BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

In the matter of the Application of San Diego Gas & Electric Company (U 902-E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project

Application No. 06-08-010
(Filed August 4, 2006)

OPENING BRIEF OF THE MUSSEY GRADE ROAD ALLIANCE ON PHASE I ISSUES OF THE SUNRISE POWERLINK TRANSMISSION PROJECT

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November 9, 2007

A.06-08-010 – MUSSEY GRADE ROAD ALLIANCE OPENING BRIEF

For the foregoing reasons, the Alliance recommends to that the Commission choose local non-wire alternatives and local conventional generation as preferable alternatives to the proposed project to

OPENING BRIEF OF THE MUSSEY GRADE ROAD ALLIANCE ON PHASE 1 ISSUES OF THE SUNRISE POWERLINK TRANSMISSION PROJECT

SUMMARY OF RECOMMENDATIONS

1. OVERALL RECOMMENDATION:

1. **The proposed project potentially poses a serious fire threat to the people and the environment of San Diego County and as a result the Commission should choose other alternatives.** The Commission should choose non-wire alternatives such as energy efficiency, local renewable in-area generation and local conventional in-area generation as preferable alternatives to the proposed project to protect the health, safety and security of the people of San Diego County and to provide a more robust energy infrastructure.

2. RECOMMENDATIONS PERTAINING TO SDG&E:

2. **The cost of potential catastrophic fire event(s) caused by the proposed project should be included in the economics of this project**. In order to accurately reflect the fire risk realities inherent in this project, the Commission should require SDG&E to include, at a minimum, a risk premium cost of $2 M/yr to the operating costs of the project for the purposes of updating the cost/benefit analysis.

3. **The question of the availability of insurance for the proposed project, including costs and terms, should be studied.** The Commission should require SDG&E to research and show whether insurance can be obtained, the costs of insurance for the lifetime of the project and if this insurance would

fully cover power line fire losses sustained by the public regardless of SDG&E liability.

4. **Costs for replacement or rehabilitation of preserved habitat should be added to the project.** The Commission should require SDG&E to add a risk premium cost estimate of $500 k / year to the costs of the project line to cover potential liability for replacement or rehabilitation of lost habitat in a wildland fire(s) caused by the project.

5. **Recoverable damages due to potential wildland fires ignited by the project should be added into the project's cost estimates.** The Commission should require SDG&E to include estimates for damages in all cost/benefit or risk analyses for the proposed project, including contingencies for multiple damages up to a ceiling of triple damages.

6. **Baseline fire hazard risk estimates performed by the Alliance should be adopted.** The Commission should require SDG&E to adopt the baseline estimates performed by the Alliance regarding the project's fire hazard as a canonical risk estimate unless assumptions regarding SPL fire hazard that are listed in Exhibit MG - 1, Table F-4 are analyzed within the scope of the EIR and better baseline estimates are obtained.

7. **A "no single point-of-failure" engineering requirement for the project, along with additional costs that may be incurred should be required.** The Commission should required SDG&E to include in the project's engineering criteria a "no single-point-of-failure" requirement: that no single component failure in the power lines or support structure should result in contact between hot materials and flammable vegetation in order to reduce the probability of catastrophic fire. The additional costs of meeting this requirement should be added to the project.

8. **The Commission should specify at least a 200-year return-level for extreme wind and earthquake events for the purposes of engineering.** This is necessary because of the extremely high costs to the public that can be incurred as a result of Santa Ana and earthquake induced wildland fires. (A 200-year return level would mean that there is an 18% probability of design limits being exceeded during the 40-year lifetime of the project assuming occurrences are randomly distributed in time.) The costs of these enhancements should be incorporated into the cost/benefit analysis for this project.

9. **The feasibility of undergrounding the proposed route and any remaining alternative routes in order to completely avoid above-ground fire ignitions caused by wind induced line faults should be studied.** The Commission should require SDG&E to draw up plans for the undergrounding of the proposed route and all alternative routes within San Diego County. The costs of the undergrounding should be included in the project costs.

3. RECOMMENDATIONS PERTAINING TO THE EIR/EIS:

10. **The effects of climate change on Santa Ana wind conditions should be analyzed and applied to the project's proposed and alternative routes in the EIR/EIS.** The Commission should consider the EIR/EIS adequate and complete only if it contains an analysis of the expected change in the intensity of Santa Ana wind conditions as a result of climate change. The projected results in terms of effects in San Diego County should be applied to the proposed route and alternative routes.

11. **Past Santa Ana wind conditions should be analyzed through wind hazard zone maps in the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it contains an analysis of wind hazard zone maps generated from the NDFD database. These maps should be constructed by summing hazardous conditions over the course of Santa Ana events.

12. **An analysis of Santa Ana historic wind and humidity conditions should be included in the EIR/EIS.** The Commission should consider the EIR/EIS to be complete only if it contains wind and humidity data indicating Santa Ana conditions collected for the history of all weather stations within 15 miles of the proposed route and all alternative routes, including time spent under "Santa Ana" wind gust conditions of 30 mph, 40 mph, and 50 mph.

13. **The EIR/EIS should include a wind hazard analysis.** The Commission should consider the EIR/EIS adequate and complete only if it contains a wind hazard analysis that uses wind gusts data during extreme events and not averages as a function of location. This analysis should be applied to the entire proposed route and all alternative routes to determine the confluence of wind-hazard and fire-hazard areas.

14. **A general study in the EIR/EIS of "type conversion" brought on by wildland fire should be conducted for the proposed route and all alternative routes.** The Commission should consider the EIR/EIS acceptable and complete only if it contains a general study of the vulnerability of the environment to "type conversion" in the event of power line induced fire for all areas within ten miles of any proposed route.

