BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

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Order Instituting Rulemaking To Revise and Clarify Commission Regulations Relating to the Safety of Electric Utility and Communications Infrastructure Provider Facilities.

Rulemaking No. 08-11-005
(Issued November 13, 2008)

MUSSEY GRADE ROAD ALLIANCE COMMENTS ON PHASE 3 REPORTS FROM TRACK ONE AND TWO TECHNICAL PANELS

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MUSSEY GRADE ROAD ALLIANCE COMMENTS ON PHASE 3 REPORTS FROM TRACK ONE AND TWO TECHNICAL PANELS

I. INTRODUCTION

The Mussey Grade Road Alliance ("Alliance" or "MGRA") files these comments in accordance with the ADMINISTRATIVE LAW JUDGE'S RULING SETTING A PREHEARING CONFERENCE AND DIRECTING PARTIES TO FILE PREHEARING CONFERENCE STATEMENTS[1] of the Order Instituting Rulemaking R.08-11-005. The Alliance was a co-sponsor of the original data collection requirement that was accepted in D.12-01-032[2] and delegated to Phase 3 for further analysis. Consequently, we were deeply involved in the technical workshops that produced the Track 2 technical panel report[3], and approved the CPSD consensus recommendation. Comments are included here to provide additional clarification of Alliance positions as well as technical details regarding fire data collection.

The Alliance was not involved in the Track 1 discussions except at the all-party meeting at which the draft report was presented on September 12, 2012. Nevertheless, we found issues of significant concern would be raised if some of the alternative proposals were to be accepted by the Commission, and provide comments herein regarding the Panel One final report[4].

Comments have been provided by Alliance expert Dr. Joseph W. Mitchell and verification of factual assertions has been provided in accordance with the assigned Commissioner's scoping memo.[5]

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[1] R.08-11-005; ADMINISTRATIVE LAW JUDGE'S RULING SETTING A PREHEARING CONFERENCE AND DIRECTING PARTIES TO FILE PREHEARING CONFERENCE STATEMENTS; March 23, 2012; p. 1.
[2] D.12-01-032; p. 132: "We agree with CPSD and MGRA that requiring electric IOUs to report information on power-line fires would be very useful in formulating fire prevention measures and gauging the effectiveness of the adopted measures. The collection and reporting of data is a prerequisite for any serious program of sustained and cost-effective fire-safety improvement."
[3] R.08-11-005; ORDER INSTITUTING RULEMAKING 08-11-005 PHASE III – TECHNICAL PANEL 2 REPORT; September 28, 2012. (Panel 2 Report)
[4] R.08-11-005; ORDER INSTITUTING RULEMAKING 08-11-005 PHASE III-TECHNICAL PANEL 1 REPORT; October 12, 2012. (Panel 1 Report)
[5] R.08-11-005; ASSIGNED COMMISSIONER'S RULING AND SCOPING MEMO FOR PHASE 3 OF THIS PROCEEDING; June 1, 2012; App. B, p. 1. (Scoping Memo)

II. TRACK ONE REPORT

The Alliance did not actively participate in the Track 1 deliberations. We do, however have comments on some of the alternatives put forward in the final report because we question whether they comply with the stated intent of this Rulemaking: "This OIR is being issued to review the current safety requirements and consider possible rule changes that may further reduce the hazards, particularly fire hazards, associated with the electric transmission and distribution facilities and communications facilities.[6]" Any proposed GO 95 modification that might potentially *reduce* safety should be carefully scrutinized and not be considered if its net impact on California residents is deleterious. In our opinion, two alternative proposals fall into this category.

A. Re-opening the will-not-fail question

R08-11-005 was initiated in 2008 in response to the 2007 fires.[7] In other words it is the expectation of the Commission that the process now underway will lead to utilities and the Commission adopting enhanced safety requirements that reduce the likelihood that the disastrous events of 2007 will recur. Therefore, we are concerned that some parties appear to be taking the opportunity of a new rulemaking proceeding to put forward proposals that may lead to an enforcement standard that is *lower* than the one currently used by CPSD.

