Golden State
Water Company
A Subsidiary of American States Water Company

July 15, 2016

Mr. Edward Randolph
Director, Energy Division
California Public Utilities Commission
505 Van Ness Ave.
San Francisco, CA 94102

Re: 2015 Annual Electric Distribution Reliability Report, D. 16-01-008

Dear Mr. Randolph:

Pursuant to the California Public Utilities Commission ("Commission") Decision ("D.") 16-01-008, "Updating the Annual Electric Reliability Reporting Requirements for California Electric Utilities," Bear Valley Electric Service (BVES) submits herewith its 2015 Annual Electric Distribution Reliability Report (Report).

BVES provides electric service to approximately 24,000 customers in the mountain resort community of Big Bear Lake, California. BVES owns and operates 34.25 miles of overhead 34.5 kilovolt sub-transmission miles, 1.4 miles of 34.5 kilovolt underground sub-transmission miles, 92 miles of overhead distribution circuit miles, 7.25 miles of underground distribution circuit miles, 13 sub-stations and a natural gas-fueled 8.4 MW peaking generation facility. The BVES service area is rural and mountainous and is served predominantly from overhead facilities.

This Report follows the Reliability Reporting Template provided in Appendix B to D.16-01-008. BVES notes that due to the small size and geography its service territory, BVES does not sub-divide its distribution system and/or service territory into Divisions (or Districts); therefore Division (or District) reliability indices are not reported separately. BVES records reliability indices at the System and Circuit level only. BVES does not operate and maintain any transmission systems; therefore, transmission system indices are not included in this Report. The BVES distribution system consists of three (3) sub-transmission circuits (34.5 kV) and twenty-three (23) distribution circuits (4.160 kV). These circuits are all included in the System reliability indices calculations.

This Report is BVES' first annual reliability report to be submitted to the Commission. Prior to the issuance of D.16-01-008, certain reliability requirements had never been implemented, imposed or required for BVES. Specifically, D.95-09-073 did not name BVES as a respondent, which meant that the requirements of D.96-09-045 never applied to BVES. Therefore, while BVES is subject to GO 165 and GO 166, the reliability reporting requirements established in D.96-09-045 have never been implemented or required for BVES until they were required by

D.16-01-008. Because certain reporting requirements were not previously required for BVES, BVES has made its best effort to generate outage data for the past ten (10) years from 2006 to 2015 to include in this Report. In addition, BVES made its best effort to generate outage data from the years 2001 to 2005 so that Major Event Day calculations in accordance with Institute of Electrical and Electronic Engineers (IEEE) Standard 1366 were possible.

Because the requirements of D.96-09-045 did not previously apply, BVES has not installed equipment to accurately measure outages at the circuit level. Also, BVES does not operate an Advanced Metering Infrastructure (AMI) system but instead operates an Automatic Meter Reading (AMR) system. Therefore, BVES uses a manual process to gather data for SAIDI, SAIFI, MAIFI and CAIDI reporting. Specifically, outage duration times are mostly recorded based on the time a customer calls in to report an outage and when the service crews record the restoration of services. It is very possible that many short and momentary outages in isolated areas are not detected and, therefore, not recorded. This significantly reduces the accuracy of the reliability indices.

Pursuant to D.16-01-008, information on the number, date, and location of planned outages is provided under seal in a separate report to the Directors of the Energy Division and the Safety and Enforcement Division.

Sincerely,

Nguyen Quan
Manager Regulatory Affairs
Bear Valley Electric Service
A division of Golden State Water Company
630 East Foothill Blvd.
San Dimas, CA 91773

c. Timothy J. Sullivan, Executive Director
Gabriel Petlin, Energy Division
David K Lee, Energy Division

Please note: Section 3 of the attached report is being submitted under seal, pursuant to Public Utilities Code Section 583, which states,

No information furnished to the commission by a public utility, or any business which is a subsidiary or affiliate of a public utility, or a corporation which holds a controlling interest in a public utility, except those matters specifically required to be open to public inspection by this part, shall be open to public inspection or made public except on order of the commission, or by the commission or a commissioner in the course of a hearing or proceeding. Any present or former officer or employee of the commission who divulges any such information is guilty of a misdemeanor.

Bear Valley Electric Service (BVES)
2015 Annual Electric Reliability Report

(D.16-01-008, Updating the Annual Electric Reliability Reporting Requirements for California Electric Utilities)

July 15, 2016

TABLE OF CONTENTS

Sections correspond to Reliability Reporting Template provided in Appendix B to D.16-01-008.

GENERAL

Bear Valley Electric Service (BVES) submits its 2015 Reliability Report in compliance with the Commission D.16-01-008, "Updating the Annual Electric Reliability Reporting Requirements for California Electric Utilities." Reliability indices reported herein are determined by following the methodology provided by the Institute of Electrical and Electronic Engineers (IEEE) Standard 1366-2012.

The report consists of the following sections:

Section	Description
1	System Indices (2006-2015)
2	Division (or District) Reliability Indices (2006-2015)
3	System Indices Including Planned Outages
4	Service Territory Map
5	Top 1% of Worst Performing Circuits (WPC)
6	Top 10 Major Unplanned Power Outage Events (2015)
7	Summary List of Major Event Day (2015)
8	Historical Ten Largest Unplanned Outage Events (2006-2015)
9	Customer Inquiries

BVES does not operate and maintain any transmission systems; therefore, transmission system indices are not included in this report. The BVES distribution system consists of three (3) sub-transmission circuits (34.5 kV) and twenty-three (23) distribution circuits (4.160 kV). These circuits are all included in the System reliability indices calculations.

Due to the small size and geography of the BVES Service Territory, BVES does not sub-divide its distribution system into Divisions (or Districts); therefore Division (or District) reliability indices are not reported separately. BVES records reliability indices at the System and Circuit level only.

BVES notes that prior to the issuance of D.16-01-008, certain reliability requirements have never been implemented, imposed or required for BVES. Specifically, Decision ("D.") 95-09-073 did not name BVES as a respondent, which meant that the requirements of D.96-09-045 never applied to BVES. Therefore, while BVES is subject to GO 165 as well as GO 166, the reliability reporting requirements established in D.96-09-045 have never been implemented or required for BVES until they were required by D.16-01-008. Because certain reporting requirements were not previously required for BVES, BVES has made its best effort to generate outage data for the past ten (10) years (2006 to 2015) to include in this report. Additionally, BVES made its best effort to generate outage data from the years 2001 to 2005 so that Major Event Day calculations in accordance with IEEE 1366 standard were possible.

Because the requirements of D.96-09-045 did not previously apply, BVES has not installed equipment to accurately measure outages at the circuit level. Also, BVES does not operate an

Advanced Metering Infrastructure (AMI) system but instead operates an Automatic Meter Reading (AMR) system. Therefore, BVES uses a manual process to gather data for SAIDI, SAIFI, MAIFI and CAIDI reporting. Specifically, outage duration times are mostly recorded based the time a customer calls in to report an outage and when the service crews record the restoration of services. It is very possible that many short and momentary outages in isolated areas are not detected and; therefore, not recorded. This significantly reduces the accuracy of the reliability indices.

SECTION 1

System Indices (2006-2015)[1]

Table 1 lists Distribution System Indices (MED Excluded): BVES includes in its distribution system sub-transmission circuits (3) that operate at 34.5 kV and distribution circuits (23) that operate at 4.160 kV.

Table 1: MED Excluded

Year	SAIDI (Minutes)	SAIFI	MAIFI	CAIDI (Minutes)
2006	29.9	0.2	3.7	156.3
2007	39.1	1.2	1.6	31.6
2008	40.4	1.2	0.5	32.5
2009	13.8	0.1	1.5	150.6
2010	47.6	0.6	1.1	81.4
2011	23.9	0.3	2.1	78.7
2012	29.8	0.2	1.0	182.2
2013	63.1	1.6	0.4	38.7
2014	47.6	1.3	0.0	36.1
2015	48.4	0.8	0.3	61.2

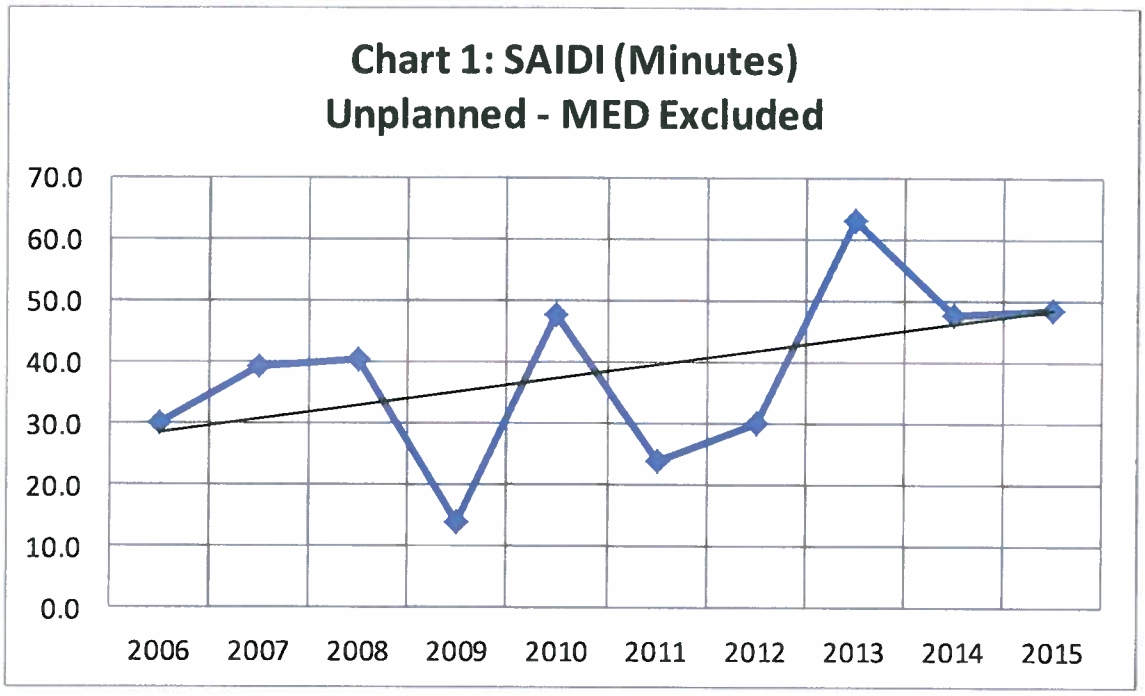
Table 2 lists Distribution System Indices (MED Included).