15. **A study should be undertaken for the EIR/EIS regarding the historical exposure of lands in San Diego County to "type conversion".** The Commission should consider the EIR/EIS acceptable and complete only if it contains a study of the average historical exposure to lands in San Diego County to type conversion by looking at fire history throughout the county.

16. **A probability study of the loss of multiple habitats due to a potential catastrophic fire event caused by the project should be required for the EIR/EIS and the costs of such an event should be calculated and added to the cost of the project.** The EIR/EIS should be deemed acceptable and complete only if it contains an estimate of the probability of loss of multiple

habitats due to a large conflagration caused by the project, and that the potential cost impacts be weighted and included in the project's cost estimates.

17. **Identification of unique and irreplaceable habitats both within and outside of preserve areas should be done in the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it identifies unique and irreplaceable habitats both within and outside of preserves that could not be mitigated by replacement and that would require rehabilitation in the event that they are under threat of type conversion due to fire.

18. **The proposed and alternative routes should be studied in order to provide comparisons of fire hazards along each in the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if the proposed route and all alternative routes are studied to provide a "Route hazard analysis" chart. The chart should break out the various characteristics and hazards along each route into small (1 km or smaller) segment for comparison purposes. These characteristics shall include, but not be limited to, Cal Fire metrics Fire Threat, Fire Hazard, Fuel load; Landfire metrics such as Scott Burgan and Anderson vegetation models; fault lines and earthquake hazard; slope; elevation; Santa Ana wind gusts and humidity.

19. **A comparison of vegetation and fuel exposure throughout the SDG&E's network should be undertaken for the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it contains a comparison of the vegetation and fuel exposure of the proposed route and all alternative routes with the rest of SDG&E's transmission network so that outage and fire rates can be appropriately scaled from the existing network.

20. **Alternatively, the predicted costs of the project in the cost/benefit analysis should be adjusted to include significant exposure to hazardous vegetation.** The Commission should require SDG&E to adopt a multiplier of

1.5X to adjust the predicted costs of the project's proposed route and all alternative routes to the significant exposure to hazardous vegetation.

21. **The EIR/EIS should include a comprehensive analysis of the earthquake threat to the proposed project.** The Commission should consider the EIR/EIS acceptable and complete only if it contains a seismic hazard analysis that addresses the issues raised by El-Attar. This analysis should contain dynamic calculations -- and not simply static wind and ice loading, and should be applied to the proposed route and all alternative routes to determine the confluence of wind-hazard and fire-hazard areas.

22. **The dual threats of fire and earthquake should be analyzed together in the EIF/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it contains engineering studies for the proposed route and all alternative routes that specify where the extreme wind and earthquake hazard zones are within fire hazard zones. Engineering solutions should be devised for these zones that significantly reduce the hazard from high wind and earthquake and the costs of applied engineering should be added to the project.

II. INTRODUCTION

Pursuant to Rule 13 of the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission") and the schedule established by Administrative Law Judge Steven Weissman, the Mussey Grade Road Alliance ("Alliance") files this opening brief in opposition to the Application of the San Diego Gas & Electric Company ("SDG&E") for a Certificate of Public Convenience and Necessity ("CPCN") for the Sunrise Powerlink Transmission Project ("SPL") in the above-captioned proceeding.

The Alliance is a grassroots citizen organization begun in 1999 and dedicated to the preservation and protection of historic Mussey Grade Road and environs in Ramona, California. The Alliance has chosen to highlight the wildland fire risks posed by this proposed transmission line project in its submitted testimony in these proceedings The Alliance believes that testimony on the subject is critical to the Commission's understanding of these risks. The Alliance also is interested in this aspect because of the collective experience of the Mussey Grade Road community and the personal experience of this intervenor in a past fire catastrophe.

Because Mussey Grade Road is a one-way in and one-way out road, blocked at its southern end by the San Vicente Reservoir, the fire danger is heightened for those who live here. However. people have been living along Mussey Grade Road from the end of the 19th century. The road was the main route from the coast to the Julian gold mines. It carried gold to the coast and supplies to the eastern mountains and is one of the oldest routes in all of San Diego County. Mussey Grade Road is recognized by the State Historic Preservation Office (SHPO) as a State Historical Point of Interest. The decision to rank Mussey Grade Road was made in 2003, and followed years of work by the Alliance to obtain the designation.

Today, though, the southern end of the road literally goes into the water of the reservoir. The dead end means that fire can be a life-threatening issue for the residents of Mussey Grade Road. And fire is on the minds of our community members because of recent history.

On October 25, 2003, four years ago, my husband and I packed what we could of our belongings, including our German Shepherd Dog, Blue, into our two Jeeps and headed out on an evacuation odyssey that would take us to Borrego Springs, CA. We waited there for five days

before venturing back to the area; on the sixth day we returned to our home, which was saved by the system my husband designed and subsequently put into the public domain so that others could use it.[1]

We returned to a blackened ash moonscape and a devastated community that lost 107 homes along Mussey Grade Road in California's largest recorded wildfire. The Cedar Fire killed 15 people, burned some 270,000 acres and destroyed a reported 2,200 homes. We vowed in our community to never let this happen again. The misnamed "Sunrise Powerlink" project, with all of its attendant problems, represents above all else a direct threat to the Mussey Grade Road community in the form of a potential power line fault in high wind conditions that could spark another fire in our valley. Surrounded by mountains covered in thousands of acres of chaparral, the Mussey Grade Road community fears fire and shares this fear with the myriad of communities, back country areas and neighborhoods that burned when Mussey Grade burned in the 2003 Cedar fire.

