Decision 16-01-008 January 14, 2016

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

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| Order Instituting Rulemaking Regarding Policies, Procedures and Rules for Reliability Reporting Pursuant to Public Utilities Code Section 2774.1. | Rulemaking 14-12-014 (Filed December 18, 2014) |

# DECISION UPDATING THE ANNUAL ELECTRIC RELIABILITY REPORTING REQUIREMENTS FOR CALIFORNIA ELECTRIC UTILITIES

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# DECISION UPDATING THE ANNUAL ELECTRIC RELIABILITY REPORTING REQUIREMENTS FOR CALIFORNIA ELECTRIC UTILITIES


## Summary

This decision updates existing electric reliability reporting requirements for California electric utilities. The current electric reliability reporting requirements are amended to define the utility district or division level as the local area from which electric outage information is collected. Today's decision also clarifies limited issues related to electric reliability reporting and describes data that utilities must provide to the Commission in an annual Electric Reliability Report. Rulemaking 14-12-014 is closed.


## 1. Background

This Order Instituting Rulemaking (OIR) was opened pursuant to Public Utilities Code Section 2774.1[1] to establish policies, procedures, and rules for reliability reporting and mitigation of reliability problems within the service territories of the California investor-owned electric utilities (electric utilities or IOUs).[2] Section 2774.1 requires, among other things, more detailed information about the frequency and duration of interruptions in electric service.

A summary of the procedural and historical aspects of the proceeding can be found in Appendix A.

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[1] Section 2774.1 was added to the Public Utilities Code by Assembly Bill 66 (Muratsuchi) (Stats. 2013, Ch. 578, Sec. 1). Unless otherwise noted, all "Section" citations in this decision are to the Public Utilities Code.

[2] The electric utilities named in the OIR are Pacific Gas and Electric Company (PG&E), Southern California Edison Company (Edison), and San Diego Gas & Electric Company (SDG&E), PacifiCorp, Liberty Utilities (CALPECO), LLC (Liberty or Liberty Utilities) and Bear Valley Electric Service (Bear Valley).

The current focus of reliability reporting is at the system-level. This means information is aggregated for the entire electric service territory or system for each electric utility. Thus municipalities, businesses or homeowners who want reliability information that is specific to their location may have trouble getting information at the level of the electrical circuit(s) that serve them. This rulemaking aims to improve access to information specific to each "local area" (as directed by Section 2774.1). It also identifies opportunities to make improvements to existing reporting by combining existing requirements into a single document where important reliability information can be found. Important reliability information includes: (1) data about the frequency and duration of electric outages; (2) the definition of "local area" for reliability reporting; (3) how to account for technical reliability issues; (4) how to identify worst performing circuits; (5) how to have electric utilities compare the cost of options to fix bad circuits and select the projects that provide the best solutions for the money spent; and, (6) how electric utilities communicate with the public about their annual electric reliability reports.

## 2. Scope

The April 24, 2015, Joint Assigned Commissioner and Administrative Law Judges' (ALJ) Interim Ruling and Scoping Memo (Scoping Memo) determined the scope of issues in this proceeding to be:

1. Review of current IOU reliability reporting;
2. Develop revised annual reporting requirements that include information about frequency and duration of outages;
3. Define the term "local area" for reliability reporting;
4. Clarify the term "major event day" (to align with definition of local area for reliability reporting);

5. Develop criteria and methodology for identifying worst performing circuits;
6. Develop an approach for demonstrating cost-effective remediation and determining cost recovery procedures;
7. Consider whether the IOUs should be allowed to set up Memorandum Accounts for remediation costs; and
8. Develop an annual outreach plan and related reporting to inform customers about planned and unplanned outages.

### 3. Proposed Improvements to Reporting

The OIR proposed the following potential updates to the Commission's current reliability reporting requirements:

1. The "local area" for reporting as required by Section 2774.1 is the "district" or "division" level as defined by the utility.
2. This definition of "local area" represents a maximum size, and that smaller areas, such as cities, are preferred, to the extent that circuit boundaries are not split.
3. The electric utilities will additionally include district level reporting of System Average Interruption Duration Index (SAIDI[3]), System Average Interruption Frequency Index (SAIFI[4]) and Customer Average Interruption Duration Index (CAIDI[5]) in their annual reports made pursuant to D.96-09-045.[6]

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[3] SAIDI indicates the total duration of interruption (in electric service) for the average customer during a predetermined period of time: commonly measured in minutes or hours.

[4] SAIFI indicates how often the average customer experiences a sustained interruption (in electric service) over a predefined period of time.

[5] CAIDI is SAIDI/SAIFI. It is defined in Institute of Electrical and Electronic Engineers (IEEE) 1366. It is the average time required to restore service to a utility customer.

[6] There are many ways to describe outages. For example, there are sudden or momentary outages due to equipment failures. In addition, outages can be characterized by the frequency, duration or impact on the customer. The SAIDI, SAIFI, Momentary Average Interruption Frequency Index or MAIFI (indicates the average frequency of momentary electric service interruptions), and CAIDI indices capture these types of variations in outages.

4. The annual reports should show the previous five years of district level SAIDI, SAIFI and CAIDI.
5. The electric utilities should present the location (town or unincorporated area) and number of maintenance outages in each district.
6. The electric utilities should annually report the list of 10 worst performing circuits, the district where located and the SAIDI, SAIFI and CAIDI for each circuit. The previous five years of such data should be included in the report.
7. The electric utilities should annually submit an electronic spreadsheet in a standard commercial format, containing circuit-level SAIDI, SAIFI and CAIDI for all operating circuits in their service territory.
8. Pursuant to Section 2774.1 para. (b)(1), the utilities should publicly present the findings of the reliability reports, and how these findings will be incorporated in their maintenance projects and programs.
9. The reliability reports required by Section 2774.1 should be posted in an easily accessible page on the utility website.
10. The electric utilities should additionally report on the number and location of planned outages in each district on an annual basis, as such reports help customers distinguish required maintenance outages from unplanned outages. The planned outage occurrence reports should be combined in an easily understandable way with the reliability statistics, so that ratepayers can clearly distinguish between the occurrences of planned and unplanned outages.

In addition to examining how to deal with system level versus local level reliability reporting issues, parties addressed the following issues:

1. How to describe worst performing circuits.
2. Whether to impose uniform reliability reporting requirements on all electric utilities.

For certain reliability issues where there were conflicting goals or approaches parties either generally agreed, disagreed or proposed alternatives to address an issue. In resolving the issues, this decision balanced the following: what is fair and appropriate, what promotes better understanding of reliability information for utility customers, what is technically feasible and what best supports safety and overall electric grid reliability.