One specific instance is the introduction of language that removes the "will-not-fail" requirement stated in GO 95, Rule 48: "*Structural members and their connection shall be designed and constructed so that the structures and parts thereof* ***will not fail*** *or be seriously distorted at any load less than their maximum working loads…*" (emphasis added). The CIP Coalition has put forward Alternative Proposal 6-B, which would remove this language, with the justification that "the concept of 'will not fail' is not utilized by structural engineers as it is not a technically feasible standard or otherwise used in the engineering world.[8]"

Heretofore the Alliance has reserved comment on the technical feasibility of the standard or its appropriateness. However, we would like now to draw attention to the point that regardless of the "will not fail" language's applicability as a *construction* standard, it provides a very clear

[6] R.08-11-005; Order Instituting Rulemaking; November 13, 2008; p. 5
[7] Id. p. 4.
[8] Panel 1 Report, p. 45.

enforcement standard. CPSD does not have the resources to inspect and monitor every piece of utility equipment that is installed in the state of California, nor would it probably be an efficient use of ratepayer dollars for it to provide that level of scrutiny. The "will-not-fail" language means that it does not need to – that any failure that occurs at less than the maximum working load is a de facto violation of GO 95 that can trigger immediate corrective action by the Commission. It is then the utilities' responsibility to ensure that the probability of structural failure that can cause fire under extreme weather conditions (and result in potential penalties) remains at a risk level it considers acceptable. Otherwise we run the risk of having "compliant" infrastructure that results in multiple failures under worst-case conditions.

While we would prefer to leave the determination of optimal language to CPSD and the utility engineers, we would assert that the following must be true in order for this Rulemaking to be a success: **No changes to GO 95 should be made that reduce or compromise the enforcement standards that are currently used by CPSD**.

B. Sample Rules exclude poles of under 60 foot height from extreme wind loading requirements

In a similar vein, the Alliance notes that two of the Sample Rules for extreme wind loading districts (Sample Rule 1-B and Sample Rule 2-B), would introduce exemptions from wind loading standards for poles that are less than 60 feet in height: "*If no portion of a structure or its supported facilities exceeds 60 ft. above ground or water level, the provisions of this rule are not required*."[9] It should be stressed that the great majority of utility infrastructure, in particular distribution infrastructure, is less than 60 feet in height.[10] This would exempt most of current infrastructure from *existing* wind loading standards much less any more stringent standards that may be adopted for extreme wind loading districts.

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[9] Panel 1 Report, pp. 65, 69.

[10] Exactly what this fraction would be would have to be ascertained from each utility. SDG&E, for instance, has stated that "It is common for SDG&E equipment to be forty (40) or more feet above ground, especially where overhead lines traverse uneven terrain." [A.08-12-021; OPENING COMMENTS OF SAN DIEGO GAS & ELECTRIC COMPANY (U-902-E) IN RESPONSE TO DIRECTION OF ADMINISTRATIVE LAW JUDGE'S RULING DENYING MOTION TO STRIKE, PROHIBITING EX PARTE COMMUNICATIONS, AND DIRECTING PARTIES TO FILE COMMENTS; July 25, 2011; p. 88.]
Additionally, in 2007 distribution lines made up roughly 80% of SDG&E's network as measured by total line length. [A.06-08-010; MGRA Phase 2 Direct Testimony, Appendix 2D; March 12, 2008; p.9]

Justification for this exemption utilized a Powerpoint presentation that has not yet been submitted for consideration.[11] Briefly summarizing:

- 60 foot exemption exists in the NESC code adopted by 49 other states.
- It has been frequently challenged.
- It is based on the assertion that debris impacts cause most pole failures at high wind speeds.
- Impulse force exerted by a "light" object (20 lbs) at high speed can be comparable to or exceed the force exerted by wind pressure.
- Upgrading poles is not an efficient manner to deal with this problem because poles of higher grade are stiffer and therefore more experience a larger impulse force from impact of debris of a given mass and velocity.
- Poles are exempted up to 60 feet in height because it is assumed that the debris density will be lesser as height increases.

We find this line of argument unconvincing and inappropriate for Southern California, for a number of reasons:

- In Southern California, there is little available as a source of heavy debris covering much of the wildlands that utility lines cross. Where lines do pass through treed areas, there is no dispute that falling or lofted branches can and do impact utility lines and cause damage and fires. However, much of Southern California is covered in chaparral shrublands, which is typically less than six feet in height, and which makes little heavy debris available to be blown by the wind.
- The most common causes for wind damage in the United States are hurricanes, tornadoes, and extreme thunderstorms. Furthermore, sources of heavy debris that can easily be lofted to the height of utility poles exists in the form of forests and urban / suburban build-out. While the 60 foot exemption might therefore potentially make sense in the many of the electrified areas of the US, it is difficult for us to see

[11] *GO 95 Technical Panel 1* Extreme Wind Loading & 60 ft. Exemption; presented at All Party meeting September 12, 2012.

how this applies to the chaparral shrublands of Southern California that we are concerned about for the purposes of catastrophic power line fires.