While we were told by the governmental authorities, state and local, that we had experienced a "once in a lifetime" fire and that this experience was an unusual occurrence – a "perfect storm" event – a mere four years later, we found ourselves surrounded on three sides by the Witch Creek Fire in the Firestorm 2007 that struck San Diego County on October 21st. This time we stayed in our house and kept a constant vigil with friends and neighbors for four days. This time we did not see the flames crest our surrounding mountains and did not experience the overwhelming devastation in the aftermath of a major fire. But that doesn't mean others did not suffer: seven persons died, some 85 were injured and up to a reported 1,700 homes were lost in this most recent conflagration. Investigations are now ongoing into the causes of the fires.

While the Alliance was the party that brought the issue of fire to the Commission in Phase I, the Alliance realized at the time that the issue and the possibility of massive wildfires seemed remote – and indeed it does until it happens to you. Now an awakening is taking place across the county, state and country especially related to the issue of the danger of winds and wildfires. It is as if the State of California has been issued a warning for Southern California and that warning is: The fire next time may be sooner than you think if changes aren't made.

[1] See www.mbartek.com for a full description of the system.

The Alliance testimony focuses on power lines, winds and fire. The Alliance testimony demonstrates that power lines and Santa Ana winds don't mix. While we are gratified to see the attention now being paid to the issue, we are pained to see the devastation, once again, in our county that comes as a result of wildfires. The deaths are the most important; and then for those who escaped the fire but whose homes and neighborhoods have been destroyed, we know their lives will not return to "normal" for a very long time. And for the larger community of San Diego County, the threat of fire looms over residents in unburned areas in a heightened and terrible way. Now, there is no "normal'. The new normal is to expect a fire until and if we get rain. We look skyward daily and still there is no rain.

As a result of our collective fire experiences, the Alliance believes that the best introduction to this brief is the presentation given by the Alliance to Assigned Commissioner Dian Grueneich and Administrative Law Judge Steven Weissman at the opening of the evidentiary hearings in San Diego on Monday, July 9, 2007.[2] The road map of our testimony is contained in this presentation, along with a general discussion of fire hazards of power lines in high wind conditions that seems both eerily prescient and very sad.

[2] Transcript, pp. 50-56.

Opening statement of Diane Conklin for the Mussey Grade Road Alliance before the California Public Utilities Commission, San Diego, CA in the Matter of A.06-08-010[3]

Monday, July 9, 2007 **County Administration Building, 1600 Pacific Highway, San Diego, CA**

Commissioner Grueneich, Your Honor,

Today is a momentous day for the Mussey Grade Road Alliance, the grass roots citizens' organization I represent in these proceedings. The Alliance has been involved from the very outset in this issue – the issue of whether or not San Diego Gas & Electric Company and its parent corporation Sempra should be granted a Certificate of Public Convenience and Necessity by the State of California to build a huge transmission line through countryside and communities along its 150-mile march from the desert to the sea.

For communities like Mussey Grade, the consequences of granting permission will be felt for generations to come. The scar on the land, the waste of ratepayers money, the very inappropriateness of the possibility of an old energy technology being foisted on the public while new energy technologies are in the process of being born - seems very wrong. That is why the Alliance is involved in this momentous struggle – to help the commission come to the right decision. The stakes are so very high and mistakes cannot be easily corrected.

The Alliance is but a small part of a huge grass roots awakening across San Diego County that is as important as it is rare. People are uniting from the coast to the desert because they do not want to see this line – a gash on the collective inheritance of our children – be allowed to plow its way through state parks and open space preserve after open space preserve after open space preserve just to make profit for a corporation.

Those of us in the back country who suffered through the largest wild fire in the history of California – the Cedar Fire in 2003 – when 15 people died and some 2,200 homes were destroyed - also know that **we don't want another back country fire catastrophe. This is <u>the</u> safety issue**.

[3] Emphasis Added

And we believe that the people of Scripps Ranch, Rancho Penasquitos and further west to La Jolla don't want to see another fire coming their way, ripping through their lives and communities.

The Cedar Fire only stopped going to the coast because the wind changed. **The wind changed and the coast was saved. That is an important point in our testimony. The Alliance testimony is attempting to go where no one has gone before -- to wake the Commission up to the fact that there are on the ground realities that can't be papered over. The reality is that -- up to now -- the Commission hasn't taken fire very seriously. Fire was just what it is -- an act of God, inevitability in Southern California. And that's just what SDG&E's fire expert says in his rebuttal to our testimony. He says regarding the threat of fire: "Welcome to Southern California."**

But fire is more than an unwelcome mat we can't get rid of. Fire is a daily reality in the back country and is becoming a greater and more profound threat as we suffer through droughts that seem to never end. **This year we got about six inches of rain where I live along Mussey Grade Road. Old timers will tell you that we used to get 16 inches and more -- but not now.**

And so the Alliance is concerned – very concerned – with the threat of fire being increased by putting huge, incongruous out of place electrical towers through some of the most beautiful but also most rugged land in the county. **The Alliance evidence will show that power lines do cause fires. They may not happen very often, but they happen --- and when they do, if the conditions are right and the wind is blowing, then you have a catastrophe on your hands. No balancing act will make that catastrophe less of a catastrophe to the people who die and the ones left to mourn them**.

We know because we saw it happen before our very eyes. Not many lifetimes witness a great catastrophe. But when one strikes, it leaves a deep impression. Earlier I mentioned the wind. **The wind is crucial in the Alliance testimony. The evidence will show that wind makes for a bad situation – causing transmission line faults -- even tower collapses. And wind drives fires**. The Cedar Fire incubated for hours in the mountains until the wind picked up around 10:30 at night. Then all hell broke loose and it was too late.

