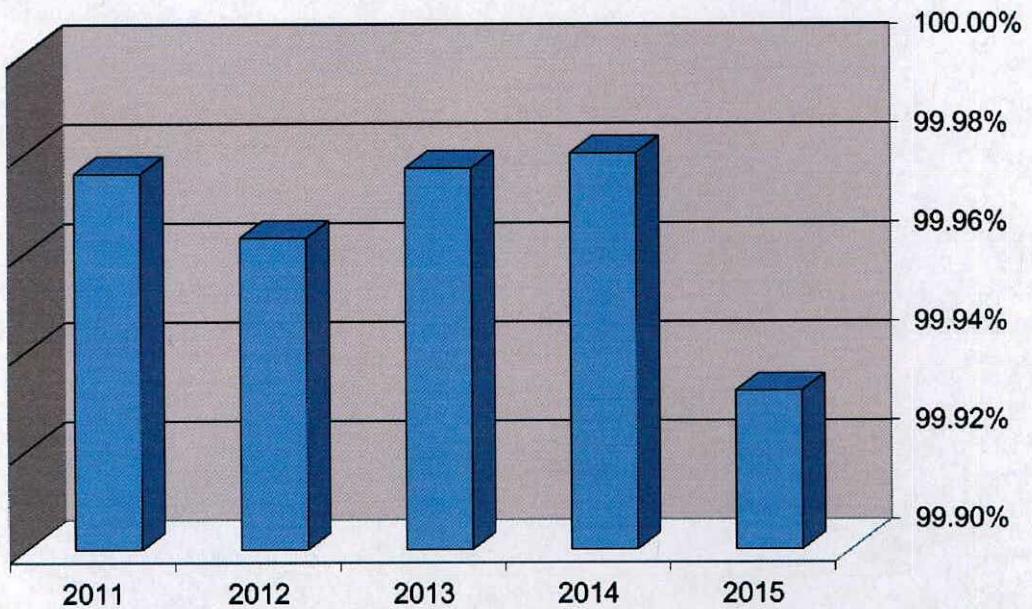


Figure 1 shows the Average System Availability (ASA) for the past five years. The 2015 ASA of 99.932% is lower than the previous four years of the five-year period and worse than the five-year average of 99.966%.

**Fig. 2: SAIFI (lower is better)**

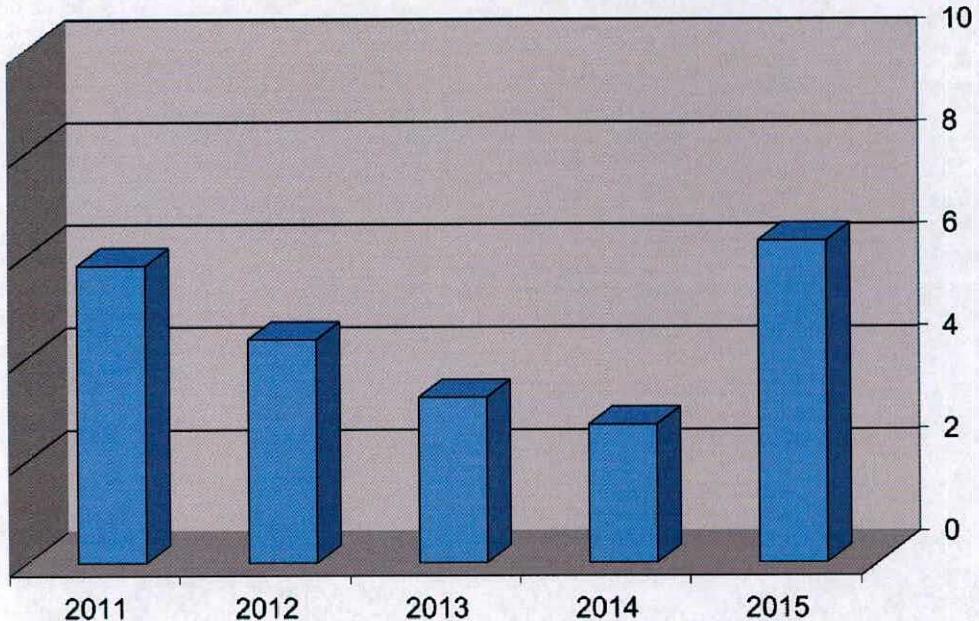


Figure 2 shows the System Average Interruption Frequency Index (SAIFI) for the past five years. The 2015 SAIFI of 6.28 was the worst of the five-year period and worse than the five-year average of 4.47.

**Fig. 3: CAIDI (lower is better)**

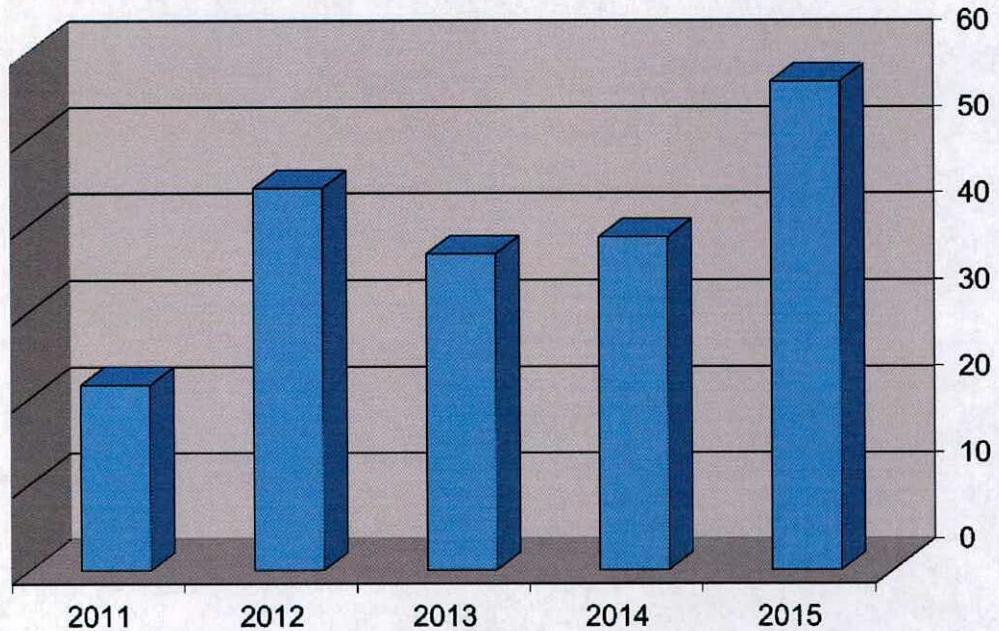


Figure 3 shows the Customer Average Interruption Duration Index (CAIDI) for the past five years. The 2015 CAIDI of 56.57 was the highest of the five-year period and higher than the five-year average of 39.50.

**Fig. 4: SAIDI (lower is better)**

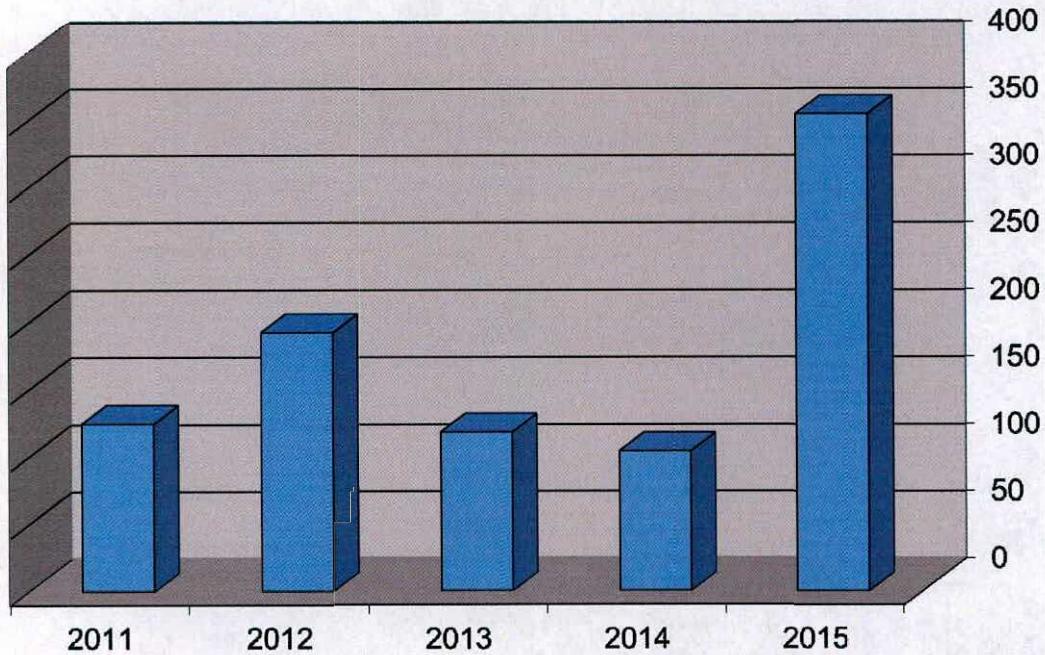


Figure 4 shows the System Average Interruption Duration Index (SAIDI) for the past five years. The 2015 SAIDI of 355.02 is higher than the previous four years of the five-year period and is also higher than the five-year average of 178.99.

## 2015 KIUC SUSTAINED INTERRUPTION CAUSES

In the following figures and tables, the most recent year's sustained interruption causes are examined. Interruptions can be broken down many ways, but we will focus on two areas: causes by frequency (what caused the most interruptions), and causes by magnitude (what caused the most severe interruptions).