### 3.1. Defining Local Area for Reliability Reporting

**Adopted Outcome**

District or division level reporting, with the ability of an electric utility customer to request more detailed information upon demand, is reasonable and in the public interest. This means that for the purpose of electric reliability reporting, all electric utilities shall collect data at their respective district or division level and continue to provide system level electric reliability data. All electric utilities should make more detailed information about local electric reliability available to their customers upon request and should post the procedures for making public requests on their websites. Edison shall continue to provide the enhanced reporting it is currently providing to the cities in its service territory.

**Discussion**

Two positions about local area definitions emerged during Workshop 1.[7] City of Torrance (Torrance) and the City of Manhattan Beach[8]

[7] The goal of Workshop 1 was to understand what was included in the current annual reliability reporting submitted to Commission by IOUs, how best to approach the definition of "local area" and to identify the relevant topics for Workshop 2.

[8] Both cities are located within Edison's service territory.

(Manhattan Beach), as well as the member cities of the South Bay Cities Council of Governments (Council)[9] (these entities are collectively referred to as "Cities") advocated for a local reliability reporting definition at the city boundary level. These parties state that reliability reporting based on electric utility districts would not provide the Cities with the information needed to evaluate the performance of the utility company in their jurisdictions. Manhattan Beach further argues "The intent of Section 2774.1 would best be realized by defining local area in such a way as to require Edison and other electric utilities to provide reliability information by jurisdiction rather than by utility district."[10]

The Utility Reform Network (TURN) also supports reporting by smaller areas, especially by city, if the circuit boundaries are not split. According to TURN reliability reporting at the city or community level is more understandable and meaningful to utility customers. According to TURN reliability reporting should be done at the city or community level when possible.[11] However, when city or community reporting cannot be done, TURN advocated that electric utilities should provide a way for customers to easily determine which district their residence is located in.[12] Conversely, the IOUs advocated for local reliability reporting at the district level. SDG&E argues that

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9 The Council is a joint powers authority with 15 member cities in Edison's service territory.

10 Opening Comments of Manhattan Regarding the OIR Regarding Policies, Procedures and Rules for Reliability Reporting Pursuant to Public Utilities Code Section 2774.1," dated January 21, 2015 at 3.

11 TURN Opening Comments at 1.

12 TURN Opening Comments at 2.

district level reporting is reasonable and can be readily implemented for the required reporting metrics.[13]

During Workshop 1 the IOUs presented information about why a shift to city level electric reliability reporting presented operational, logistical and data accuracy problems. For example, cities are often served by multiple circuits and the electric utilities are unable to easily isolate outages by circuit segments specific to a city. Therefore, all outages affecting a circuit that crosses any part of a local jurisdiction is included in the reliability of this local area regardless of whether its citizens are affected by the outage. Customers looking at city level reliability data would therefore see information about their location that did not match their experience because they are located on circuits that serve multiple jurisdictions.

Furthermore, a circuit serving a customer might change due to engineering revisions to a circuit to accommodate load growth. Additionally, electric utilities might re-route power to parts of an outage area by using circuit switching equipment at the substation. All these operational changes can result in inaccurate reliability data for the customer. The electric utilities state they would have to reconfigure the electric distribution systems to confine circuits to individual cities in order to achieve the city level electric reliability reporting supported by Office of Ratepayer Advocates (ORA), TURN, the Council, Torrance, and Manhattan Beach. This would be difficult and expensive to implement. Moreover, the potential cost of the technical changes to accomplish

[13] Opening Comments of SDG&E dated January 23, 2015 at 2.

city level reporting may outweigh the benefit of greater transparency sought by some parties.

Edison has made significant customer-friendly upgrades to its electric reliability website in response to cities' demands for more detailed information about electric reliability within the city boundary. As a result of the improved website, businesses and residents within Edison's service territory can now view a file containing electric reliability information that is specific to circuits within their cities.

Despite the cost and effort that Edison has undertaken to provide more detailed city-level local reliability reporting customers have not visited the website in large numbers. The Workshop 1 Report noted that to date, there have reportedly been less than 100 visits to Edison's new local area reliability webpages, over a six-month period. Other parties attending Workshop 1 mentioned that customers do not typically question their electric reliability and only become interested in reliability performance when they feel that there are too many outages. Moreover, there was no representation from local governments outside of Edison's service territory at Workshop 1. As a result no additional perspectives were introduced to address the definition of local area.

Based on the Workshop 1 discussion of various parties the utility district or division emerged as the best solution for a local area definition for the purposes of electric reliability reporting.

After taking into consideration all the factors impacting city versus district level reporting we conclude that the definition for local reliability reporting area should be at the district level, with the ability of a utility customer to request more detailed information upon request. We adopt this definition in light of the practical impact on current reporting practices; the accuracy of overall reporting; the usefulness to the public; and, the potential economic impact on ratepayers.

### 3.2. Worst Performing Circuit Definition

**Adopted Outcome**

Each electric utility shall include in its annual report an explanation of the process it uses to identify poorly performing circuits. Each electric utility shall also describe its process(es) for conducting capital projects to resolve the problems with circuits identified as poorly performing. Each electric utility shall also include the timeframe and cost associated with each type of circuit repair project. Each electric utility shall use two or three years of data, at its discretion, to flag a grouping of worst performing circuits. When a circuit is on the list of worst performing circuits for a third year, the electric utility shall also include in its annual electric reliability report, either a plan for a capital project, including a timeframe and estimated cost, to repair that circuit or an explanation for an alternate approach for addressing the performance of that circuit, including a timeframe and estimated cost.

**Discussion**

Each IOU has a different approach to how it manages its electric distribution systems including maintenance, repair, and outage activities. Given the size of the state, the diversity of the topography and complexity and unique infrastructure within each electric utility's service territory, it is unrealistic to adopt a single model for identifying worst performing electric circuits. We provide instead, guidelines to be used by the electric utilities to improve their existing processes.

Section 2774.1 refers to "deficient" circuits; however electric utilities characterize circuits differently. In their Workshop 2[14] report, the electric utilities also refer to "underperforming" and "poorly performing" circuits.[15] In order to have a commonly understood definition, we will use the term "worst performing circuit(s)."

Neither Workshop 1 nor Workshop 2 determined a common definition for "worst performing circuit." However, discussion during Workshop 2 disclosed that many electric utilities used at least two to three years of data to determine which of their electric circuits were not working well.

### 3.3. Determining the Number of Worst Performing Circuits

**Adopted Outcome**

The large IOUs (PG&E, Edison and SDG&E) shall list one percent of the worst performing circuits among all the electric circuits in their respective service territories. Bear Valley, Liberty Utilities and PacifiCorp shall report a proportionally reasonable number of circuits on their list of worst performing circuits.

The table below indicates the approximate number of Worst Performing Circuits to be reported by all electric utilities in their annual electric reliability reports.