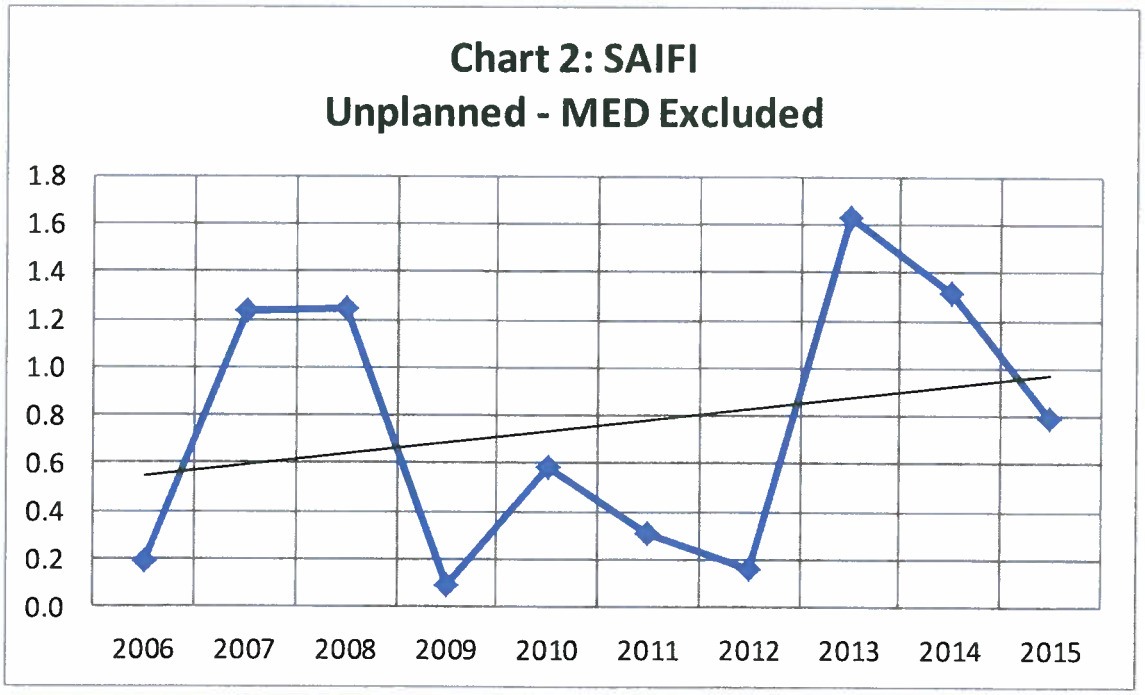
Table 2: MED Included

Year	SAIDI (Minutes)	SAIFI	MAIFI	CAIDI (Minutes)
2006	305.8	1.0	3.7	308.6
2007	74.4	1.6	1.6	47.8
2008	332.1	3.0	0.5	111.3
2009	13.8	0.1	1.5	150.6
2010	118.6	0.6	1.1	194.4
2011	190.0	1.5	2.1	126.3
2012	29.8	0.2	1.0	182.2
2013	95.2	2.1	0.4	46.3
2014	71.6	2.1	0.0	33.8
2015	198.2	2.8	0.3	71.6

[1] Calculations based on the IEEE 1366-2012 method.

Charts 1 through 4 provide line graphs of SAIDI, SAIFI, MAIFI and CAIDI for the past 10 years with linear trend line (MED Excluded).





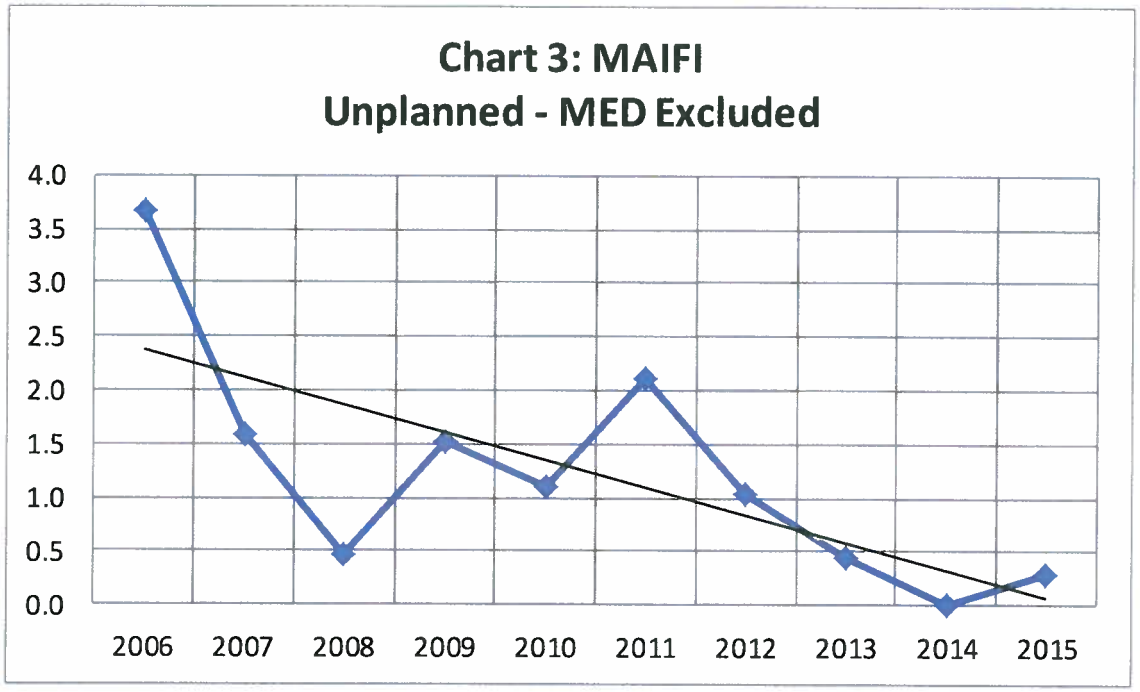


Chart 3: MAIFI
Unplanned - MED Excluded
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

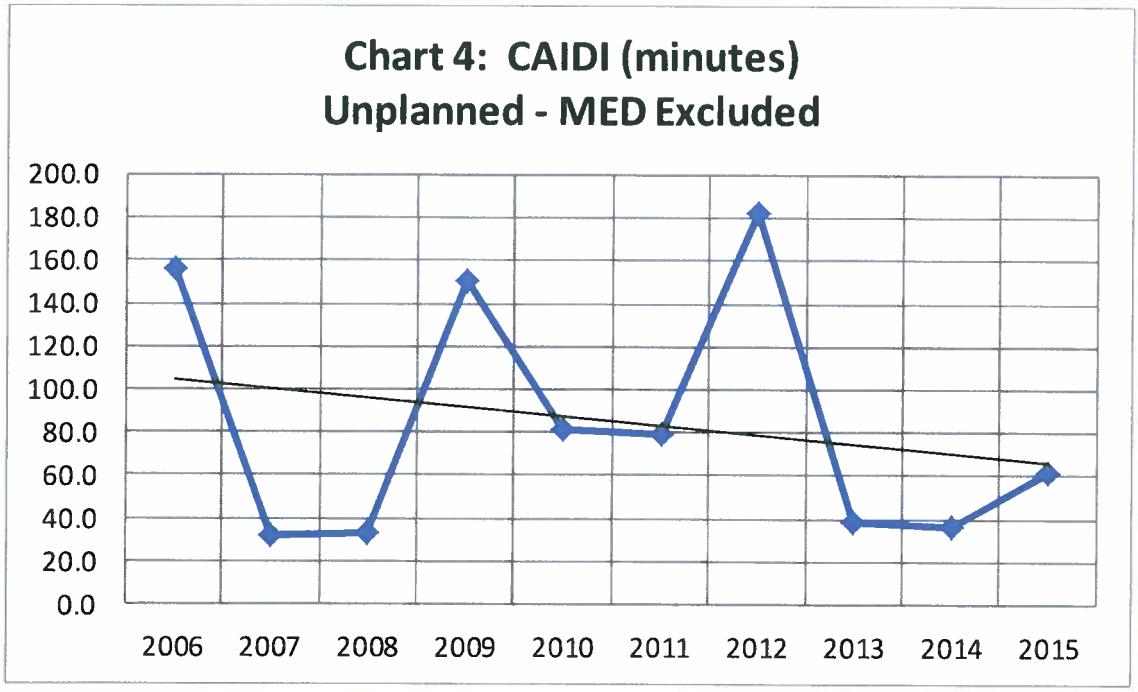
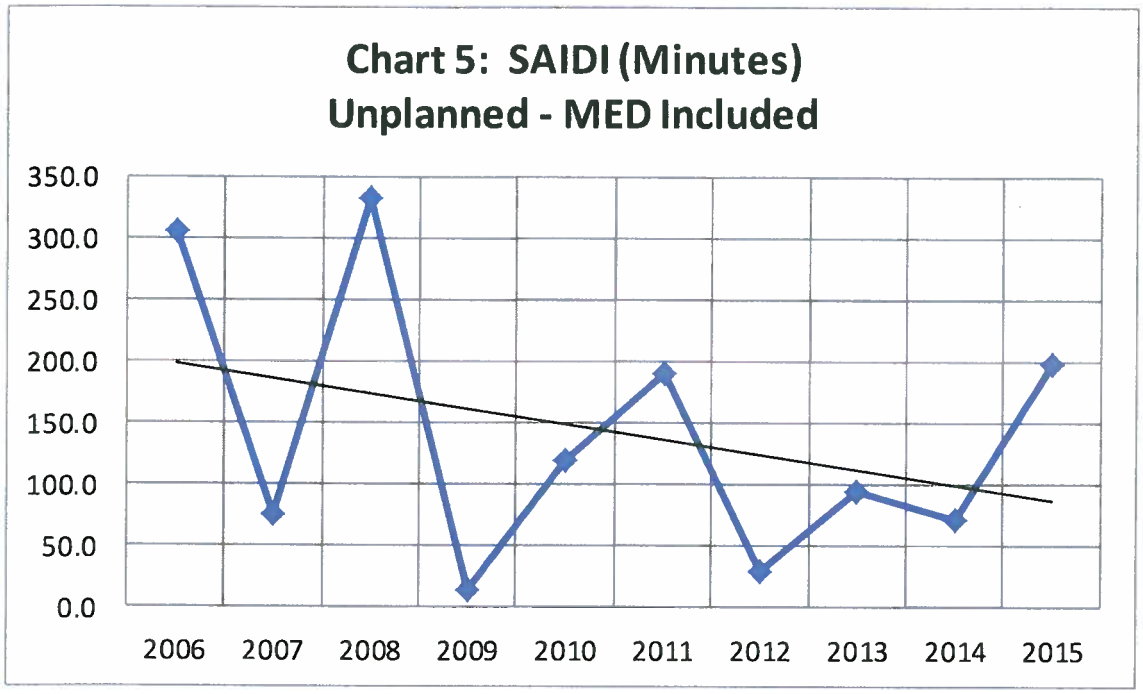
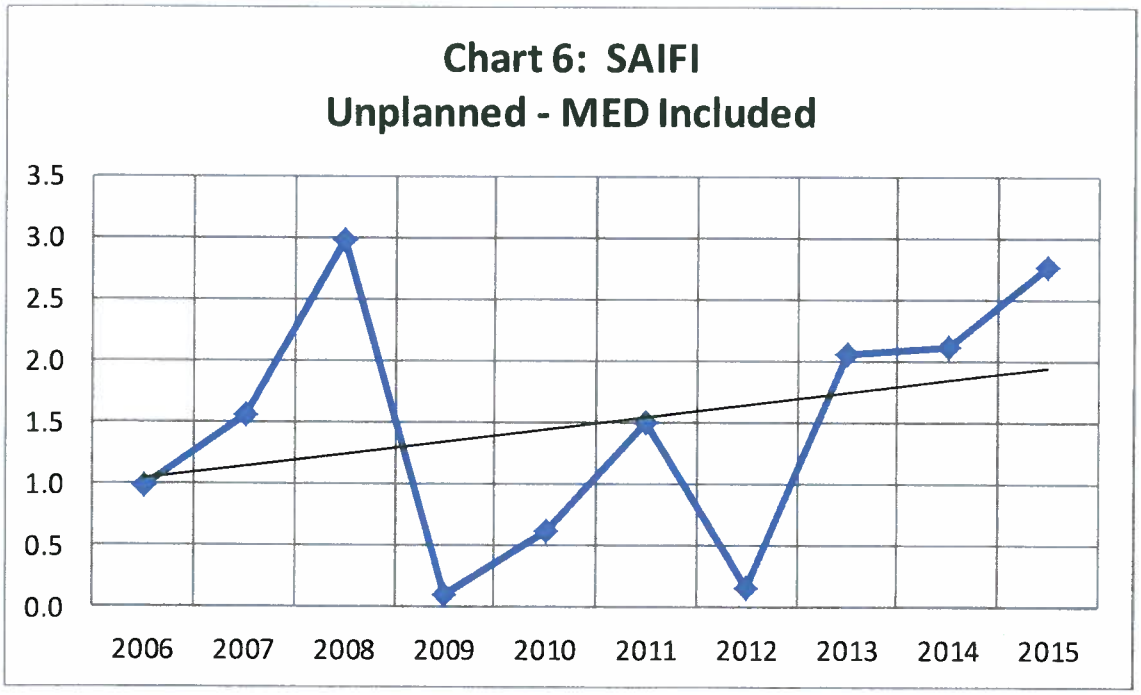


