BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop a Risk-Based Decision-Making Framework to Evaluate Safety and Reliability Improvements and Revise the General Rate Case Plan for Energy Utilities.	Rulemaking No. 13-11-006 (Issued November 14, 2013)

MUSSEY GRADE ROAD ALLIANCE COMMENTS ON INCORPORATING RISK-BASED DECISION MAKING INTO GENERAL RATE CASES

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I. INTRODUCTION

In accordance with the instructions of President Peevey in Order Instituting Rulemaking R.13-11-006,[1] the Mussey Grade Road Alliance (MGRA or Alliance) files these comments to respond to issues raised and questions posed in sections 4.1 through 4.6 of the Order. Additionally, the Alliance responds to issues and information provided in the response to data requests that the utilities produced at the behest of the Order.[2] The Alliance will be participating as a party in accordance with Rule 1.4(a)(2)(ii) of the CPUC Rules of Practice and Procedure.

II. BACKGROUND

The Mussey Grade Road Alliance welcomes the opening of Rulemaking R.13-11-006 and the development of a quantitative risk-based decision framework for general rate cases. Our primary goal will be to help ensure that wildfire risks are given proper weight in the development of future GRC decision frameworks, and that the best efforts be made to adequately quantify wildfire risks and prevention costs so that safety spending in GRCs is optimized to suit the needs of ratepayers and residents of fire-prone areas.

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[1] R.13-11-006; ORDER INSTITUTING RULEMAKING TO DEVELOP A RISK-BASED DECISION-MAKING FRAMEWORK TO EVALUATE SAFETY AND RELIABILITY IMPROVEMENTS AND REVISE THE GENERAL RATE CASE PLAN FOR ENERGY UTILITIES; November 14, 2013. (OIR)

[2] Responses to utility data requests, all dated December 20, 2013, include:
PACIFIC GAS AND ELECTRIC COMPANY'S (U 39 M) RESPONSES TO QUESTIONS (PG&E Response).
RESPONSE OF LIBERTY UTILITIES (CALPECO ELECTRIC) LLC (U 933-E) TO DATA REQUEST IN ATTACHMENT A OF ORDER INSTITUTING RULEMAKING 13-11-006 (CalPeco Response)
RESPONSE OF PACIFICORP (U 901-E) TO RISK-BASED DECISION MAKING QUESTIONS (Pacificorp Response)
RESPONSE OF BEAR VALLEY ELECTRIC SERVICE (U 913-E), A DIVISION OF GOLDEN STATE WATER COMPANY, TO ATTACHMENT A OF THE ORDER INSTITUTING RULEMAKING (Bear Valley Response)
SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) RESPONSE TO QUESTIONS IN ATTACHMENT A (SCE Response)
RESPONSE OF SAN DIEGO GAS & ELECTRIC COMPANY (U902M) TO DATA REQUEST IN ATTCHMENT A OF ORDER INSTITUTING RULEMAKING 13-11-006 (SDG&E Response)

MGRA is a grassroots citizen-based organization begun in 1999 and dedicated to the preservation and protection of historic Mussey Grade Road and environs in Ramona, California,[3] and has been and intervenor before the Commission since 2006. It has been a participant in a number of proceedings including R.08-11-005 (wildfire safety), A.06-08-021 (SDG&E Sunrise Powerlink), A.08-12-021 (SDG&E power shutoff) and A.09-08-020 (Wildfire Expense Balancing Account). MGRA also was granted party status in SDG&E rate case A.10-12-005, though we did not actively participate in this proceeding due to our limited resources.

The majority of MGRA contributions to proceedings of the Commission concern the issue of power line fires. Our concern with the issue of catastrophic fires began as a result of the collective experience of the Mussey Grade Road community in the 2003 Cedar Fire in San Diego County[4] as well as the subsequent involvement in the Sunrise Powerlink application, during which we brought to the attention of the Commission the potential risk of fires ignited by transmission lines. Four years later, the MGRA area was threatened by the Witch Fire, a catastrophic wildland fire ignited by San Diego Gas & Electric Company's (SDG&E) equipment in 2007.

Our contributions to proceedings have consisted of expert witness testimony and other technical input, proposed rules that have been adopted or are being adopted by the Commission, as well as general argument for the application of sound scientific and engineering principles to the problem of power line wildfire safety.