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[14] Workshop 2 covered a review of current electric distribution system management, definition of deficient or worst performing circuit, determining the number of worst performing circuits, major event day treatment, and various other issues.

[15] Report of Edison, SDG&E, PG&E, PacifiCorp, Liberty Utilities, and Bear Valley Regarding Workshop on Issues Related to Reliability Improvement and Public Reporting of Reliability, dated June 12, 2015 at 3 and 5.

**Table 1:**

| Total Number of Worst Performing Circuits Reported by Larger Electric Utilities under the 1% Requirement and a Proportionate Number of Total Circuits Reported by Small and Mid-Sized Electric Utilities* | | |
|---|---|---|
| **Utility** | **Number of Total Circuits** | **1% of Total Circuits or a Proportionate Number of Circuits** |
| PG&E | 3200 | 32 |
| SCE | 4600 | 46 |
| SDG&E | 1000 | 10 |
| PacifiCorp | 75 | 3 |
| Liberty Utilities | 43 | 2 |
| Bear Valley Electric | 23 | 1 |
| * Small and Mid-Sized Electric Utilities may report less or more circuits than indicated in this chart but must provide a rationale for the increase or decrease in their annual report | | |

**Discussion**

The OIR proposed that each electric company should provide a list of the 10 worst performing circuits as part of its annual electric reliability report. During Workshop 2, a debate emerged about whether 10 was an appropriate sample size. Some parties argued that for large IOUs, 10 was not a sufficient sample of their circuits since large IOUs manage hundreds of circuits.[16] However, for small to medium sized IOUs, 10 may represent too large a number given the fewer number of circuits in their respective service areas.

Coalition of California Utility Employees (CUE) proposed at Workshop 2 that a more reasonable approach would be to require the large IOUs to report on

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[16] Report of Edison, SDG&E, PG&E, PacifiCorp, Liberty Utilities and Bear Valley Electric Service (A Division of Golden State Water Company), Regarding Workshop on Issues Related to Reliability Improvement and Public Reporting of Reliability at 14.

one percent of the total number of circuits in their service territories.[17] The number of electric circuits within the service territories of California's electric utilities varies from approximately 23 for Bear Valley to 4,600 for Edison. The OIR proposed requiring each electric utility to list its 10 worst performing circuits. However, parties subsequently identified the need for proportionality in determining the number of circuits to include on a list tracking worst performing circuits. For example, requiring Bear Valley to list 10 circuits would represent over 40 percent of the total number of circuits in its service territory. Conversely requiring Edison to report only 10 of its approximately 4,600 circuits would represent only 0.22 percent of the circuits in its service territory.

Small to mid-sized IOUs would, depending on the total number of circuits in their service areas, report on a specified number of circuits based on a reasonable proportion to the total number of circuits in their respective service areas. The small to mid-sized IOUs may report less or more circuits than specified, but must provide a rationale for the increase or decrease in their annual electric reliability reports. It is important to strike an appropriate balance for small, mid-sized and large electric utilities for determining the number of poorly performing circuits. Directing the large IOUs to apply a one-percent factor to all the circuits in their service territories while requiring the small and mid-sized electric utilities to provide, depending on their size, information on a reasonable specified number of worst performing circuits strikes this balance.

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[17] Comments of the Coalition of CUE on the Workshop Report, dated June 26, 2015 at 3.

### 3.4. Definition of Cost-Effective Remediation

**Adopted Outcome**

Each electric utility shall define and provide an easy to understand explanation of the cost-effectiveness methodology it used to select a circuit repair or replacement project from among the available options in its annual electric reliability report. The Commission may provide additional guidance when the cost-effectiveness methods under consideration in both the Integrated Distributed Energy Resources Rulemaking (R.) 14-10-003 and the Distributed Resource Planning R.14-08-013 proceedings are finalized, to the extent they are relevant to quantifying the benefits of improved reliability.

**Discussion**

Under current conditions the electric utilities use differing processes to both rank worst performing circuits and apply a cost effectiveness methodology to select among reliability projects. Section 2774.1 referred to "cost effective remediation" as a guide to ensure that the IOUs make reasonable choices about the circuits which show repeated problems. However it does not define cost effectiveness or cite to any objective standard to evaluate cost effectiveness. The Commission has addressed cost effectiveness in many different proceedings but has not adopted a common approach for use across proceedings. In the absence of any guidance on how to assess cost effectiveness in this instance, we adopt an interim approach to have the IOUs provide an explanation, in their annual electric reliability reports, for the process and/or methodology used to make choices about projects to fix poorly performing circuits.

The Workshop 2 report notes that one of the definitions for cost effective is selecting the most economical option in terms of tangible benefits delivered versus money spent. Workshop 2 participants agreed that Section 2774.1 did not intend to have the Commission develop a common definition for "cost-effectiveness" for reliability projects. The Commission is considering this issue in both the Integrated Distributed Energy Resources R.14-10-003 and Distributed Resource Planning R.14-08-013 proceedings. This proceeding takes into account the development of cost effectiveness frameworks in other proceedings and therefore adopts an interim approach until the Commission resolves this issue.

### 3.5. Consolidating Reliability Reporting

**Adopted Outcome**

Each electric utility shall submit an annual report that combines the reliability reporting directed in D.96-09-045 and D.04-10-034 as well as any incremental new reporting requirements adopted in this decision. A single consolidated report that combines the system and district/division level reporting pursuant to D.96-09-045 and D.04-10-034 is reasonable and should be implemented. This single report shall be submitted annually on July 15. All IOUs shall use the electric reliability reporting template contained in Appendix B of this decision to prepare their annual reports. This template does not replace reporting requirements from existing Commission orders; it instead establishes a minimum floor for reliability information. All California electric utilities are responsible for complying with Commission orders and must therefore provide any former reliability requirement that the template does not capture. The electric utilities shall discontinue reporting, pursuant to D.96-09-045, on circuits in which customers have experienced more than 12 sustained outages in a reporting year since this information will be captured in reporting elsewhere in this decision.

The IOUs shall submit a draft reliability report, to the Energy Division (ED) Director 45 days before the July 15, 2016 and 2017 submission dates to ensure that the report complies with the template and to provide an opportunity for input from Commission staff before the report is made public. Thereafter pre-filings will be the discretion of the director of the Energy Division with ample notice provided to the utilities.