Chart 4: CAIDI (minutes)
Unplanned - MED Excluded
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Charts 5 through 8 provide line graphs of SAIDI, SAIFI, MAIFI and CAIDI for the past 10 years with linear trend line (MED Included).





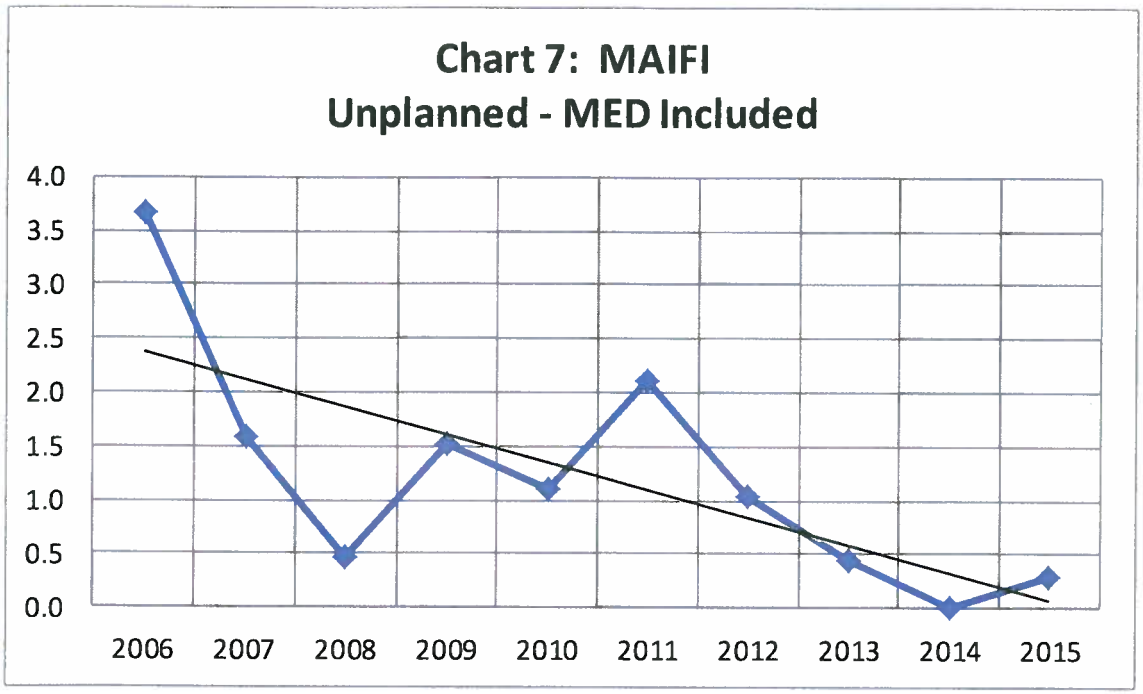


Chart 7: MAIFI
Unplanned - MED Included
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

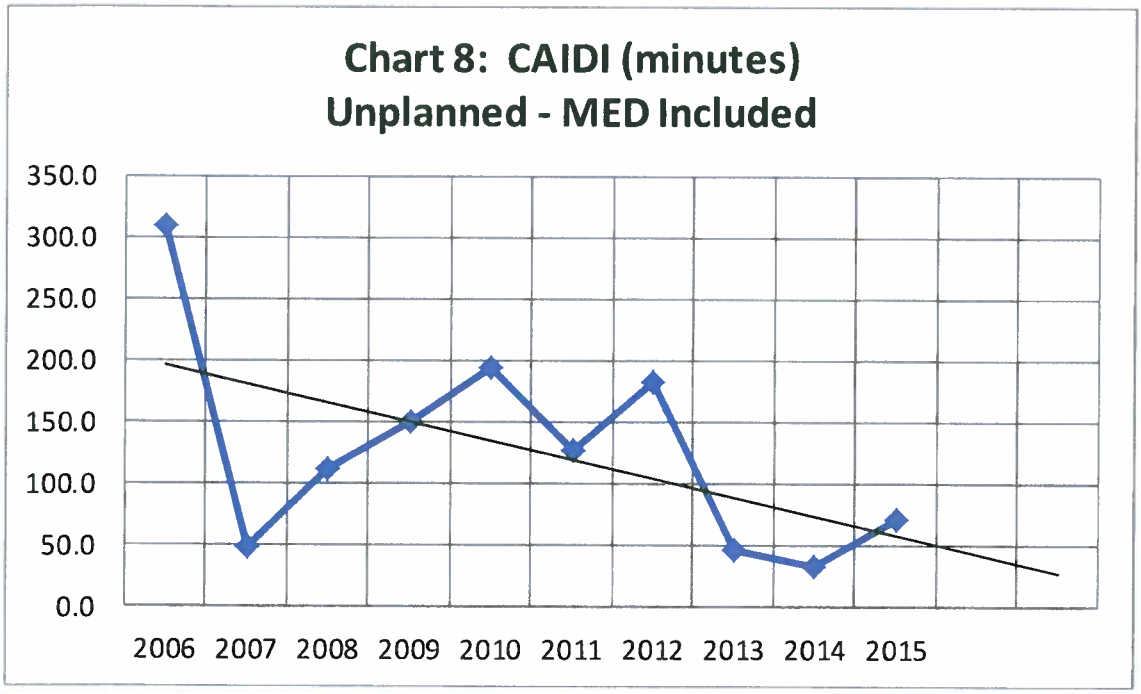


Chart 8: CAIDI (minutes)
Unplanned - MED Included
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

SECTION 2

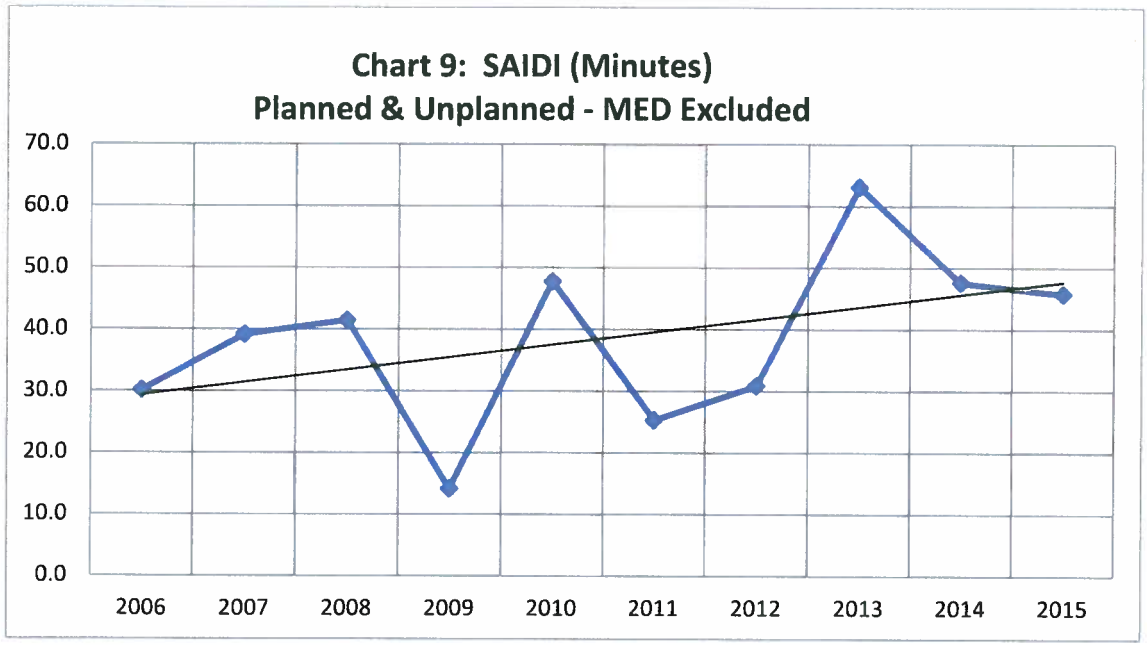
Division (or District) Reliability Indices (2006-2015)