Fig. 5: Sustained Interruptions by Frequency

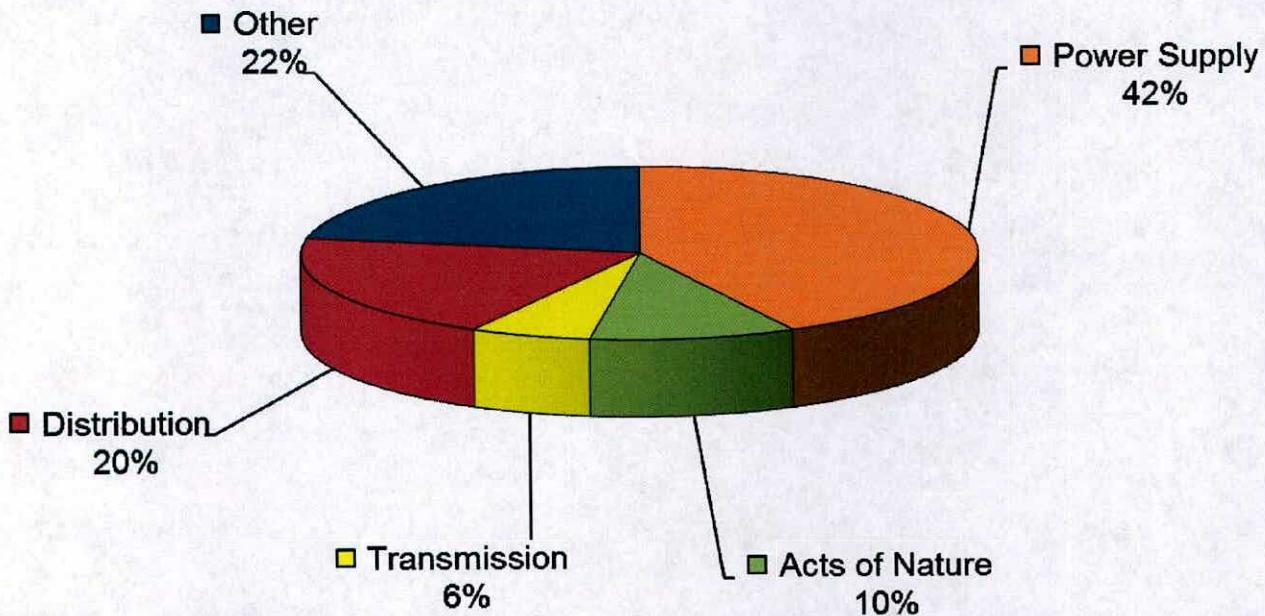


Figure 5 shows the breakdown by frequency. The leading cause of outages was "Power Supply" – interruptions caused by generating unit problems that result in a reduction of output, causing an under frequency load shed. The second most common cause was "Other" – persons or equipment not related to or owned by KIUC. Examples include auto accidents that contact utility poles or wires, non-KIUC contractors such as construction crews that dig into underground cables or tree trimmers that contact overhead wires, and trees that contact wires due to overgrowth. The third leading cause of interruptions was "Distribution" -- failure or malfunction of distribution equipment including cables, fuses, insulators, poles, and transformers. The fourth leading cause of interruptions was "Acts of Nature" – interruptions caused by high winds, floods, storms, etc ; and the fifth (or least) and final cause of interruptions was "Transmission" – failure or malfunction of transmission equipment including insulators, large transformers, lightning arrestors, and switches.

Fig. 6: Sustained Interruptions by Magnitude

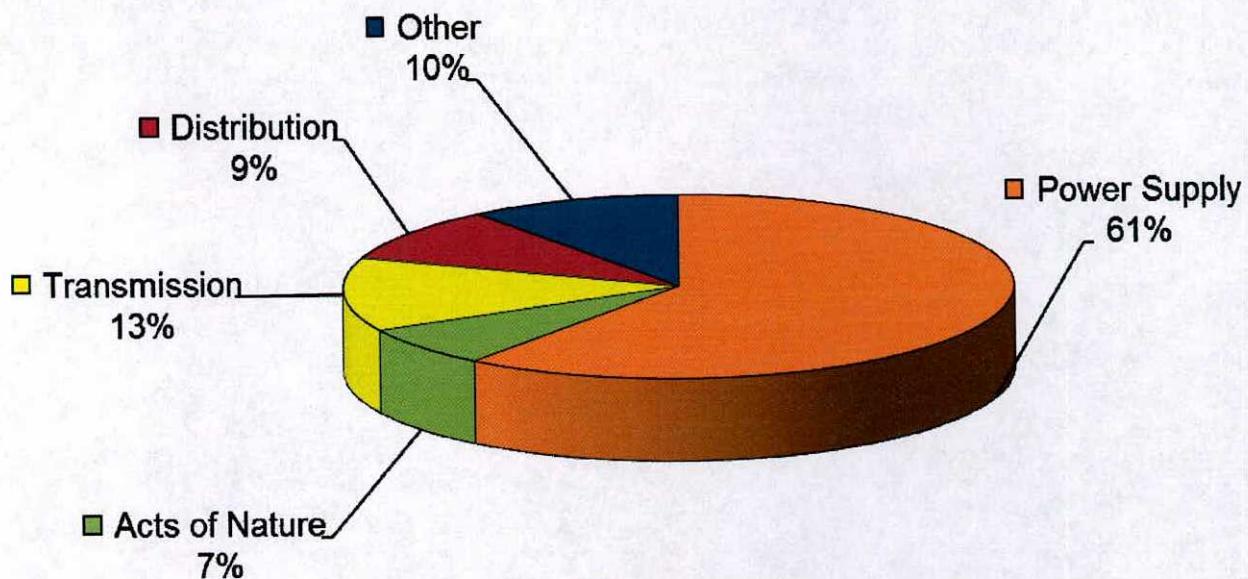


Figure 6 shows the breakdown by magnitude. The same descriptions and examples that were described following Figure 5 apply also for Figure 6. The causes of severe interruptions, in order from most to least, were "Power Supply", "Transmission", "Other", "Distribution", and lastly "Acts of Nature".