**Discussion**

PG&E notes that pursuant to D.96-09-045 the IOUs currently report on system-wide reliability annually by March 1.[18] In addition, PG&E currently submits a supplemental division-level report annually by May 1 pursuant to D.04-10-034. PG&E proposes that the Commission adopt a single set of reliability reporting requirements in one document. Specifically, PG&E urges the Commission to "consider adopting a single, simple set of requirements in one place for reliability reporting so that any reported reliability data and information is consistent among the various IOUs."[19] PG&E proposes that this single report be submitted by July 30 on an annual basis. SDG&E supports a single annual report due in July.[20] TURN also supports the recommendation to streamline electric reliability reporting and provide the Commission, customers and interested stakeholders with all annual reliability information in one report.[21]

In Comments to the OIR and Workshop 1, parties supported consolidation of PG&E's current reliability reports. Parties indicated that consolidating the

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[18] PG&E Opening Comments at 9.

[19] "Opening Comments of PG&E on OIR," dated January 23, 2015 at 7.

[20] SDG&E Reply Comments at 3.

[21] "Comments of TURN on the Workshop 1 Report" dated May 20, 2015 at 2.

current electric reliability reporting requirements will result in cost savings that is in the public interest.

We agree that consolidating the current electric reliability reporting requirements into a single document is in the public interest. The electric reliability reporting template contained in Appendix B of this decision provides clear direction to electric utilities about what electric reliability information must be filed in their annual reports.

### 3.6. Adopting Edison's Outage Website Format for all Electric Utilities

**Adopted Outcome**

PG&E, SDG&E, Liberty, PacifiCorp, and Bear Valley are not required to report the identical city-level electric reliability information that Edison has provided on its outage internet website. There is insufficient basis in the record to direct other electric utilities to adopt Edison's local city-level electric reliability reporting.

**Discussion**

Since local governments outside of Edison's service territory did not attend Workshop 1, there was no input on the level of interest among local governments in other electric utility service territories for city-level electric reliability information. Consequently, the Commission has no basis to determine whether to direct the other electric utilities to adopt the same local jurisdictional reliability reporting format that Edison has implemented.

During Workshop 1, PG&E demonstrated that an outage in one segment of the circuit could have an effect on other segments of the circuit.[22] SDG&E

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22 PG&E's Comments on April 24 Workshop Report at 1-2.

indicated that their current reporting systems are not set up to report outages at the city level.[23] PG&E and other IOUs noted that they did not face the same challenges that Edison did with the cities in their respective service territories and consequently they did not find it appropriate or necessary to adopt the reliability reporting changes that Edison introduced.

## 4. Other Electric Reliability Reporting Streamlining Issues

### 4.1. Planned vs Unplanned Outages and Reliability Reporting

**Adopted Outcome**

The IOUs shall provide electric reliability data listing the planned and unplanned outages that took place during the preceding calendar year. The IOUs are directed to inform the Commission about planned and unplanned outages at the district and system level as part of their annual reliability reporting requirements included in their July 15 annual reliability report. Annual information about planned outages shall be provided to the ED and the Safety and Enforcement Division (SED), on a confidential basis. Unplanned outage information shall be included in the annual electric reliability report. We reject the Energy Producers and Users Coalition's (EPUC's) proposal to require reporting related to outages at critical facilities and facilities on non-interruptible schedules.

**Discussion**

PG&E proposed providing data for both planned and unplanned outages at the division/district level.[24] In their comments, CUE argues that both planned

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[23] Reply Comments of SDG&E, dated February 6, 2015 at 2-3.

[24] PG&E Opening Comments at 16.

and unplanned outages should be included in reliability reports because it affects end-user reliability and transparency.[25] EPUC argues that the Commission should require reporting related to outages at critical facilities and facilities on non-interruptible schedules.[26] According to EPUC adopting this approach would enhance safety oversight.[27]

We agree that the Commission should receive information about both planned and unplanned outages in order to monitor IOU activities to ensure grid safety. However, making planned outage data public poses a potential risk as the data could expose grid vulnerabilities. Therefore, planned outage data should be confidential to protect the public from potential harmful activities that could damage the grid and electric reliability. On the other hand, unplanned outages are by their nature random. Typical unplanned outage events involve weather or equipment failure. Consequently, we see no potential future harm or risk in making unplanned outage information public.

EPUC's proposal is rejected. Requiring specialized reporting for critical facilities and facilities on non-interruptible schedules would single out this customer class for treatment not available to other customer classes. Critical facilities and facilities on non-interruptible schedules have access to information about utility planned outages through their utility representative and should explore that pathway to get the information they seek.

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[25] CUE Reply Comments at 3.

[26] CUE Reply Comments at 5.

[27] EPUC Reply Comments at 5.

### 4.2. Momentary Average Interruption Frequency Index (MAIFI) and CAIDI Reporting

**Adopted Outcome**

All electric utilities shall continue to include MAIFI data in their annual reliability reports. MAIFI data describes the average frequency of momentary electricity interruptions. At their discretion, they may also include a related index, $MAIFI_E$. This index describes the average frequency of momentary interruption events, defined as incidents in which one or multiple momentary interruptions occur within a short time interval, usually five minutes. Additionally, all utilities shall provide CAIDI data. This means that the updated listing of required annual electric reliability data includes the following indices: SAIDI, SAIFI, MAIFI and CAIDI.[28] California utilities shall continue to use their existing methodologies, which may entail some degree of estimation for the California Association of Small and Multijurisdictional Utilities (CASMU), to calculate MAFI and/or $MAIFI_E$. We reject Liberty and PacifiCorp's proposal that they be excluded from MAIFI reporting.

**Discussion**

We believe all electric utilities should be treated similarly with regard to electric reliability reporting requirements. Therefore, all electric utilities must provide comparable data about their electric reliability.

The OIR includes a proposal to include CAIDI in its annual reliability reporting. CAIDI is SAIDI/SAIFI. As defined in IEEE 1366, CAIDI describes the average time needed to restore electric service to a utility customer. CAIDI is a

[28] Definitions for SAIFI, SAIDI, and MAIFI are provided in Appendix A and CAIDI in Section 3 of this decision.

useful additional metric to have because it provides information about the customer's experience during an outage. It is reasonable to add this index to current electric reliability statistics.

PG&E suggests that, in the OIR, Commission staff is recommending that CAIDI replace MAIFI in utility annual reliability reports but points out that Section 2774.1 specifically directs that "the (annual reliability) report differentiate both sustained and momentary outages."[29] Edison and SDG&E also mention the need to continue MAIFI reporting in their comments.[30]

In Joint Comments on the Reliability Report Template, Liberty and PacifiCorp propose that their organizations be excluded from a requirement to provide MAIFI data.[31] As CASMU members, both utilities mention that due to the rural nature of their service areas they are unable to accurately report MAIFI on their systems. Moreover, CASMU mentions that their member utilities have numerous field interrupting devices for which there is no remote monitoring.[32] According to the CASMU utilities, remote monitoring is needed in order to properly and accurately report MAIFI data. Liberty and PacifiCorp's comments additionally mention that an investment (in monitoring equipment) would grossly exceed any marginal value.[33] In their Joint comments Liberty and

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[29] PG&E Opening Comments at 7-8.