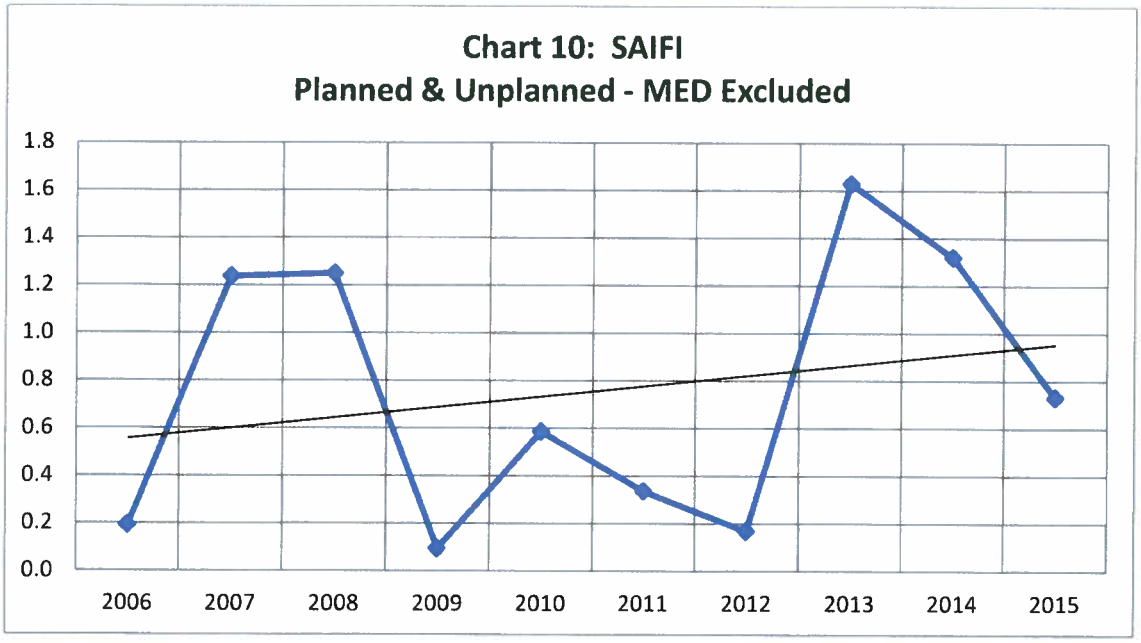
Due to the relatively small size and geography of the BVES Service Territory, BVES does not sub-divide its system into Divisions (or Districts); therefore Division (or District) Reliability Indices are not reported separately in this report. Section 1 of this report provides BVES System reliability indices in tabular and chart format (MED Included and Excluded).

SECTION 3

System Indices Including Planned Outages

Charts 9 through 12 provide line graphs of SAIDI, SAIFI, MAIFI and CAIDI for the past 10 years with linear trend line for planned and unplanned outages (MED Excluded).





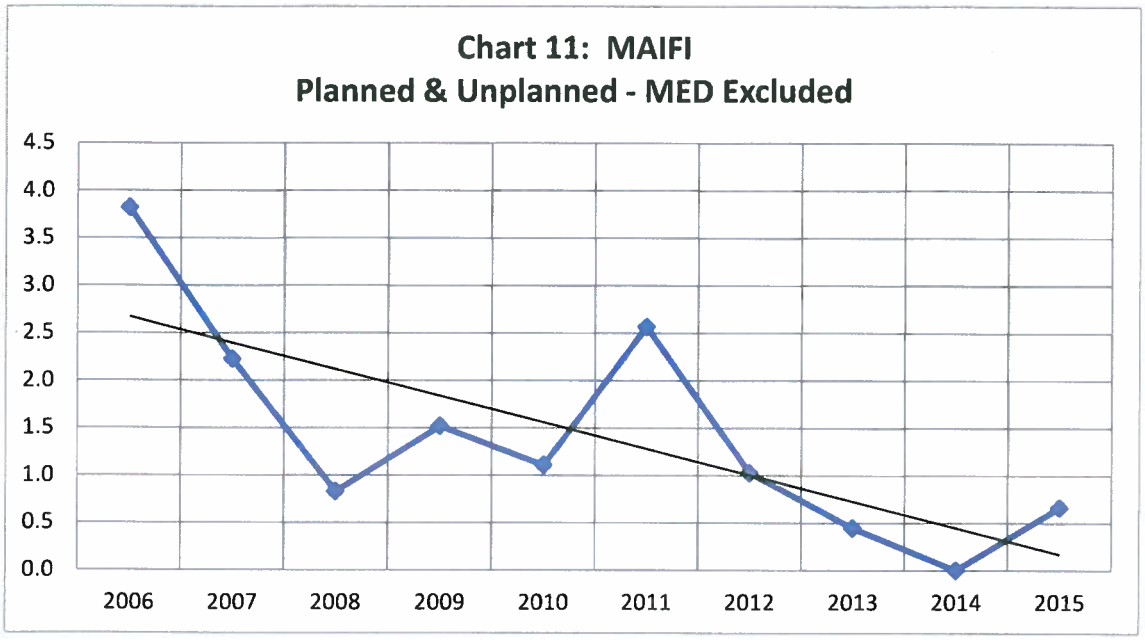


Chart 11: MAIFI
Planned & Unplanned - MED Excluded
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

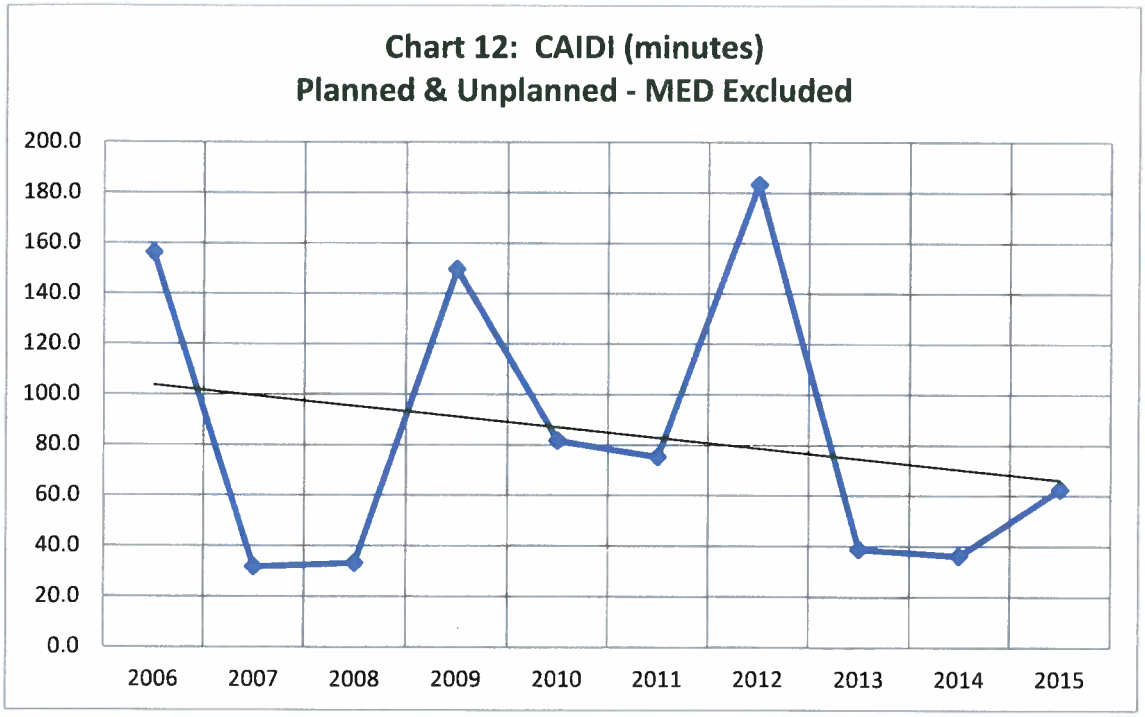
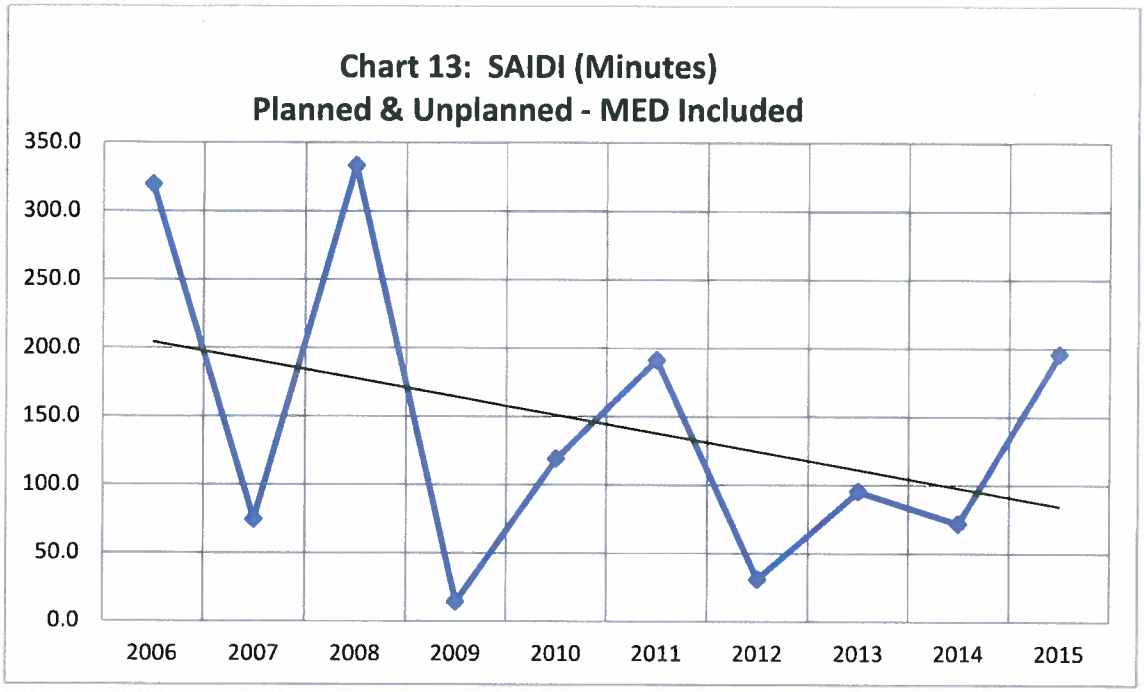
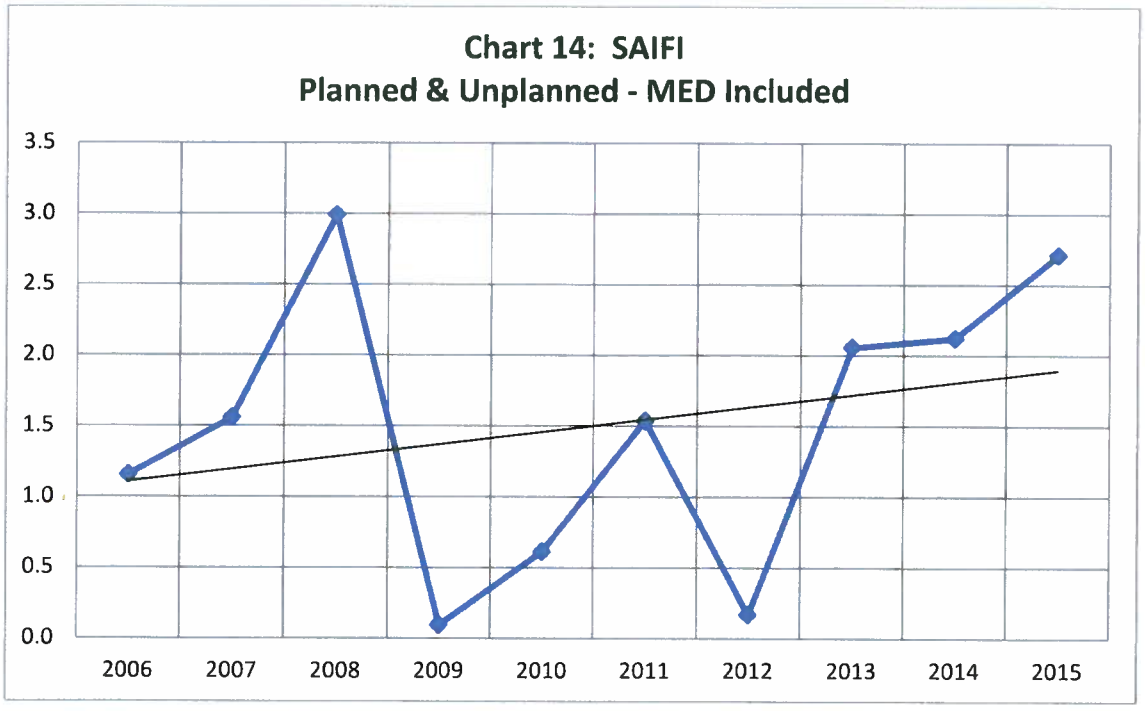


