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PUBLIC UTILITIES  
COMMISSION

September 5, 2014

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

Subject: Amended KIUC 2013 Annual Service Reliability Report

Dear Ms. Kane:

In response to a recent request by the Commission (Ms. Janice Masuda), KIUC provided an informal letter containing certain historical annual system peak information. Shortly thereafter, it was brought to KIUC's attention that an inconsistency existed between the 2013 system peak represented in the informal letter and the 2013 system peak represented in KIUC's 2013 Annual Service Reliability Report. KIUC looked into this inconsistency and determined that the 2013 Annual Service Reliability Report inadvertently referenced the 2013 annual forecasted system peak as opposed to the 2013 actual system peak. Please note that KIUC has amended this value (on page 6 of 10) to reflect the correct annual actual system peak in the attached amended version of KIUC's 2013 Annual Service Reliability Report.

If you have any questions regarding the attached report please contact Tim Blume at (808) 246-8274.

Very truly yours,

A handwritten signature in black ink, appearing to read "Michael V. Yamane".

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

Enclosures

cc: Consumer Advocate  
Tom Lovas

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**ANNUAL SERVICE RELIABILITY REPORT**

**2013**

Prepared  
March 26, 2014

Amended  
September 5, 2014

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## INTRODUCTION

This is the 2013 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: 2009 – 2013 KIUC RELIABILITY INDICES**

|                 | 2009   | 2010        | 2011   | 2012   | 2013         |
|-----------------|--------|-------------|--------|--------|--------------|
| System Peak, MW | 75.41  | 76.54       | 72.05  | 73.06  | <b>72.96</b> |
| Customers, #    | 36,004 | 36,113      | 36,222 | 36,473 | 36,704       |
| ASA, %          | 99.983 | 99.980      | 99.976 | 99.963 | 99.977       |
| SAIFI, #        | 6.17   | <b>4.76</b> | 5.80   | 4.36   | 3.23         |
| CAIDI, minutes  | 14.63  | 20.74       | 21.53  | 44.20  | 36.62        |
| SAIDI, minutes  | 90.28  | 98.72       | 124.97 | 192.72 | 118.32       |

Note:

- None of the above data has been normalized.

2013 Outages of Significant Magnitude:

1. Interruption Report 2013-190, 10/29/13, 7:38:26 PM – A transmission circuit tripped due to an auto accident which resulted in loss of power to Kaumakani Substation, Kekaha Switchyard, and Mana Substation. Clearing of the damaged pole and repairs lasted in excess of 3 hours before the transmission circuit could be re-energized and subsequent loads restored to approximately 2,625 customers.
2. Interruption Report 2013-060, 4/7/13, 3:08:19 PM – A transmission circuit between Port Allen Switchyard and Kapaa Switchyard tripped due to a phase-to-phase fault. An initial attempt to restore the affected transmission circuit caused another transmission circuit between Kapaa Switchyard and Lydgate Substation to open due to the pre-existing fault. The faulted circuit was isolated followed by the re-energizing of the Kapaa to Lydgate transmission lines. Loads were restored within 1 hour to approximately 11,103 customers.
3. Interruption Report 2013-080, 5/20/13, 11:50:45 PM – Kapaia Power Station tripped due to a failed coupling of the mineral lube oil pump, resulting in an under-frequency load shed. Port Allen Generating Station started all available generation and restored loads within 33 minutes to approximately 28,654 customers.

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

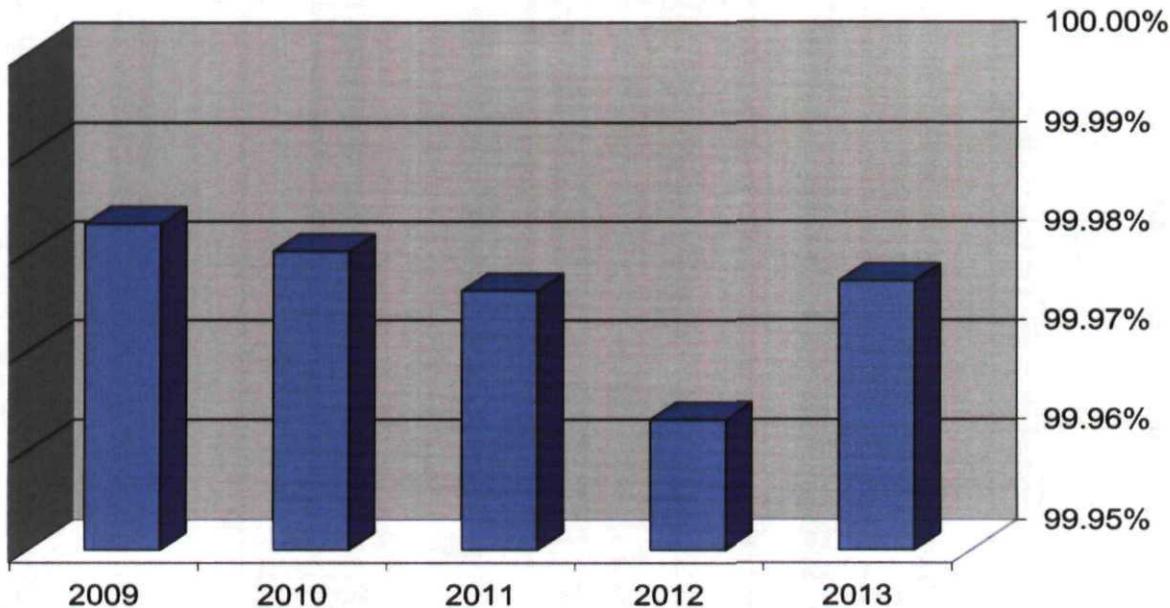


Figure 1 shows the Average System Availability (ASA) for the past five years. The 2013 ASA of 99.977% is higher than the previous two years of the five-year period and nearly equal to the five-year average of 99.976%.

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

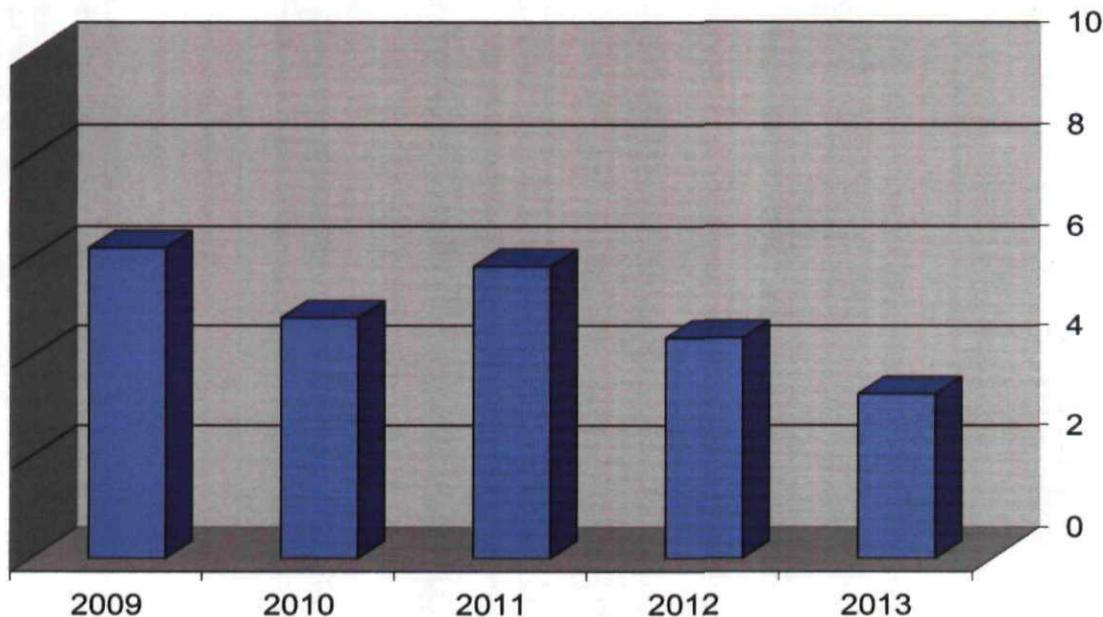


Figure 2 shows the System Average Interruption Frequency Index (SAIFI) for the past five years. The 2013 SAIFI of 3.23 was the best of the five-year period and better than the five-year average of 4.86.

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

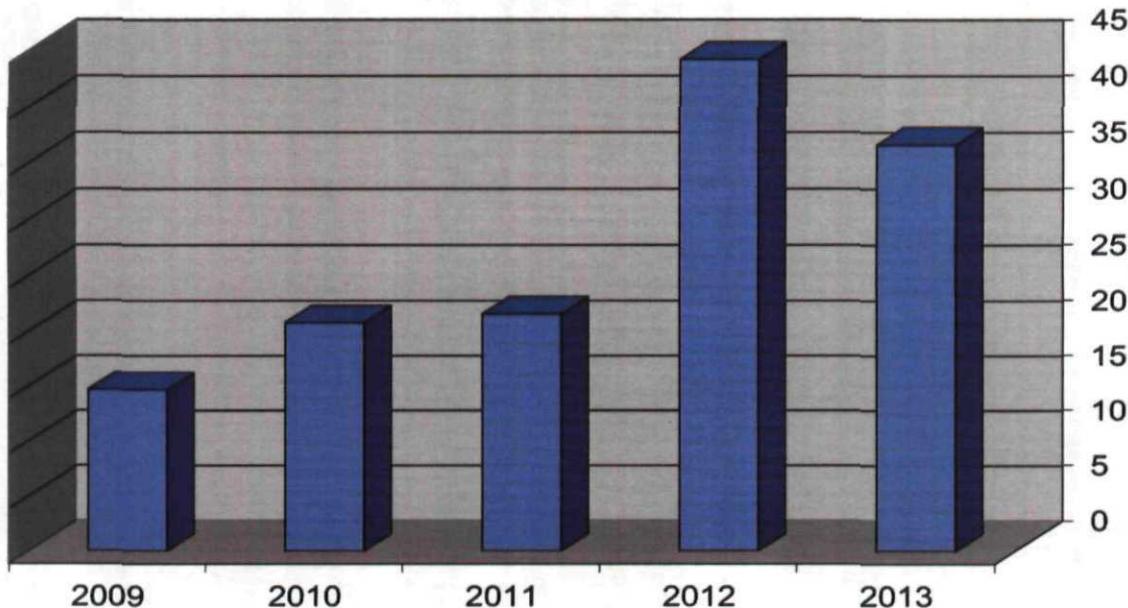


Figure 3 shows the Customer Average Interruption Duration Index (CAIDI) for the past five years. The 2013 CAIDI of 36.62 was the second highest of the five-year period and higher than the five-year average of 27.54.