The Alliance testimony will show that **wind is the key to the problems of great fires – and to power line fires. The evidence will show that power lines are the only ignition source that is more likely to occur during high winds and that power line fires in San Diego County were 19 times larger than the average.**

The evidence also will show that **there is a threshold, where the wind is gusting around 30 miles per hour, beyond which power line faults become more frequent. We will demonstrate that at about that same threshold, effectiveness of fire fighting initial attack drops from 98 per cent to around two-thirds. This combination is what makes power line fires so destructive.**

While the evidence will show that our calculations assume that the proposed project would be no more or less likely to start a major fire than any other power line, we have to take into account that this line would pass through some of the most densely vegetated and windiest areas in the county – following the very path of the Cedar Fire which is growing back as we speak.

We on Mussey Grade, in Ramona, along with communities all along the line in the backcountry of Julian and Santa Ysabel to the suburban Scripps Ranch live in the Santa Ana wind pattern. **The Santa Ana winds blow from east to west – right through our communities – in a funnel of mountains and canyons to the sea. The testimony will show that miles and miles of the power line SDG&E wants is planted in the path of that funnel that carried the Cedar Fire halfway across the county.**

Then there is the issue of who pays if there is a fire someday. This line is supposed to be good for 40 years or so. I am 60 this year, so I won't see its demise. But this project will be threatening to start a catastrophic fire for years to come when many in this room won't be around. That's something to think about. **What could we be saddling our families and communities with for the future? Especially in an acknowledged global warming world – which no company can air-condition us out of – it is clear that we should ponder what we are doing in light of new conditions never before faced by modern man.**

Who pays? Obviously SDG&E should pay. But what should they pay? Our evidence will show that **the destruction of open space preserves and parks would be expensive and ratepayers would pay for it – pay to restore what the company destroys**. In fact, it is not clear exactly how expensive it would be – but certainly it is not even contemplated today because, well, fire is an act of God, right?

There is also the incredible damage that fire brings with it to land that is burned too many times in too short a time. Whole areas of San Diego, if they burn too frequently, can change from one kind of landscape – say chaparral or coastal sage – to dry, weedy grasses that are even more flammable and much less desirable in every other way.

The Mussey Grade Road Alliance has submitted 50 pages of testimony and 10 appendices containing scientific analyses and comprising one of the largest bodies of testimony of its kind ever submitted to the commission.[4] We have also submitted testimony on community values and plan to do more in the Phase II response to the Environmental Impact Report. Our testimony re fire risks will show that the mantra SDG&E's has in its corporate head is not the threat of fire to us; it's the threat of fire to them and to their lines. **Threats to their lines, as our testimony will show, is <u>not</u> the issue. The threat is fires started by their lines and that endanger us.**

Our testimony will show that **87 power line fires in the SDG&E service area occurred in 35 months during 2004-2006 from transmission and distribution lines. Nine of these were started by the big lines. Our testimony will also show that under different conditions – wind conditions – fires like these could have become catastrophic events.** Our testimony will show there is a gamble involved in this decision beyond the issue of the line itself.

In closing, I would like to thank you in advance for your attention to our testimony and concerns. We have been working on this project since December 2005. That's a long haul for volunteers. However, it makes it worth it when we are able to talk to you in this setting. Because

[4] In fact, the Alliance testimony and exhibits come to a total of more than 150 pages, with much of the evidence consisting of original scientific fire analysis never before attempted by any party in any previous Commission proceedings. This analysis, informed with new facts not available prior to the end of Phase 1, will be continued in Phase II. The recommendations in this brief form part of the road map of necessary information that is unknown at this time and to be included in the work of the Commission in this proceeding.

the commission encourages participation, we say "okay we'll participate". It isn't easy. But we do it because we care and the opportunity is there**. We thank you heartily for that and for your careful and informed consideration of our evidence. The larger issue at hand - our personal safety and security and the right to live undisturbed in our homes and communities - deserves nothing less.**

Thank you.

III. PROCEDURAL HISTORY – NOT ADDRESSED

IV. STANDARD OF REVIEW – NOT ADDRESSED

V. PROJECT DESCRIPTION AND SCOPE – NOT ADDRESSED

VI. NEED FOR THE PROJECT

A. Analytical Baseline - NOT ADDRESSED

B. Project costs

1. Cost estimates – ADDRESSED IN VII-5

2. Cost cap – NOT ADDRESSED

C. Reliability – ADDRESSED IN VI-B (NON-WIRE ALTERNATIVES)

D. Access to Renewables - NOT ADDRESSED

VII. ALTERNATIVES (id., at 14-15, and Pub. Util Code §§ 1002.3, 1003 (c), (d))

A. Transmission - NOT ADDRESSED

B. Non-wires

a) Non-wire alternatives will not face the same wildland-fire induced outages claimed by SDG&E.

SDG&E's primary concern regarding wildland fire has been that fires cause outages and thus represent an obstacle to the reliable transmission of power. According to this view, adding an additional corridor for power transmission reduces the chance that fires will knock out both of the lines at the same time[5]. This argument ignores two important points:

1. Large fires may span considerable distances in the back country of San Diego County. The Cedar Fire, for instance, spanned 40 miles along its longest axis. The minimum distance between the SWPL and proposed SPL corridor that transects a heavily vegetated area is roughly 25 miles, following a NE/SW tangent that represents a common direction for Santa Ana winds[6]. The Cedar fire is not the only fire that traveled a considerable distance: the 1970 Laguna fire spanned 33 miles, and the Pines fire of 2002 spanned 28 miles along their longest axes[7].