Chart 12: CAIDI (minutes)
Planned & Unplanned - MED Excluded
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Charts 13 through 16 provide line graphs of SAIDI, SAIFI, MAIFI and CAIDI for the past 10 years with linear trend line for planned and unplanned outages (MED Included).





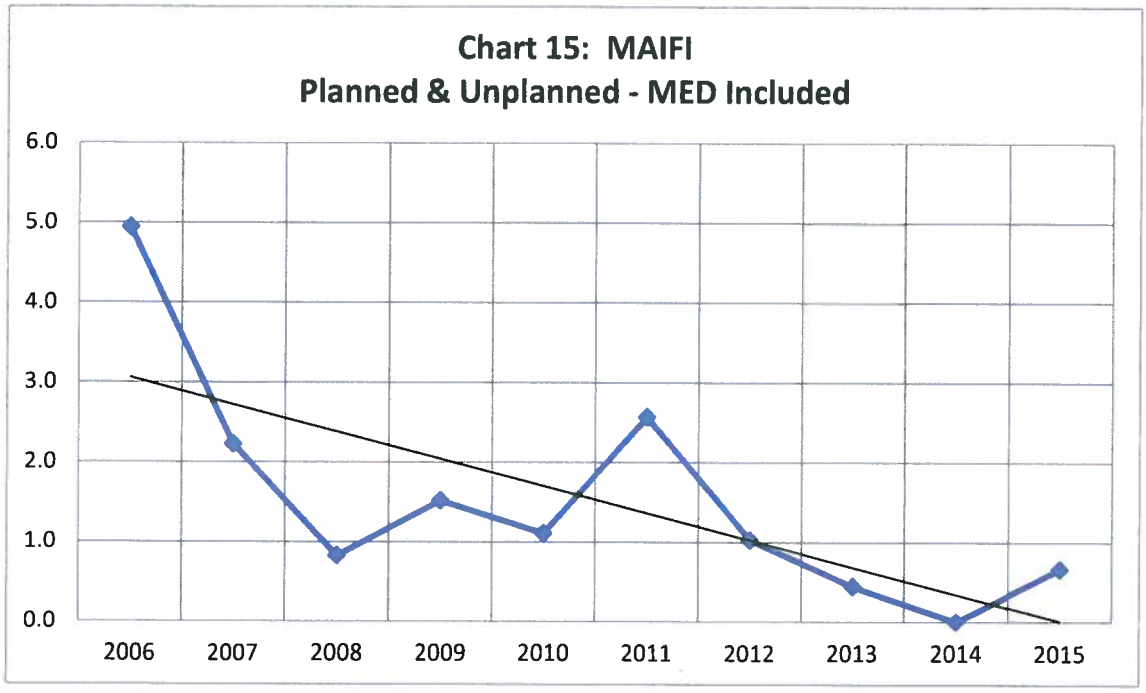


Chart 15: MAIFI
Planned & Unplanned - MED Included
6.0
5.0
4.0
3.0
2.0
1.0
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

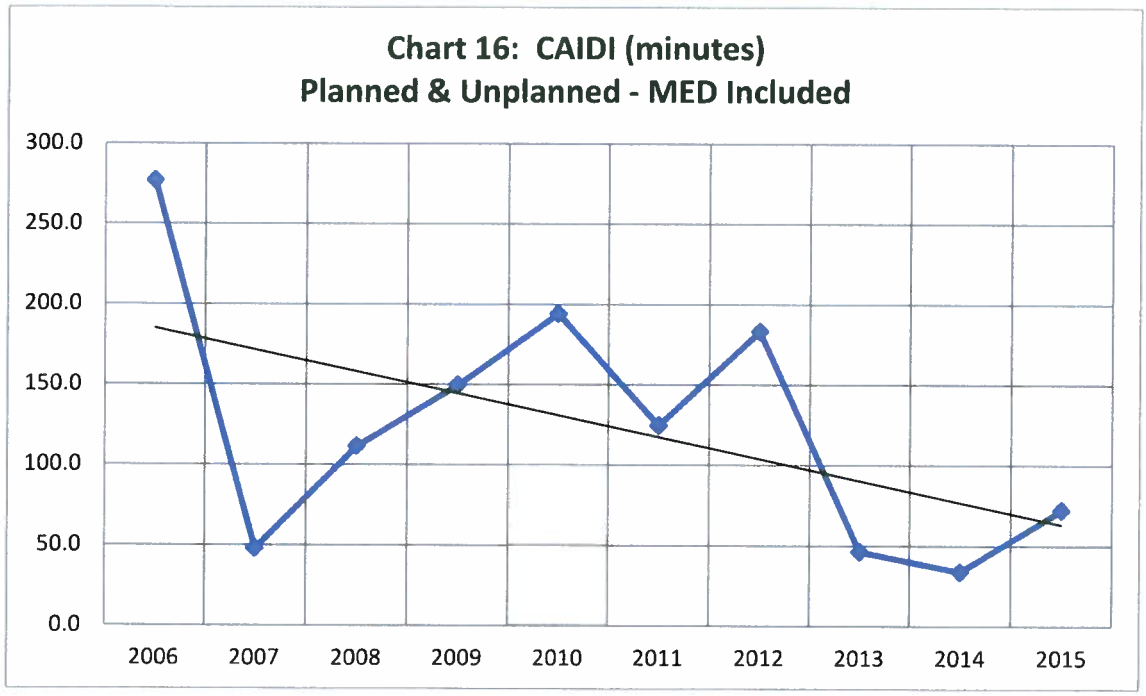


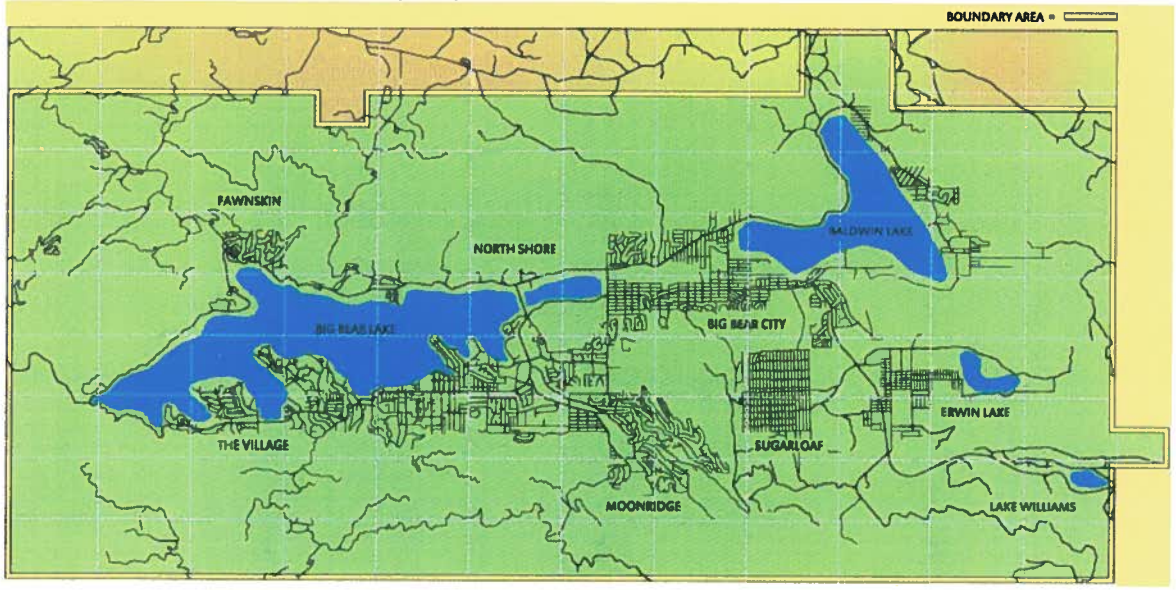
Chart 16: CAIDI (minutes)
Planned & Unplanned - MED Included
300.0
250.0
200.0
150.0
100.0
50.0
0.0
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

SECTION 4

Service Territory Map

BVES provides electric service to approximately 24,000 customers in the mountain resort community of Big Bear, California. BVES owns and operates 34.25 miles of overhead 34.5 kilovolt sub-transmission miles, 1.4 miles of 34.5 kilovolt underground sub-transmission miles, 92 miles of overhead distribution circuit miles, 7.25 miles of underground distribution circuit miles, 13 sub-stations and a natural gas-fueled 8.4 MW peaking generation facility. The BVES service area is rural and mountainous and is located in the San Bernardino Mountains of Southern California, 80 miles east of Los Angeles. The BVES Main Office is located at 42020 Garstin Dr., Big Bear Lake, CA 92315.