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

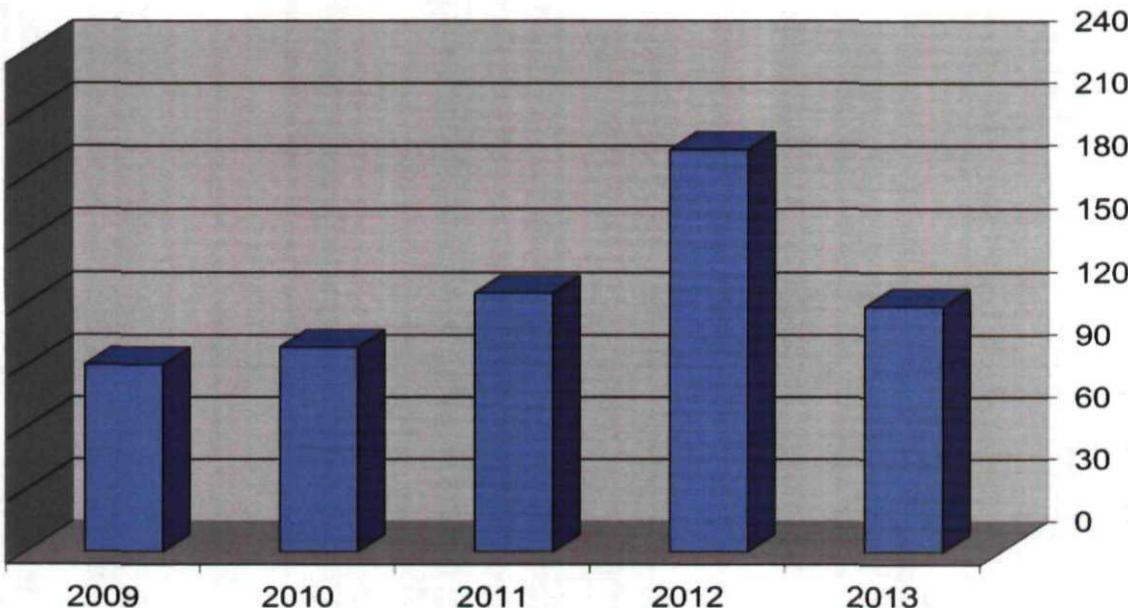


Figure 4 shows the System Average Interruption Duration Index (SAIDI) for the past five years. The 2013 SAIDI of 118.32 is lower than the previous two years of the five-year period and is also lower than the five-year average of 124.98.

## 2013 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

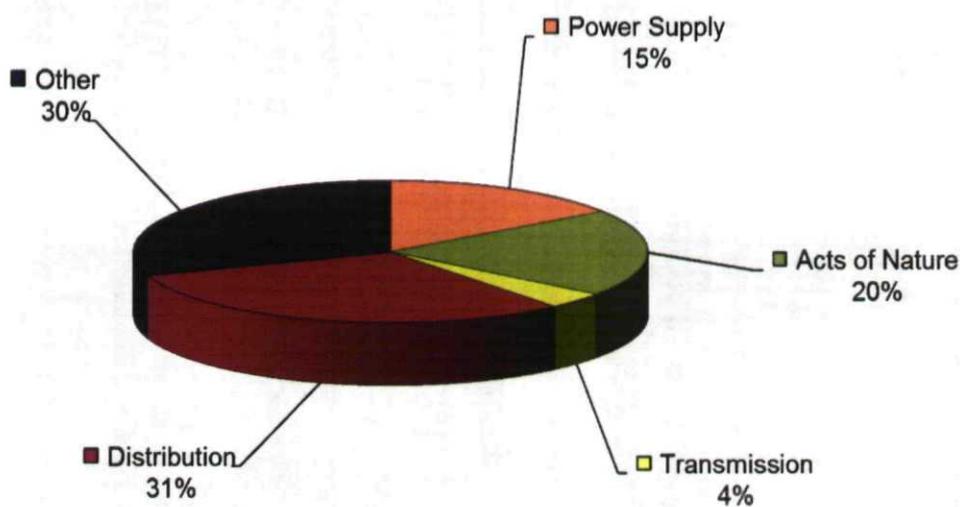


Figure 5 shows the breakdown by frequency. The leading cause of outages was "Distribution" – failure or malfunction of distribution equipment including cables, fuses, insulators, poles, and transformers. A close second was "Other" – persons or equipment not related to or owned by KIUC. Examples include 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 "Acts of Nature" – interruptions caused by high winds, floods, storms, etc. The fourth leading cause of interruptions was "Power Supply" confined within KIUC. An example of this is generating unit problems that result in a reduction of output, causing an under frequency load shed; 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

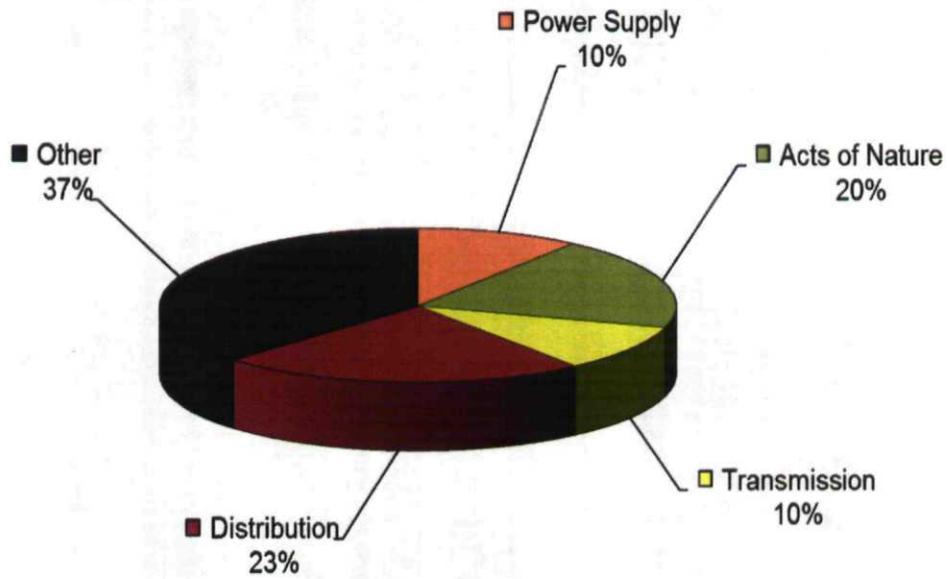


Figure 6 shows the breakdown by magnitude. The same descriptions and examples that were described following Figure 5 apply also for Figure 6. The causes of severe interruptions, in order from most to least, were "Other", "Distribution", "Acts of Nature", followed by "Transmission", and "Power Supply"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