The Alliance therefore welcomes OIR 13-11-006, which will hopefully provide a productive forum for producing and optimizing methods for quantifying power line wildfire risks and costs.

III. GENERAL COMMENTS

As an organization representing the interest of rural ratepayers with a wide range of economic backgrounds MGRA greatly appreciates this attempt by the Commission to balance cost

[3] For more information see http://www.musseygraderoad.org

[4] The Mussey Grade Road area was devastated in the 2003 Cedar Fire during which two-thirds of existing homes were destroyed in the southern portion of the five-mile road south of Dos Picos Park Road and long-term damage inflicted on our historic oaks lining our canopy road. While the Cedar Fire was not ignited by power lines, the fear of repetition of such a catastrophic fire event has motivated the Alliance since 2005 to become engaged in Commission proceedings in order to enhance the safety of our community.

and safety in an appropriate quantitative way. In fact, we have ourselves argued for such an approach in other proceedings we have participated in.[5]

We note that the OIR does not explicitly mention wildfire caused by utilities as one of the potential safety hazards to be addressed. Indeed its only mention of wildfire is with respect to grid vulnerability ("expected damage *from* wildfires"[6] – emphasis ours). In light of the numerous proceedings spawned by the disastrous 2007 fires, in which utility infrastructure was implicated in numerous fire starts resulting in massive property damage and loss of life, this omission is surprising. We hope, by our participation, to help the Commission put a proper emphasis on wildfire prevention in the course of this proceeding.

Fortunately all electrical utilities save one[7] mention wildfires as one of their "top ten" risk concerns, and we address some of their responses in a following section.

Section four of the OIR directs parties to "provide comments to complete the following set of issues and refine the relevant questions. We want to encourage creative ideas, including radical departures from our current way of doing business."[8] Accordingly the Alliance describes below some of the goals it would like to see achieved in this Rulemaking:

- Integration of GRC efforts with future outputs from R.08-11-005 fire data collection and fire hazard mapping efforts.
- Establish a minimum standard for the evaluation of wildfire risks by utilities and methods for quantitative risk assessment for wildland fire that can be factored into rate cases.
- That quantitative wildfire risk models be required to include, where appropriate, 'fat tail' statistical distributions that describe low-probability, high-impact events. This proceeding should also lead to the development of mechanisms for identifying and

[5] In A.08-12-021 we proposed adoption of a quantitative cost/benefit analysis to determine the optimum wind speed threshold for shutting off power in the event of extreme fire danger. MUSSEY GRADE ROAD ALLIANCE COMMENTS ON SDG&E'S SHUTOFF PLAN AND PROPOSED RULE 14 CHANGE; March 27, 2009; pp. 21-26. In R.08-11-005 we argued for developing granular fire hazard maps optimized for wind-sensitive utility infrastructure so that safety expenditures could be concentrated in the area of greatest risk: R.08-11-005; MUSSEY GRADE ROAD ALLIANCE OPENING BRIEF FOR ORDER INSTITUTING RULEMAKING R.08-11-005 PHASE 2; September 3, 2013; p. 11.
[6] OIR; p. 8.
[7] Bear Valley Electric comments unfortunately omit mention of wildfire caused by power lines as a risk.
[8] OIR; p.10.

assessing the risk of other low-probability, high-impact events.

We address these goals in more detail below.

A. MGRA Goals

The Alliance is interested in seeing the following issues address in this proceeding. This is a non-exclusive list, and we may encounter other issues where we have relevant expertise or interest:

1. Incorporating outputs of R.08-11-005 data and maps for risk assessment

The proceeding R.08-11-005 is targeted towards improving fire safety for public utilities (both electrical and communication providers). Initiated in 2008, this ongoing proceeding has produced many changes to the General Orders regulating power line and communication line safety, with many more still under evaluation or in some stage of finalization. Among those being readied, at least two may be of specific interest to this rulemaking.

A proposed decision currently under review will require all electrical utilities to collect fire data and provide it on a regular basis to SED.[9] There is no current opposition to the proposed rule in its current form and it seems likely to be adopted. Currently, a number of utilities report using "near miss" safety reports, operational outage reports and other data when trying to formulate their internal risk assessments. Among the data we suggest should be formally used in risk assessment would be the fire start reports, not only from internal utility data but also, to the extent it is shareable, the data of other utilities. As co-authors of the data collection rule, we believe that identifying the causes of fires that are caught before becoming catastrophic is crucial to identifying ways to reduce the probability of catastrophic fire starts.