Outage Number	Circuit	Outage Start Time	Outage End Time	Duration	Class	Type	kW	Consumers
2015-001	3313	1/1/2015 4:15:00 AM	1/1/2015 5:01:00 AM	0:46:00	A	1	1620	1396
2015-001	3411	1/1/2015 3:05:00 AM	1/1/2015 3:50:00 AM	0:45:00	A	1	1070	300
2015-001	1232	1/1/2015 3:05:00 AM	1/1/2015 4:14:00 AM	1:09:00	A	1	20	10
2015-001	1231	1/1/2015 3:05:00 AM	1/1/2015 4:10:00 AM	1:05:00	A	1	260	2
2015-001	4002	1/1/2015 2:39:00 AM	1/1/2015 2:42:00 AM	0:03:00	A	1	460	471
2015-001	4002	1/1/2015 2:17:00 AM	1/1/2015 2:31:00 AM	0:14:00	A	1	780	471
2015-001	1432	1/1/2015 12:22:48 AM	1/1/2015 4:39:00 AM	4:16:12	A	1	170	300
2015-001	1325	1/1/2015 12:22:48 AM	1/1/2015 2:51:00 AM	2:28:12	A	1	420	20
2015-001	1322	1/1/2015 12:22:48 AM	1/1/2015 5:41:00 AM	5:18:12	A	1	660	700
2015-001	3127	1/1/2015 12:22:47 AM	1/1/2015 5:34:00 AM	5:11:13	A	1	1590	1569
2015-001	3126	1/1/2015 12:22:47 AM	1/1/2015 5:32:00 AM	5:09:13	A	1	150	19
2015-001	3124	1/1/2015 12:22:47 AM	1/1/2015 4:27:00 AM	4:04:13	A	1	1050	210
2015-001	3123	1/1/2015 12:22:47 AM	1/1/2015 4:25:00 AM	4:02:13	A	1	610	1187
2015-001	3122	1/1/2015 12:22:47 AM	1/1/2015 4:38:00 AM	4:15:13	A	1	1800	300
2015-001	3121	1/1/2015 12:22:47 AM	1/1/2015 5:35:00 AM	5:12:13	A	1	1580	650
2015-001	3415	1/1/2015 12:22:46 AM	1/1/2015 4:53:00 AM	4:30:14	A	1	950	1612
2015-001	3414	1/1/2015 12:22:46 AM	1/1/2015 5:39:00 AM	5:16:14	A	1	1090	859
2015-001	3413	1/1/2015 12:22:46 AM	1/1/2015 4:16:00 AM	3:53:14	A	1	1880	2735
2015-001	3412	1/1/2015 12:22:46 AM	1/1/2015 4:56:00 AM	4:33:14	A	1	960	1004
2015-001	3411	1/1/2015 12:22:46 AM	1/1/2015 2:49:00 AM	2:26:14	A	1	440	300
2015-001	2314	1/1/2015 12:22:46 AM	1/1/2015 5:38:00 AM	5:15:14	A	1	1910	768
2015-001	2313	1/1/2015 12:22:46 AM	1/1/2015 3:51:00 AM	3:28:14	A	1	1920	717
2015-001	2312	1/1/2015 12:22:46 AM	1/1/2015 5:40:00 AM	5:17:14	A	1	1660	754
2015-001	2311	1/1/2015 12:22:46 AM	1/1/2015 4:38:00 AM	4:15:14	A	1	870	748
2015-001	1233	1/1/2015 12:22:44 AM	1/1/2015 3:53:00 AM	3:30:16	A	1	80	30
2015-001	1232	1/1/2015 12:22:44 AM	1/1/2015 2:50:00 AM	2:27:16	A	1	270	10
2015-001	1231	1/1/2015 12:22:44 AM	1/1/2015 2:57:00 AM	2:34:16	A	1	60	2
2015-001	5002	1/1/2015 12:22:43 AM	1/1/2015 4:03:00 AM	3:40:17	A	1	1440	1980
2015-001	5001	1/1/2015 12:22:43 AM	1/1/2015 3:54:00 AM	3:31:17	A	1	960	876
2015-001	4124	1/1/2015 12:22:43 AM	1/1/2015 4:44:00 AM	4:21:17	A	1	2410	1926
2015-001	4123	1/1/2015 12:22:43 AM	1/1/2015 3:56:00 AM	3:33:17	A	1	580	225
2015-001	4122	1/1/2015 12:22:43 AM	1/1/2015 4:11:00 AM	3:48:17	A	1	1810	1972
2015-001	4121	1/1/2015 12:22:43 AM	1/1/2015 4:13:00 AM	3:50:17	A	1	560	430
2015-001	4002	1/1/2015 12:22:43 AM	1/1/2015 1:35:00 AM	1:12:17	A	1	360	471
2015-001	3314	1/1/2015 12:22:43 AM	1/1/2015 4:23:00 AM	4:00:17	A	1	40	552
2015-001	3313	1/1/2015 12:22:43 AM	1/1/2015 3:58:00 AM	3:35:17	A	1	960	1396
2015-001	3215	1/1/2015 12:22:43 AM	1/1/2015 5:11:00 AM	4:48:17	A	1	1150	1818
2015-001	3214	1/1/2015 12:22:43 AM	1/1/2015 5:24:00 AM	5:01:17	A	1	930	120
2015-001	3212	1/1/2015 12:22:43 AM	1/1/2015 5:25:00 AM	5:02:17	A	1	20	30
2015-001	3211	1/1/2015 12:22:43 AM	1/1/2015 6:00:00 AM	5:37:17	A	1	530	5
2015-001	3125	1/1/2015 12:22:43 AM	1/1/2015 3:44:00 AM	3:21:17	A	1	1760	766
2015-001	2134	1/1/2015 12:22:43 AM	1/1/2015 3:57:00 AM	3:34:17	A	1	1070	1528
2015-001	2133	1/1/2015 12:22:43 AM	1/1/2015 4:38:00 AM	4:15:17	A	1	230	406
2015-001	2132	1/1/2015 12:22:43 AM	1/1/2015 4:39:00 AM	4:16:17	A	1	430	718
2015-001	1323	1/1/2015 12:22:43 AM	1/1/2015 3:41:00 AM	3:18:17	A	1	1420	1385
2015-002	3127	1/1/2015 6:30:00 AM	1/1/2015 9:30:00 AM	3:00:00	C	5	300	100
2015-003	3126	1/1/2015 10:58:00 AM	1/1/2015 11:30:52 AM	0:32:52	C	5	80	19
2015-003	3122	1/1/2015 10:58:00 AM	1/1/2015 11:29:34 AM	0:31:34	C	5	1850	300
2015-003	3121	1/1/2015 10:58:00 AM	1/1/2015 11:28:35 AM	0:30:35	C	5	1470	650
2015-005	1432	1/2/2015 5:10:29 PM	1/2/2015 5:38:53 PM	0:28:24	C	2	260	300
2015-005	1432	1/2/2015 5:07:06 PM	1/2/2015 5:09:41 PM	0:02:35	C	2	260	300
2015-005	1432	1/2/2015 3:42:07 PM	1/2/2015 4:51:53 PM	1:09:46	C	2	260	300
2015-006	5002	1/2/2015 4:36:50 PM	1/2/2015 5:30:40 PM	0:53:50	C	2	2300	1980
2015-009	3123	1/2/2015 4:32:37 PM	1/2/2015 5:26:00 PM	0:53:23	C	2	1260	1187
2015-014	4121	1/2/2015 6:06:07 PM	1/3/2015 2:00:00 AM	7:53:53	C	2	276	430
2015-016	3126	1/2/2015 8:41:49 PM	1/3/2015 2:26:00 AM	5:44:11	C	2	9	19
2015-016	3126	1/2/2015 8:35:23 PM	1/2/2015 8:41:49 PM	0:06:26	C	2	50	19
2015-016	3126	1/2/2015 8:33:46 PM	1/2/2015 8:34:47 PM	0:01:01	C	2	50	19
2015-017	1325	1/2/2015 11:23:30 PM	1/2/2015 11:50:00 PM	0:26:30	C	2	330	20
2015-017	1325	1/2/2015 11:23:30 PM	1/2/2015 11:30:00 PM	0:06:30	C	2	350	20
2015-018	3415	1/3/2015 12:48:24 AM	1/3/2015 4:30:00 AM	3:41:36	C	2	51	17
2015-019	4121	1/2/2015 9:30:01 PM	1/3/2015 6:35:00 AM	9:04:59	C	2	30	10
2015-020	2134	1/3/2015 11:10:00 AM	1/3/2015 12:58:00 PM	1:48:00	C	2	6	1528
2015-021	1432	1/3/2015 12:10:00 PM	1/3/2015 1:48:00 PM	1:38:00	C	2	6	300
2015-022	3215	1/4/2015 1:32:00 PM	1/4/2015 3:51:00 PM	2:19:00	C	5	138	46
2015-023	3127	1/5/2015 11:48:58 AM	1/5/2015 11:59:28 AM	0:10:30	A	4	2050	1569
2015-023	3126	1/5/2015 11:48:58 AM	1/5/2015 11:59:47 AM	0:10:49	A	4	180	19
2015-023	3121	1/5/2015 11:48:58 AM	1/5/2015 12:00:05 PM	0:11:07	A	4	1230	650
2015-023	3414	1/5/2015 11:48:57 AM	1/5/2015 12:00:42 PM	0:11:45	A	4	1800	859