2. Large wildland fires are correlated in time, and tend to occur during conditions of extreme "fire weather". A clear example of this is the 2003 California "Fire Siege", during which many large fires burned in California at the same time, including the three large fires of San Diego County: Cedar, Paradise, and Otay (Mine) fire. Had the SPL (in its original proposed route) existed in 2003, both the SPL and the SWPL would have been removed from service at the same time[8].

Should SDG&E come to rely on two corridors (SWPL plus a new route) to supply electricity to San Diego County, it is not unreasonable to expect a common-mode failure of both lines due to wildland fire within the lifetime of the project, particularly since an incident capable of producing such an outage has already occurred within recent history. According to a simulation run by SDG&E, such a common-mode failure could lead to a cascading blackout during periods of peak power usage[9]. The correlation between fires due to Santa Ana conditions calls into question the N-

[5] Sunrise Powerlink Transmission Project Purpose and Need; Vol. 2; Application No. 05-12-014; August 4, 2006; p. II-18 – Sec K.1
[6] Exhibit MG – 1; Prepared Testimony of Mussey Grade Road Alliance - Dr. Joseph Mitchell Testimony and Appendices A-J, Fire Analysis - Economic Impacts; Appendix E., p. 13; Figure E-5.
[7] Exhibit MG – 1; Appendix D, p. 9, Figure D-3.
[8] Exhibit MG – 1; Appendix E., p. 13; Figure E-5.
[9] Exhibit MG - 1; p. 50.

1-1 classification used for fire events under independent transmission corridors[10]. The "event" in question is actually the Santa Ana windstorm, and it is this single "event" that is capable of causing multiple outages due to fire and infrastructure damage.

SDG&E has also attempted to characterize the SPL proposed route as somehow more reliable, from the vantage point of wildland fire, than the SWPL corridor. This runs counter to analysis done for the Alliance which was presented as testimony and other exhibits:

- The analysis using the Scott-Burgan vegetation model indicates that the current SWPL and SPL routes are roughly equivalent in terms of exposure to heavy fuels (flame lengths > 15 feet), whereas SPL would be exposed to roughly 50 km more than SWPL in terms of moderate fuels (flame lengths 5-15 feet). (SPL shows 137 km of exposure while SWPL shows 83 km)[11].

- It was demonstrated that the current Cal Fire data for the "Fuel Rank" and "Fire Threat" metrics are biased by the reduction of fuels caused by the 2002 Pines and 2003 Cedar fires, and hence would tend to show the SPL route as being a lower fire risk. Even with this bias affecting the data, the Alliance analysis found exposure to "very high" and "extreme" CDF "Fire Threat" along 88 km segments for SPL and 102 km segments for SWPL. After submission of the Alliance testimony, a pre-2003 "Fire Threat" map was obtained, and this was presented by the Alliance during cross-examination of witness Mortier[12]. These clearly show that the exposure of the SPL route to mature chaparral creates an "extreme" fire threat over a greater portion of the proposed route. That this condition could be re-established within the early lifetime of the proposed SPL project was confirmed by witness Mortier under cross-examination[13].

[10] Examination of witness Linda P. Brown; Public Utilities Commission, State of California; A0608010; July 12, 2007; pp. 698-701
[11] Exhibit MG - 1; Appendix E; p. 19; Table E-5.
[12] Exhibit MG – 10; CDF Fire Threat - Pre-Cedar (2003)/Pines(2002) Fires;
Exhibit MG – 11; CDF Fire Threat - Post Cedar (2003)/Pines (2002) Fires;
Exhibit MG – 12; CDF Fire 2003 - Pre-Cedar/Pines Enlarged "Sunrise" Northern Loop
[13] Cross Examination of witness Mortier; Public Utilities Commission, State of California; A0608010; July 17, 2007; p. 1007.

The SDG&E analysis of the proposed route included in Mr. Mortier's testimony regarding the fire threat along SPL did not analyze the line from the proposed substation near Santa Ysabel to the coast. The analysis deliberately left out the western segment to the coast.[14] This explains his statement that "The Cedar fire burned to within 3 miles of the proposed route at its closest point, but did not burn inside the corridor and would not have affected it, had the proposed route existed at that time."[15] As residents near the proposed corridor, and extremely aware that we were well within the Cedar fire perimeter, we found it odd and disturbing that we had to submit evidence to prove this[16]. While the statement was corrected and clarified by the witness during cross-examination[17], it also means SDG&E's analysis in the rebuttal testimony does not analyze the real fire exposure of the proposed SPL route.

According to Alliance testimony, the segment of line exposed to vegetation east of the proposed substation near Santa Ysabel represents only about one-fourth of the total line distance exposed to flammable vegetation along the SPL route[18]. Hence it is not possible to reach any conclusions SDG&E's calculations or assertions about the risk of fire along the SPL proposed route because the actual proposed route was not analyzed.

Further, it would be incorrect to characterize the proposed SPL route as being any less prone to fire outages than the SWPL route. In fact, the evidence submitted by the Alliance supports the assertion that the proposed SPL route would be somewhat more exposed than SWPL to future catastrophic fires.