| Outage Number | Circuit | Outage Start Time     | Outage End Time       | Duration | Class | Type | kW   | Consumers |
|---------------|---------|-----------------------|-----------------------|----------|-------|------|------|-----------|
| 2013-001      | 5001    | 1/2/2013 11:15:00 AM  | 1/2/2013 1:30:00 PM   | 2:15:00  | C     | 5    | 18   | 6         |
| 2013-002      | 3413    | 1/3/2013 6:30:00 PM   | 1/3/2013 9:30:00 PM   | 3:00:00  | C     | 6    | 45   | 15        |
| 2013-003      | 3411    | 1/5/2013 6:30:00 AM   | 1/5/2013 8:30:00 AM   | 2:00:00  | C     | 2    | 90   | 30        |
| 2013-004      | 5002    | 1/5/2013 7:00:00 AM   | 1/5/2013 9:00:00 AM   | 2:00:00  | C     | 2    | 3    | 1         |
| 2013-005      | 1325    | 1/5/2013 7:05:00 AM   | 1/5/2013 5:00:00 PM   | 9:55:00  | C     | 2    | 18   | 6         |
| 2013-006      | 5002    | 1/6/2013 12:43:07 PM  | 1/6/2013 6:00:00 PM   | 5:16:53  | C     | 6    | 60   | 20        |
| 2013-007      | 4002    | 1/7/2013 11:25:33 AM  | 1/7/2013 11:33:41 AM  | 0:08:08  | C     | 5    | 480  | 471       |
| 2013-008      | 1323    | 1/13/2013 8:30:00 PM  | 1/13/2013 10:30:00 PM | 2:00:00  | C     | 6    | 36   | 12        |
| 2013-009      | 3413    | 1/14/2013 4:30:00 PM  | 1/14/2013 6:30:00 PM  | 2:00:00  | C     | 6    | 75   | 25        |
| 2013-010      | 3412    | 1/17/2013 11:00:00 PM | 1/17/2013 11:30:00 PM | 0:30:00  | C     | 5    | 120  | 40        |
| 2013-011      | 1323    | 1/19/2013 3:30:00 PM  | 1/19/2013 7:00:00 PM  | 3:30:00  | C     | 5    | 21   | 7         |
| 2013-012      | 4121    | 1/20/2013 10:50:00 PM | 1/21/2013 7:00:00 AM  | 8:10:00  | C     | 5    | 45   | 15        |
| 2013-013      | 4124    | 1/24/2013 12:18:48 AM | 1/24/2013 4:30:00 AM  | 4:11:12  | C     | 5    | 60   | 20        |
| 2013-014      | 3412    | 1/24/2013 12:00:00 PM | 1/24/2013 3:30:00 PM  | 3:30:00  | C     | 5    | 45   | 15        |
| 2013-015      | 1432    | 1/25/2013 1:15:00 PM  | 1/25/2013 4:30:00 PM  | 3:15:00  | C     | 5    | 75   | 25        |
| 2013-017      | 2314    | 1/27/2013 8:42:39 AM  | 1/27/2013 1:45:00 PM  | 5:02:21  | C     | 2    | 3    | 1         |
| 2013-018      | 3411    | 1/27/2013 4:15:38 PM  | 1/27/2013 4:31:00 PM  | 0:15:22  | C     | 2    | 150  | 50        |
| 2013-018      | 3411    | 1/27/2013 3:36:48 PM  | 1/27/2013 4:15:38 PM  | 0:38:50  | C     | 2    | 3460 | 300       |
| 2013-019      | 3215    | 1/28/2013 9:15:00 AM  | 1/28/2013 11:00:00 AM | 1:45:00  | C     | 5    | 75   | 1818      |
| 2013-021      | 5002    | 2/1/2013 1:26:06 PM   | 2/1/2013 4:30:00 PM   | 3:03:54  | C     | 6    | 3    | 1         |
| 2013-022      | 2311    | 2/4/2013 1:54:24 AM   | 2/4/2013 9:00:00 AM   | 7:05:36  | C     | 2    | 12   | 4         |
| 2013-023      | 5001    | 2/4/2013 4:49:42 PM   | 2/4/2013 8:30:00 PM   | 3:40:18  | C     | 6    | 150  | 50        |
| 2013-024      | 2134    | 2/5/2013 3:42:11 AM   | 2/5/2013 4:39:45 AM   | 0:57:34  | C     | 5    | 840  | 1528      |
| 2013-024      | 2133    | 2/5/2013 3:42:11 AM   | 2/5/2013 4:44:59 AM   | 1:02:48  | C     | 5    | 140  | 406       |
| 2013-024      | 2132    | 2/5/2013 3:42:11 AM   | 2/5/2013 6:28:04 AM   | 2:45:53  | C     | 5    | 270  | 718       |
| 2013-025      | 3127    | 2/5/2013 11:57:14 AM  | 2/5/2013 12:00:26 PM  | 0:03:12  | C     | 5    | 2740 | 1569      |
| 2013-027      | 3411    | 2/7/2013 2:25:00 AM   | 2/7/2013 4:00:00 AM   | 1:35:00  | C     | 5    | 30   | 10        |
| 2013-028      | 2312    | 2/11/2013 11:48:35 AM | 2/11/2013 1:50:00 PM  | 2:01:25  | C     | 5    | 0    | 754       |
| 2013-029      | 1323    | 2/13/2013 12:00:00 PM | 2/13/2013 1:30:00 PM  | 1:30:00  | C     | 6    | 450  | 150       |
| 2013-030      | 3412    | 2/14/2013 7:00:00 AM  | 2/14/2013 9:00:00 AM  | 2:00:00  | C     | 5    | 36   | 12        |
| 2013-031      | 3411    | 2/15/2013 1:15:00 AM  | 2/15/2013 2:20:00 AM  | 1:05:00  | C     | 5    | 30   | 10        |
| 2013-032      | 2134    | 2/16/2013 4:10:00 PM  | 2/16/2013 6:40:00 PM  | 2:30:00  | C     | 5    | 180  | 60        |
| 2013-033      | 3214    | 2/17/2013 12:40:00 PM | 2/17/2013 2:15:00 PM  | 1:35:00  | C     | 6    | 150  | 50        |
| 2013-034      | 3121    | 2/17/2013 2:51:35 PM  | 2/17/2013 5:00:00 PM  | 2:08:25  | C     | 5    | 9    | 3         |
| 2013-035      | 3415    | 2/17/2013 3:41:12 PM  | 2/17/2013 5:30:00 PM  | 1:48:48  | C     | 6    | 45   | 15        |
| 2013-037      | 3314    | 2/18/2013 9:12:10 PM  | 2/18/2013 11:15:14 PM | 2:03:04  | C     | 5    | 150  | 50        |
| 2013-038      | 3125    | 2/19/2013 3:54:12 AM  | 2/19/2013 8:30:00 AM  | 4:35:48  | C     | 6    | 24   | 8         |
| 2013-039      | 3314    | 2/19/2013 10:40:47 AM | 2/19/2013 2:20:00 PM  | 3:39:13  | C     | 5    | 300  | 100       |
| 2013-039      | 3314    | 2/19/2013 10:40:47 AM | 2/19/2013 10:43:11 AM | 0:02:24  | C     | 5    | 2660 | 552       |
| 2013-041      | 5002    | 2/19/2013 1:54:24 PM  | 2/19/2013 1:58:18 PM  | 0:03:54  | C     | 5    | 410  | 1980      |
| 2013-041      | 5001    | 2/19/2013 1:54:24 PM  | 2/19/2013 1:58:00 PM  | 0:03:36  | C     | 5    | 930  | 876       |
| 2013-042      | 2132    | 2/19/2013 7:10:00 PM  | 2/19/2013 10:00:00 PM | 2:50:00  | C     | 5    | 24   | 8         |
| 2013-043      | 3415    | 2/20/2013 12:25:59 PM | 2/20/2013 2:00:00 PM  | 1:34:01  | C     | 2    | 3    | 1         |
| 2013-044      | 3413    | 2/23/2013 6:48:18 PM  | 2/23/2013 7:17:49 PM  | 0:29:31  | C     | 6    | 2900 | 2735      |
| 2013-044      | 3413    | 2/23/2013 6:47:33 PM  | 2/23/2013 11:55:00 PM | 5:07:27  | C     | 6    | 400  | 300       |
| 2013-045      | 4121    | 2/26/2013 5:20:00 PM  | 2/26/2013 9:00:00 PM  | 3:40:00  | C     | 5    | 60   | 20        |
| 2013-046      | 2134    | 2/28/2013 8:37:54 PM  | 3/1/2013 12:30:00 AM  | 3:52:06  | C     | 5    | 27   | 9         |
| 2013-047      | 4002    | 3/1/2013 4:55:00 AM   | 3/1/2013 9:00:00 AM   | 4:05:00  | C     | 6    | 30   | 20        |
| 2013-048      | 3121    | 3/2/2013 11:31:23 PM  | 3/3/2013 4:30:00 AM   | 4:58:37  | C     | 5    | 45   | 15        |
| 2013-049      | 5002    | 3/3/2013 7:00:00 PM   | 3/3/2013 10:00:00 PM  | 3:00:00  | C     | 5    | 90   | 30        |
| 2013-050      | 1324    | 3/8/2013 12:30:02 AM  | 3/8/2013 1:29:58 AM   | 0:59:56  | A     | 6    | 530  | 0         |
| 2013-050      | 1323    | 3/8/2013 12:28:27 AM  | 3/8/2013 1:44:00 AM   | 1:15:33  | A     | 6    | 1200 | 1385      |
| 2013-050      | 1231    | 3/8/2013 12:22:45 AM  | 3/8/2013 1:25:18 AM   | 1:02:33  | A     | 6    | 660  | 0         |
| 2013-050      | 1232    | 3/8/2013 12:22:45 AM  | 3/8/2013 1:24:45 AM   | 1:02:00  | A     | 6    | 150  | 10        |
| 2013-050      | 1233    | 3/8/2013 12:22:45 AM  | 3/8/2013 1:24:06 AM   | 1:01:21  | A     | 6    | 290  | 30        |
| 2013-050      | 1432    | 3/8/2013 12:22:43 AM  | 3/8/2013 1:25:52 AM   | 1:03:09  | A     | 6    | 120  | 300       |
| 2013-050      | 1325    | 3/8/2013 12:22:42 AM  | 3/8/2013 1:23:40 AM   | 1:00:58  | A     | 6    | 500  | 200       |
| 2013-050      | 1322    | 3/8/2013 12:22:42 AM  | 3/8/2013 1:26:31 AM   | 1:03:49  | A     | 6    | 730  | 700       |
| 2013-052      | 4002    | 3/13/2013 8:01:00 AM  | 3/13/2013 11:09:15 AM | 3:08:15  | C     | 3    | 360  | 471       |
| 2013-053      | 3415    | 3/15/2013 12:42:40 PM | 3/15/2013 12:53:49 PM | 0:11:09  | B     | 1    | 220  | 1612      |