<b>Outage Number</b>	<b>Circuit</b>	<b>Outage Start Time</b>	<b>Outage End Time</b>	<b>Duration</b>	<b>Class</b>	<b>Type</b>	<b>kW</b>	<b>Consumers</b>
2015-023	3412	1/5/2015 11:48:57 AM	1/5/2015 11:57:55 AM	0:08:58	A	4	840	1004
2015-023	3313	1/5/2015 11:48:55 AM	1/5/2015 11:58:15 AM	0:09:20	A	4	820	1396
2015-023	3215	1/5/2015 11:48:54 AM	1/5/2015 11:58:36 AM	0:09:42	A	4	790	1818
2015-023	3214	1/5/2015 11:48:54 AM	1/5/2015 11:58:50 AM	0:09:56	A	4	1150	120
2015-023	3212	1/5/2015 11:48:54 AM	1/5/2015 11:59:09 AM	0:10:15	A	4	260	30
2015-023	3211	1/5/2015 11:48:54 AM	1/5/2015 12:01:07 PM	0:12:13	A	4	500	5
2015-023	5712	1/5/2015 11:48:52 AM	1/5/2015 8:59:16 PM	9:10:24	A	4	0	0
2015-023	5702	1/5/2015 11:48:52 AM	1/5/2015 9:44:27 PM	9:55:35	A	4	0	0
2015-023	1432	1/5/2015 11:48:52 AM	1/5/2015 9:51:17 PM	10:02:25	A	4	180	300
2015-023	1325	1/5/2015 11:48:52 AM	1/5/2015 9:49:03 PM	10:00:11	A	4	540	20
2015-023	1323	1/5/2015 11:48:52 AM	1/5/2015 9:46:37 PM	9:57:45	A	4	1050	1385
2015-023	1322	1/5/2015 11:48:52 AM	1/5/2015 9:52:07 PM	10:03:15	A	4	180	700
2015-023	1234	1/5/2015 11:48:52 AM	1/5/2015 10:09:02 PM	10:20:10	A	4	830	1
2015-023	1233	1/5/2015 11:48:52 AM	1/5/2015 9:49:31 PM	10:00:39	A	4	780	30
2015-023	1232	1/5/2015 11:48:52 AM	1/5/2015 9:49:54 PM	10:01:02	A	4	390	10
2015-023	1231	1/5/2015 11:48:52 AM	1/5/2015 9:50:50 PM	10:01:58	A	4	620	2
2015-023	2314	1/5/2015 11:48:51 AM	1/5/2015 12:00:24 PM	0:11:33	A	4	1250	768
2015-023	2312	1/5/2015 11:48:51 AM	1/5/2015 12:01:32 PM	0:12:41	A	4	1910	754
2015-024	5001	1/6/2015 5:01:00 PM	1/6/2015 6:17:00 PM	1:16:00	C	5	441	147
2015-025	3313	1/8/2015 10:15:00 PM	1/8/2015 11:00:00 PM	0:45:00	C	5	280	64
2015-026	2312	1/9/2015 1:41:10 PM	1/9/2015 1:56:00 PM	0:14:50	C	6	2130	754
2015-026	2312	1/9/2015 1:14:10 PM	1/9/2015 2:57:45 PM	1:43:35	C	6	129	754
2015-027	2311	1/10/2015 4:05:50 AM	1/10/2015 8:40:00 AM	4:34:10	C	6	200	748
2015-028	1432	1/16/2015 3:00:00 PM	1/16/2015 7:45:00 PM	4:45:00	C	5	30	10
2015-029	3123	1/17/2015 7:55:52 PM	1/17/2015 10:00:00 PM	2:04:08	C	5	102	34
2015-030	2132	1/22/2015 11:28:29 AM	1/22/2015 11:53:28 AM	0:24:59	C	6	560	718
2015-031	2134	1/22/2015 2:47:37 PM	1/22/2015 4:30:00 PM	1:42:23	C	6	120	1528
2015-032	1232	1/23/2015 2:22:16 PM	1/23/2015 5:45:00 PM	3:22:44	C	6	3	10
2015-033	2134	1/24/2015 6:09:00 AM	1/24/2015 7:46:00 AM	1:37:00	C	5	45	15
2015-034	2311	1/25/2015 8:02:00 AM	1/25/2015 1:30:00 PM	5:28:00	C	5	18	6
2015-035	3125	1/25/2015 4:31:00 PM	1/25/2015 7:22:00 PM	2:51:00	C	5	24	8
2015-036	2134	1/29/2015 11:00:00 AM	1/29/2015 2:05:00 PM	3:05:00	C	3	129	43
2015-038	1325	2/2/2015 9:17:45 AM	2/2/2015 1:30:00 PM	4:12:15	C	2	140	44
2015-039	4122	2/2/2015 10:54:43 AM	2/2/2015 1:31:00 PM	2:36:17	C	2	30	10
2015-040	3121	2/2/2015 3:56:28 PM	2/2/2015 6:00:00 PM	2:03:32	C	2	57	19
2015-041	3313	2/2/2015 3:49:00 PM	2/2/2015 5:00:00 PM	1:11:00	C	2	33	1396
2015-042	4002	2/3/2015 12:10:16 AM	2/3/2015 7:59:50 AM	7:49:34	C	2	320	471
2015-043	1325	2/2/2015 10:53:00 PM	2/3/2015 3:00:00 AM	4:07:00	C	2	90	20
2015-044	3121	2/3/2015 2:16:17 AM	2/3/2015 8:00:00 AM	5:43:43	C	2	51	650
2015-045	3126	2/3/2015 12:04:50 PM	2/3/2015 1:03:24 PM	0:58:34	C	4	270	19
2015-045	5736	2/3/2015 11:56:25 AM	2/3/2015 7:59:59 PM	8:03:34	C	4	0	0
2015-045	5723	2/3/2015 11:56:25 AM	2/3/2015 7:58:22 PM	8:01:57	C	4	0	0
2015-046	2134	2/3/2015 1:19:45 PM	2/3/2015 3:30:00 PM	2:10:15	C	6	171	1528
2015-047	3412	2/3/2015 1:25:00 PM	2/3/2015 3:40:00 PM	2:15:00	C	6	126	1004
2015-048	3211	2/4/2015 2:46:00 AM	2/4/2015 7:00:00 AM	4:14:00	C	5	340	5
2015-049	4122	2/4/2015 8:21:09 PM	2/4/2015 11:00:00 PM	2:38:51	C	6	90	34
2015-050	2134	2/5/2015 12:12:52 PM	2/5/2015 6:30:00 PM	6:17:08	C	6	9	3
2015-050	2134	2/5/2015 12:12:52 PM	2/5/2015 1:00:00 PM	0:47:08	C	6	39	1528
2015-051	2311	2/6/2015 1:24:41 PM	2/6/2015 2:28:00 PM	1:03:19	C	6	54	18
2015-052	2134	2/6/2015 3:37:15 PM	2/6/2015 5:30:00 PM	1:52:45	C	6	196	14
2015-053	3415	2/9/2015 12:52:00 PM	2/9/2015 2:00:00 PM	1:08:00	C	6	159	53
2015-054	1323	2/10/2015 11:30:00 AM	2/10/2015 2:00:00 PM	2:30:00	C	6	18	6
2015-055	2134	2/10/2015 4:47:32 PM	2/10/2015 6:50:00 PM	2:02:28	C	6	90	30
2015-057	3413	2/13/2015 9:35:37 AM	2/13/2015 10:01:56 AM	0:26:19	C	2	1580	2735
2015-058	3415	2/13/2015 11:00:17 AM	2/13/2015 1:44:00 PM	2:43:43	C	2	144	48
2015-059	3415	2/13/2015 12:09:24 PM	2/13/2015 3:24:00 PM	3:14:36	C	2	465	155
2015-060	3415	2/13/2015 11:06:57 AM	2/13/2015 3:24:00 PM	4:17:03	C	2	150	1612
2015-062	3413	2/13/2015 10:01:56 AM	2/13/2015 4:33:00 PM	6:31:04	C	2	36	12
2015-063	3313	2/13/2015 2:00:00 PM	2/13/2015 4:45:00 PM	2:45:00	C	2	18	6
2015-064	3121	2/14/2015 3:24:34 AM	2/14/2015 4:23:16 AM	0:58:42	C	2	1410	650
2015-064	3121	2/14/2015 1:50:46 AM	2/14/2015 4:30:00 AM	2:39:14	C	2	12	4
2015-065	3122	2/14/2015 2:49:47 AM	2/14/2015 6:08:00 AM	3:18:13	C	2	81	300
2015-067	4122	2/14/2015 4:16:56 AM	2/14/2015 6:36:30 AM	2:19:34	C	2	1240	1972
2015-068	1432	2/14/2015 3:37:18 AM	2/14/2015 4:57:06 AM	1:19:48	C	2	140	300
2015-071	3211	2/14/2015 2:41:41 PM	2/14/2015 2:45:08 PM	0:03:27	B	2	410	5
2015-071	1322	2/14/2015 2:41:31 PM	2/14/2015 2:44:51 PM	0:03:20	B	2	350	700
2015-071	3414	2/14/2015 2:41:30 PM	2/14/2015 2:46:00 PM	0:04:30	B	2	1810	859
2015-071	2312	2/14/2015 2:41:29 PM	2/14/2015 2:46:50 PM	0:05:21	B	2	2140	754
2015-073	3413	2/22/2015 1:00:00 PM	2/22/2015 2:40:00 PM	1:40:00	C	5	140	47