Below is the BVES Service Territory Map:



SECTION 5

Top 1% of Worst Performing Circuits (WPC)

Table 3 lists the Top 1% of WPCs, which for BVES is 1 circuit.

Table 3: Top 1% of Worst Performing Circuits (WPC)

Reporting Year	Circuit	Customer Count	Substation	Circuit-miles	% UG	% OH	Number of Mainline Outages		Prefered Metric	Other Metrics		
							Sustained	Momentary	SAIDI-3YR Period	SAIDI 1YR Period	SAIFI-3YR Period	SAIFI-1YR Period
2015	Garstin	1000	Meadow	3.42	30	70	3	22	578.2	220.5	4.912	2.902

There were no circuits on the list of WPC this year (2015) that appeared on the list of WPC for the previous year (2014).

The Garstin Circuit (4.160 kV) made the WPC list due to it having the highest 3-year SAIDI, which is the preferred metric for evaluating circuit reliability. There were three large outages that contributed almost equally to the Garstin Circuit's high 3-year SAIDI and they were: a major car-hit-pole event, an oak tree falling on the lines, and the Garstin Circuit OCB tripping upon restoration of 34 kV supply to the substation supporting the Garstin Circuit. To improve Garstin Circuit reliability BVES is ensuring vegetation is outside minimum clearance zones and poles are equipped with vis-strips. The Garstin Circuit OCB is included in capital improvement project to remotely monitor and control it through the Supervisory and Control Data Acquisition (SCADA) System. This capital work is scheduled for 2018.

The Preferred Metric for evaluating WPC is to evaluate the circuit SAIDI over a 3 year period (SAIDI-3YR Period), which is reported in Table 3. This method involves the summation of sustained outages (>5 minutes) over the previous 3 years divided by the customer count on the circuit for that period. BVES also evaluates circuit SAIFI calculated over a 3 year period SAIFI-3YR as well as circuit SAIDI and SAIFI calculated over a 1 year period. These values are also reported in Table 3.

WPC Process Evaluation

BVES' WPC program uses a top-down, system-wide approach to assess reliability trends and requirements of its 26 circuits. This approach employs a long-term and short-term analysis process. The WPCs are determined based upon at least the past three years of average duration of outages and average frequency of outages reliability statistics. BVES reviews these reliability performance metrics (SAIDI, SAIFI, MAIFI, and CAIDI) for each circuit using the following quantitative and qualitative analysis process:

- Reliability performance metrics for each circuit are calculated over a 3 year period (e.g., metrics reported for 2015 include outage data from 2013-2015, metrics reported for 2014 include outage data from 2012-2014, etc.). Four basic comparisons are then made with the results and the top 3 WPCs are selected:
    - The circuit reliability metrics based on a 3 year period are compared to the 10-year reliability metrics based on 3 year period averages for each circuit.

- The circuit reliability metrics based on a 3 year period are compared to the service area reliability metrics for the reported year.
- The circuit reliability metrics based on a 3 year period are compared to reliability metrics for the other circuits in the reported year.
- Trends for each circuit are analyzed looking at the last 10 years of circuit reliability metrics based on a 3 year period.

- Reliability performance metrics for each circuit are calculated over a 1 year period. Four basic comparisons are then made with the results and the top 3 WPCs are selected:

  - The circuit reliability metrics based on a 1 year period are compared to the 10-year reliability metrics based on 1 year period averages for each circuit.
  - The circuit reliability metrics based on a 1 year period are compared to the service area reliability metrics for the reported year.
  - The circuit reliability metrics based on a 1 year period are compared to reliability metrics for the other circuits in the reported year.
  - Trends for each circuit are analyzed looking at the last 10 years of circuit reliability metrics based on a 1 year period.

- The results are then reviewed and a detailed analysis is performed for each circuit to determine the driver(s) of the results. The results using the 3-year periods are given more weight but the results using the 1-year period are also checked to determine if there is an emerging reliability issue that may be addressed sooner than waiting 3 years for the data to collect. Based on this analysis, the WPC for the reported year is selected.
- BVES management also reviews the outage log monthly so that any emergent issues at the circuit level may be detected and more urgent action taken if warranted.

Once a WPC is designated for the reporting year, the BVES Planning Group reviews the mitigation projects and/or maintenance actions necessary to bring the WPC's reliability performance to at least the 10-year system average and determines the cost of mitigation measures. Further analysis is performed to take into consideration impact on rates and budgets (capital and operations and maintenance (O&M)), the number of customers affected, the benefit to the affected customers, the benefit to the customer base, and the safety and reliability risks and consequences of not taking any action. This process takes about a year and generally work orders are developed to be executed in the following year. Hence, for a WPC identified in 2015, it might take BVES until 2017 to execute the improvement project. It should be noted that reliability projects that require substantial investment such as substation reconstruction may require more time to garner California Public Utilities Commission (CPUC) approval through the General Rate Case (GRC) process or Advice Letter process depending on when the project must be executed.

The BVES service area is rural and mountainous and is served predominantly from overhead facilities. Therefore, circuit hardening projects, projects to install monitoring instrumentation, and projects to install automatic circuit sectionalizing equipment generally will produce increased in reliability.

Despite the top-down approach, BVES is also sensitive to its customer service requirements. Thus, BVES maintains the flexibility to take action on recurring customer reliability issues. BVES frequently reviews the outage logs and looks for repeated outages to an individual customer or small groups of customers. Such occurrences are then referred to the BVES Planning Group to determine if and what mitigation action is necessary.

Currently, BVES uses a manual process to gather data for SAIDI, SAIFI and MAIFI reporting. Hence, the accuracy of reliability performance metrics is significantly reduced. Specifically, outage duration times are mostly recorded based on the time a customer calls in to report an outage and when the service crews record the restoration of services. It is very possible that many short and momentary outages in isolated areas are not detected and, therefore, not recorded. This significantly reduces the accuracy of the reliability indices. BVES plans to install equipment to provide recorded data of circuit level performance metrics.

SECTION 6

Top 10 Major Unplanned Power Outage Events (2015)

Table 4 lists the Top 10 major unplanned power outage events within the reporting year (2015) including (a) the cause of each outage event; and (b) the location of each outage event.

Table 4: Top 10 Major Unplanned Power Outages (2015)

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
6/12/2015	Baldwin	Baldwin connected load - exact location unknown. Big Bear Lake, CA	9,678	182	1,761,396	74.2	Weather: Lightning storm moving through the service area.
6/12/2015	Shay	Shay connected load - exact location unknown. Big Bear Lake, CA	13,311	81	1,078,191	45.4	Weather: Lightning storm moving through the service area
6/13/2015	Shay & Baldwin	System-wide connected load - - exact location unknown. Big Bear Lake, CA	22,989	29	666,681	28.1	Weather: Lightning storm moving through the service area.
10/13/2015	Baldwin	929 Michael Ave., Big Bear City, CA 92314	6,533	49	320,117	13.5	Vegetation: Large tree limb fell onto 33KV and then contacted 4kV.
10/13/2015	Garstin	929 Michael Ave., Big Bear City, CA 92314	2,900	76	220,400	9.3	Vegetation: Garstin tripped when Baldwin tripped due to large tree limb falling onto 33KV and then contacted 4kV.
4/7/2015	Boulder	SCE's Bear Valley 33kV supply line (Radford Line)	2,000	80	160,000	6.7	Weather: SCE experienced an outage on the Bear Valley 33kV supply line (Radford Line) due to high winds.
4/7/2015	Lagonita	SCE's Bear Valley 33kV supply line (Radford Line)	1,400	80	112,000	4.7	Weather: SCE experienced an outage on the Bear Valley 33kV supply line (Radford Line) due to high winds.
10/13/2015	Bear City	929 Michael Ave., Big Bear City, CA 92314	1,320	76	100,320	4.2	Vegetation: Bear City tripped when Baldwin tripped due to large tree limb falling onto 33KV and then contacted 4kV.
10/13/2015	Division	929 Michael Ave., Big Bear City, CA 92314	825	90	74,250	3.1	Vegetation: Division tripped when Baldwin tripped due to large tree limb falling onto 33KV and then contacted 4kV.
6/12/2015	Erwin	Maltby Substation, S/E Corner of Maltby Blvd. and Shore Dr., Big Bear City, CA 92314	1,000	53	53,000	2.2	Weather: Lightning storm moving through the service area.
12/31/2015	Goldmine	Intersection of Wolf Rd. and Alameda Rd., Big Bear Lake, CA 92315	150	228	34,200	1.4	Equipment Failure: Overloaded line segment.

SECTION 7

Summary List of Major Event Days (2015)

Table 5 provides a summary list of Major Event Days (MED per IEEE 1366) and includes (a) the average number of customers without service for each MED; (b) the cause of each ME (Major Event); and (c) the location of each ME.

Table 5: Summary List of Major Event Days (MED) (2015)

Date	Affected Circuit	Location	Average Number of Customers	Event SAIDI	Cause
6/12/2015 -	Shay/Baldwin	System-wide - exact location unkown, Big Bear, CA 92314	9678	149.9	**Weather:** Lightning storm moving through the service area.

The Reliability Reporting Template provided in Appendix B to D.16-01-008 requests the number of customers without service at periodic intervals be reported for each MED. BVES does not have the equipment or the resources to record periodic (normally hourly) event data. BVES anticipates having this capability installed over the next 2 years. BVES has identified the equipment and systems required to establish this capability and identified the costs involved. BVES is now pursuing the capital funding to for this reliability reporting project. BVES anticipates starting the project in September 2016 and completing it by September 2018.

SECTION 8

Historical Ten Largest Unplanned Outage Events (2006-2015)

Table 6 provides a summary list of the historical ten largest unplanned outage events for each of the past 10 years (2006-2015).