[30] SDG&E Opening Comments at 2; SCE Opening Comments at 3.

[31] Joint Comments of Liberty Utilities, and PacifiCorp on the Reliability Report Template, dated September 10, 2015 at 1-2.

[32] *Ibid*. at 2.

[33] *Ibid*.

PacifiCorp argue that $MAIFI_E$[34], as opposed to MAIFI, is a preferable metric since it captures inconvenience to the customer. MAIFI records every individual outage event, however, $MAIFI_E$ counts multiple outage events that occur close to each other in time as a single event. All California electric utilities may, at their discretion, report $MAIFI_E$ in addition to MAIFI data.

We have reviewed Section 2774.1 and conclude that it specifically requires MAIFI or $MAIFI_E$ data to be provided as part of annual electric reliability reporting. Therefore all California electric utilities shall continue to provide MAIFI data and may also provide $MAIFI_E$.

### 4.3. Communication with the Public

**Adopted Outcome**

All electric utilities shall conduct at least one annual public in-person presentation about the information in their annual electric reliability report. Electric utilities shall make webinar participation available for the event so that their customers can attend the presentation remotely or in-person. An in-person presentation will provide the Commission, interested parties and all interested utility customers an opportunity to ask questions about the information contained in their annual electric reliability reports. The Commission's ED and SED Directors shall be notified about the location and timing for these events.

Additionally, PG&E, Edison and SDG&E shall respond to customer inquiries about their electric reliability within 15 business days. Bear Valley, Liberty and PacifiCorp shall respond to customer inquiries in no more than

[34] MAIFI describes the average frequency of momentary (electric service) interruption events.

30 business days. We provide these small and mid-sized IOUs with more time to accommodate their need to complete their current manual investigation and analysis of outage events. To the extent that an IOU has a website, it shall provide text with links and phone-numbers to instruct customers about how they can request more detailed information about their electric reliability. Electric utilities shall include the number of customer inquiries and the average number of days to respond to inquiries in their July 15 annual reports.

**Discussion**

During Workshop 1, Edison reported that its customer service personnel visit their 35 service districts with briefing packages that describe upgrade projects to improve electric reliability. SED indicated that Edison's "City Reports" and website allow customers to identify their circuits, reduce customer complaints, and support better communication with the legislature. At Workshop 1 ED staff proposed that electric utilities may sponsor annual local presentations or workshops to discuss local reliability and explain maintenance activities. Utilities were concerned that there would be a low level of interest and attendance at such workshops. Although attendance may be low in some areas, providing customers the opportunity to find out more and ask questions about their electric reliability is important and should be made available to all Californians. In order to increase the likelihood of customer interest, we encourage the utilities to hold the annual presentations in an area affected by one of the worst performing circuits.

Section 2774.1 requires IOUs to provide information about electric reliability within their service areas on internet websites. Many parties mention the need to provide electric reliability information to customers in an easy to understand format.[35] Some IOUs have sophisticated websites that can be updated with online forms, while others conduct manual investigation before information can be provided to customers by mail. In D.96-09-045, the Commission set a 30-day limit for IOUs to respond to customer inquiries about reliability.[36] At Workshop 2, representatives of large IOUs mentioned that they can provide responses to customer inquiries in 10 days. Small and mid-sized IOUs were unclear about how much time they would need for customer response since many of their processes are manual. Liberty reported that it has a web-based form that customers can fill out and submit for a response within two business days to questions about reliability. Liberty noted that it can add a webpage that allows customers to input their address in order to receive circuit information.[37] Although PacifiCorp did not provide a specific number of days for response to customer inquiries about reliability, it did mention in its Workshop 2 notes that it records customer inquiries and received about 50 customer inquiries about reliability over the last year.[38]

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[35] Reply Comments of TURN on the OIR Regarding Policies, Procedures and Rules for Reliability Reporting Pursuant to Pub. Util. Code § 2774.1, dated February 6, 2015 at 4.

[36] D.96-09-045 Appendix A at 3.

[37] Report of SCE, SDG&E, PG&E, PacifiCorp, Liberty Utilities, and Bear Valley Regarding Workshop on Issues Related to Reliability Improvement and Public Reporting of Reliability, dated June 12, 2015 at 7.

[38] *Ibid* at 6.

### 4.4. Risk Assessment Management Program (RAMP) and Reliability Reporting

**Adopted Outcome**

CUE's proposal to require the IOUs to include the annual electric reliability reports in the RAMP process is rejected. We have reviewed D.14-12-025[39] and have determined that reliability was excluded from the components of the framework for the RAMP.

**Discussion**

CUE suggests that the Commission should require that the annual (reliability) reports, with circuit-level reliability data, be included in the IOUs' General Rate Cases (GRC) RAMP phase. CUE argues that this inclusion would provide useful information to the GRCs since the RAMP phase will present information about a utility's assessment of its safety risks and its proposed programs for mitigating those risks.[40] EPUC supports CUE's suggestion that reliability reports directed in this proceeding also be included in the RAMP phase of GRCs.[41] ORA also expressed support for CUE's approach, noting that it was reasonable, consistent with the law and in the public interest.[42] CASMU requests that the Commission provide an explicit exemption for its members since their GRCs do not have a RAMP phase.[43] SDG&E and PG&E, in their

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[39] D.14-12-025 December 4, 2014 at 19-20; "Accordingly, we conclude that expanding SB 705's policy of prioritizing safety to include reliability is outside the scope of this proceeding and the S-MAP and RAMP processed adopted in this decision."

[40] CUE Opening Comments at 3.

[41] Reply Comments of The Energy Producers and Users Coalition, dated February 6, 2015 at 6-7.

[42] Reply Comments of the ORA, dated February 6, 2015 at 3-4.

[43] CASMU Reply Comments at 5.

respective Reply Comments, point out that CUE's proposal is inconsistent with the risk-reward framework adopted in D.14-12-025. According to the IOUs, the framework clearly stated that reliability is outside the scope of the RAMP proceedings.

### 4.5. Major Event Day Treatment

**Adopted Outcome**

The IOUs shall provide electric reliability data at both the system and the utility district level. Whatever Major Event Days are determined for calculations at the system level shall also be used for reliability calculations at the district or division level. We reject the joint proposal of Bear Valley, Liberty and PacifiCorp to allow electric utilities to analyze and recommend specific reporting area(s) in their service territory for setting Major Event Day thresholds. This approach would be difficult to administer and complicated to track in a reasonable manner.