Outage Number	Circuit	Outage Start Time	Outage End Time	Duration	Class	Type	kW	Consumers
2015-074	2311	3/2/2015 4:23:37 PM	3/2/2015 7:00:00 PM	2:36:23	C	6	12	4
2015-075	5001	3/4/2015 12:52:00 PM	3/4/2015 2:24:00 PM	1:32:00	C	5	234	78
2015-076	3215	3/4/2015 12:02:00 PM	3/4/2015 6:23:00 PM	6:21:00	C	6	36	12
2015-077	3413	3/4/2015 8:59:00 PM	3/4/2015 9:33:00 PM	0:34:00	C	5	39	13
2015-079	4124	3/8/2015 4:11:50 AM	3/8/2015 7:58:00 AM	3:46:10	C	5	375	123
2015-080	3415	3/11/2015 3:15:00 AM	3/11/2015 4:00:00 AM	0:45:00	C	5	20	6
2015-081	2314	3/12/2015 11:58:52 AM	3/12/2015 12:11:21 PM	0:12:29	C	6	1560	768
2015-081	2314	3/12/2015 9:38:08 AM	3/12/2015 12:30:00 PM	2:51:52	C	6	177	59
2015-083	2132	3/13/2015 3:00:00 PM	3/13/2015 11:20:00 PM	8:20:00	C	6	15	5
2015-084	4122	3/16/2015 12:44:00 AM	3/16/2015 6:30:00 AM	5:46:00	C	5	72	24
2015-085	3215	3/17/2015 2:10:07 PM	3/17/2015 3:30:00 PM	1:19:53	C	5	48	16
2015-087	2311	3/19/2015 8:23:20 AM	3/19/2015 8:26:46 AM	0:03:26	C	5	920	748
2015-087	2311	3/19/2015 6:28:16 AM	3/19/2015 11:00:00 AM	4:31:44	C	5	90	30
2015-088	1323	3/21/2015 1:37:00 PM	3/21/2015 2:03:00 PM	0:26:00	C	6	42	14
2015-089	4124	3/21/2015 1:43:00 PM	3/21/2015 4:41:00 PM	2:58:00	C	5	186	62
2015-089	4124	3/21/2015 1:43:00 PM	3/21/2015 4:22:00 PM	2:39:00	C	5	396	132
2015-090	2311	3/25/2015 10:49:00 AM	3/25/2015 12:59:00 PM	2:10:00	C	5	30	10
2015-091	3124	3/29/2015 3:33:36 AM	3/29/2015 6:08:11 AM	2:34:35	C	5	260	210
2015-091	3124	3/29/2015 3:32:59 AM	3/29/2015 3:38:28 AM	0:05:29	C	5	260	210
2015-092	4002	3/30/2015 2:00:36 AM	3/30/2015 5:07:00 AM	3:06:24	C	6	210	70
2015-093	3415	4/1/2015 1:44:00 PM	4/1/2015 6:15:00 PM	4:31:00	C	5	18	6
2015-095	3413	4/3/2015 10:21:49 PM	4/4/2015 12:30:00 AM	2:08:11	C	6	210	2735
2015-095	3413	4/3/2015 9:37:21 PM	4/3/2015 10:21:49 PM	0:44:28	C	6	2510	2735
2015-096	3411	4/5/2015 6:57:45 AM	4/5/2015 8:24:00 AM	1:26:15	C	5	51	17
2015-097	5001	4/5/2015 1:35:00 PM	4/5/2015 3:38:00 PM	2:03:00	C	6	81	27
2015-098	4122	4/6/2015 12:07:00 PM	4/6/2015 2:21:00 PM	2:14:00	C	6	87	29
2015-099	3215	4/8/2015 7:27:23 PM	4/8/2015 9:51:00 PM	2:23:37	C	5	66	22
2015-100	2313	4/10/2015 11:21:10 PM	4/11/2015 10:00:00 AM	10:38:50	C	5	63	21
2015-102	1325	4/12/2015 4:12:00 PM	4/12/2015 6:19:00 PM	2:07:00	C	6	24	8
2015-103	3121	4/21/2015 5:37:05 AM	4/21/2015 6:54:40 AM	1:17:35	C	5	1870	650
2015-105	3413	4/21/2015 10:39:00 AM	4/21/2015 12:15:00 PM	1:36:00	C	6	216	72
2015-107	3121	4/23/2015 10:01:00 AM	4/23/2015 11:28:00 AM	1:27:00	C	3	333	111
2015-108	4122	4/26/2015 12:06:00 AM	4/26/2015 1:08:13 AM	1:02:13	C	6	1660	1972
2015-109	4122	4/27/2015 10:00:00 AM	4/27/2015 11:40:00 AM	1:40:00	C	5	30	10
2015-110	3413	4/27/2015 2:44:00 PM	4/27/2015 4:30:00 PM	1:46:00	C	6	117	39
2015-112	1322	4/27/2015 5:13:33 PM	4/27/2015 5:19:39 PM	0:06:06	B	1	560	700
2015-112	3126	4/27/2015 5:13:31 PM	4/27/2015 5:26:22 PM	0:12:51	B	1	100	19
2015-112	3215	4/27/2015 5:13:30 PM	4/27/2015 5:22:25 PM	0:08:55	B	1	1370	1818
2015-112	3214	4/27/2015 5:13:30 PM	4/27/2015 5:25:10 PM	0:11:40	B	1	1580	120
2015-112	3212	4/27/2015 5:13:30 PM	4/27/2015 5:25:30 PM	0:12:00	B	1	290	30
2015-112	3211	4/27/2015 5:13:30 PM	4/27/2015 5:28:43 PM	0:15:13	B	1	690	5
2015-112	3313	4/27/2015 5:13:29 PM	4/27/2015 5:21:41 PM	0:08:12	B	1	1190	1396
2015-112	3127	4/27/2015 5:13:29 PM	4/27/2015 5:25:53 PM	0:12:24	B	1	3020	1569
2015-112	3121	4/27/2015 5:13:29 PM	4/27/2015 5:27:05 PM	0:13:36	B	1	2270	650
2015-112	2314	4/27/2015 5:13:28 PM	4/27/2015 5:27:35 PM	0:14:07	B	1	1530	768
2015-112	2312	4/27/2015 5:13:28 PM	4/27/2015 5:29:56 PM	0:16:28	B	1	2540	754
2015-112	3415	4/27/2015 5:13:26 PM	4/27/2015 5:20:30 PM	0:07:04	B	1	1180	1612
2015-112	3414	4/27/2015 5:13:26 PM	4/27/2015 5:28:23 PM	0:14:57	B	1	1970	859
2015-112	3412	4/27/2015 5:13:26 PM	4/27/2015 5:21:07 PM	0:07:41	B	1	1300	1004
2015-113	3126	4/27/2015 6:56:40 PM	4/27/2015 7:09:05 PM	0:12:25	B	1	80	19
2015-113	2314	4/27/2015 6:56:39 PM	4/27/2015 7:10:28 PM	0:13:49	B	1	1960	768
2015-113	3415	4/27/2015 6:56:37 PM	4/27/2015 7:04:55 PM	0:08:18	B	1	1740	1612
2015-113	3412	4/27/2015 6:56:37 PM	4/27/2015 7:06:34 PM	0:09:57	B	1	1470	1004
2015-113	3214	4/27/2015 6:56:36 PM	4/27/2015 7:07:53 PM	0:11:17	B	1	1560	120
2015-113	3212	4/27/2015 6:56:36 PM	4/27/2015 7:08:42 PM	0:12:06	B	1	300	30
2015-113	3313	4/27/2015 6:55:11 PM	4/27/2015 7:07:24 PM	0:12:13	B	1	1990	1396
2015-113	3211	4/27/2015 6:52:34 PM	4/27/2015 7:54:05 PM	1:01:31	B	1	760	5
2015-113	1322	4/27/2015 6:52:32 PM	4/27/2015 7:59:42 PM	1:07:10	B	1	760	700
2015-113	2312	4/27/2015 6:52:31 PM	4/27/2015 7:58:41 PM	1:06:10	B	1	2550	754
2015-113	3414	4/27/2015 6:52:30 PM	4/27/2015 7:07:57 PM	0:15:27	B	1	2030	859
2015-114	3415	4/27/2015 7:12:59 PM	4/27/2015 7:24:06 PM	0:11:07	B	1	2050	1612
2015-114	3412	4/27/2015 7:12:59 PM	4/27/2015 7:24:51 PM	0:11:52	B	1	1570	1004
2015-114	3215	4/27/2015 7:12:58 PM	4/27/2015 7:48:57 PM	0:35:59	B	1	2020	1818
2015-114	3214	4/27/2015 7:12:58 PM	4/27/2015 7:51:26 PM	0:38:28	B	1	1750	120
2015-114	3212	4/27/2015 7:12:58 PM	4/27/2015 7:47:14 PM	0:34:16	B	1	210	30
2015-114	3127	4/27/2015 7:12:58 PM	4/27/2015 7:44:16 PM	0:31:18	B	1	2800	1569
2015-114	3126	4/27/2015 7:12:58 PM	4/27/2015 7:49:58 PM	0:37:00	B	1	110	19
2015-114	3121	4/27/2015 7:12:58 PM	4/27/2015 7:53:29 PM	0:40:31	B	1	2800	650
2015-114	2314	4/27/2015 7:12:58 PM	4/27/2015 7:54:55 PM	0:41:57	B	1	1870	768

Outage Number	Circuit	Outage Start Time	Outage End Time	Duration	Class	Type	kW	Consumers
2015-114	3313	4/27/2015 7:12:55 PM	4/27/2015 7:45:33 PM	0:32:38	B	1	1790	1396
2015-115	4123	4/27/2015 7:45:04 PM	4/27/2015 8:41:00 PM	0:55:56	B	1	910	225
2015-115	4122	4/27/2015 7:43:27 PM	4/27/2015 8:43:15 PM	0:59:48	B	1	2630	1972
2015-115	2134	4/27/2015 7:59:23 PM	4/27/2015 8:41:57 PM	0:42:34	B	1	1740	1528
2015-115	3122	4/27/2015 7:58:18 PM	4/27/2015 8:49:29 PM	0:51:11	B	1	2340	300
2015-115	2133	4/27/2015 7:56:55 PM	4/27/2015 8:23:10 PM	0:26:15	B	1	430	406
2015-115	2132	4/27/2015 7:56:42 PM	4/27/2015 8:50:26 PM	0:53:44	B	1	980	718
2015-115	1432	4/27/2015 7:54:55 PM	4/27/2015 8:25:07 PM	0:30:12	B	1	370	300
2015-115	3123	4/27/2015 7:53:05 PM	4/27/2015 8:46:18 PM	0:53:13	B	1	1140	1187
2015-115	5001	4/27/2015 7:52:34 PM	4/27/2015 8:38:54 PM	0:46:20	B	1	1620	876
2015-115	5002	4/27/2015 7:50:54 PM	4/27/2015 8:38:19 PM	0:47:25	B	1	2530	1980
2015-115	3314	4/27/2015 7:49:44 PM	4/27/2015 8:20:13 PM	0:30:29	B	1	460	552
2015-115	3413	4/27/2015 7:48:43 PM	4/27/2015 8:45:18 PM	0:56:35	B	1	3250	2735
2015-115	4121	4/27/2015 7:46:31 PM	4/27/2015 8:18:27 PM	0:31:56	B	1	840	430
2015-116	3415	4/27/2015 8:53:32 PM	4/27/2015 9:06:30 PM	0:12:58	B	1	1550	1612
2015-116	3414	4/27/2015 8:53:32 PM	4/27/2015 9:29:47 PM	0:36:15	B	1	1740	859
2015-116	3412	4/27/2015 8:53:32 PM	4/27/2015 9:07:14 PM	0:13:42	B	1	1510	1004
2015-116	1322	4/27/2015 8:53:32 PM	4/27/2015 9:27:12 PM	0:33:40	B	1	770	700
2015-116	3127	4/27/2015 8:53:31 PM	4/27/2015 9:21:07 PM	0:27:36	B	1	2590	1569
2015-116	3126	4/27/2015 8:53:31 PM	4/27/2015 9:16:16 PM	0:22:45	B	1	190	19
2015-116	3121	4/27/2015 8:53:31 PM	4/27/2015 9:22:17 PM	0:28:46	B	1	2350	650
2015-116	3313	4/27/2015 8:53:29 PM	4/27/2015 9:08:00 PM	0:14:31	B	1	1370	1396
2015-116	3215	4/27/2015 8:53:29 PM	4/27/2015 9:09:10 PM	0:15:41	B	1	1830	1818
2015-116	3214	4/27/2015 8:53:29 PM	4/27/2015 9:14:57 PM	0:21:28	B	1	1530	120
2015-116	3212	4/27/2015 8:53:29 PM	4/27/2015 9:15:29 PM	0:22:00	B	1	340	30
2015-116	3211	4/27/2015 8:53:29 PM	4/27/2015 9:28:22 PM	0:34:53	B	1	740	5
2015-116	2314	4/27/2015 8:53:27 PM	4/27/2015 9:26:07 PM	0:32:40	B	1	1830	768
2015-116	2312	4/27/2015 8:53:27 PM	4/27/2015 9:31:28 PM	0:38:01	B	1	2710	754
2015-117	3215	5/1/2015 9:47:00 AM	5/1/2015 12:03:00 PM	2:16:00	C	5	30	10
2015-118	3411	5/4/2015 4:15:18 AM	5/4/2015 7:00:00 AM	2:44:42	C	5	150	300
2015-119	3415	5/4/2015 6:57:20 AM	5/4/2015 7:11:22 AM	0:14:02	B	1	1170	1612
2015-119	3413	5/4/2015 6:57:20 AM	5/4/2015 7:11:58 AM	0:14:38	B	1	1930	2735
2015-119	3412	5/4/2015 6:57:20 AM	5/4/2015 7:12:36 AM	0:15:16	B	1	1040	1004
2015-119	3215	5/4/2015 6:57:19 AM	5/4/2015 7:13:01 AM	0:15:42	B	1	1320	1818
2015-119	3214	5/4/2015 6:57:19 AM	5/4/2015 7:13:42 AM	0:16:23	B	1	1340	120
2015-119	3126	5/4/2015 6:57:19 AM	5/4/2015 7:08:51 AM	0:11:32	B	1	90	19
2015-119	5001	5/4/2015 6:57:18 AM	5/4/2015 7:05:08 AM	0:07:50	B	1	1250	876
2015-119	4123	5/4/2015 6:57:17 AM	5/4/2015 7:05:37 AM	0:08:20	B	1	660	225
2015-119	3313	5/4/2015 6:57:17 AM	5/4/2015 7:15:08 AM	0:17:51	B	1	1230	1396
2015-119	3127	5/4/2015 6:57:16 AM	5/4/2015 7:18:14 AM	0:20:58	B	1	2710	1569
2015-119	3122	5/4/2015 6:57:16 AM	5/4/2015 7:14:03 AM	0:16:47	B	1	2220	300
2015-119	3121	5/4/2015 6:57:16 AM	5/4/2015 7:14:26 AM	0:17:10	B	1	2260	650
2015-119	2133	5/4/2015 6:57:16 AM	5/4/2015 7:14:40 AM	0:17:24	B	1	240	406
2015-119	2132	5/4/2015 6:57:16 AM	5/4/2015 7:17:40 AM	0:20:24	B	1	520	718
2015-120	4122	5/5/2015 8:35:00 AM	5/5/2015 12:30:00 PM	3:55:00	C	6	105	35
2015-121	3313	5/7/2015 4:55:00 PM	5/7/2015 7:00:00 PM	2:05:00	C	6	210	71
2015-123	4122	5/14/2015 11:34:00 AM	5/14/2015 2:33:00 PM	2:59:00	C	6	144	48
2015-124	2312	5/22/2015 9:42:34 AM	5/22/2015 3:03:00 PM	5:20:26	C	5	246	754
2015-125	1323	5/22/2015 11:17:35 PM	5/23/2015 5:28:00 AM	6:10:25	C	6	330	1385
2015-126	3413	5/24/2015 1:06:35 AM	5/24/2015 7:23:00 AM	6:16:25	C	6	93	31
2015-127	3413	5/28/2015 12:30:55 PM	5/28/2015 2:38:00 PM	2:07:05	C	5	87	29
2015-128	3411	5/30/2015 12:55:55 PM	5/30/2015 3:45:00 PM	2:49:05	C	5	24	8
2015-129	2132	6/6/2015 11:02:04 AM	6/6/2015 1:10:00 PM	2:07:56	C	6	90	718
2015-134	4002	6/10/2015 4:12:00 AM	6/10/2015 8:15:00 AM	4:03:00	C	6	60	471
2015-135	3413	6/11/2015 7:14:33 PM	6/11/2015 8:51:00 PM	1:36:27	C	5	459	2735
2015-136	1432	6/12/2015 3:55:09 PM	6/12/2015 4:02:36 PM	0:07:27	C	5	250	300
2015-137	3413	6/13/2015 12:06:00 PM	6/13/2015 6:15:00 PM	6:09:00	C	5	33	11
2015-138	1323	6/15/2015 7:33:00 PM	6/15/2015 11:15:00 PM	3:42:00	C	6	42	14
2015-142	3415	6/18/2015 1:03:00 PM	6/18/2015 1:58:00 PM	0:55:00	C	6	39	13
2015-144	2134	6/18/2015 11:43:01 PM	6/19/2015 2:45:00 AM	3:01:59	C	6	60	21
2015-145	3415	6/20/2015 8:24:36 PM	6/20/2015 9:15:00 PM	0:50:24	C	6	81	27
2015-146	3123	6/25/2015 2:23:00 AM	6/25/2015 4:30:00 AM	2:07:00	C	5	102	34
2015-147	5736	6/25/2015 12:15:01 PM	6/25/2015 8:03:36 PM	7:48:35	B	4	0	0
2015-147	3127	6/25/2015 12:15:01 PM	6/25/2015 12:20:37 PM	0:05:36	B	4	2840	1569
2015-147	3313	6/25/2015 12:15:00 PM	6/25/2015 12:21:10 PM	0:06:10	B	4	750	1396
2015-147	5723	6/25/2015 12:14:59 PM	6/25/2015 12:40:22 PM	0:25:23	B	4	0	0
2015-147	2132	6/25/2015 12:14:58 PM	6/25/2015 12:21:42 PM	0:06:44	B	4	380	718
2015-149	2133	6/27/2015 7:25:00 PM	6/27/2015 10:15:00 PM	2:50:00	C	5	24	8
2015-150	2314	6/30/2015 10:06:00 AM	6/30/2015 11:43:00 AM	1:37:00	C	5	21	7