Table 6: Top 10 Major Unplanned Power Outages Last 10 Years (2006 - 2015)

2015

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
6/12/2015	Baldwin	Baldwin connected load - exact location unknown. Big Bear Lake, CA	9,678	182	1,761,396	74.2	Weather: lightning storm moving through the service area.
6/12/2015	Shay	Shay connected load - exact location unknown. Big Bear Lake, CA	13,311	81	1,078,191	45.4	Weather: Lightning storm moving through the service area.
6/13/2015	Shay & Baldwin	System-wide connected load - - exact location unknown. Big Bear Lake, CA	22,989	29	666,681	28.1	Weather: Lightning storm moving through the service area.
10/13/2015	Baldwin	929 Michael Ave., Big Bear City, CA 92314	6,533	49	320,117	13.5	Vegetation: Large tree limb fell onto 33KV and then contacted 4kV.
10/13/2015	Garstin	929 Michael Ave., Big Bear City, CA 92314	2,900	76	220,400	9.3	Vegetation: Garstin tripped when Baldwin tripped due to large tree limb falling onto 33KV and then contacted 4kV.
4/7/2015	Boulder	SCE's Bear Valley 33kV supply line (Radford Line)	2,000	80	160,000	6.7	Weather: SCE experienced an outage on the Bear Valley 33kV supply line (Radford Line) due to high winds.
4/7/2015	Lagonita	SCE's Bear Valley 33kV supply line (Radford Line)	1,400	80	112,000	4.7	Weather: SCE experienced an outage on the Bear Valley 33kV supply line (Radford Line) due to high winds.
10/13/2015	Bear City	929 Michael Ave., Big Bear City, CA 92314	1,320	76	100,320	4.2	Vegetation: Bear City tripped when Baldwin tripped due to large tree limb falling onto 33KV and then contacted 4kV.
10/13/2015	Division	929 Michael Ave., Big Bear City, CA 92314	825	90	74,250	3.1	Vegetation: Division tripped when Baldwin tripped due to large tree limb falling onto 33KV and then contacted 4kV.
6/12/2015	Erwin	Maltby Substation, S/E Corner of Maltby Blvd. and Shore Dr., Big Bear City, CA 92314	1,000	53	53,000	2.2	Weather: Lightning storm moving through the service area.
12/31/2015	Goldmine	Intersection of Wolf Rd. and Alameda Rd., Big Bear Lake, CA 92315	150	228	34,200	1.4	Equipment Failure: Overloaded line segment.

2014

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
7/7/2014	Baldwin	Sandalwood Dr & Business Center Dr, Big Bear Lake, CA	9,500	30	285,000	12.0	Third Pany: Remote controlled airplane flew into 34.5 kV lines.
7/7/2014	Shay	Sandalwood Dr & Business Center Dr, Big Bear Lake, CA	9,500	30	285,000	12.0	Third Party: Remote controlled airplane flew into 34.5 kV lines.
7/27/2014	Sunset	Maple Substation, Big Bear City, CA	1,600	160	256,000	10.8	Weather: Lightning strike caused fault.
10/15/2014	Boulder	Big Bear Blvd & Lark Rd, Big Bear City, CA	2,000	124	248,000	10.4	Vegetation: Tree branch fell across power lines.
6/21/2014	Maple	Maple Substation, Big Bear City, CA	1,500	150	225,000	9.5	Equipment Failure: Problem with OCB Controller.
8/10/2014	Garstin	41734 Comstock Ln, Big Bear Lake, CA	1,000	183	183,000	7.7	Vegetation: Tree fell onto power lines breaking them.
3/3/2014	Shay & Baldwin	SCE Gold Hill Substation	23,500	7	164,500	6.9	Supply: SCE reported capacitor bank failure on SCE side.
6/20/2014	Maple	Maple Substation, Big Bear City, CA	1,500	18	27,000	1.1	Equipment Failure: Problem with OCB Controller. Diagnosed 6/21/2016.
1/1/2014	Eagle	Eureka Dr & Condor Dr, Big Bear Lake, CA	52	118	6,136	0.3	Equipment Failure: Blown fuse.
11/3/2014	Boulder	39077 Bayview Ln, big Bear Lake, CA	22	166	3,652	0.2	Equipment Failure: Blown transformer fuse due to overload.
12/26/2014	Division	206 W. Aeroplane Blvd, big Bear City, CA	23	113	2,599	0.1	Equipment Failure: Transformer bank had blown fuse due to overload.

2013

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
10/9/2013	Shay	Park Ave & Thrush Rd, Big Bear Lake, CA	10,111	75	758,325	32.1	Vegetation: Tree branches fell into 34.5 kV lines.
10/2/2013	Shay	100 W. Sherwood, Big Bear City, CA	10,111	48	485,328	20.5	Third Party: Tree trimming contractors dropped a tree limb across two phases of a 34.5 kV feeder.
2/9/2013	Radford	Village Substation, Big Bear Lake, CA	3,600	109	392,400	16.6	Supply: Unknown problem on SCE side of Radford Line.
4/3/2013	Shay & Baldwin	SCE Goldhill Ute Lines	23,000	15	345,000	14.6	Supply: Unknown problem on SCE side.
5/19/2013	Garstin	Across from 42020 Garstin Dr., Big Bear Lake, CA	1,000	170	170,000	7.2	Third Party: Car-hit-pole (Commercial Truck).
9/8/2013	Division	Division Substation, Big Bear City, CA	500	98	49,000	2.1	Weather: Lightning strike caused fault.
6/8/2013	Boulder	Mill Creek Rd, Big Bear Lake, Ca	100	280	28,000	1.2	Vegetation: Rotted tree fell and knocked another tree over onto power lines causing blown fuse.
9/8/2013	Division	42236 Eagle Ridge Dr, big Bear City, CA	15	324	4,860	0.2	Third Party: Car hit UG transformer on pad.
7/21/2013	Garstin	Comstock Ln & St. Montz Dr, Big Bear Lake, CA	10	465	4,650	0.2	Weather: Lightning strike caused fault.
9/7/2013	Country Club	504 W Aeroplane Blvd, Big Bear Lake, CA	17	113	1,921	0.1	Weather: Lightning strike caused fault.
1/24/2013	Bear City	Unknown	1,320	1	1,320	0.1	Vegetation: Phase-to-ground fault. Exact location unknown but strongly suspect cause was vegetation.

2012

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
11/8/2012	Interlaken	CATALINA Rd & Big Bear Blvd, Big Bear Lake, CA (Pole 57538V)	1,200	420	504,000	21.5	Third Party: Car-hit-pole.
8/10/2012	Fawnskin	39111 North Shore Dr, Fawnskin, CA	300	270	81,000	3.5	Vegetation: Tree fell across power lines.
9/4/2012	Fawnskin	39188 Rim of the World Dr, Fawnskin, CA	300	205	61,500	2.6	Third Party: Contractor cutting tree down lost control of tree and it fell on power lines.
6/6/2012	Village	7891 Talmage Rd, Big Bear Lake, CA	1,800	11	19,800	0.8	Other: While transferring 4 kV lines to a new pole, crew error resulted in phase to neutral contact.
1/10/2012	Radford	Radford AR #3470	3,600	5	18,000	0.8	Other: AR inadvertently opened during maintenance.
12/13/2012	Lagonita	Forest Rd & Arroyo Dr, Big Bear Lake, CA	70	104	7,280	0.3	Weather: Snow storm caused line to break.
8/18/2012	Maple	401 Pine Ln, Big Bear City, CA	18	255	4,590	0.2	Weather: Lightning strike resulted in blown transformer fuse.
8/20/2012	Division	137 W Aeroplane Blvd, Big Bear City, CA	18	190	3,420	0.1	Weather: Lightning strike resulted in blown transformer fuse.
4/14/2012	Georgia	806 Knight Ave, Big Bear Lake, CA	16	210	3,360	0.1	Vegetation: Tree branches contacted lines causing phase-to-neutral contact.
3/17/2012	Goldmine	1594 Trinity Ct, Big Bear Lake, CA	13	210	2,730	0.1	Vegetation: Tree branches rubbed service, broke neutral, and rubbed insulation off of phases resulting in blown transformer fuse.
8/28/2012	Eagle	41571 Mockingbird Dr, big Bear Lake, CA	6	420	2,520	0.1	Weather: Lightning strike resulted in blown transformer fuse.

2011

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
4/7/2011	Shay & Baldwin	SCE Doble Line	19,389	120	2,326,680	99.0	Supply: Snow storm caused damage on SCE's Doble Line, which supplies BVES.
3/20/2011	Erwin	Erwin Ranch Rd & Hwy 38, big Bear City, CA	1,500	497	745,500	31.7	Weather: High winds caused tree to fall on lines resulting in breaking six cross arms and two conductors.
2/18/2011	Radford	Village Substation, Big Bear Lake, CA	3,600	157	565,200	24.0	Supply: Snow storm resulted in loss of the Radford line on SCE side.
12/1/2011	Radford	Village Substation, Big Bear Lake, CA	3,600	55	198,000	8.4	Supply: Snow storm resulted in loss of the Radford line on SCE side.
4/10/2011	Bear City	1041 Mound St, Big Bear City, CA	1,320	125	165,000	7.0	Animal: Large bird flew into primary lines.
4/8/2011	Goldmine	43135 Moonndge Rd, Big Bear Lake, CA	1,700	85	144,500	6.1	Third Party: Car-hit-pole (Commercial Truck).
11/4/2011	Village	40833 Maryland Rd, Big Bear Lake, CA	300	200	60,000	2.6	Weather: Snow storm caused tree to fall on lines at two locations.
3/20/2011	Erwin	Erwin Ranch Rd & Hwy 38, Big Bear City, CA	1,000	53	53,000	2.3	Weather: High winds caused tree to fall on lines resulting in breaking six cross arms and two conductors.
3/20/2011	Erwin	Erwin Ranch Rd & Hwy 38, Big Bear City, CA	1,000	53	53,000	2.3	Weather: High winds caused tree to fall on lines resulting in breaking six cross arms and two conductors.
9/30/2011	Paradise	836 E Country Club Blvd, Big Bear City, CA	1,085	45	48,825	2.1	Weather: Lightning strike caused fault.
1/12/2011	Palomino	Baldwin Lake Rd between Ponderosa Ranch Rd & Selenium Ln, Big Bear City, CA	300	85	25,500	1.1	Equipment Failure: Fuse blown due to overload.