If wildland fire is a significant determinant of reliability, as claimed by SDG&E, then it follows that any proposed route should avoid wildland vegetation where it would be exposed to harm. Unfortunately, this would relegate transmission corridors to developed areas, which tend to be undesirable for many other reasons. As far as selecting other routes that might be less fire prone, this is extremely difficult. As stated by SDG&E witness Hal Mortier: "given the geography of the San Diego region, there is no way to interconnect SDG&E's local system to the rest of the grid –

[14] Cross Exam, Mortier; p. 997.
[15] Exhibit SD - 15; Prepared Rebuttal Testimony of Hal Mortier on Behalf of San Diego Gas & Electric Company; p. 8.
[16] Exhibit MG – 7; SDG&E 69 KV Line - Cedar Fire Aftermath Kimball Valley Road 11/8/03.
[17] Cross Exam, Mortier; p. 1007.
[18] Exhibit MG – 1; Appendix B, pp. 9-10; Appendix E, p. 9, Fig. E-2

from whatever direction – without routing EHV transmission lines through areas of high fire risk. Welcome to Southern California.[19]"

In order to have an electrical supply that is secure against wildland fire, then, non-wire alternatives should be used.

Wildland fire, however, is not the only threat that affects the security of our grid. If more of Southern California's energy infrastructure is routed through the Imperial Valley substation, as is planned for SPL; the grid becomes much more vulnerable to earthquakes. The San Andreas fault system runs less than 20 miles to the east of the substation), and to the possibility of terrorist or other attack on a single, vulnerable target[20].[9] The lives and well-being of millions now depend on a sparse and somewhat fragile infrastructure of major centralized installations. The spirit of reliability dictates that we should create a diverse and robust energy supply and distribution network that will be resilient against the contingencies of a potentially chaotic 21st century.

- **The proposed project potentially poses a serious fire threat to the people and the environment of San Diego County and as a result the Commission should choose other alternatives.** The Commission should choose non-wire alternatives such as energy efficiency, local renewable in-area generation and local conventional in-area generation as preferable alternatives to the proposed project to protect the health, safety and security of the people of San Diego County and to provide a more robust energy infrastructure.

C. Combined Wires/Non-wires Alternatives - NOT ADDRESSED

D. Delay in the Online Date for the Project - NOT ADDRESSED

E. Other – NOT ADDRESSED

VIII. ECONOMICS

A. Cost/benefit analysis

1. Production Cost Savings - NOT ADDRESSED

2. Reliability Cost Savings - NOT ADDRESSED

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[19] Exhibit SD - 15; Hal Mortier Rebuttal Testimony; pp. 5-6

[20] Exhibit MG - 1; p. 50.

3. Renewable Cost Savings - NOT ADDRESSED

4. Other Savings - NOT ADDRESSED

5. Project Costs

a) The costs of the line should explicitly include sufficient mitigation to cover the liability and property damage costs from wildland fire. An actuarial calculation which estimates costs weighted by probability should be used for this purpose. Since no alternative model has been offered, we request that the Commission use the Alliance testimony as a basis for this estimate.

A considerable portion of the Alliance testimony was dedicated to devising a means by which the costs of potential wildland fires accidentally started as a result of SPL operation could be estimated and applied to the cost of the project. We adopted the following model for the creation and spread of a catastrophic power line fire:

> "1) A section of transmission line, tower, or other hardware is unusually vulnerable due to aging, material defects, assembly defects, poor maintenance, or exposure to unusually extreme conditions.
> 2) This section of transmission line, tower, or other hardware is also in the proximity of flammable vegetation.
> 3) Weather conditions with strong gusting winds and low humidity (i.e. "Santa Ana" conditions) are present.
> 4) Stress from the wind causes a component failure.
> 5) The component failure causes arcing and the ejection of hot or flaming materials.
> 6) The hot or burning materials ignite the adjacent vegetation.
> 7) The fire is rapidly spread due to the high wind and low moisture conditions.
> 8) Remoteness of the site or the rapid growth of the fire foils initial firefighting response, and the fire grows to a large size.[21]"

The process by which the probability of this scenario can be estimated relied on the use of historical data from several sources:

[21] Exhibit MG - 1; pp. 2-3.

- SDG&E outage data from 1999 onward.
- SDG&E fire data collected from February 2004 onward.
- Cal Fire (CDF) EARS database containing fire start information in San Diego County, from 2002 onward.
- Cal Fire (CDF) fire perimeter data (from 1900; large fires only).
- Mesowest RAWS weather station data (1999-present)
- Fire loss data from the Insurance Information Institute (nationwide).

The process by which these data were turned into probability estimates is described in the testimony:

1. The number of fires in the SDG&E fire data due to transmission lines was scaled to the total length of the transmission network, giving a fire ignition rate per mile per year.[22]

2. This fire rate was multiplied by the length of the proposed SPL route, using only the segment of the line exposed to flammable vegetation[23].

This was used to obtain a projection of one fire per 20 years for the SPL, or per 15 years if the 500 kV segment is assumed to have the same ignition rate, with relatively large uncertainties.

3. Ignition data (EARS) were correlated with weather data (RAWS) in order to determine the fire-fighting initial attack success rate for fire ignitions. This was determined to be 98% overall, but only around 64% when the wind gust speed at the nearest weather station exceeds 30 mph. This implies that severe SPL fires related to wind conditions could occur with a mean recurrence time of 42 years[24].

4. The cost of major fires is compared against historical data to estimate potential losses, which can range upwards of $1 billion[25]. Additionally, theories of liability which might be applied in this case can add multipliers of 2-3X to assessed damages[26]. "Optimistic" and "pessimistic" cases were analyzed for the probability of a $1 B loss, with 2% and 10% probability for an occurrence over the 40 year lifetime of the line. These would lead to a $0.5 M and $2.5 M cost per year over the life of the line, increasing to $1.5 to $7.5 M per year if the increased liabilities are applied. This number would then be used as a cost in calculating the cost/benefit ratio for the line. It is possible that a more refined calculation using more comprehensive analysis could narrow the

[22] Exhibit MG - 1; Appendix B, pp. 5-9
[23] Exhibit MG - 1; Appendix B, pp. 9-11
[24] Exhibit MG - 1; Appendix F, pp. 13-17
[25] Exhibit MG - 1; Appendix H, pp. 4-9
[26] Exhibit MG - 1; Appendix G, pp. 3-5

range of uncertainty, and we have suggested in the testimony that this be performed within the scope of the EIR/EIS. In lieu of this we would like to suggest a conservative estimate of $2 M per year be added as a cost that accounts for the wildland fire potential of the proposed line. $2M represents the geometric mean between the minimum ($0.5 M/yr – no liability multipliers & optimistic) and maximum ($7.5 M/yr – liability multipliers & pessimistic).