Another effort underway in the same proceeding involves the development of detailed utility-specific fire threat maps that may incorporate expected wind speeds, a factor that greatly

[9] R.08-11-005; Proposed Decision of Commissioner Florio: DECISION ADOPTING REGULATIONS TO REDUCE THE FIRE HAZARDS ASSOCIATED WITH OVERHEAD ELECTRIC UTILITY FACILITIES AND AERIAL COMMUNICATIONS FACILITIES; November 19, 2013; pp. 82-88.

affects the probability of utility fire starts.[10] A proposed decision is now pending on this issue, again with little current opposition, that will fund the development of these detailed fire maps.[11] Such maps may be used to identify areas of specific danger that need to be more urgently addressed. If the risk levels defined by the maps are sufficiently quantitative they should allow relative risks to be assessed and incorporated in a GRC risk framework. A challenge faced by the present Rulemaking is that due to the lead time in developing and reviewing maps that are scientifically sound and properly incorporate utility infrastructure, it may be that the final R.08-11-005 maps are not available until after the present rulemaking completes. Hence, it is important that the GRC risk estimation framework incorporate appropriate "hooks" that will allow future geographic fire risk information to be used for quantitatively assessing risk levels.

2. Establishing a minimum standard and common methods for utility risk assessment

We note in the utility responses to the data requests a wide variation from utility to utility of formality applied to the determination of utility risks. While we can only judge the underlying program through the data request responses, these would appear to range from highly formal and involved, such as the SDG&E response, to others that are considerably less detailed. Doubtless the level of formality may depend on the size of the utility and its available resources. However in the interest of ensuring that all ratepayers and residents of California be provided the assurance of the best cost/safety balance, we think it is necessary that minimum standards for risk assessment be in place.

To this effect, it would be good if some resources for estimating risk and cost could be incorporated by the Commission. In this way, smaller providers may be given an adequate opportunity to provide risk and cost estimation tools that might require unreasonable cost expenditure were they to develop it themselves. On the other end, while we would welcome offerings by the larger utilities that are clearly and definitively above the minimum standard, it is important that the purported superiority be quantifiable and well-demonstrated.

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[10] Mitchell, Joseph W.; Power line failures and catastrophic wildfires under extreme weather conditions; Engineering Failure Analysis; Volume 35, 15 December 2013, Pages 726–735 (ICEFA V, The Hague, The Netherlands, July 3, 2012)
http://www.sciencedirect.com/science/article/pii/S1350630713002343

[11] R.08-11-005; Proposed Decision of Commissioner Florio: DECISION APPROVING THE WORK PLAN FOR THE DEVELOPMENT OF FIRE MAP 1; December 13, 2013.

While each major electrical utility might have its own methodology and tools for risk estimation, it must be remembered that every time a tool is built or methodology developed, it is the ratepayers who pay for the effort and its future implementation and maintenance. To the extent that business models and service area needs might differ, some of this might be reasonable. However, we believe it is in the ratepayer interest that common methodologies and tools be developed wherever possible in order to reduce overall ratepayer costs and to ensure as far as possible a uniform level of risk/cost balancing for all GRC cases.

3. Incorporation of proper statistics to handle low-probability high-impact events

A common cause for risks being underestimated is that the person doing the estimation uses incorrect statistical assumptions regarding probabilities. Certain classes of event are driven by what are known as self-organization, and these exhibit the characteristic that the greatest amount of change (damage or loss) over time is likely to be produced by rare catastrophic events. Wildfires, earthquakes, landslides, and economic market fluctuations have been shown to fall into this category. Past MGRA testimony and comment has provided evidence that wildfires fall into this class of event, and describe some of the consequences for risk estimation.[12] Work by the MGRA expert has specifically demonstrated that power-line ignited wildfire size distributions fit this classification.[13]

As far as a safety standard to be applied to low-probability high-impact events, the Alliance has often argued in the past filings for adopting at the least that of the American Society of Civil Engineers (ASCE) 1700 year recurrence interval for Class IV hazards for "buildings and other structures, the failure of which could pose a substantial hazard to the community"[14] applied to power-line wildfire ignition risks. Some of these recommendations have been adopted by the Commission.[15]

There are other low-probability high impact events related to utility activities that should be appropriately quantified in the course of this proceeding to ensure that appropriate funds are being