- Cal Fire has noted a distinct difference in the character of power line fires started in Southern California versus Northern California, as it noted in its Phase 1 comments: "*CAL FIRE's experience with powerline-related fires differ markedly between Southern California and Northern California. Powerline-fires in Southern California are usually related to infrastructure and equipment failures, while powerline-caused fires in Northern California are usually related to vegetation management failures, i.e. limbs or entire trees falling into powerlines.*
  CAL FIRE's investigators have determined 'line-slap', cross-arm failures, conductor metal fatigue, and 'dead man' failures to be the primary cause of recent large damaging fires… These equipment and hardware failures suggest that engineering standards currently in place are not sufficient for Southern California extreme wind events, which are common, ordinary and predictable. "[12]
- Major conflagrations during wind storms during which multiple ignitions were associated with power lines have occurred in Southern California in 2007 and in Victoria, Australia in 2009. Major fires were fully investigated by both fire agencies and regulatory agencies. Of five of the major fires investigated in Southern California in 2007, only one of these (Rice fire) has been associated with external object impact (a tree). Likewise, of the five major power line fires investigated after the 2009 Victoria fires, only one (Beechworth-Mudegonga) was associated with contact with an external object (again, a tree). So in the two most recent instances of major power line fire storms, debris impact played a minor though not insignificant role in the ignition of fires.
- In the proof-of-principle calculation presented to the working group, debris speed of 85 mph was assumed in an 85 mph wind. This assumes that large (20 lb) debris has reached terminal velocity and is being carried with the wind at wind speed. However, in order for it to remain lofted for an extended distance, it would need to have not only an aerodynamically favorable shape (implying a large surface-to-volume ratio), but also to have sufficient frictional force to provide loft. This would imply that lofted debris would generally travel at less than the prevailing wind speed. Less aerodynamically shaped objects could only reach the height of utility poles if they

[12] R.08-12-005; Opening Comments of CAL FIRE on Proposed Rules; March 27, 2009; p. 7.

> were themselves lofted from a significant height, and as we've noted many areas of Southern California lack a debris source at a significant height. Thus we remain skeptical that we would expect heavy debris to impact near the tops of utility poles at or near ambient wind speeds in much of Southern California.

Should the 60 foot or any other similar exemption be adopted, it would effectively negate the benefits of creating of special wind loading zones. Creation of maps to support wind loading zones that do not apply to most utility infrastructure would be a wasteful and pointless exercise.

III. TRACK TWO REPORT

The Alliance was a co-sponsor of the original PRC for data collection that resulted in the creation of this Phase 3 effort, and was actively involved in the Track Two workshops. In general, we're pleased with the constructive role taken by the majority of the participants and with the resulting report. Comments are provided to clarify how and why the proposed data fields were selected, as well as some of the language in the accompanying Guiding Principle.

A. Critical data field justifications

There is a specific reason for and history of each of the data fields that has been listed in the technical panel proposal. Some of the justifications are technical and some are legal, and have resulted from intensive discussions between parties. There are two classes of data fields that the Alliance considers critical for producing a data set that will help utilities, fire agencies, and the Commission reduce the risk of future fires. One type of data consists of information available only to the utilities themselves or about which they have the greatest expertise and that will be useful in fire prevention. The other type of data is referential, in that it allows the person analyzing the data to "dig deeper" and obtain further relevant information from a definitive source. Ideally, the utilities should not have to look outside of their own organizations in order to provide all of the requested information. Another class of data, "derived" fields, can be determined from unique or referential data in conjunction with public data sources. We consider derived data fields to be optional. Including them in the data set is a convenience for the reader, but in fact the best source for such fields will be outside of the electrical utility.

1. Unique utility data

The primary purpose in collecting this fire data set is to gather information from utilities that is available only from them, or about which they would have deeper and more accurate knowledge than other entities that might report on the data.

Among the data fields that would be considered unique utility data included in the Track 1 proposal are:

- **Utility Name**
- **Fire Start Time –** Due to its access to outage data, an electrical utility may have first knowledge about the exact start time of a fire. When this is not the case, the fire agency records may be considered more definitive. Knowing the exact timing of an ignition may help fire agencies determine fire spread rates and help measure reporting and response times. Timing is also important to cross reference ignitions with weather conditions that are recorded by automatic weather stations.
- **Location –** Since the utility will make a determination regarding the point and source of ignition, it is in the best place to make a determination regarding the location of the fire. Knowing the location is key to determining wind and weather characteristics, as well as weather, vegetation, housing density, and a number of other important characteristics.
- **Size -** In the case where a fire self-extinguishes or is extinguished by someone outside of a fire agency, there may be no fire agency record as to fire size, and in this case having the utility record the fire size is useful. Knowing the factors and conditions that result in limited fire spread may help in reducing catastrophic losses.
- **Facility Identification –** As discussed below in the referential data section, the utility's own identifier for the equipment involved in the ignition may be important in identifying patterns in equipment failure.
- **Other Companies –** The electrical utility reporting the fire is in a unique position to identify the third party owners of equipment sharing joint-use poles. This information may or may not have specific relevance to any particular fire.
- **Voltage –** The electrical utility will have unique knowledge of the operating voltage of its equipment. Since different design and construction is typically used for

equipment of significantly different voltage, knowing this information helps researchers differentiate between different scenarios that might lead to ignition.

- **Equipment Involved / Type –** This information is key to determining the equipment that provided the energy to cause the ignition, which helps to differentiate between types of ignition scenarios. The electrical utility is uniquely suited to make this determination.
- **Outage –** The utility makes outage determinations and keeps outage records. As shown in the subsequent section, knowing the outage time can be used as a reference to outage records.
- **Suspected Cause Fields –** Regardless of whether the term "cause" is used to determine the specifics of the scenario leading to fire ignition and possible spread, this set of fields constitutes the most critical data being collected. Only by knowing what started a fire can it be possible to take countermeasures to prevent future similar occurrences. The electrical utility is in a unique position to collect this data accurately, because it knows its own equipment and has extensive experience with its operation and maintenance. Whether this data set is useful or not will be primarily determined by the quality of the data provided in these fields, and the Commission's guidelines for collecting this data must provide strong encouragement for the utilities to be forthcoming and accurate in these descriptions.
- **Notes –** An unexpectedly controversial field, this field allows the utility to record other information related to the circumstances of the ignition that do not fit into the other fields, and which the utility believes provided explanatory value. Some parties have expressed concern that this field might be used by the electrical utility to impugn other parties with liability. It should be pointed out that this field can just as easily hold additional exculpatory information. It is also extremely useful in the case where the utility is not sure how to exactly record the information in the other fields. This was demonstrated by the mock exercise held during the workshops, which showed that given the same information different parties would fill out the form in different ways, but was able to provide additional information in the Notes field. Having clarification in a notes field would allow CPSD to make corrections to the data to make sure that the records are in a uniform format.

2. Referential data

Referential data allow the researcher to obtain additional information about specific incidents without requiring the utility to collect this information itself, thus expediting the collection and reporting of fire data. Additionally, referential data may have a source of truth outside of the utilities' expertise. A size of a large fire, for example, is more likely to be estimated by a fire agency than by the utility employee that makes the report. What is important with referential data is that the utility provide a reference to the "source of truth" for the data in question, so that any researcher or agency who wishes to can obtain it from the best source.

Referential data include:

- **Suppressed By / Suppressing Agency –** Factual information regarding any specific fire can be best obtained by the agency involved in suppressing the fire. This includes but is not limited to overall fire size, rate of spread, vegetation involved, damages, and suppression costs. Where it is available, fire agency data regarding the fire itself (though not necessarily the utility equipment involved) are best obtained from the fire agency.
- **Facility Identification –** While this field is specific to each utility, it allows information regarding the specific equipment on the pole as well as maintenance and inspection records to be obtained. This information may or may not be relevant to the specific fire cause, and making it a reference and not requiring full information regarding equipment near the ignition source will simplify and expedite data reporting. It might also reduce challenges based on confidentiality grounds, and enable wider dissimulation of data. In the event that the data proves to be relevant, it can always be requested. For instance, if an abnormal number of transformer fires were be observed, CPSD might want to investigate the hypothesis that a particular manufacturer's equipment was correlated with the fires. It could then request additional information from each utility using the facility identification for each transformer fire. While each utility might possibly do such analysis on their own, the advantage of this fire database is that it allows a much larger data set to be accumulated that includes all utilities.

- **Outage** – Outage data may also be collected by the utilities, and if so more specific information related to the outage itself could be requested for any specific fire. For instance, data related to the number of reclose operations might be useful in determining optimal recloser settings.

3. Derived data

Only one currently proposed field fits the definition of derived data – that it can be obtained from publicly available data which is outside of the utilities' core expertise:

- **Land Use –** Land use data should be obtainable from public sources if the geographic location is specified.