| Outage Number | Circuit | Outage Start Time     | Outage End Time       | Duration | Class | Type | kW   | Consumers |
|---------------|---------|-----------------------|-----------------------|----------|-------|------|------|-----------|
| 2013-053      | 3414    | 3/15/2013 12:42:40 PM | 3/15/2013 1:00:04 PM  | 0:17:24  | B     | 1    | 1990 | 859       |
| 2013-053      | 3412    | 3/15/2013 12:42:40 PM | 3/15/2013 12:54:52 PM | 0:12:12  | B     | 1    | 970  | 1004      |
| 2013-053      | 2314    | 3/15/2013 12:42:38 PM | 3/15/2013 12:58:35 PM | 0:15:57  | B     | 1    | 1830 | 768       |
| 2013-053      | 3214    | 3/15/2013 12:42:38 PM | 3/15/2013 12:55:43 PM | 0:13:05  | B     | 1    | 1350 | 120       |
| 2013-053      | 3211    | 3/15/2013 12:42:38 PM | 3/15/2013 1:00:40 PM  | 0:18:02  | B     | 1    | 300  | 5         |
| 2013-053      | 4122    | 3/15/2013 12:42:37 PM | 3/15/2013 12:51:34 PM | 0:08:57  | B     | 1    | 1970 | 1972      |
| 2013-053      | 3314    | 3/15/2013 12:42:37 PM | 3/15/2013 12:50:30 PM | 0:07:53  | B     | 1    | 2700 | 552       |
| 2013-053      | 3313    | 3/15/2013 12:42:37 PM | 3/15/2013 12:55:13 PM | 0:12:36  | B     | 1    | 920  | 1396      |
| 2013-053      | 4123    | 3/15/2013 12:42:37 PM | 3/15/2013 12:50:14 PM | 0:07:37  | B     | 1    | 690  | 225       |
| 2013-053      | 5001    | 3/15/2013 12:42:36 PM | 3/15/2013 12:49:53 PM | 0:07:17  | B     | 1    | 1140 | 876       |
| 2013-053      | 2134    | 3/15/2013 12:42:36 PM | 3/15/2013 12:59:15 PM | 0:16:39  | B     | 1    | 1030 | 1528      |
| 2013-053      | 2133    | 3/15/2013 12:42:36 PM | 3/15/2013 12:59:51 PM | 0:17:15  | B     | 1    | 170  | 406       |
| 2013-053      | 1322    | 3/15/2013 12:42:36 PM | 3/15/2013 1:02:33 PM  | 0:19:57  | B     | 1    | 650  | 700       |
| 2013-053      | 3121    | 3/15/2013 12:42:35 PM | 3/15/2013 12:57:47 PM | 0:15:12  | B     | 1    | 1790 | 650       |
| 2013-053      | 3127    | 3/15/2013 12:42:35 PM | 3/15/2013 1:01:23 PM  | 0:18:48  | B     | 1    | 2440 | 1569      |
| 2013-053      | 3123    | 3/15/2013 12:42:35 PM | 3/15/2013 12:57:10 PM | 0:14:35  | B     | 1    | 1160 | 1187      |
| 2013-054      | 4122    | 3/21/2013 1:23:40 PM  | 3/21/2013 2:28:00 PM  | 1:04:20  | C     | 6    | 1650 | 1972      |
| 2013-054      | 4122    | 3/21/2013 1:22:45 PM  | 3/21/2013 6:55:00 PM  | 5:32:15  | C     | 6    | 300  | 100       |
| 2013-055      | 2132    | 3/26/2013 11:55:06 PM | 3/27/2013 2:05:04 AM  | 2:09:58  | C     | 5    | 350  | 718       |
| 2013-056      | 4122    | 4/2/2013 9:00:00 AM   | 4/2/2013 3:00:00 PM   | 6:00:00  | C     | 3    | 36   | 12        |
| 2013-057      | 3313    | 4/5/2013 1:46:29 PM   | 4/5/2013 4:30:00 PM   | 2:43:31  | C     | 5    | 45   | 15        |
| 2013-058      | 3125    | 4/5/2013 8:10:00 PM   | 4/5/2013 10:30:00 PM  | 2:20:00  | C     | 6    | 30   | 10        |
| 2013-059      | 2132    | 4/7/2013 10:58:18 AM  | 4/7/2013 12:20:00 PM  | 1:21:42  | C     | 6    | 60   | 20        |
| 2013-060      | 4124    | 4/7/2013 3:08:57 PM   | 4/7/2013 3:59:58 PM   | 0:51:01  | A     | 4    | 3450 | 1926      |
| 2013-060      | 3415    | 4/7/2013 3:08:57 PM   | 4/7/2013 4:05:50 PM   | 0:56:53  | A     | 4    | 390  | 1612      |
| 2013-060      | 4123    | 4/7/2013 3:08:57 PM   | 4/7/2013 3:59:39 PM   | 0:50:42  | A     | 4    | 680  | 225       |
| 2013-060      | 4122    | 4/7/2013 3:08:57 PM   | 4/7/2013 4:00:38 PM   | 0:51:41  | A     | 4    | 2160 | 1972      |
| 2013-060      | 4002    | 4/7/2013 3:08:57 PM   | 4/7/2013 3:59:00 PM   | 0:50:03  | A     | 4    | 350  | 40        |
| 2013-060      | 3414    | 4/7/2013 3:08:57 PM   | 4/7/2013 4:01:33 PM   | 0:52:36  | A     | 4    | 2040 | 859       |
| 2013-060      | 3413    | 4/7/2013 3:08:57 PM   | 4/7/2013 4:02:09 PM   | 0:53:12  | A     | 4    | 1880 | 2735      |
| 2013-060      | 3412    | 4/7/2013 3:08:57 PM   | 4/7/2013 4:05:26 PM   | 0:56:29  | A     | 4    | 1220 | 1004      |
| 2013-060      | 3411    | 4/7/2013 3:08:57 PM   | 4/7/2013 4:02:26 PM   | 0:53:29  | A     | 4    | 750  | 300       |
| 2013-060      | 4121    | 4/7/2013 3:08:57 PM   | 4/7/2013 3:59:09 PM   | 0:50:12  | A     | 4    | 770  | 430       |
| 2013-061      | 4122    | 4/7/2013 9:45:00 PM   | 4/8/2013 12:30:00 AM  | 2:45:00  | C     | 5    | 60   | 20        |
| 2013-062      | 3415    | 4/8/2013 12:50:00 PM  | 4/8/2013 3:00:00 PM   | 2:10:00  | C     | 5    | 60   | 20        |
| 2013-063      | 4124    | 4/9/2013 10:19:17 PM  | 4/10/2013 5:00:00 AM  | 6:40:43  | C     | 5    | 390  | 130       |
| 2013-064      | 3413    | 4/12/2013 6:30:00 AM  | 4/12/2013 12:00:00 PM | 5:30:00  | C     | 6    | 6    | 2         |
| 2013-065      | 1231    | 4/13/2013 9:42:22 AM  | 4/13/2013 10:50:01 AM | 1:07:39  | A     | 2    | 370  | 0         |
| 2013-065      | 1233    | 4/13/2013 9:42:22 AM  | 4/13/2013 10:51:04 AM | 1:08:42  | A     | 2    | 390  | 30        |
| 2013-065      | 1232    | 4/13/2013 9:42:22 AM  | 4/13/2013 10:50:33 AM | 1:08:11  | A     | 2    | 210  | 10        |
| 2013-067      | 3415    | 4/14/2013 12:47:25 AM | 4/14/2013 3:00:00 AM  | 2:12:35  | C     | 6    | 30   | 10        |
| 2013-068      | 3412    | 4/14/2013 8:36:39 AM  | 4/14/2013 2:00:00 PM  | 5:23:21  | C     | 5    | 30   | 10        |
| 2013-070      | 3413    | 4/16/2013 10:43:23 PM | 4/16/2013 11:30:00 PM | 0:46:37  | C     | 6    | 120  | 40        |
| 2013-071      | 3413    | 4/19/2013 11:55:35 AM | 4/19/2013 2:30:00 PM  | 2:34:25  | C     | 6    | 30   | 10        |
| 2013-072      | 4002    | 4/19/2013 6:05:00 PM  | 4/19/2013 10:00:00 PM | 3:55:00  | C     | 6    | 24   | 8         |
| 2013-074      | 1325    | 5/2/2013 8:56:27 AM   | 5/2/2013 11:00:00 AM  | 2:03:33  | C     | 5    | 30   | 10        |
| 2013-075      | 2132    | 5/2/2013 9:03:32 AM   | 5/2/2013 11:30:00 AM  | 2:26:28  | C     | 5    | 60   | 20        |
| 2013-076      | 4124    | 5/5/2013 9:31:07 PM   | 5/5/2013 9:32:37 PM   | 0:01:30  | C     | 5    | 3600 | 1926      |
| 2013-076      | 4124    | 5/5/2013 7:38:25 PM   | 5/5/2013 7:41:25 PM   | 0:03:00  | C     | 5    | 4300 | 1926      |
| 2013-076      | 4124    | 5/5/2013 5:21:33 PM   | 5/5/2013 10:53:00 PM  | 5:31:27  | C     | 5    | 300  | 1926      |
| 2013-076      | 4124    | 5/5/2013 5:21:33 PM   | 5/5/2013 6:29:21 PM   | 1:07:48  | C     | 5    | 3830 | 1926      |
| 2013-077      | 4122    | 5/11/2013 10:45:42 AM | 5/11/2013 1:00:00 PM  | 2:14:18  | C     | 5    | 24   | 8         |
| 2013-078      | 3214    | 5/12/2013 8:55:27 AM  | 5/12/2013 9:53:14 AM  | 0:57:47  | C     | 5    | 1470 | 120       |
| 2013-078      | 3214    | 5/12/2013 8:54:40 AM  | 5/12/2013 10:09:00 AM | 1:14:20  | C     | 5    | 300  | 120       |
| 2013-079      | 4123    | 5/14/2013 12:49:20 PM | 5/14/2013 5:30:00 PM  | 4:40:40  | C     | 5    | 12   | 4         |
| 2013-079      | 4123    | 5/14/2013 12:49:20 PM | 5/14/2013 3:00:00 PM  | 2:10:40  | C     | 5    | 150  | 50        |
| 2013-080      | 2314    | 5/20/2013 11:50:52 PM | 5/21/2013 12:24:43 AM | 0:33:51  | A     | 1    | 1100 | 768       |
| 2013-080      | 2313    | 5/20/2013 11:50:52 PM | 5/21/2013 12:01:42 AM | 0:10:50  | A     | 1    | 2340 | 717       |
| 2013-080      | 2312    | 5/20/2013 11:50:52 PM | 5/21/2013 12:16:33 AM | 0:25:41  | A     | 1    | 1700 | 754       |
| 2013-080      | 2311    | 5/20/2013 11:50:52 PM | 5/21/2013 12:19:15 AM | 0:28:23  | A     | 1    | 890  | 748       |