Outage Number	Circuit	Outage Start Time	Outage End Time	Duration	Class	Type	kW	Consumers
2015-151	3122	7/1/2015 10:15:49 AM	7/1/2015 11:30:00 AM	1:14:11	C	5	90	30
2015-156	3127	7/6/2015 10:28:29 AM	7/6/2015 10:53:46 AM	0:25:17	A	1	3280	1569
2015-156	3126	7/6/2015 10:28:29 AM	7/6/2015 10:46:18 AM	0:17:49	A	1	190	19
2015-156	3124	7/6/2015 10:28:29 AM	7/6/2015 10:31:41 AM	0:03:12	A	1	2750	210
2015-156	3123	7/6/2015 10:28:29 AM	7/6/2015 10:44:22 AM	0:15:53	A	1	1590	1187
2015-156	3122	7/6/2015 10:28:29 AM	7/6/2015 10:52:54 AM	0:24:25	A	1	2460	300
2015-156	3121	7/6/2015 10:28:29 AM	7/6/2015 10:53:18 AM	0:24:49	A	1	1560	650
2015-156	3415	7/6/2015 10:28:28 AM	7/6/2015 10:46:48 AM	0:18:20	A	1	110	1612
2015-156	3414	7/6/2015 10:28:28 AM	7/6/2015 10:43:23 AM	0:14:55	A	1	2030	859
2015-156	3413	7/6/2015 10:28:28 AM	7/6/2015 10:45:58 AM	0:17:30	A	1	1350	2735
2015-156	3412	7/6/2015 10:28:28 AM	7/6/2015 10:47:11 AM	0:18:43	A	1	1230	1004
2015-156	3411	7/6/2015 10:28:28 AM	7/6/2015 10:31:01 AM	0:02:33	A	1	1210	300
2015-156	1432	7/6/2015 10:28:26 AM	7/6/2015 10:45:42 AM	0:17:16	A	1	190	300
2015-156	1325	7/6/2015 10:28:26 AM	7/6/2015 10:34:56 AM	0:06:30	A	1	700	20
2015-156	1322	7/6/2015 10:28:26 AM	7/6/2015 10:45:55 AM	0:17:29	A	1	330	700
2015-156	4124	7/6/2015 10:28:25 AM	7/6/2015 10:30:20 AM	0:01:55	A	1	3910	1926
2015-156	4123	7/6/2015 10:28:25 AM	7/6/2015 10:46:39 AM	0:18:14	A	1	790	225
2015-156	4122	7/6/2015 10:28:25 AM	7/6/2015 10:30:43 AM	0:02:18	A	1	2200	1972
2015-156	4121	7/6/2015 10:28:25 AM	7/6/2015 10:37:37 AM	0:09:12	A	1	880	430
2015-156	3314	7/6/2015 10:28:25 AM	7/6/2015 10:38:43 AM	0:10:18	A	1	850	552
2015-156	3313	7/6/2015 10:28:25 AM	7/6/2015 10:54:20 AM	0:25:55	A	1	860	1396
2015-156	3215	7/6/2015 10:28:25 AM	7/6/2015 10:47:24 AM	0:18:59	A	1	830	1818
2015-156	3214	7/6/2015 10:28:25 AM	7/6/2015 10:48:04 AM	0:19:39	A	1	1800	120
2015-156	3212	7/6/2015 10:28:25 AM	7/6/2015 10:41:29 AM	0:13:04	A	1	300	30
2015-156	3211	7/6/2015 10:28:25 AM	7/6/2015 10:43:42 AM	0:15:17	A	1	620	5
2015-156	1233	7/6/2015 10:28:25 AM	7/6/2015 10:35:16 AM	0:06:51	A	1	2270	30
2015-156	1232	7/6/2015 10:28:25 AM	7/6/2015 11:04:51 AM	0:36:26	A	1	430	10
2015-156	1231	7/6/2015 10:28:25 AM	7/6/2015 10:35:38 AM	0:07:13	A	1	270	2
2015-156	5001	7/6/2015 10:28:24 AM	7/6/2015 10:46:18 AM	0:17:54	A	1	1420	876
2015-156	2314	7/6/2015 10:28:24 AM	7/6/2015 10:44:52 AM	0:16:28	A	1	1600	768
2015-156	2313	7/6/2015 10:28:24 AM	7/6/2015 10:32:20 AM	0:03:56	A	1	1510	717
2015-156	2312	7/6/2015 10:28:24 AM	7/6/2015 10:45:13 AM	0:16:49	A	1	2860	754
2015-156	2311	7/6/2015 10:28:24 AM	7/6/2015 10:34:20 AM	0:05:56	A	1	2600	748
2015-156	2134	7/6/2015 10:28:23 AM	7/6/2015 10:45:33 AM	0:17:10	A	1	880	1528
2015-156	2133	7/6/2015 10:28:23 AM	7/6/2015 10:51:34 AM	0:23:11	A	1	110	406
2015-156	2132	7/6/2015 10:28:23 AM	7/6/2015 10:54:33 AM	0:26:10	A	1	440	718
2015-157	3127	7/8/2015 9:03:22 AM	7/8/2015 10:09:00 AM	1:05:38	C	6	50	5
2015-158	2134	7/10/2015 1:22:00 AM	7/10/2015 4:53:00 AM	3:31:00	C	6	36	12
2015-159	1325	7/10/2015 9:37:05 AM	7/10/2015 4:04:00 PM	6:26:55	C	6	336	112
2015-160	4002	7/10/2015 3:52:00 PM	7/10/2015 6:34:00 PM	2:42:00	C	6	306	102
2015-162	3412	7/13/2015 12:50:00 PM	7/13/2015 2:30:00 PM	1:40:00	C	5	21	7
2015-163	2132	7/16/2015 7:31:30 AM	7/16/2015 8:50:00 AM	1:18:30	C	6	81	27
2015-164	1323	7/20/2015 5:38:00 AM	7/20/2015 7:38:00 AM	2:00:00	C	5	183	61
2015-165	4122	7/21/2015 10:03:00 AM	7/21/2015 2:00:00 PM	3:57:00	C	6	147	49
2015-166	2134	7/22/2015 6:28:21 AM	7/22/2015 7:56:00 AM	1:27:39	C	6	87	29
2015-167	3215	7/25/2015 2:37:52 PM	7/25/2015 4:46:00 PM	2:08:08	C	6	225	75
2015-168	2132	7/26/2015 5:30:00 PM	7/26/2015 8:50:00 PM	3:20:00	C	5	42	14
2015-169	4002	7/27/2015 10:00:00 PM	7/28/2015 1:01:00 AM	3:01:00	C	6	231	77
2015-171	2134	7/30/2015 6:41:06 AM	7/30/2015 10:00:00 AM	3:18:54	C	6	30	10
2015-172	5001	8/1/2015 7:14:00 PM	8/1/2015 10:16:00 PM	3:02:00	C	6	180	60
2015-173	3415	8/2/2015 2:27:00 PM	8/2/2015 4:50:00 PM	2:23:00	C	6	120	40
2015-175	3415	8/6/2015 6:28:00 AM	8/6/2015 7:40:00 AM	1:12:00	C	5	78	26
2015-176	3413	8/6/2015 8:59:00 PM	8/6/2015 9:27:00 PM	0:28:00	C	5	6	2
2015-179	3127	8/8/2015 6:43:33 PM	8/8/2015 10:29:58 PM	3:46:25	C	5	6	1
2015-180	2132	8/10/2015 3:31:00 AM	8/10/2015 12:15:00 PM	8:44:00	C	6	21	7
2015-181	3214	8/10/2015 7:08:00 PM	8/10/2015 8:24:00 PM	1:16:00	C	5	9	3
2015-185	4002	8/15/2015 1:07:00 AM	8/15/2015 4:04:00 AM	2:57:00	C	6	54	18
2015-186	4123	8/15/2015 6:59:25 PM	8/15/2015 10:47:00 PM	3:47:35	C	5	297	99
2015-187	3123	8/16/2015 9:10:50 PM	8/16/2015 11:15:00 PM	2:04:10	C	5	9	3
2015-188	4002	8/18/2015 12:03:28 AM	8/18/2015 2:16:44 AM	2:13:16	C	6	360	471
2015-189	3413	8/18/2015 12:36:00 PM	8/18/2015 1:21:00 PM	0:45:00	C	6	219	73
2015-189	3413	8/18/2015 12:26:00 PM	8/18/2015 1:45:00 PM	1:19:00	C	6	81	27
2015-190	4122	8/18/2015 2:34:00 PM	8/18/2015 4:05:00 PM	1:31:00	C	5	129	43
2015-190	4122	8/18/2015 2:34:00 PM	8/18/2015 2:38:00 PM	0:04:00	C	5	2420	1972
2015-191	2134	8/19/2015 10:29:56 AM	8/19/2015 12:25:00 PM	1:55:04	C	6	135	45
2015-192	3512	8/20/2015 6:45:00 PM	8/20/2015 10:14:00 PM	3:29:00	C	5	15	5
2015-193	1326	8/21/2015 4:14:00 PM	8/21/2015 7:08:00 PM	2:54:00	C	5	33	11
2015-194	2134	8/22/2015 12:03:00 PM	8/22/2015 2:15:00 PM	2:12:00	C	6	132	44
2015-197	4002	8/24/2015 9:56:00 AM	8/24/2015 12:42:00 PM	2:46:00	C	6	24	8