**Discussion**

The issue of how to treat data about "Major Event Day(s)" was raised by CUE in its Opening Comments and included in Workshop 2[44] discussion. According to CUE, the Commission must clarify how electric utilities should determine whether system-wide and local events ought to be included or excluded from system and district level reliability data. As an example to demonstrate its point, CUE pointed out that under the IEEE[45] approach, the

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[44] Report of SCE, SDG&E, PG&E, PacifiCorp, Liberty Utilities, and Bear Valley Regarding Workshop on Issues Related to Reliability Improvement and Public Reporting of Reliability, dated June 12, 2015 at 11.

[45] Institute of Electrical and Electronics Engineers, Inc.

1989 Loma Prieta earthquake would be included in system-wide reliability data; however, the smaller 2014 Napa earthquake would not be considered a Major Event Day on a system-wide basis. Edison requests clarification about whether Major Event data submitted for districts (or divisions) include or exclude Major Event Days (MEDs).[46] In their Reply Comments TURN also supports clarifying whether to include or exclude Major Event Days from reliability reporting.[47] In reply comments, Bear Valley, Liberty and PacifiCorp argue that the Commission should allow each utility to analyze and recommend specific reporting area(s) in its service territory to use for Major Event Day thresholds in reliability reporting.[48] In their joint comments, on the Reliability Reporting Template, Liberty and PacifiCorp argue that the term Major Event Day should be replaced with the term "Major Event" because "use of the proper term is critical to ensuring proper interpretation and application of technical requirements in making their calculations."[49] IEEE defines a Major Event as an "event that exceeds reasonable design and or operational limits of the electric power system." A Major Event includes at least one Major Event Day[50] as defined by IEEE. The IEEE 1366 standard excludes days that exceed the major event day threshold and we should adopt this approach. Therefore we will use the term Major Event Day instead of Major Event.

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46 Edison Opening Comments at 2.

47 TURN Reply Comments, February 6, 2015, at 5.

48 Reply Comments of EPUC, dated February 6, 2015 at 6-7.

49 Reply Comments of the ORA, dated February 6, 2015 at 3-4.

50 IEEE or Institute of Electrical and Electronics Engineers, Inc. standard at 3.

## 5. Next Steps

In addition to the incremental reliability reporting we direct in this decision, we have recognized at least two prior Commission decisions and two General Orders (GOs) that outline reliability reporting for electric utilities. There may be others that we have not identified. In order to further improve clarity about reliability reporting it is reasonable to consolidate unidentified reliability reporting requirements from Commission decisions and GOs into a single Commission decision and GO. The proposed consolidation will eliminate redundancy and overlap in existing Commission documents. The electric utilities should meet and confer to create a joint proposal to the directors of the ED and the SED within one year from the date of this decision.

## 6. Categorization and Need for Hearing

This proceeding was designated at Quasi-Legislative with no need for hearing. No protests have been received. Given these developments, a public hearing is not necessary, and it is not necessary to disturb the preliminary determinations.

## 7. Comments on Proposed Decision

The proposed decision of the ALJ in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on December 7, 2015, by Bear Valley, PacifiCorp, PG&E, SDE&E, Edison, CUE, EPUC, TURN, and reply comments were filed on December 14, 2015, by PG&E, SDG&E, Edison, CUE, EPUC, TURN. Comments focused on a variety of issues including how to provide information about planned outages, clarifications regarding MAIFI and $MAIFI_E$, whether and how to provide information about cyber security, creating an outage notification priority for essential facilities, how to handle cost effectiveness treatment for reliability projects and defining transmission and distribution circuits among other issues.

## 8. Assignment of Proceeding

Commissioner Michael Picker is the assigned Commissioner and ALJ Amy C. Yip-Kikugawa and ALJ Pro Tem Hazlyn Fortune are co-assigned ALJs in this proceeding

## Findings of Fact

1. The City of Manhattan Beach, the City of Torrance and the South Bay Cities Council of Governments' all experienced electric outages.
2. The City of Manhattan Beach, the City of Torrance and the South Bay Cities Council of Governments' were unable to get timely information from Edison about their electric outages.
3. At this time, not all California electric utilities provide MAIFI data to the Commission.
4. At this time, not all California electric utilities provide CAIDI data to the Commission.
5. PG&E currently provides two separate reports on electric reliability to the Commission.
6. Edison has launched an electric outage website with detailed city-level circuit information.
7. There have been a low number of visits to Edison's electric outage website.
8. City-level reliability reporting is more complex and difficult to manage than district or division level reporting.
9. At this time not all California electric utilities provide in person public presentations about their annual electric reliability reports.

10. D.14-12-025 identifies electric reliability as outside the scope of the RAMP.

11. California electric utilities have different approaches for assessing and managing capital projects for their electric distribution systems.

12. California cities outside the service territory of Southern California Edison did not participate in this proceeding.

13. California electric utilities use at least two years of data to analyze their circuits.

14. The number of electric circuits within the service territories of California electric utilities varies from 23 to 4,600.

15. Requiring each electric utility to report its 10 worst performing circuits would result in an unreasonable reporting burden for electric utilities with a small number of circuits but possibly unrepresentative reporting for electric utilities with a large number of circuits.

16. Most California electric utilities do not provide Major Event Data for their respective utility districts or divisions.

17. The Commission does not currently require a single methodology for assessing the cost effectiveness of capital projects.

18. California electric utility customers interested in local reliability metrics may visit utility websites or contact them by mail.

## Conclusions of Law

1. Utility district or division level reporting, with the ability of a utility customer to request more detailed information upon demand, is reasonable and in the public interest.

2. All California electric utilities should be treated in proportion to the characteristics of their service territory in regard to electric reliability requirements.

3. A single consolidated report that combines the system and district/division level reporting pursuant to D.96-09-045 and D.04-10-034 is reasonable and should be implemented.

4. All interested customers should have an opportunity to ask questions of their electric utilities about the information contained in their annual electric reliability report.

5. Use of the template set forth in Appendix B will improve electric reliability reporting and should be required.

6. It is reasonable for the utilities to consult with Commission staff about the content of the revised annual reliability report before for the reports are made public.

7. Today's decision should be made effective immediately.

## O R D E R

**IT IS ORDERED** that:

1. All California electric utilities shall submit system level and district or division level electric reliability information to the Commission on July 15 of each year.

2. Draft copies of the reports prepared for July 15, 2016 and July 15, 2017 shall be delivered to the Energy Division Director in electronic format at least 45 days prior to the July 15 deadline. Draft copies for subsequent reporting years shall be required at the discretion of the Energy Division Director.

3. Commission staff, in consultation with utilities, has the authority to require any necessary revisions to the draft reports before they are made public.

4. Pacific Gas and Electric Company shall combine in one single report the electric reliability reporting requirements pursuant to Decision (D.) 96-09-045 and D.04-10-034.