SDG&E has not provided an alternative probability or cost analysis. They have offered two objections to the probability calculation, and also object to the economic analysis.

First, they argue that the risk of fires from transmission lines is small. Noting that we entered into testimony reports of two transmission tower collapses in California within one year[27], witness Hal Mortier asserted that the fact that these did not cause fires indicated the low risk due to transmission towers[28]. Under cross examination, the witness was presented with photos of these incidents, with one tower falling in a mud flat and the other in the desert[29], and concurred with the Alliance that the lack of vegetation was a likely reason that fire did not occur in these cases[30]. Later, presented with a photo of another tower in a heavily vegetated area[31], the witness was asked that whether it could ignite vegetation were it to collapse for some reason. He stated that it could[32]. Additionally, SDG&E fire records and outage records show that there was a fire as a result of a fallen line on a 230 kV tower on Camp Pendleton in December 2006[33].

Second, Mortier argues that since 69 kV lines already exist along much of the proposed SPL corridor, the addition of the SPL will add negligible additional risk to the route[34]. This would be true if the SPL were *replacing* the existing line. However for the great majority of its run through the areas of fire risk the SPL will be added to the 69kV corridor on its own towers and the existing 69kV line will be left in place[35]. Hence, both existing and new lines would contribute to fire risk. Additionally, the existing 69 kV lines were included in the original calculation of fire rate per mile,

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[27] Exhibit MG - 1; p. 13
[28] Exhibit SD - 15; Mortier Rebuttal Testimony; p. 5
[29] Exhibit MG - 5; Downed Tower #1 SCE E. Riverside County 7/7/06 High Winds
Exhibit MG - 9; Downed Tower #2 - PG&E Redwood City Wetlands 12/26/06 - High Winds and Defect
[30] Mortier Cross Examination; pp. 994-996
[31] Exhibit MG - 6; SDG&E Tower Rancho Penasquitos 7/5/07
[32] Mortier Cross Examination; pp. 1009
[33] Exhibit MG – 1; Appendix B; p. 6; Table B-2
[34] Exhibit SD - 15; Mortier Rebuttal Testimony; p. 5.
[35] Exhibit MG - 17; Table 2.3-1 Sunrise Powerlink Project Plan of Service List, Sunrise Powerlink Transmission Project, Application for Certificate of Public Convenience and Necessity, Application No. 05-12-014, Part 1 of 2, Proponent's Environmental Assessment (PEA), August 4, 2006, San Diego Gas & Electric Company

and hence were in fact taken into account in our probability calculations. During cross-examination, Mr. Mortier was presented with this assertion and did not challenge it[36].

The rebuttal testimony also argued against the Alliance's economic approach, arguing basically that because SDG&E already pays liability insurance, the potential cost of wildland fire is already included in SDG&E operating costs[37]. The Alliance concurs that these cost estimates need to be handled properly and the charges need to be placed against the project only once. However, the rebuttal testimony does not sufficiently support the assertion that the charges calculated by the Alliance are currently included in premiums.

The assertion that the costs are reflected in the rates is a presumption: "While I am not a rate expert, presumably these costs are already reflected in the rates."[38] However: 1) there are good reasons to presume otherwise 2) it would have been straightforward for the company to demonstrate that the rate it pays is consistent with estimated costs 3) even if SDG&E is covered by liability insurance, if the rate paid is insufficient to adequately cover the risk, it should still be included in the costs 4) that there is no guarantee that SDG&E will be able to obtain insurance at the current rate in the future, and 5) SDG&E might not be held liable for fires started by its lines ("act of God") and therefore its insurer would not be required to compensate for damages 6) insurance coverage typically does not redress all damages.

There are good reasons to presume otherwise:

1) The rebuttal testimony points out that the policy, to the understanding of the witness, covers "risk liability to all SDG&E assets". Hence one would expect the analysis used to be very broad and general and not focused on the wildland fire issue. This analysis is tightly focused on the wildland fire issue, and it uses data that were not available until quite recently, and then only provided under data request – SDG&E's own fire history records. These form the primary foundation for the Alliance fire rate estimates, and there is no reason to believe that these were used in the formulation of insurance rates for the company. Likewise, the calculation of initial attack success rates under the high-wind conditions often associated with power line failures is, to our knowledge, new. Furthermore, the recognition on the part of the scientific community that wildland fire is a "critical phenomenon", in other words that the rarest, largest events are the most important

[36] Mortier Cross-examination, p. 1001
[37] Exhibit SD - 15; Mortier Rebuttal testimony; p. 15.
[38] Ibid.

from a physical, environmental, and economic point of view, is relatively new[39] and while now being accepted into scientific circles is only slowly making its way into the wildland fire community. Throughout Mr. Mortier's testimony, for instance, he characterizes the probability of transmission line fires as "small" or "trivial". A graph of the cost of the most expensive wildland fires[40], though, shows that costs are dramatically weighted towards the rarest and most expensive events. What this means is that in order to do an accurate estimation of cost, *all* potential events, no matter how rare, need to be included in the estimation. The combination of novel or proprietary data, plus novel scientific approaches, makes it unlikely that the insurer has estimated potential costs and probabilities in the same manner as the analysis presented in the Alliance testimony.