<b>Outage Number</b>	<b>Circuit</b>	<b>Outage Start Time</b>	<b>Outage End Time</b>	<b>Duration</b>	<b>Class</b>	<b>Type</b>	<b>kW</b>	<b>Consumers</b>
2015-199	3122	8/24/2015 4:09:00 PM	8/24/2015 5:34:00 PM	1:25:00	C	6	93	300
2015-201	2134	8/25/2015 4:12:29 AM	8/25/2015 7:30:00 AM	3:17:31	C	2	174	58
2015-202	2134	8/25/2015 10:30:00 AM	8/25/2015 1:00:00 PM	2:30:00	C	5	60	18
2015-203	3412	8/26/2015 2:06:52 PM	8/26/2015 2:08:47 PM	0:01:55	B	1	390	1004
2015-203	3314	8/26/2015 2:06:50 PM	8/26/2015 2:11:01 PM	0:04:11	B	1	1010	552
2015-203	5001	8/26/2015 2:06:49 PM	8/26/2015 2:11:33 PM	0:04:44	B	1	1200	876
2015-203	1432	8/26/2015 2:06:49 PM	8/26/2015 2:09:06 PM	0:02:17	B	1	280	300
2015-203	3123	8/26/2015 2:06:48 PM	8/26/2015 2:12:09 PM	0:05:21	B	1	1820	1187
2015-203	3511	8/26/2015 2:06:47 PM	8/26/2015 2:08:16 PM	0:01:29	B	1	80	0
2015-204	3313	8/26/2015 8:53:00 PM	8/26/2015 11:30:00 PM	2:37:00	C	5	63	21
2015-205	2134	8/27/2015 2:15:01 PM	8/27/2015 3:01:00 PM	0:45:59	C	6	129	43
2015-206	3411	8/28/2015 5:08:04 AM	8/28/2015 5:32:00 AM	0:23:56	C	5	24	8
2015-207	3411	8/28/2015 6:06:00 AM	8/28/2015 6:36:00 AM	0:30:00	C	5	81	27
2015-208	1432	8/28/2015 3:26:45 PM	8/28/2015 3:47:10 PM	0:20:25	B	1	320	300
2015-208	3415	8/28/2015 3:26:44 PM	8/28/2015 3:34:55 PM	0:08:11	B	1	1300	1612
2015-208	3414	8/28/2015 3:26:44 PM	8/28/2015 3:35:43 PM	0:08:59	B	1	2270	859
2015-208	3413	8/28/2015 3:26:44 PM	8/28/2015 3:39:31 PM	0:12:47	B	1	2500	2735
2015-208	3412	8/28/2015 3:26:44 PM	8/28/2015 3:45:08 PM	0:18:24	B	1	370	1004
2015-208	2312	8/28/2015 3:26:44 PM	8/28/2015 3:42:05 PM	0:15:21	B	1	2680	754
2015-208	3511	8/28/2015 3:26:43 PM	8/28/2015 3:44:35 PM	0:17:52	B	1	130	0
2015-208	3211	8/28/2015 3:26:43 PM	8/28/2015 3:36:39 PM	0:09:56	B	1	950	5
2015-208	2133	8/28/2015 3:26:43 PM	8/28/2015 3:42:51 PM	0:16:08	B	1	210	406
2015-208	3314	8/28/2015 3:26:42 PM	8/28/2015 3:45:33 PM	0:18:51	B	1	960	552
2015-208	3127	8/28/2015 3:26:42 PM	8/28/2015 3:40:55 PM	0:14:13	B	1	3700	1569
2015-208	3123	8/28/2015 3:26:42 PM	8/28/2015 3:47:35 PM	0:20:53	B	1	1810	1187
2015-208	3122	8/28/2015 3:26:42 PM	8/28/2015 3:41:35 PM	0:14:53	B	1	2530	300
2015-208	5001	8/28/2015 3:26:41 PM	8/28/2015 3:43:29 PM	0:16:48	B	1	1190	876
2015-209	2313	8/29/2015 3:37:08 PM	8/29/2015 7:45:00 PM	4:07:52	C	5	261	87
2015-212	3313	8/31/2015 12:35:38 AM	8/31/2015 1:23:17 AM	0:47:39	C	5	1020	1396
2015-214	4002	9/1/2015 5:43:00 AM	9/1/2015 7:52:00 AM	2:09:00	C	6	420	140
2015-215	1432	9/1/2015 2:42:00 PM	9/1/2015 6:30:00 PM	3:48:00	C	5	39	13
2015-216	4122	9/1/2015 2:45:00 PM	9/1/2015 4:30:00 PM	1:45:00	C	5	30	10
2015-217	1325	9/1/2015 8:45:00 PM	9/2/2015 1:00:00 AM	4:15:00	C	6	21	7
2015-218	4124	9/2/2015 10:24:48 PM	9/3/2015 4:22:00 AM	5:57:12	C	5	294	98
2015-219	3512	9/4/2015 10:03:00 AM	9/4/2015 10:15:00 AM	0:12:00	C	6	132	44
2015-220	1326	9/4/2015 1:11:24 PM	9/4/2015 9:25:00 PM	8:13:36	C	2	333	111
2015-221	3415	9/5/2015 9:49:54 AM	9/5/2015 10:46:00 AM	0:56:06	C	6	87	29
2015-222	1325	9/6/2015 7:36:48 AM	9/6/2015 7:45:00 AM	0:08:12	C	6	550	20
2015-222	1325	9/6/2015 7:35:53 AM	9/6/2015 12:08:00 PM	4:32:07	C	6	525	20
2015-222	1325	9/6/2015 7:35:53 AM	9/6/2015 11:52:00 AM	4:16:07	C	6	25	20
2015-223	3121	9/6/2015 4:51:52 PM	9/6/2015 5:33:17 PM	0:41:25	C	6	2150	650
2015-224	1325	9/6/2015 5:10:52 PM	9/6/2015 5:12:22 PM	0:01:30	C	5	24	20
2015-224	1325	9/6/2015 5:09:55 PM	9/6/2015 6:49:39 PM	1:39:44	C	5	500	20
2015-225	3512	9/10/2015 4:01:16 AM	9/10/2015 8:21:00 AM	4:19:44	C	6	15	5
2015-226	3415	9/10/2015 1:29:00 PM	9/10/2015 3:00:00 PM	1:31:00	C	5	75	25
2015-227	4002	9/10/2015 6:52:00 PM	9/10/2015 9:30:00 PM	2:38:00	C	6	105	35
2015-228	3121	9/10/2015 7:56:47 PM	9/10/2015 11:00:00 PM	3:03:13	C	5	42	14
2015-229	3512	9/11/2015 5:39:00 AM	9/11/2015 7:58:00 AM	2:19:00	C	6	141	47
2015-230	2311	9/11/2015 12:43:50 PM	9/11/2015 12:51:26 PM	0:07:36	C	6	1890	748
2015-232	3415	9/11/2015 4:37:00 PM	9/11/2015 6:20:00 PM	1:43:00	C	5	87	29
2015-233	3413	9/12/2015 12:08:45 AM	9/12/2015 5:00:00 AM	4:51:15	C	2	90	28
2015-235	3127	9/12/2015 4:34:14 AM	9/12/2015 9:32:00 AM	4:57:46	C	2	9	3
2015-236	3127	9/12/2015 6:31:01 AM	9/12/2015 7:48:00 AM	1:16:59	C	2	72	24
2015-237	3121	9/12/2015 7:07:14 AM	9/12/2015 7:43:00 AM	0:35:46	C	2	135	45
2015-239	3123	9/14/2015 9:44:00 AM	9/14/2015 10:44:00 AM	1:00:00	C	5	105	35
2015-240	3511	9/14/2015 2:12:24 PM	9/14/2015 2:16:36 PM	0:04:12	B	1	60	0
2015-240	3314	9/14/2015 2:12:22 PM	9/14/2015 2:17:18 PM	0:04:56	B	1	970	552
2015-240	3123	9/14/2015 2:12:22 PM	9/14/2015 2:16:59 PM	0:04:37	B	1	1510	1187
2015-240	1432	9/14/2015 2:12:22 PM	9/14/2015 2:17:41 PM	0:05:19	B	1	230	300
2015-240	5001	9/14/2015 2:12:20 PM	9/14/2015 2:17:52 PM	0:05:32	B	1	900	876
2015-240	3412	9/14/2015 2:12:20 PM	9/14/2015 2:17:29 PM	0:05:09	B	1	330	1004
2015-241	3126	9/15/2015 5:56:00 PM	9/15/2015 7:11:00 PM	1:15:00	C	6	27	19
2015-242	3415	9/15/2015 8:11:00 PM	9/15/2015 9:43:00 PM	1:32:00	C	6	144	48
2015-243	1233	9/16/2015 10:15:02 AM	9/16/2015 10:19:08 AM	0:04:06	B	1	1060	30
2015-243	1232	9/16/2015 10:15:02 AM	9/16/2015 10:19:22 AM	0:04:20	B	1	500	10
2015-243	3512	9/16/2015 10:15:01 AM	9/16/2015 10:20:09 AM	0:05:08	B	1	2320	0
2015-243	3126	9/16/2015 10:15:01 AM	9/16/2015 10:23:07 AM	0:08:06	B	1	110	19
2015-243	4124	9/16/2015 10:14:59 AM	9/16/2015 10:19:51 AM	0:04:52	B	1	3820	1926
2015-243	4122	9/16/2015 10:14:59 AM	9/16/2015 10:17:51 AM	0:02:52	B	1	810	1972