5. All California electric utilities shall use the electric reliability reporting template at Appendix B of this decision to create their annual reports.

6. All California electric utilities shall publish on their internet websites or provide to customers via U.S. mail, procedures for making requests about electric circuits that serve their homes or businesses.

7. All California electric utilities shall conduct at least one annual public in-person presentation about the information in their annual electric reliability reports.

8. All California electric utilities shall make webinar participation available for their annual in-person events so that their customers can attend the presentation remotely or in-person.

9. Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company shall annually report the worst performing one percent of the circuits among all the electric circuits in their respective service territories.

10. Bear Valley Electric Service, Liberty Utilities, LLC and PacifiCorp shall report the following number of circuits on their list of worst performing circuits: three circuits for PacifiCorp; two circuits for Liberty Utilities, LLC; and one circuit for Bear Valley Electric Service.

11. All California electric utilities shall provide reliability data at both the system and the district level. Whatever major event days are determined for calculations at the system level shall also be used for reliability calculations at the district or division level.

12. Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company shall respond to customer inquiries about electric reliability within 15 business days.

13. Bear Valley Electric Service, Liberty Utilities, LLC and PacifiCorp shall respond to customer inquiries about electric reliability within 30 business days.

14. All California electric utilities should meet and confer to consolidate unidentified reliability reporting requirements from Commission decisions and General Orders into a single Commission decision and General Order.

15. California electric utilities shall submit a single joint proposal for a proposed consolidated decision and general order to the directors of the Energy Division and the Safety and Enforcement Division within one year from the date of this decision.

16. Rulemaking 14-12-014 is closed.

This order is effective today.

Dated January 14, 2016, at San Francisco, California.

MICHAEL PICKER
President
MICHEL PETER FLORIO
CATHERINE J.K. SANDOVAL
CARLA J. PETERMAN
LIANE M. RANDOLPH
Commissioners

# Appendix A

## Procedural and Historical Background on Reliability Reporting

## Procedural Background

On December 18, 2014 the Commission opened Rulemaking (R.14-12-014) to implement Public Utilities (PU) Code Section 2774.1.[1] Public Utilities Code Section 2774.1 established new reliability reporting rules and guidelines for electric utilities, as well as new enacting procedures for the mitigation of problems discovered by utility reported reliability data.

Parties[2] filed Opening Comments on January 23, 2015. On February 6, 2015, Reply Comments were filed by the following parties[3]. A prehearing conference was held on March 27th and a Scoping Ruling was issued on April 24, 2015. Two workshops were held; the first, Workshop 1, on April 24 and the second, Workshop 2, on May 26 and 27. Workshop reports were issued after each workshop.

A Ruling was issued on May 13, with a report on Workshop 1 attached; the Ruling directed the Investor Owned Utilities (IOUs) to submit materials in advance of Workshop 2[4]. The Ruling also requested response to the report on

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[1] Appendix B to the OIR introduced additional incremental reporting requirements for electric corporations pursuant to PU Code 2774.1 to supplement existing annual reliability reporting.

[2] Pacific Gas and Electric Company (PG&E); Southern California Edison Company (Edison); San Diego Gas & Electric Company (SDG&E); Liberty Utilities (CalPeco Electric) LLC (Liberty Utilities), PacifiCorp, Bear Valley Electric Service (Bear Valley); Coalition of California Utility Employees (CUE),; The Utility Reform Network (TURN); South Bay Cities Council of Governments; City of Torrance; City of Manhattan Beach.

[3] PG&E; Edison; SDG&E; Office of Ratepayer Advocates (ORA); CUE; Energy Producers & Users Coalition (EPUC), TURN; Bear Valley, Liberty Utilities; PacifiCorp.

[4] Administrative Law Judge Ruling Directing Parties to Submit May Workshop Materials and Provide Comments on April 24 Workshop, dated May 13, 2015.

Workshop 1. Parties filed comments and responses to the Ruling on May 20, 2015.[5]

A Ruling was issued on June 8 directing the electric utilities to file a joint straw proposal or individual proposals regarding the format and content for the annual reliability report required by PU Code Section 2774.1.[6] On June 12, the electric utilities filed a joint Workshop 2 report which included straw proposals about the content of future reliability reporting. Parties filed comments on July 26[7] and Reply Comments on July 10.[8]

A Ruling was issued on August 31 requesting comment on a proposed template for the annual report on reliability[9]. Parties submitted comments on September 10.[10]

**Historical Background**

Section 364 requires the Commission to adopt standards for electric utility distribution systems that provide for high quality, safe, and reliable service. The Commission implemented Section 364 over many years to provide the electric utilities with standards and guidance regarding what constitutes a reasonable level of reliable service.

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5 Responses and Comments were filed by the following Parties: PG&E, TURN, Edison, SDG&E.

6 E-mail Ruling Directing Investor Owned Utilities to file a Straw Proposal, June 8, 2015.

7 Comments were filed by the following Parties: CUE, TURN, EPUC, SDG&E.

8 Reply Comments were filed by the following Parties: PG&E, CUE, Edison, SDG&E.

9 Administrative Law Judge's Ruling Seeking Comment on the Reliability Report Template, August 31, 2015.

10 Comments were filed by the following Parties: Edison, PG&E, SDG&E, EPUC, jointly by Liberty Utilities and PacifiCorp, CUE.

For example, Investigation 95-02-015 was initiated after severe storms hit northern California in 1995. As a result, Decision (D.) 96-09-045 adopted recording and reporting requirements related to the sustained and momentary frequency and duration of system outages, circuits that persistently perform poorly and major accidents or incidents affecting reliability.

In compliance with D.96-09-045, the electric utilities currently record and report system reliability information on a territory-wide basis annually using the following indices:[11]

- System Average Interruption Frequency Index (SAIFI)
- System Average Interruption Duration Index (SAIDI)
- Momentary Average Interruption Frequency Index (MAIFI)

Shortly after D.96-09-045, the Commission adopted General Order (GO) 165. GO 165 was initially adopted in D.97-03-070 and revised in D.12-01-032. The Commission also adopted GO 166, which set forth 11 standards for electric service reliability and safety during emergencies and disasters. These standards ensure that the electric utilities are prepared for emergencies in order to minimize damage and inconvenience resulting from electric system failures and major outages. GO 166 contains detailed requirements for emergency planning and performance during emergencies, and requires an investigation following every major outage. The Commission's Safety and Enforcement Division coordinates with the IOUs to manage inspection activities and separate reporting pursuant to GO 165 and 166.

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[11] The public reports are available on the Commission's website.

In D.04-10-034, the Commission addressed storm and reliability issues raised in PG&E's General Rate Case application for test year 2003. This decision required PG&E to report durations and frequencies of division-level sustained and momentary outages excluding major events, and to investigate and report to the Commission when the division-level reliability indices vary by 10 percent or more in any division from the five-year rolling average of reliability performance. At the present time, these requirements apply only to PG&E.