2010

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
1/18/2010	Palomino	Baldwin Lake Rd (between Arastre Rd & Pioneertown Rd), Big Bear City, CA	400	3,240	1,296,000	55.7	Weather: Winter wind storm Wind resulted in four poles falling.
7/15/2010	Fox Farm	Big Bear Blvd & Fox Farm Rd, Big Bear Lake, CA	4,928	80	394,240	17.0	Weather: Lightning strike caused fault.
1/18/2010	Palomino	Baldwin Lake Rd (between Arastre Rd & Pioneertown Rd), Big Bear City, CA	200	1,780	356,000	15.3	Weather: Winter wind storm Wind resulted in four poles falling.
10/9/2010	Erwin	Stanfield Cutoff, Big Bear Lake, CA	4,923	60	295,380	12.7	Animal: Large bird landed 34 kV lines causing phase-to-phase short.
12/22/2010	Country Club	Division Substation	825	180	148,500	6.4	Weather: Snow storm caused unknown fault and circuit to lock out.
5/25/2010	Erwin	Hemlock LN, Big Bear City, CA	225	325	73,125	3.1	Third Party: Vehicle hooked communications cable and one pole (CIT37123) over and broke 100' Ft span.
5/25/2010	Erwin	Hemlock 1N, Big Bear City, CA	300	205	61,500	2.6	Third Party: Vehicle hooked communications cable and one pole (CIT37123) over and broke 100' Ft span.
2/28/2010	Paradise	East Big Bear Blvd & Shore Dr, big Bear City, CA	1,400	20	28,000	1.2	Third Party: Car-hit-pole incident.
12/19/2010	Goldmine	Primrose Dr & Shasta Rockspray St, Big Bear Lake, CA	200	84	16,800	0.7	Vegetation: Tree fell into primary lines.
12/19/2010	Goldmine	Sand Canyon Rd & Sand Canyon Ct, Big Bear Lake, CA	100	115	11,500	0.5	Vegetation: Tree top broke off and fell on primary lines.
1/19/2010	Garstin	Moonndge Rd & Siskiyou Dr, Big Bear Lake, CA	75	149	11,175	0.5	Weather: High winds resulting in short and blown fuse.

2009

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
1/7/2009	Bear City	Bear City Substation, Big Bear City, CA	1,320	110	145,200	6.2	Equipment Failure: One 34 kV pothead failed.
2/9/2009	Goldmine	Moonridge Rd & Lassen Dr, Big Bear Lake, CA	100	370	37,000	1.6	Weather: Snow and wind storm caused fault resulting in blown fuse.
3/24/2009	Georgia	41044 Big Bear Blvd (Leisure Bear Mobile Home Park), Big Bear Lake, CA	80	371	29,680	1.3	Equipment Failure: Failed transformer and blown fuse.
4/14/2009	SCE Goldhill Ute L	SCE Doble Line	19,389	1	24,236	1.0	Supply: Broken cross-arms on SCE Doble Line resulted in phase-to-phase faults.
6/3/2009	Interlaken	447 Catalina Rd, Big Bear Lake, CA	150	130	19,500	0.8	Weather: High winds caused tree to break and fall on a vehicle and power line span.
4/14/2009	Goldmine	Villa Grove Ave & Wolf Rd, Big Bear Lake, CA	60	260	15,600	0.7	Weather: Wind storm cause tree branches to impact lines and blow fuse.
12/22/2009	Boulder	Millcreek Rd (Lease Cabin #75), Big Bear Lake, CA	55	240	13,200	0.6	Vegetation: Dead tree fell over hitting pole and line.
12/12/2009	Fawnskin	38925 North Shore Dr (Pole BV9716N), Fawnskin, CA	20	330	6,600	0.3	Vegetation: Tree fell on lines causing blown fuse.
12/30/2009	Interlaken	42024 Skyview Ridge Dr., Big Bear Lake, CA	14	341	4,774	0.2	Equipment Failure: 25KVA UG Transformer overloaded.
3/22/2009	Clubview	890 Tehama Dr., Big Bear Lake, CA	38	120	4,560	0.2	Weather: High winds caused tree branch to fall and hit 4 kV lines, which resulted in blown fuse.
1/1/2009	Eagle	Finch Dr. & Swallow Dr., Big Bear Lake, CA	60	70	4,200	0.2	Equipment Failure: Blown fuse due to overload.

2008

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
1/4/2008	Shay & Baldwin	SCE's Lugo Substation	22,989	180	4,138,020	178.6	Supply: Wind Storm at SCE's Lugo Substation.
11/2/2008	Shay	408 Pinon Ln & 411 Sugarloaf Blvd, Big Bear City, CA	10,111	155	1,567,205	67.6	Weather: Snow storm caused dead tree to fall over onto 34kV lines causing phase to phase short.
1/6/2008	Radford	SCE Territory	3,600	150	540,000	23.3	Supply: Snow storm caused unknown damage to SCE supply line to Radford.
1/4/2008	Radford	SCE Vista Substation, Redlands, CA	3,600	135	486,000	21.0	Supply: Wind Storm caused unknown damage at SCE's Vista Substation.
12/25/2008	Lagonita	Big Bear Blvd & Spruce Rd, Big Bear Lake, CA	1,100	210	231,000	10.0	Weather: Snow storm caused tree to fall onto line span and damaging pole.
6/25/2008	Boulder	39037 Big Bear Blvd, Big Bear Lake, CA	300	656	196,800	8.5	Third Party: Car-hit-pole at Boulder Bay Park.
5/30/2008	Shay & Baldwin	SCE's Cushenbury Substation	22,989	5	116,784	5.0	Supply: Problem at SCE's Vista Substation causing loss of SCE source at SCE's Cushenbury Substation.
12/25/2008	Lagonita	Big Bear Blvd & Spruce Rd, Big Bear Lake, CA	750	150	112,500	4.9	Weather: Snow storm caused tree to fall onto line span and damaging pole.
12/25/2008	Lagonita	Big Bear Blvd & Spruce Rd, Big Bear Lake, CA	1,200	60	72,000	3.1	Weather: Snow storm caused tree to fall onto line span and damaging pole.
1/27/2008	Palomino	Palomino Substation, Big Bear City, CA	750	70	52,500	2.3	Weather: Snow storm caused unknown fault at Palomino Substation.
5/28/2008	Country Club	Kiener Dr. (between Aeroplane Blvd and Country Club Blvd), big Bear City, Ca	900	40	36,000	1.6	Third Party: Airplane crash.

2007

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
8/25/2007	Shay & Baldwin	Palomino Substation, Big Bear City, CA	19,400	17	329,800	14.2	Weather: Lightning strike on 34 kV.
12/3/2007	Baldwin	Division Substation Pole BVB517, Big Bear City, CA	3,100	90	279,000	12.0	Equipment Failure: Failed terminator on 34 kV underground dip to Division Substation.
12/3/2007	Fawnskin	Division Substation Pole BVB517, Big Bear City, CA	1,353	150	202,950	8.7	Equipment Failure: Failed terminator on 34 kV underground dip to Division Substation.
1/5/2007	Radford	Forestry Area	3,600	54	194,400	8.4	Weather: Wind storm caused dead tree to fall mid span resulting in broken cross-arms.
12/3/2007	Baldwin	Division Substation Pole BVB517, Big Bear City, CA	1,650	110	181,500	7.8	Equipment Failure: Failed terminator on 34 kV underground dip to Division Substation.
12/3/2007	Bear City	Division Substation Pole BVB517, Big Bear City, CA	1,320	120	158,400	6.8	Equipment Failure: Failed terminator on 34 kV underground dip to Division Substation.
4/30/2007	Georgia	41144 Big Bear Blvd, Big Bear Lake, CA	1,100	111	122,100	5.2	Third Party: Car-hit-pole accident.
10/17/2007	Radford	Forestry Area	3,367	21	70,707	3.0	Third Party: Forest Service contractors dropped tree limbs on line.
4/30/2007	Georgia	41144 Big Bear Blvd, Big Bear Lake, CA	100	555	55,500	2.4	Third Party: Car-hit-pole accident.
8/25/2007	Palomino	Palomino Substation, Big Bear City, CA	720	54	38,880	1.7	Weather: Lightning strike on 4 kV.
7/10/2007	Fawnskin	Lakeview Lease Cabin #26, Fawnskin, CA	41	765	31,365	1.3	Vegetation: Tree fell on lines and cause pole to break.

2006

Date	Affected Circuit	Location	Number of Customers	Outage Duration (minutes)	Customer Minutes Out (minutes)	Event SAIDI (minutes)	Cause
6/6/2006	Shay	SCE Goldhill Ute Lines	11,762	375	4,410,750	189.7	Supply: SCE Metering PT at Goldhill damaged.
6/6/2006	Garstin, Interlake	SCE at Goldhill - Meadow Substation	2,124	245	520,380	22.4	Supply: SCE Metering PT at Goldhill damaged.
6/6/2006	Eagle & Georgia	SCE at Goldhill - Pineknot Substation	1,800	278	500,400	21.5	Supply: SCE Metering PT at Goldhill damaged.
6/6/2006	Division & Countr	SCE at Goldhill - Division Substation	1,500	325	487,500	21.0	Supply: SCE Metering PT at Goldhill damaged.
6/6/2006	Fawnskin	SCE at Goldhill - Fawnskin Substation	1,350	355	479,250	20.6	Supply: SCE Metering PT at Goldhill damaged.
1/2/2006	Erwin	Hwy 38 vicinity of Boxing Camp (46550), Big Bear City, CA	300	1,140	342,000	14.7	Weather: Wind Storm caused line down event.
11/14/2006	Bear City	Bear City Substation, Big Bear City, CA	1,320	45	59,400	2.6	Equipment Failure: Failure of 34 kV elbow.
11/14/2006	Village	Maryland Rd & Stocker Rd, Big Bear Lake, CA	500	93	46,500	2.0	Vegetation: Tree fell across primary.
8/9/2006	Shay & Baldwin	SCE Goldhill Ute Lines	22,000	2	44,000	1.9	Supply: Unknown SCE fault.
1/2/2006	Boulder	Chipmunk Ln & Peak Ln, Big Bear Lake, CA	50	870	43,500	1.9	Vegetation: Tree fell down through primary and secondary. Broken pole and cross arms.

SECTION 9

Customer Inquires

Table 7 provides a summary list of customer inquiries on reliability data and the number of days per response (average response time) for the reporting year (2015). BVES did not receive any customer inquiries on reliability data in 2015.

Table 7: Sumary of Customer Inquires 2015

Number of Customer Inquires	Average Response Time (days)
0	NA