[12] For example, A.06-08-010; MGRA Phase 1 Direct Testimony, Appendix H; May 31, 2007.
[13] Mitchell, Joseph W.; "Power Lines and Catastrophic Wildland Fire in Southern California"; Presentation to the Fire & Materials 2009 Conference, San Francisco CA, Jan 26, 2009.
http://www.mbartek.com/FM09_JWM_PLFires_1.0fc.pdf
[14] ASCE/SEI; Minimum Design Loads for Buildings and Other Structures; ASCE/SEI 7-10, New York. pp. 2,248
[15] D.12-01-032; p. 50. The 3% in 50 year requirement is equivalent to a 1700 year recurrence interval.

spent on prevention, mitigation and planning. Some of these are mentioned either in the OIR itself or in the utility data responses. However, we believe that the scope of this proceeding should include some effort to identify risks of other low-probability high impact events that are not currently considered because they have not happened yet. One potential example is the occurrence of an extreme geomagnetic storm, which has the potential to disrupt, damage or even destroy transmission infrastructure. The incidence of this type of event is known historically, but events of the magnitude of the worst known historical cases have not occurred since the development of the modern transmission network.[16] Another might be outbreak of a pandemic, which is widely anticipated and feared by public health experts. What level of reduction in utility staffing would affect its ability to provide reliable service? We hope that this proceeding's broad focus on safety, risk and costs will allow consideration of issues that might have been missed to date but have the potential to be future headlines.

IV. ALLIANCE RESPONSE TO COMMISSION QUESTIONS

The Order Instituting Rulemaking puts forward a number of questions that are designed to frame the issues to be pursued in this Rulemaking, and invites parties to comment on them.[17] While the Alliance wishes to narrow our concern to the issues of greatest interest to us (wildfire risk and cost), we would like to reserve the right to reply to the comments of other parties on any of the questions raised by the Commission.

How should the Commission develop a new RCP for energy utilities in a way that will link strategy and goals to resource allocation? What kind of reporting requirements are needed in order to identify the framework, method, practices and activities used in assessing risk of safety, security, and/or reliability deficiencies and linking it to the requested funding in a GRC? (4.2.1)

One of the factors necessary for the success of this proceeding will be the degree to which risks can be adequately quantified, and the costs – both cost of prevention and mitigation as well as the potential costs of the risk itself, are well-understood. Reporting requirements need to be quantitative and not merely qualitative to the full extent possible. One example is the use of outage records to identify problem circuits and provide metrics, a practice put in place by most of the

[16] Kappenman, John; Geomagnetic Storms and Their Impacts on the U.S. Power Grid; Metatech R-319; January 2010. http://www.ferc.gov/industries/electric/indus-act/reliability/cybersecurity/ferc_meta-r-319.pdf
[17] OIR; pp. 10-16.

electric utilities who responded to the data requests. This data might also be linked to customer outage costs to as well as the potential for fire ignition and associated costs and risks, in order to provide financial justifications for circuit replacement priorities. Reporting of fire starts is another example that we addressed in Section III.A.1.

What criteria should be used by the Commission to evaluate whether a utility has produced an adequate risk-informed GRC filing? (4.2.2)

Among the criteria that MGRA would like to see applied to these filings would be:

- All risks are specifically quantified and to the degree possible tied to the magnitude of potential losses.
- "Scores" or "Levels" defined to designate risks or benefits should be translatable into dollar values, if not by the utility then by the Commission.
- The benefits of proposed improvements to infrastructure are adequately quantified and linked as tied as far as possible to reliability and avoided risk.
- Proposed projects in a GRC have some degree of cost/benefit analysis applied.
- Correct statistics are used to deal with extreme, low-probability events with inordinate impacts on ratepayers and residents.
- Electrical utilities should include utility-ignited wildfire risks.
- Risk metrics should show improvements in safety from GRC to GRC.

Is the development of safety, reliability, and security assessment and review tools that could be used internally or externally desirable and sufficient for investment review purposes?

Since ratepayers may be responsible for the development of some of these tools, we would like to see the Commission coordinate a common approach to their development. Otherwise, we might need to pay for independent development of all tools by each utility. Even more significant is the fact that utilities may bias tools they construct to achieve business goals rather than to optimize for public benefit. We therefore urge the Commission to develop safety, reliability, and security assessment tools itself rather than leave these to be independently developed by each utility.