| Outage Number | Circuit | Outage Start Time     | Outage End Time       | Duration | Class | Type | kW   | Consumers |
|---------------|---------|-----------------------|-----------------------|----------|-------|------|------|-----------|
| 2013-080      | 3414    | 5/20/2013 11:50:49 PM | 5/21/2013 12:07:02 AM | 0:16:13  | A     | 1    | 1310 | 859       |
| 2013-080      | 3411    | 5/20/2013 11:50:49 PM | 5/20/2013 11:59:11 PM | 0:08:22  | A     | 1    | 540  | 300       |
| 2013-080      | 3413    | 5/20/2013 11:50:49 PM | 5/21/2013 12:08:26 AM | 0:17:37  | A     | 1    | 1610 | 2735      |
| 2013-080      | 3415    | 5/20/2013 11:50:49 PM | 5/21/2013 12:14:55 AM | 0:24:06  | A     | 1    | 870  | 1612      |
| 2013-080      | 3412    | 5/20/2013 11:50:49 PM | 5/21/2013 12:23:35 AM | 0:32:46  | A     | 1    | 200  | 1004      |
| 2013-080      | 1322    | 5/20/2013 11:50:47 PM | 5/21/2013 12:13:23 AM | 0:22:36  | A     | 1    | 650  | 700       |
| 2013-080      | 3215    | 5/20/2013 11:50:47 PM | 5/21/2013 12:10:32 AM | 0:19:45  | A     | 1    | 1000 | 1818      |
| 2013-080      | 3214    | 5/20/2013 11:50:47 PM | 5/21/2013 12:23:48 AM | 0:33:01  | A     | 1    | 1010 | 120       |
| 2013-080      | 3212    | 5/20/2013 11:50:47 PM | 5/21/2013 12:05:36 AM | 0:14:49  | A     | 1    | 240  | 30        |
| 2013-080      | 3211    | 5/20/2013 11:50:47 PM | 5/21/2013 12:10:50 AM | 0:20:03  | A     | 1    | 570  | 5         |
| 2013-080      | 1325    | 5/20/2013 11:50:47 PM | 5/21/2013 12:00:11 AM | 0:09:24  | A     | 1    | 290  | 200       |
| 2013-080      | 3124    | 5/20/2013 11:50:46 PM | 5/21/2013 12:12:23 AM | 0:21:37  | A     | 1    | 1640 | 210       |
| 2013-080      | 3123    | 5/20/2013 11:50:46 PM | 5/21/2013 12:15:48 AM | 0:25:02  | A     | 1    | 610  | 1187      |
| 2013-080      | 2133    | 5/20/2013 11:50:46 PM | 5/21/2013 12:18:58 AM | 0:28:12  | A     | 1    | 180  | 406       |
| 2013-080      | 2132    | 5/20/2013 11:50:46 PM | 5/21/2013 12:19:33 AM | 0:28:47  | A     | 1    | 350  | 718       |
| 2013-080      | 5001    | 5/20/2013 11:50:46 PM | 5/20/2013 11:57:52 PM | 0:07:06  | A     | 1    | 770  | 876       |
| 2013-080      | 3122    | 5/20/2013 11:50:46 PM | 5/21/2013 12:12:41 AM | 0:21:55  | A     | 1    | 1920 | 300       |
| 2013-080      | 5002    | 5/20/2013 11:50:46 PM | 5/21/2013 12:06:03 AM | 0:15:17  | A     | 1    | 1200 | 1980      |
| 2013-080      | 3314    | 5/20/2013 11:50:46 PM | 5/21/2013 12:15:10 AM | 0:24:24  | A     | 1    | 190  | 552       |
| 2013-080      | 3127    | 5/20/2013 11:50:46 PM | 5/21/2013 12:11:39 AM | 0:20:53  | A     | 1    | 1560 | 1569      |
| 2013-080      | 3126    | 5/20/2013 11:50:46 PM | 5/20/2013 11:59:56 PM | 0:09:10  | A     | 1    | 10   | 19        |
| 2013-080      | 2134    | 5/20/2013 11:50:46 PM | 5/21/2013 12:17:34 AM | 0:26:48  | A     | 1    | 990  | 1528      |
| 2013-080      | 3121    | 5/20/2013 11:50:46 PM | 5/21/2013 12:16:17 AM | 0:25:31  | A     | 1    | 1540 | 650       |
| 2013-080      | 3313    | 5/20/2013 11:50:46 PM | 5/21/2013 12:15:10 AM | 0:24:24  | A     | 1    | 890  | 1396      |
| 2013-080      | 4124    | 5/20/2013 11:50:45 PM | 5/21/2013 12:07:19 AM | 0:16:34  | A     | 1    | 2570 | 1926      |
| 2013-080      | 4123    | 5/20/2013 11:50:45 PM | 5/21/2013 12:13:37 AM | 0:22:52  | A     | 1    | 500  | 225       |
| 2013-080      | 4122    | 5/20/2013 11:50:45 PM | 5/21/2013 12:20:30 AM | 0:29:45  | A     | 1    | 2120 | 1972      |
| 2013-080      | 4121    | 5/20/2013 11:50:45 PM | 5/21/2013 12:14:13 AM | 0:23:28  | A     | 1    | 460  | 430       |
| 2013-080      | 1432    | 5/20/2013 11:50:45 PM | 5/21/2013 12:19:47 AM | 0:29:02  | A     | 1    | 170  | 300       |
| 2013-080      | 1233    | 5/20/2013 11:50:45 PM | 5/21/2013 12:00:31 AM | 0:09:46  | A     | 1    | 300  | 30        |
| 2013-080      | 1232    | 5/20/2013 11:50:45 PM | 5/21/2013 12:00:43 AM | 0:09:58  | A     | 1    | 220  | 10        |
| 2013-080      | 1231    | 5/20/2013 11:50:45 PM | 5/21/2013 12:05:11 AM | 0:14:26  | A     | 1    | 220  | 0         |
| 2013-083      | 2132    | 5/27/2013 11:45:00 AM | 5/27/2013 1:30:00 PM  | 1:45:00  | C     | 6    | 60   | 20        |
| 2013-084      | 3415    | 5/29/2013 7:20:00 AM  | 5/29/2013 11:00:00 AM | 3:40:00  | C     | 5    | 30   | 10        |
| 2013-085      | 3413    | 5/29/2013 9:52:00 PM  | 5/30/2013 12:30:00 AM | 2:38:00  | C     | 5    | 150  | 50        |
| 2013-086      | 3215    | 6/2/2013 7:50:00 PM   | 6/3/2013 2:10:00 AM   | 6:20:00  | C     | 6    | 600  | 200       |
| 2013-088      | 4122    | 6/4/2013 11:40:00 AM  | 6/4/2013 2:10:00 PM   | 2:30:00  | C     | 6    | 300  | 100       |
| 2013-089      | 3126    | 6/4/2013 2:10:00 PM   | 6/4/2013 3:50:00 PM   | 1:40:00  | C     | 5    | 5    | 1         |
| 2013-090      | 4122    | 6/4/2013 2:30:00 PM   | 6/4/2013 5:30:00 PM   | 3:00:00  | C     | 5    | 30   | 10        |
| 2013-092      | 1323    | 6/12/2013 6:14:26 AM  | 6/12/2013 6:39:00 AM  | 0:24:34  | C     | 5    | 1460 | 1385      |
| 2013-093      | 5002    | 6/13/2013 8:52:57 AM  | 6/13/2013 1:48:00 PM  | 4:55:03  | C     | 5    | 180  | 60        |
| 2013-093      | 5002    | 6/13/2013 8:52:57 AM  | 6/13/2013 8:58:33 AM  | 0:05:36  | C     | 5    | 2100 | 1980      |
| 2013-093      | 5002    | 6/13/2013 6:18:59 AM  | 6/13/2013 8:45:00 AM  | 2:26:01  | C     | 5    | 180  | 1980      |
| 2013-094      | 2313    | 6/13/2013 3:48:55 PM  | 6/13/2013 5:05:35 PM  | 1:16:40  | C     | 5    | 2840 | 717       |
| 2013-096      | 3412    | 6/15/2013 7:33:30 PM  | 6/16/2013 12:30:00 AM | 4:56:30  | C     | 6    | 3    | 1         |
| 2013-097      | 5001    | 6/20/2013 2:23:50 PM  | 6/20/2013 7:00:00 PM  | 4:36:10  | C     | 6    | 9    | 3         |
| 2013-098      | 4121    | 6/21/2013 5:17:01 PM  | 6/21/2013 8:00:00 PM  | 2:42:59  | C     | 6    | 36   | 12        |
| 2013-100      | 4122    | 6/22/2013 10:10:00 PM | 6/23/2013 1:30:00 AM  | 3:20:00  | C     | 6    | 30   | 10        |
| 2013-101      | 3415    | 6/24/2013 7:30:00 AM  | 6/24/2013 9:00:00 AM  | 1:30:00  | C     | 6    | 45   | 15        |
| 2013-102      | 2134    | 6/25/2013 7:42:45 PM  | 6/25/2013 11:30:00 PM | 3:47:15  | C     | 6    | 6    | 2         |
| 2013-103      | 1323    | 6/29/2013 3:55:00 PM  | 6/29/2013 6:30:00 PM  | 2:35:00  | C     | 5    | 30   | 10        |
| 2013-104      | 3121    | 7/1/2013 7:30:00 PM   | 7/1/2013 8:30:00 PM   | 1:00:00  | C     | 5    | 75   | 25        |
| 2013-105      | 3121    | 7/3/2013 7:10:00 AM   | 7/3/2013 9:30:00 AM   | 2:20:00  | C     | 5    | 36   | 12        |
| 2013-107      | 3412    | 7/6/2013 3:50:00 AM   | 7/6/2013 7:00:00 AM   | 3:10:00  | C     | 6    | 60   | 20        |
| 2013-108      | 2132    | 7/7/2013 9:30:00 PM   | 7/8/2013 12:30:00 AM  | 3:00:00  | C     | 6    | 45   | 15        |
| 2013-109      | 2134    | 7/10/2013 5:44:00 AM  | 7/10/2013 7:00:00 AM  | 1:16:00  | C     | 6    | 96   | 32        |
| 2013-111      | 4002    | 7/12/2013 2:48:00 PM  | 7/12/2013 11:45:00 PM | 8:57:00  | C     | 5    | 9    | 3         |
| 2013-112      | 3215    | 7/12/2013 3:30:00 PM  | 7/12/2013 7:00:00 PM  | 3:30:00  | C     | 5    | 18   | 6         |
| 2013-113      | 3412    | 7/15/2013 6:30:00 AM  | 7/15/2013 9:50:00 AM  | 3:20:00  | C     | 5    | 9    | 3         |
| 2013-114      | 4122    | 7/15/2013 9:10:00 AM  | 7/15/2013 10:40:00 AM | 1:30:00  | C     | 6    | 75   | 25        |