In 2011, the Commission, through its Executive Director, ordered the IOUs to report using the Institute of Electrical and Electronics Engineers (IEEE) 1366-2003 reliability standards.[12] IEEE standard 1366-2003 uses a statistical method to determine a Threshold for Major Event Day.[13] Utilities may remove days that exceed the threshold from their reliability indices calculations. These are days in which the energy delivery system experienced stress beyond that normally expected. The IOUs officially began reporting reliability indices under both the IEEE 1366-2003 and the D.96-09-045 methods in March 2012 and were mandated to report this way for three years. After that time the IOUs would report under the IEEE 1366-2003 method only.

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[12] By letter from Commission Executive Director Paul Clanon, August 27, 2010, requesting advice letters from the electric corporations which were subsequently approved (SCE AL 2673-E, approved January 11, 2012, SDG&E AL 2256-E, approved June 16, 2011) and, D.04-10-034 approval for PG&E.

[13] IEEE defines a "Mayor Event Day" as a day in which the daily System Average Interruption Duration Index or SAIDI exceeds a threshold value, $T_{MED}$. For the purposed of calculating this index, any interruption that spans multiple calendar days is accrued to the day on which the interruption began.

Large IOUs complied with these requirements in full but mid-sized and small IOUs provided estimates or were explicitly excluded from providing certain data.

**(END OF APPENDIX A)**

# Appendix B

## Reliability Reporting Template

# Reliability Reporting Template

## *Description of Required Sections*

**1. System Indices For The Last 10 Years[1]**

a. Include Separate Tables with SAIDI, SAIFI, MAIFI[2] and CAIDI (Major Event Day (MED) Included and Excluded)[3]:

i. Distribution System Indices[4] (MED Included and Excluded); and

ii. Transmission System Indices[5] (MED Included and Excluded).

b. Separate Charts Showing a Line Graph of SAIDI, SAIFI, MAIFI and CAIDI for the past 10 years with linear trend line (MED Excluded).

[1] Calculations based on the IEEE 1366 method. Data shall exclude planned and ISO outages and include generation outages.

[2] $MAIFI_E$ may also be provided at the discretion of the utility. (MAIFI records every individual outage event, however, $MAIFI_E$ counts multiple outage events that occur close to each other in time as a single event.)

[3] IEEE standard uses a statistical method to determine a threshold for Major Event Day ($T_{MED}$). Utilities may remove days that exceed the threshold from their reliability indices calculations.

[4] Each utility will provide an explanation of how it defines its distribution system.

[5] Each utility will provide an explanation of how it defines its transmission system.

**2. Division (or District) Reliability Indices for the past 10 years Including and Excluding MED[6]**

a. SAIDI, SAIFI, MAIFI, CAIDI; and
b. Separate Charts Showing a Line Graph of SAIDI, SAIFI, MAIFI, and CAIDI in the past 10 years with linear trend line.

**3. System and Division (or District) Indices Based on IEEE 1366 for the past 10 years including Planned Outages and including and excluding MED[7]**

a. Separate Charts Showing a Line Graph of SAIDI, SAIFI, MAIFI, and CAIDI in the past 10 years with linear trend line; and

b. The number, date, and, location of planned outages in each district on an annual basis.

**4. Service Territory Map including Divisions or Districts**

**5. Top 1% of Worst Performing Circuits (WPC) excluding Major Event Day (MED)** [8]

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[6] All electric utilities are required to report reliability indices by Division/District. However, the following investigative requirements specified in D.04-10-034 only apply to PG&E:

- Investigate and report to the Commission when SAIDI, SAIFI, MAIFI, and CAIDI vary by 10 percent or more in any division and/or 5 percent or more at the system level from the five-year rolling average of reliability performance.
- Investigate and report on all weather-related excludable major events for each division in which CAIDI varies by 25 percent or more from the division benchmark. The division benchmarks are calculated from the rolling average of the prior 10 weather-related excludable events as defined by IEEE 1366.

[7] The annual report shall include aggregated data for planned outages at a Division/District level. Information on the number, date, and location of planned outages shall be provided under seal in a separate report to the Directors of the Energy Division and the Safety Enforcement Division. A utility that is unable to provide 10 years of planned outage data should provide its best available data even it is not fully refined and a detailed explanation in the annual report and the reports to the Commission under seal.

[8] PG&E, SCE, and SDG&E to report a minimum of 1% of their worst performing circuits based on their total number of circuits' SAIDI and SAIFI; and PacifiCorp, Liberty Utilities and Bear Valley to report 3, 2 and 1 of their worst performing circuits, respectively, based on their circuit performance ranking criteria.

a. For each of these circuits each utility shall include the following information in its annual report: (1) Circuit name; (2) District/Division; (3) Customer Count; (4) Substation name; (5) Circuit-miles; (6) Percentage underground, or "% UG"; (7) Percentage overhead, or "% OH"; (8) Number of mainline/feeder/backbone outages resulting in the operation of either a circuit breaker ("CB") or automatic re-closer ("AR"); and, (9) its preferred reliability metric.

b. Any circuit appearing on this list of "deficient" (WPC) circuits that also appeared on the previous year's list would be marked by an asterisk. For each asterisked circuit, each utility shall provide the following information:

   i. An explanation of why it was ranked as a "deficient" circuit, i.e., the value of the metric used to indicate its performance;

   ii. A historical record of the metric;

   iii. An explanation of why it was on the deficiency list again;

   iv. An explanation of what is being done to improve the circuit's future performance and the anticipated timeline for completing those activities (or an explanation why remediation is not being planned); and

   v. A quantitative description of the utility's expectation for that circuit's future performance.

c. Language to explain how the IOUs' include a cost effectiveness review as part of their respective internal review processes for circuit remediation projects.

   i. Definitions of terms, acronyms, limitations, and assumptions;

   ii. A clear explanation of the utility's process to determine the worst performing circuits; and

iii. A clear explanation of the utility's process to determine cost-effective remediation projects. This shall include why the utility may decide to implement a project to address one worst performing circuit issue while deciding to not implement a project to address a different worst performing circuit.

**6. Top 10 major unplanned power outage events within a Reporting Year**

a. The cause of each outage event; and

b. The location of each outage event**.**

**7. Summary List of MED per IEEE 1366**

a. The number of customers without service at periodic intervals for each MED;

b. The cause of each ME (Major Event); and

c. The location of each ME.

**8. Historical Ten Largest Unplanned Outage Events for the past 10 years**

**9 The number of customer inquiries on reliability data and the number of days per response.**

**(END OF APPENDIX B)**