One aspect we have noted in our time intervening at the CPUC is the reluctance of utilities to quantify and discuss certain items (such as fire starts) because of the potential for liability. Allowing some of the duties of this quantification fall upon the Commission might potentially lessen some of the liability concerns – for instance the utilities provide raw data and a Commission tool provides a dollar value for the benefits of a particular improvement project, and this value might potentially include avoided fire costs.

We would not object to the Commission utilizing tools and methodologies developed by or with utilities, provided that they were appropriately reviewed by all stakeholders and then owned by the Commission.

V. COMMENTS ON THE ELECTRICAL UTILITY DATA REQUESTS

A. General

While all electrical utilities have risk management in place, their responses vary widely in formality and detail and comprehensiveness. This is correlated in part with the size of the utility. However, when we look at the treatment of wildfire-related risks, it is apparent that San Diego Gas and Electric Company makes by far the most comprehensive showing, describing in detail a number of its risk identification and reduction programs. In comparison, SCE and PG&E are rather cursory in their description of wildfire risk and mitigations. Clearly, the description of a program is not the program itself, but the Commission should pay attention to the details of existing programs as they are examined in the course of this proceeding, and try to glean which might serve as examples for emulation or adoption as a standard.

Some practices, though, seem to be in wide use by a number of utilities, and these might be evaluated for incorporation in Commission GRC standards:

For example:

- Use of outage data and subsequent inspections to identify problematic circuits
- Near-hit and safety incident reviews

B. SDG&E Response

We reply specifically to the SDG&E response specifically because they say a lot more about wildfire than any other respondent, and much of what they say is good. Among the programs that might be examined in the course of this proceeding: RIRAT, a program specifically geared to rural infrastructure improvement; employing new methods and technologies; changing operational practices and equipment; and the use of statistical analytics to identify high-risk circuits. This detail provided with regard to their wildfire prevention program is unmatched by showings of other utilities.

However we think that this proceeding presents some opportunities for improving the SDG&E program and its outcomes with regard to the GRC. We were parties in the last SDG&E rate case, A.10-12-005, but did not actively participate. In this proceeding, SDG&E laid out a quite a number of fire safety initiatives. We observed from the outset that there was no quantitative means by which external parties could measure the relative value of these programs. While many were adopted others, such as RIRAT,[18] were not. SDG&E notes that "many parties are intensely focused on rates, intervenors sometimes oppose safety related funding, and those recommendations are sometimes adopted."[19]

We would like to suggest that outcomes might improve in GRC rate cases if the program evaluations were to be more quantitative with regard to benefits (avoided losses). Processes such as using "CFSP Scorecard" methodologies are good for internal use (and do not get us wrong, as residents of a fire-prone SDG&E service area we would much rather have such processes in use than not), but they don't translate well when arguing benefits with ratepayer advocates. We believe that a more explicit cost/benefit approach might help in these circumstances.

Another good example raised by SDG&E is its wood-to-steel pole replacement program.[20] We've commented extensively on this program in prior proceedings.[21] This program, which is been in place since 2008, has installed 3000 new poles. However, SDG&E had 89,000 poles in its high

[18] D.13-05-010; p. 97.
[19] SDG&E Response; p. 61.
[20] Id. p. 20.
[21] Example: A.08-12-021; MUSSEY GRADE ROAD ALLIANCE COMMENTS ON SDG&E'S SHUT-OFF PLAN AND PROPOSED RULE 14 CHANGE; p.14.

fire threat areas in 2010.[22] At a rate of 500 poles per year, it would take SDG&E 172 years to replace the remaining 86,000 poles. If this is an important program, why isn't it being conducted with greater alacrity? If it isn't an important program, why is it continuing? How are poles selected for replacement? What is the comparative risk reduction for wood-to-steel and corresponding savings in avoided losses? We posit that if questions of this type were answered more explicitly in the GRC, it would make it easier for parties to evaluate their appropriateness from a cost perspective.

VI. CONCLUSION

The Alliance welcomes the introduction of this effort to develop a risk-based methodology for prioritizing safety spending. We thank the Commission for the opportunity to provide input into matters that will affect all ratepayers and residents of fire-prone areas.

Respectfully submitted this 15th day of January, 2014,

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[22] A.10-12-005; PREPARED DIRECT TESTIMONY OF SCOTT P. FURGERSON ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY; December 2010; SPF-50.