| Outage Number | Circuit | Outage Start Time     | Outage End Time        | Duration | Class | Type | kW   | Consumers |
|---------------|---------|-----------------------|------------------------|----------|-------|------|------|-----------|
| 2013-115      | 3415    | 7/16/2013 3:20:38 AM  | 7/16/2013 4:51:35 AM   | 1:30:57  | C     | 6    | 750  | 1612      |
| 2013-116      | 4121    | 7/17/2013 11:04:18 AM | 7/17/2013 3:30:00 PM   | 4:25:42  | C     | 6    | 5    | 1         |
| 2013-117      | 4002    | 7/18/2013 4:34:00 PM  | 7/18/2013 7:00:00 PM   | 2:26:00  | C     | 6    | 45   | 15        |
| 2013-118      | 4122    | 7/19/2013 7:45:00 AM  | 7/19/2013 11:00:00 AM  | 3:15:00  | C     | 6    | 90   | 30        |
| 2013-119      | 5002    | 7/20/2013 7:00:00 AM  | 7/20/2013 11:30:00 AM  | 4:30:00  | C     | 5    | 6    | 2         |
| 2013-120      | 3415    | 7/20/2013 11:25:59 AM | 7/20/2013 2:00:00 PM   | 2:34:01  | C     | 6    | 84   | 28        |
| 2013-121      | 5002    | 7/20/2013 2:08:00 PM  | 7/20/2013 5:30:00 PM   | 3:22:00  | C     | 5    | 63   | 21        |
| 2013-123      | 3121    | 7/20/2013 8:01:23 PM  | 7/20/2013 10:30:00 PM  | 2:28:37  | C     | 5    | 48   | 16        |
| 2013-124      | 1323    | 7/22/2013 1:00:00 PM  | 7/22/2013 6:00:00 PM   | 5:00:00  | C     | 5    | 30   | 10        |
| 2013-125      | 3215    | 7/23/2013 12:20:00 AM | 7/23/2013 2:45:00 AM   | 2:25:00  | C     | 6    | 60   | 20        |
| 2013-126      | 5001    | 7/23/2013 12:05:00 PM | 7/23/2013 1:30:00 PM   | 1:25:00  | C     | 5    | 60   | 20        |
| 2013-127      | 3415    | 7/25/2013 8:18:55 PM  | 7/25/2013 10:15:00 PM  | 1:56:05  | C     | 6    | 24   | 8         |
| 2013-128      | 5002    | 7/29/2013 12:25:16 PM | 7/29/2013 3:00:00 PM   | 2:34:44  | C     | 5    | 3    | 1         |
| 2013-129      | 3415    | 7/30/2013 3:32:07 AM  | 7/30/2013 7:00:00 AM   | 3:27:53  | C     | 2    | 105  | 35        |
| 2013-130      | 3413    | 7/30/2013 3:30:00 AM  | 7/30/2013 5:30:00 AM   | 2:00:00  | C     | 2    | 30   | 10        |
| 2013-131      | 3125    | 7/30/2013 3:20:51 AM  | 7/30/2013 11:00:00 AM  | 7:39:09  | C     | 2    | 9    | 3         |
| 2013-132      | 4121    | 7/30/2013 9:42:08 AM  | 7/30/2013 12:30:00 PM  | 2:47:52  | C     | 2    | 5    | 1         |
| 2013-133      | 1325    | 7/30/2013 12:15:00 PM | 7/30/2013 7:30:00 PM   | 7:15:00  | C     | 2    | 21   | 7         |
| 2013-134      | 1432    | 7/30/2013 7:20:00 PM  | 7/30/2013 9:35:00 PM   | 2:15:00  | C     | 5    | 15   | 5         |
| 2013-135      | 1323    | 7/31/2013 3:00:00 PM  | 7/31/2013 6:30:00 PM   | 3:30:00  | C     | 6    | 39   | 13        |
| 2013-136      | 1323    | 7/31/2013 8:20:00 PM  | 7/31/2013 9:45:00 PM   | 1:25:00  | C     | 5    | 6    | 2         |
| 2013-137      | 2311    | 8/3/2013 9:05:00 AM   | 8/3/2013 11:00:00 AM   | 1:55:00  | C     | 5    | 60   | 20        |
| 2013-138      | 4002    | 8/5/2013 11:21:00 PM  | 8/6/2013 1:19:00 AM    | 1:58:00  | C     | 6    | 45   | 15        |
| 2013-141      | 4002    | 8/13/2013 10:00:00 AM | 8/13/2013 1:00:00 PM   | 3:00:00  | C     | 3    | 48   | 16        |
| 2013-142      | 4122    | 8/16/2013 12:25:00 PM | 8/16/2013 8:30:00 PM   | 8:05:00  | C     | 5    | 60   | 20        |
| 2013-143      | 2134    | 8/16/2013 4:40:00 PM  | 8/16/2013 9:00:00 PM   | 4:20:00  | C     | 6    | 114  | 38        |
| 2013-144      | 3214    | 8/17/2013 5:25:00 AM  | 8/17/2013 7:30:00 AM   | 2:05:00  | C     | 6    | 78   | 26        |
| 2013-145      | 4122    | 8/18/2013 8:45:00 AM  | 8/18/2013 12:00:00 PM  | 3:15:00  | C     | 5    | 12   | 4         |
| 2013-146      | 4122    | 8/20/2013 12:48:18 AM | 8/20/2013 3:00:00 AM   | 2:11:42  | C     | 6    | 60   | 20        |
| 2013-147      | 4122    | 8/20/2013 11:01:00 AM | 8/20/2013 1:01:00 PM   | 2:00:00  | C     | 6    | 36   | 12        |
| 2013-148      | 4002    | 8/22/2013 12:05:20 PM | 8/22/2013 12:13:00 PM  | 0:07:40  | C     | 5    | 400  | 471       |
| 2013-149      | 2311    | 8/22/2013 12:43:35 PM | 8/22/2013 1:13:00 PM   | 0:29:25  | C     | 6    | 114  | 38        |
| 2013-150      | 5001    | 8/26/2013 11:35:46 PM | 8/26/2013 11:43:44 PM  | 0:07:58  | C     | 5    | 850  | 876       |
| 2013-151      | 3215    | 8/27/2013 7:55:00 PM  | 8/27/2013 11:50:00 PM  | 3:55:00  | C     | 5    | 36   | 12        |
| 2013-153      | 3215    | 8/29/2013 4:35:00 PM  | 8/29/2013 5:30:00 PM   | 0:55:00  | C     | 6    | 180  | 60        |
| 2013-157      | 4002    | 9/2/2013 5:25:27 PM   | 9/3/2013 5:19:56 AM    | 11:54:29 | C     | 6    | 460  | 471       |
| 2013-158      | 4124    | 9/3/2013 12:48:19 PM  | 9/3/2013 2:42:00 PM    | 1:53:41  | C     | 5    | 96   | 32        |
| 2013-159      | 3413    | 9/4/2013 6:36:56 AM   | 9/4/2013 8:06:00 AM    | 1:29:04  | C     | 6    | 78   | 26        |
| 2013-161      | 3412    | 9/7/2013 4:08:30 PM   | 9/7/2013 6:15:00 PM    | 2:06:30  | C     | 6    | 33   | 11        |
| 2013-162      | 3415    | 9/8/2013 6:24:00 AM   | 9/8/2013 9:20:00 AM    | 2:56:00  | C     | 6    | 90   | 30        |
| 2013-164      | 3415    | 9/12/2013 2:08:00 PM  | 9/12/2013 3:30:00 PM   | 1:22:00  | C     | 6    | 60   | 20        |
| 2013-165      | 3127    | 9/13/2013 12:39:22 AM | 9/13/2013 9:00:00 AM   | 8:20:38  | C     | 6    | 18   | 6         |
| 2013-166      | 2134    | 9/14/2013 11:50:00 AM | 9/14/2013 2:00:00 PM   | 2:10:00  | C     | 5    | 24   | 8         |
| 2013-167      | 3215    | 9/17/2013 3:41:41 PM  | 9/17/2013 4:02:00 PM   | 0:20:19  | C     | 5    | 1500 | 1818      |
| 2013-167      | 3215    | 9/17/2013 3:41:41 PM  | 9/17/2013 5:12:00 PM   | 1:30:19  | C     | 5    | 8    | 10        |
| 2013-168      | 3413    | 9/20/2013 9:59:58 AM  | 9/20/2013 11:00:00 AM  | 1:00:02  | C     | 6    | 51   | 17        |
| 2013-169      | 4121    | 9/23/2013 10:00:00 AM | 9/23/2013 1:00:00 PM   | 3:00:00  | C     | 6    | 18   | 6         |
| 2013-170      | 3127    | 10/1/2013 2:44:01 AM  | 10/1/2013 10:30:00 AM  | 7:45:59  | C     | 6    | 30   | 10        |
| 2013-171      | 4122    | 10/1/2013 3:56:44 AM  | 10/1/2013 2:15:00 PM   | 10:18:16 | C     | 6    | 3    | 1         |
| 2013-172      | 3413    | 10/2/2013 12:46:03 PM | 10/2/2013 2:30:00 PM   | 1:43:57  | C     | 5    | 120  | 40        |
| 2013-174      | 3211    | 10/10/2013 6:46:11 PM | 10/10/2013 8:03:00 PM  | 1:16:49  | C     | 5    | 10   | 5         |
| 2013-174      | 3212    | 10/10/2013 6:46:11 PM | 10/10/2013 8:06:00 PM  | 1:19:49  | C     | 5    | 320  | 30        |
| 2013-175      | 3415    | 10/11/2013 7:09:35 PM | 10/11/2013 9:00:00 PM  | 1:50:25  | C     | 6    | 45   | 15        |
| 2013-176      | 3127    | 10/14/2013 7:02:37 PM | 10/14/2013 9:00:00 PM  | 1:57:23  | C     | 2    | 9    | 3         |
| 2013-178      | 3313    | 10/14/2013 7:33:47 PM | 10/14/2013 10:00:00 PM | 2:26:13  | C     | 2    | 24   | 8         |
| 2013-179      | 1323    | 10/15/2013 2:41:00 PM | 10/15/2013 6:00:00 PM  | 3:19:00  | C     | 6    | 54   | 18        |
| 2013-180      | 5002    | 10/16/2013 2:49:31 PM | 10/16/2013 5:30:00 PM  | 2:40:29  | C     | 6    | 150  | 200       |
| 2013-181      | 3413    | 10/19/2013 2:43:29 PM | 10/19/2013 5:00:00 PM  | 2:16:31  | C     | 6    | 90   | 30        |
| 2013-182      | 4002    | 10/19/2013 4:31:00 PM | 10/19/2013 9:30:00 PM  | 4:59:00  | C     | 6    | 36   | 12        |
| 2013-183      | 3415    | 10/22/2013 2:20:00 PM | 10/22/2013 4:00:00 PM  | 1:40:00  | C     | 6    | 78   | 26        |