It should be pointed out that obtaining many types of derived data requires full and accurate recording of utility-specific data such as fire start time (for weather), location (for weather, vegetation, slope, land use, population, and many other characteristics), or fire agency (for all specific fire data, including exact size). Derived data can be included for convenience of the parties or agencies consuming the data. However, where derived data differs from the original source, original source data should be preferred.

B. Guiding Principle

The Alliance is appreciative of the great effort that has been put forward by all parties in creating and drafting the guiding principles that led to the proposed list of data collection fields, and we support the final document. Comments below are intended to clarify the Alliance's own position on topics and how these views accommodate the positions adopted in the guiding principle.

1. Confidential Data

Considerable discussion occurred around the matter of confidential data, since there are a wide divergence of views on this topic. During these discussions it became clear that this forum would not be appropriate for discussions of what constitutes confidential data, since the entire process now surrounding Advice Letter L-436 is now dedicated to answering of this question. There was general agreement between parties that guidance regarding the confidentiality of data

produced in the present proceeding should not conflict with the results of the L-436 deliberations, so language was drafted to accommodate this requirement.[13]

The Alliance adopts this view as well. We do, though, have our own opinion regarding the optimal use of data to benefit public safety. Furthermore, we also have some technical comments regarding how any confidential data might be protected without unduly restricting public access to information.

The Alliance favors as wide a dissemination of collected data as possible in order to allow it to get into the hands of academics, government agencies, and the general public – who are the ones who suffer the safety and economic impacts of wildland fires. In this way, analysis will not be restricted to only CPSD or possibly fire agencies, but instead anyone who might be interested could try to glean public safety information from this data set. Other groups might adopt alternative approaches to the ones taken by CPSD, which might reveal relationships that might otherwise not be apparent. We fully recognize that utilities are concerned about liability, and that there are strongly differing views among the members of the panel. However, this is our own opinion about what our preferences regarding the outcome of A-436 and how it affects the results of the current proceeding.

Additionally, we also believe that there is a hierarchy of groups that should have access to the data, based upon their need-to-know based and overall benefit to the public. While we favor as wide a dissemination as possible for the reasons stated above, any restrictions that end up being applied should respect the privilege of access for certain groups:

- CPSD and the Commission must absolutely have access to the data collected by the utilities for their own trend analysis.
- Fire agencies should have preferential access to the data as well, since it may help them conduct inspections and investigations.
- Should data access be restricted, it would be beneficial if approved groups, such as government agencies and academics, should have access in accordance with agreements regarding re-distribution of the data.

[13] Panel 2 Report, p. A-3, Item 7: "The data collected is raw data that is correct to the best of the utility's knowledge. Confidential data submitted will be protected in accordance with California law."

- The general public should have access to all data not deemed confidential.

When we are discussing "data", we are not referring to a monolithic block of information that is either "confidential" or "not confidential", but rather a collection of incident reports ("records") consisting of the various types of information collected (called "columns" or "fields"). Some incidents might be of much greater sensitivity than others – for instance if an incident has caused property damage and may result in liability it may be of greater concern to a utility than minor incidents which involved no damages and did not involve fire agencies. Certain fields or types of information might be of more concern to utilities than others as well. It may well be that the overall collection of data reported to the Commission could contain some data that is considered by the Commission to be confidential mixed in with a much larger volume of data that is not considered confidential. Rather than have the entire dataset "tainted" with confidentiality and rendered off-limits to the public, there are a number of simple technical solutions that allow confidential data to be protected while still fully allowing public access to the remainder of data.

One approach would be to give each record and/or field a confidentiality flag in the database maintained by the Commission. This could be Boolean (yes/no) or indicate a protection level (share with government agencies, share with fire agencies, share with other utilities, share with the public). Access to the data can be through a generated published report or through an interactive website. In either case, the presentation of each data record would be controlled by the confidentiality flag, and would blank out or replace any information that was not considered appropriate for the audience receiving the report. Preferably it would indicate to the reader that specific information had been redacted.

As we've noted previously, however, we do favor the least restrictive dissemination of fire data possible that complies with state law, and therefore urge that any mechanism created to publish this data will by default make all non-confidential information available to all of its potential users.

Respectfully submitted this 23rd day of October, 2012,

By: __*/S/*____***Diane Conklin***_____

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VERIFICATION

I am the subject matter expert for the **MUSSEY GRADE ROAD ALLIANCE**, intervenor herein. I am the founder of M-bar Technologies and Consulting, LLC, a wildland fire research and consulting company. The technical data, description of historical events, and statements in this document are all true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters I believe them to be true.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed this 23rd day of October, 2012 at Ramona, California.

/s/ Joseph W. Mitchell

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