<b>Outage Number</b>	<b>Circuit</b>	<b>Outage Start Time</b>	<b>Outage End Time</b>	<b>Duration</b>	<b>Class</b>	<b>Type</b>	<b>kW</b>	<b>Consumers</b>
2015-243	3411	9/16/2015 10:14:59 AM	9/16/2015 10:18:33 AM	0:03:34	B	1	1810	300
2015-243	3313	9/16/2015 10:14:59 AM	9/16/2015 10:18:51 AM	0:03:52	B	1	970	1396
2015-243	1432	9/16/2015 10:14:59 AM	9/16/2015 10:32:33 AM	0:17:34	B	1	0	300
2015-243	2313	9/16/2015 10:14:58 AM	9/16/2015 10:19:34 AM	0:04:36	B	1	1500	717
2015-243	3511	9/16/2015 10:14:57 AM	9/16/2015 10:31:36 AM	0:16:39	B	1	40	0
2015-243	3215	9/16/2015 10:14:57 AM	9/16/2015 10:21:48 AM	0:06:51	B	1	1210	1818
2015-243	3214	9/16/2015 10:14:57 AM	9/16/2015 10:22:12 AM	0:07:15	B	1	2040	120
2015-243	3212	9/16/2015 10:14:57 AM	9/16/2015 10:22:30 AM	0:07:33	B	1	280	30
2015-243	3211	9/16/2015 10:14:57 AM	9/16/2015 10:28:27 AM	0:13:30	B	1	700	5
2015-243	3314	9/16/2015 10:14:56 AM	9/16/2015 10:31:55 AM	0:16:59	B	1	900	552
2015-243	3127	9/16/2015 10:14:55 AM	9/16/2015 10:29:42 AM	0:14:47	B	1	3750	1569
2015-243	3123	9/16/2015 10:14:55 AM	9/16/2015 10:32:19 AM	0:17:24	B	1	1240	1187
2015-243	3122	9/16/2015 10:14:55 AM	9/16/2015 10:31:18 AM	0:16:23	B	1	2510	300
2015-243	3121	9/16/2015 10:14:55 AM	9/16/2015 10:23:42 AM	0:08:47	B	1	1940	650
2015-243	4123	9/16/2015 10:14:54 AM	9/16/2015 10:21:02 AM	0:06:08	B	1	720	225
2015-243	4121	9/16/2015 10:14:54 AM	9/16/2015 10:21:27 AM	0:06:33	B	1	910	430
2015-243	2314	9/16/2015 10:14:54 AM	9/16/2015 10:24:13 AM	0:09:19	B	1	1720	768
2015-243	2312	9/16/2015 10:14:54 AM	9/16/2015 10:28:46 AM	0:13:52	B	1	2810	754
2015-243	2134	9/16/2015 10:14:54 AM	9/16/2015 10:26:59 AM	0:12:05	B	1	900	1528
2015-243	2133	9/16/2015 10:14:54 AM	9/16/2015 10:29:11 AM	0:14:17	B	1	190	406
2015-243	2132	9/16/2015 10:14:54 AM	9/16/2015 10:27:15 AM	0:12:21	B	1	350	718
2015-243	1322	9/16/2015 10:14:54 AM	9/16/2015 10:27:25 AM	0:12:31	B	1	290	700
2015-243	5002	9/16/2015 10:14:53 AM	9/16/2015 10:20:42 AM	0:05:49	B	1	1950	1980
2015-243	5001	9/16/2015 10:14:53 AM	9/16/2015 10:30:16 AM	0:15:23	B	1	1030	876
2015-243	3415	9/16/2015 10:14:53 AM	9/16/2015 10:27:41 AM	0:12:48	B	1	750	1612
2015-243	3414	9/16/2015 10:14:53 AM	9/16/2015 10:27:53 AM	0:13:00	B	1	1810	859
2015-243	3413	9/16/2015 10:14:53 AM	9/16/2015 10:28:06 AM	0:13:13	B	1	1560	2735
2015-243	3412	9/16/2015 10:14:53 AM	9/16/2015 10:31:48 AM	0:16:55	B	1	330	1004
2015-244	4122	9/18/2015 3:03:00 PM	9/18/2015 5:38:00 PM	2:35:00	C	6	138	46
2015-245	2134	9/22/2015 6:15:00 AM	9/22/2015 10:05:00 AM	3:50:00	C	6	33	11
2015-246	3414	9/24/2015 11:00:00 AM	9/24/2015 11:40:00 AM	0:40:00	C	5	90	30
2015-247	3127	9/25/2015 2:15:28 PM	9/25/2015 3:15:00 PM	0:59:32	C	6	18	6
2015-248	4002	9/26/2015 2:07:42 AM	9/26/2015 4:21:19 AM	2:13:37	C	5	270	471
2015-250	3126	9/26/2015 11:56:57 AM	9/26/2015 1:35:42 PM	1:38:45	C	6	180	19
2015-250	3126	9/26/2015 11:56:07 AM	9/26/2015 4:32:00 PM	4:35:53	C	6	63	21
2015-253	5001	9/27/2015 7:53:00 PM	9/27/2015 11:23:00 PM	3:30:00	C	6	24	8
2015-254	4002	9/28/2015 4:59:00 AM	9/28/2015 6:56:00 AM	1:57:00	C	6	180	471
2015-255	3415	9/29/2015 1:47:32 AM	9/29/2015 2:26:00 AM	0:38:28	C	6	50	1612
2015-255	3415	9/29/2015 1:47:32 AM	9/29/2015 1:58:59 AM	0:11:27	C	6	870	1612
2015-256	3121	10/1/2015 11:50:27 AM	10/1/2015 1:02:00 PM	1:11:33	C	5	18	6