| OutageNumber | Circuit | OutageStartTime        | OutageEndTime          | Duration | Class | Type | kW   | Consumers |
|--------------|---------|------------------------|------------------------|----------|-------|------|------|-----------|
| 2013-184     | 3412    | 10/24/2013 9:28:00 AM  | 10/24/2013 12:30:00 PM | 3:02:00  | C     | 6    | 120  | 40        |
| 2013-185     | 3415    | 10/26/2013 9:31:43 PM  | 10/27/2013 1:30:00 AM  | 3:58:17  | C     | 6    | 90   | 15        |
| 2013-186     | 3415    | 10/27/2013 7:00:00 AM  | 10/27/2013 9:00:00 AM  | 2:00:00  | C     | 5    | 60   | 20        |
| 2013-187     | 3411    | 10/27/2013 12:45:00 PM | 10/27/2013 3:20:00 PM  | 2:35:00  | C     | 5    | 21   | 7         |
| 2013-188     | 3413    | 10/28/2013 5:26:00 AM  | 10/28/2013 7:00:00 AM  | 1:34:00  | C     | 5    | 27   | 9         |
| 2013-189     | 3415    | 10/29/2013 5:44:00 PM  | 10/29/2013 9:30:00 PM  | 3:46:00  | C     | 5    | 108  | 36        |
| 2013-190     | 1323    | 10/29/2013 7:38:26 PM  | 10/29/2013 10:49:54 PM | 3:11:28  | A     | 6    | 2130 | 1385      |
| 2013-190     | 1231    | 10/29/2013 7:38:26 PM  | 10/29/2013 10:52:10 PM | 3:13:44  | A     | 6    | 740  | 0         |
| 2013-190     | 1232    | 10/29/2013 7:38:26 PM  | 10/29/2013 10:51:45 PM | 3:13:19  | A     | 6    | 330  | 10        |
| 2013-190     | 1322    | 10/29/2013 7:38:26 PM  | 10/29/2013 10:52:26 PM | 3:14:00  | A     | 6    | 890  | 700       |
| 2013-190     | 1325    | 10/29/2013 7:38:26 PM  | 10/29/2013 10:51:06 PM | 3:12:40  | A     | 6    | 510  | 200       |
| 2013-190     | 1432    | 10/29/2013 7:38:26 PM  | 10/29/2013 11:25:47 PM | 3:47:21  | A     | 6    | 350  | 300       |
| 2013-190     | 1233    | 10/29/2013 7:38:26 PM  | 10/29/2013 10:51:24 PM | 3:12:58  | A     | 6    | 770  | 30        |
| 2013-191     | 3415    | 10/30/2013 3:25:12 PM  | 10/30/2013 4:30:00 PM  | 1:04:48  | C     | 6    | 90   | 30        |
| 2013-192     | 2132    | 10/30/2013 7:43:50 PM  | 10/30/2013 9:54:12 PM  | 2:10:22  | C     | 6    | 820  | 718       |
| 2013-192     | 2132    | 10/30/2013 7:43:50 PM  | 10/30/2013 11:24:00 PM | 3:40:10  | C     | 6    | 500  | 718       |
| 2013-193     | 3413    | 10/31/2013 8:13:54 PM  | 10/31/2013 9:30:00 PM  | 1:16:06  | C     | 5    | 210  | 2735      |
| 2013-194     | 2134    | 11/2/2013 5:25:08 PM   | 11/2/2013 7:00:00 PM   | 1:34:52  | C     | 6    | 80   | 1528      |
| 2013-195     | 3125    | 11/3/2013 12:25:00 PM  | 11/3/2013 3:30:00 PM   | 3:05:00  | C     | 6    | 15   | 5         |
| 2013-196     | 3212    | 11/3/2013 4:37:43 PM   | 11/3/2013 6:17:00 PM   | 1:39:17  | C     | 5    | 150  | 30        |
| 2013-197     | 2134    | 11/4/2013 8:00:00 AM   | 11/4/2013 10:00:00 AM  | 2:00:00  | C     | 5    | 30   | 10        |
| 2013-198     | 3124    | 11/6/2013 11:18:35 PM  | 11/7/2013 12:36:00 AM  | 1:17:25  | C     | 6    | 300  | 210       |
| 2013-199     | 3121    | 11/7/2013 2:35:00 PM   | 11/7/2013 6:00:00 PM   | 3:25:00  | C     | 5    | 50   | 15        |
| 2013-201     | 3121    | 11/9/2013 3:40:00 PM   | 11/9/2013 10:30:00 PM  | 6:50:00  | C     | 5    | 9    | 3         |
| 2013-202     | 2134    | 11/10/2013 3:47:54 AM  | 11/10/2013 8:30:00 AM  | 4:42:06  | C     | 6    | 15   | 1528      |
| 2013-203     | 2134    | 11/10/2013 9:49:10 AM  | 11/10/2013 12:20:52 PM | 2:31:42  | A     | 4    | 1050 | 1528      |
| 2013-203     | 2133    | 11/10/2013 9:49:10 AM  | 11/10/2013 12:21:40 PM | 2:32:30  | A     | 4    | 220  | 406       |
| 2013-203     | 2132    | 11/10/2013 9:49:10 AM  | 11/10/2013 12:22:22 PM | 2:33:12  | A     | 4    | 290  | 718       |
| 2013-204     | 3413    | 11/10/2013 10:36:23 AM | 11/10/2013 12:30:00 PM | 1:53:37  | C     | 2    | 525  | 175       |
| 2013-205     | 3415    | 11/10/2013 11:41:48 AM | 11/10/2013 2:30:00 PM  | 2:48:12  | C     | 2    | 150  | 50        |
| 2013-206     | 3413    | 11/10/2013 2:21:18 PM  | 11/10/2013 3:55:00 PM  | 1:33:42  | C     | 2    | 60   | 20        |
| 2013-207     | 1325    | 11/10/2013 5:26:43 PM  | 11/10/2013 5:28:43 PM  | 0:02:00  | C     | 2    | 500  | 200       |
| 2013-207     | 1325    | 11/10/2013 5:26:43 PM  | 11/11/2013 12:30:00 AM | 7:03:17  | C     | 2    | 120  | 200       |
| 2013-208     | 2134    | 11/10/2013 11:34:08 PM | 11/11/2013 3:00:00 AM  | 3:25:52  | C     | 2    | 9    | 3         |
| 2013-209     | 2134    | 11/11/2013 3:47:54 AM  | 11/11/2013 7:30:00 AM  | 3:42:06  | C     | 2    | 45   | 15        |
| 2013-211     | 5001    | 11/16/2013 7:00:00 PM  | 11/16/2013 9:00:00 PM  | 2:00:00  | C     | 5    | 24   | 8         |
| 2013-213     | 3123    | 11/18/2013 4:10:00 PM  | 11/18/2013 7:30:00 PM  | 3:20:00  | C     | 5    | 3    | 1         |
| 2013-214     | 3215    | 11/21/2013 8:40:35 AM  | 11/21/2013 4:00:00 PM  | 7:19:25  | C     | 6    | 75   | 25        |
| 2013-215     | 3127    | 11/21/2013 5:25:00 PM  | 11/22/2013 2:20:00 AM  | 8:55:00  | C     | 5    | 30   | 10        |
| 2013-215     | 3127    | 11/21/2013 5:25:00 PM  | 11/22/2013 5:30:00 AM  | 12:05:00 | C     | 5    | 30   | 10        |
| 2013-216     | 2132    | 11/22/2013 7:57:22 AM  | 11/22/2013 9:00:00 AM  | 1:02:38  | B     | 5    | 470  | 718       |
| 2013-216     | 2133    | 11/22/2013 7:57:22 AM  | 11/22/2013 8:45:00 AM  | 0:47:38  | B     | 5    | 210  | 406       |
| 2013-216     | 2134    | 11/22/2013 7:57:22 AM  | 11/22/2013 8:55:00 AM  | 0:57:38  | B     | 5    | 1190 | 1528      |
| 2013-217     | 4122    | 11/26/2013 11:57:44 AM | 11/26/2013 12:32:00 PM | 0:34:16  | B     | 6    | 110  | 1972      |
| 2013-217     | 4121    | 11/26/2013 11:57:38 AM | 11/26/2013 12:42:00 PM | 0:44:22  | B     | 6    | 430  | 430       |
| 2013-217     | 2311    | 11/26/2013 11:23:58 AM | 11/26/2013 11:31:40 AM | 0:07:42  | B     | 6    | 870  | 748       |
| 2013-217     | 3314    | 11/26/2013 11:23:55 AM | 11/26/2013 11:29:34 AM | 0:05:39  | B     | 6    | 850  | 552       |
| 2013-217     | 3313    | 11/26/2013 11:23:55 AM | 11/26/2013 11:30:00 AM | 0:06:05  | B     | 6    | 1080 | 1396      |
| 2013-217     | 1432    | 11/26/2013 11:23:54 AM | 11/26/2013 11:31:28 AM | 0:07:34  | B     | 6    | 210  | 300       |
| 2013-217     | 3122    | 11/26/2013 11:23:53 AM | 11/26/2013 11:28:48 AM | 0:04:55  | B     | 6    | 2280 | 300       |
| 2013-217     | 4123    | 11/26/2013 11:23:52 AM | 11/26/2013 12:00:55 PM | 0:37:03  | B     | 6    | 660  | 225       |
| 2013-217     | 4124    | 11/26/2013 11:23:52 AM | 11/26/2013 12:01:50 PM | 0:37:58  | B     | 6    | 3890 | 1926      |
| 2013-219     | 4121    | 11/29/2013 11:07:48 PM | 11/30/2013 2:20:00 AM  | 3:12:12  | C     | 2    | 6    | 430       |
| 2013-221     | 3413    | 11/30/2013 9:57:52 AM  | 11/30/2013 11:30:00 AM | 1:32:08  | C     | 2    | 300  | 2735      |
| 2013-222     | 2133    | 11/30/2013 10:11:51 AM | 11/30/2013 10:19:46 AM | 0:07:55  | C     | 2    | 270  | 406       |
| 2013-225     | 3123    | 11/30/2013 10:29:17 AM | 11/30/2013 12:30:00 PM | 2:00:43  | C     | 2    | 30   | 10        |
| 2013-227     | 3215    | 11/30/2013 11:49:48 AM | 11/30/2013 1:52:00 PM  | 2:02:12  | C     | 2    | 450  | 1818      |
| 2013-233     | 4122    | 12/1/2013 1:40:05 AM   | 12/1/2013 8:00:00 AM   | 6:19:55  | C     | 2    | 30   | 10        |
| 2013-234     | 3214    | 12/1/2013 3:17:37 AM   | 12/1/2013 4:38:52 AM   | 1:21:15  | C     | 2    | 1130 | 120       |
| 2013-234     | 3214    | 12/1/2013 2:08:23 AM   | 12/1/2013 3:17:37 AM   | 1:09:14  | C     | 2    | 1130 | 120       |

| Outage Number | Circuit | Outage Start Time      | Outage End Time        | Duration | Class | Type | kW   | Consumers |
|---------------|---------|------------------------|------------------------|----------|-------|------|------|-----------|
| 2013-235      | 3126    | 12/1/2013 3:45:28 AM   | 12/1/2013 5:00:00 PM   | 13:14:32 | C     | 2    | 15   | 5         |
| 2013-236      | 3127    | 12/1/2013 5:35:04 AM   | 12/1/2013 11:30:00 AM  | 5:54:56  | C     | 2    | 100  | 1569      |
| 2013-237      | 4122    | 12/1/2013 10:00:00 AM  | 12/1/2013 3:00:00 PM   | 5:00:00  | C     | 2    | 30   | 10        |
| 2013-238      | 2134    | 12/1/2013 8:19:44 AM   | 12/1/2013 3:00:00 PM   | 6:40:16  | C     | 2    | 36   | 12        |
| 2013-239      | 3412    | 12/1/2013 2:00:00 PM   | 12/1/2013 5:00:00 PM   | 3:00:00  | C     | 2    | 18   | 1004      |
| 2013-240      | 1325    | 11/30/2013 5:40:20 PM  | 12/1/2013 9:04:10 PM   | 3:23:50  | C     | 2    | 420  | 200       |
| 2013-241      | 3125    | 12/2/2013 10:25:00 AM  | 12/2/2013 12:00:00 PM  | 1:35:00  | C     | 5    | 3    | 1         |
| 2013-242      | 3412    | 12/2/2013 10:40:00 AM  | 12/2/2013 1:00:00 PM   | 2:20:00  | C     | 5    | 6    | 2         |
| 2013-243      | 3415    | 12/3/2013 9:28:00 AM   | 12/3/2013 10:19:00 AM  | 0:51:00  | C     | 5    | 84   | 28        |
| 2013-244      | 5001    | 12/6/2013 7:35:00 PM   | 12/6/2013 11:55:00 PM  | 4:20:00  | C     | 6    | 60   | 20        |
| 2013-245      | 3127    | 12/8/2013 3:24:00 AM   | 12/8/2013 10:50:00 AM  | 7:26:00  | C     | 5    | 60   | 20        |
| 2013-247      | 1325    | 12/9/2013 10:58:08 AM  | 12/9/2013 2:26:00 PM   | 3:27:52  | C     | 6    | 210  | 200       |
| 2013-247      | 1325    | 12/9/2013 10:58:08 AM  | 12/9/2013 11:00:31 AM  | 0:02:23  | C     | 6    | 0    | 200       |
| 2013-247      | 1325    | 12/9/2013 12:58:19 AM  | 12/9/2013 1:02:30 AM   | 0:04:11  | C     | 6    | 30   | 200       |
| 2013-248      | 3413    | 12/10/2013 7:21:41 PM  | 12/11/2013 1:00:00 AM  | 5:38:19  | C     | 5    | 90   | 30        |
| 2013-249      | 3415    | 12/12/2013 7:41:43 AM  | 12/12/2013 11:24:00 AM | 3:42:17  | C     | 5    | 144  | 48        |
| 2013-250      | 4122    | 12/13/2013 9:00:00 AM  | 12/13/2013 1:00:00 PM  | 4:00:00  | C     | 6    | 30   | 10        |
| 2013-251      | 3411    | 12/14/2013 10:10:48 PM | 12/14/2013 11:26:09 PM | 1:15:21  | C     | 5    | 720  | 300       |
| 2013-252      | 1232    | 12/15/2013 5:35:41 AM  | 12/15/2013 11:32:10 AM | 5:56:29  | C     | 2    | 300  | 10        |
| 2013-253      | 3122    | 12/15/2013 5:34:59 AM  | 12/15/2013 5:44:39 AM  | 0:09:40  | B     | 2    | 2150 | 300       |
| 2013-253      | 2311    | 12/15/2013 5:34:58 AM  | 12/15/2013 5:51:03 AM  | 0:16:05  | B     | 2    | 770  | 748       |
| 2013-253      | 4123    | 12/15/2013 5:34:57 AM  | 12/15/2013 5:43:56 AM  | 0:08:59  | B     | 2    | 540  | 225       |
| 2013-253      | 4121    | 12/15/2013 5:34:57 AM  | 12/15/2013 5:40:33 AM  | 0:05:36  | B     | 2    | 1450 | 430       |
| 2013-253      | 3211    | 12/15/2013 5:34:54 AM  | 12/15/2013 5:43:05 AM  | 0:08:11  | B     | 2    | 660  | 5         |
| 2013-253      | 3314    | 12/15/2013 5:34:54 AM  | 12/15/2013 5:46:07 AM  | 0:11:13  | B     | 2    | 510  | 552       |
| 2013-253      | 3313    | 12/15/2013 5:34:54 AM  | 12/15/2013 5:45:14 AM  | 0:10:20  | B     | 2    | 880  | 1396      |
| 2013-253      | 3214    | 12/15/2013 5:34:54 AM  | 12/15/2013 5:41:25 AM  | 0:06:31  | B     | 2    | 1190 | 120       |
| 2013-253      | 3212    | 12/15/2013 5:34:54 AM  | 12/15/2013 5:42:07 AM  | 0:07:13  | B     | 2    | 220  | 30        |
| 2013-253      | 1432    | 12/15/2013 5:34:53 AM  | 12/15/2013 5:51:56 AM  | 0:17:03  | B     | 2    | 180  | 300       |
| 2013-255      | 1324    | 12/15/2013 5:47:21 AM  | 12/15/2013 5:49:18 AM  | 0:01:57  | C     | 2    | 440  | 0         |
| 2013-256      | 1324    | 12/15/2013 6:06:50 AM  | 12/15/2013 6:09:42 AM  | 0:02:52  | C     | 2    | 440  | 0         |
| 2013-260      | 1324    | 12/15/2013 1:38:26 PM  | 12/15/2013 2:16:01 PM  | 0:37:35  | A     | 2    | 440  | 0         |
| 2013-260      | 1323    | 12/15/2013 1:37:14 PM  | 12/15/2013 2:19:13 PM  | 0:41:59  | A     | 2    | 1160 | 1385      |
| 2013-260      | 1325    | 12/15/2013 1:30:27 PM  | 12/15/2013 2:17:49 PM  | 0:47:22  | A     | 2    | 340  | 200       |
| 2013-260      | 1322    | 12/15/2013 1:30:27 PM  | 12/15/2013 2:18:34 PM  | 0:48:07  | A     | 2    | 470  | 700       |
| 2013-260      | 1232    | 12/15/2013 1:30:24 PM  | 12/15/2013 2:20:23 PM  | 0:49:59  | A     | 2    | 260  | 10        |
| 2013-260      | 1231    | 12/15/2013 1:30:24 PM  | 12/15/2013 2:20:54 PM  | 0:50:30  | A     | 2    | 400  | 0         |
| 2013-260      | 1233    | 12/15/2013 1:30:24 PM  | 12/15/2013 2:19:49 PM  | 0:49:25  | A     | 2    | 630  | 30        |
| 2013-260      | 1432    | 12/15/2013 6:48:37 AM  | 12/15/2013 10:08:53 AM | 3:20:16  | C     | 2    | 240  | 300       |
| 2013-261      | 5002    | 12/15/2013 6:55:20 AM  | 12/15/2013 8:18:47 AM  | 1:23:27  | C     | 2    | 1820 | 1980      |
| 2013-263      | 5002    | 12/17/2013 10:29:25 AM | 12/17/2013 6:00:00 PM  | 7:30:35  | C     | 5    | 240  | 79        |
| 2013-264      | 4122    | 12/15/2013 10:29:13 AM | 12/15/2013 10:49:06 AM | 0:19:53  | C     | 2    | 1740 | 1972      |
| 2013-264      | 4122    | 12/15/2013 10:23:43 AM | 12/15/2013 10:29:13 AM | 0:05:30  | C     | 2    | 1740 | 1972      |
| 2013-264      | 4122    | 12/15/2013 8:59:49 AM  | 12/15/2013 10:10:32 AM | 1:10:43  | C     | 2    | 1740 | 1972      |
| 2013-264      | 4122    | 12/15/2013 7:14:08 AM  | 12/15/2013 8:59:37 AM  | 1:45:29  | C     | 2    | 1740 | 1972      |
| 2013-264      | 4122    | 12/15/2013 7:03:55 AM  | 12/15/2013 7:11:46 AM  | 0:07:51  | C     | 2    | 1740 | 1972      |
| 2013-264      | 4121    | 12/15/2013 7:01:38 AM  | 12/15/2013 8:58:12 AM  | 1:56:34  | C     | 2    | 520  | 430       |
| 2013-268      | 1325    | 12/15/2013 7:42:31 AM  | 12/15/2013 8:28:27 AM  | 0:45:56  | C     | 2    | 460  | 200       |
| 2013-272      | 3414    | 12/15/2013 1:37:21 PM  | 12/15/2013 1:46:43 PM  | 0:09:22  | C     | 2    | 1760 | 859       |
| 2013-273      | 2311    | 12/27/2013 6:00:00 PM  | 12/27/2013 6:53:00 PM  | 0:53:00  | C     | 3    | 66   | 22        |
| 2013-273      | 2311    | 12/27/2013 3:08:00 PM  | 12/27/2013 5:59:00 PM  | 2:51:00  | C     | 3    | 90   | 30        |