It would have been straightforward for the company to demonstrate that the rate it pays is consistent with estimated costs:

2) Say, however, that the insurer has a "secret sauce" analysis method that accurately and fully characterizes the incremental risk due to the proposed Sunrise Powerlink. This incremental cost will be passed on to SDG&E, the customer. SDG&E could demonstrate the estimated incremental cost increase in insurance due to the SPL, and yet they did not do so in their rebuttal. Now it might be that the incremental cost of risk due to SPL is considered small compared to the entire risk the company is exposed to, as implied by witness Mortier. If so, then the insurance burden would be very much larger than the incremental risk, which we've estimated in the $0.5 M to $7.5 M per year range. It is and would have been straightforward for the applicant to demonstrate that their insurance burden is very much larger than these calculated incremental costs, and hence support the assertion that the insurance rates properly calculate and assume the risk.

Even if SDG&E is covered by liability insurance, if the rate paid is insufficient to adequately cover the risk, it should still be included in the costs:

3) It could also be argued that the actual risk is irrelevant – since the company has an insurer willing to subsume the risk at an agreed price, doesn't it then become the insurer's problem if their risk calculation is incorrect? We would argue no – for two reasons. First, if the risk estimate is incorrect, it is likely that the insurer will correct it at some point in the future. Subsequently, insurance will no longer be available to SDG&E at the original cost, and this extra cost will be passed on to ratepayers. We cannot assume that any savings are permanent, and the prudent

[39] Exhibit MG - 1; Appendix C; p 2-3; References to Malamud et al. and Moritz et al.
[40] Exhibit MG - 1; Appendix H; pp. 5-7; Table H-1, Figure H-1

approach is to use the most reasonable cost estimate over the long term. Second, the purpose of this exercise is to do a "cost/benefit" analysis for the line. If there is a fire, there is a real cost, regardless of whether ratepayers, insurers, or society absorbs this cost. Even if ratepayers are getting a "deal" because of a flaw in risk estimation, the cost is simply being shifted elsewhere. In the broadest sense, all California ratepayers in one way or another pay insurance and re-insurance costs. If "badly estimated projects" (defined as projects with under-estimated risk) go forward everywhere, Californians will end up paying for these projects in the form of higher insurance rates, higher costs of goods and services, higher taxes, and personal losses. Hence "due diligence" on the cost/benefit analysis for this project requires that we verify that the risk is correctly subsumed into any insurance premium before we can claim it is being properly accounted for.

There is no guarantee that SDG&E will be able to obtain insurance at the current rate in the future:

4) If it becomes widely known that power line fires are the cause of catastrophic fires due to the mechanism detailed in this brief, and if such fires occur either inside or outside of the SDG&E service area, then it is only a matter of time before insurers take note, and it would be unlikely that SDG&E could continue to obtain insurance on its present terms.[41] These costs would be passed on to consumers.

Insurance coverage typically does not redress all damages:

5) It could also be that in the case of catastrophic power line fires started by SDG&E equipment via the mechanism described above that SDG&E would not be held liable for damages, and hence its insurer would not have to pay. This could be true if SDG&E were found to have followed industry best practices for maintenance and engineering or if the wind event initiating the fire were severe and unusual enough to be considered an "act of God". Regardless of liability finding, however, the public would have sustained real damages from any such potential fire, and these damages, weighted for probability need to be calculated into the cost/benefit analysis if the economic study for the project is to truly analyze public benefit and cost of the project.

[41] Exhibit MG - 1; Testimony; p. 36

Insurance is a business:

6) Insurance companies are businesses, and their profitability requires that they not be overly generous in dispensing relief. They are not there to make those suffering loss whole, but instead to shield the company holding the policy from the claims laid against it. T he insurers will dispense the minimum amount that they can within the terms of their policies. We cannot assume that the full amount of damage accrued to the public during a wildland fire will be covered by SDG&E's insurer.

In summary:

- **The cost of potential catastrophic fire event(s) caused by the proposed project should be included in the economics of this project**. In order to accurately reflect the fire risk realities inherent in this project, the Commission should require SDG&E to include, at a minimum, a risk premium cost of $2 M/yr to the operating costs of the project for the purposes of updating the cost/benefit analysis.

- **The question of the availability of insurance for the proposed project, including costs and terms, should be studied.** The Commission should require SDG&E to research and show whether insurance can be obtained, the costs of insurance for the lifetime of the project and if this insurance would fully cover power line fire losses sustained by the public regardless of SDG&E liability.

b) The costs of the project should include construction costs due to the more robust construction needed for wind-resilience in high-wind areas and in earthquake zones.

Two specific risks were identified in the Alliance testimony that were not identified in the SDG&E application: 1) the fire risk due to high winds in regions of hazardous vegetation[42], and, 2) the risk due to earthquakes that might cause element failures or lines to touch in regions of hazardous vegetation[43]. Evidence presented in the testimony showed the vulnerability of transmission towers to extreme wind events. At least one professional engineer (El-Attar) was able to demonstrate that seismic effects need to be modeled and that the standard practice of relying on ice and wind loading in areas such as Southern California cannot be relied upon.

[42] Exhibit MG - 1; Appendix F; pp. 8-10.
[43] Exhibit MG - 1; Testimony; pp. 48-49

These specific risks might be mitigated through more robust construction. These extra and probably considerable costs need to be added to the construction cost estimates for the proposed line.

- **The EIR/EIS should include a wind hazard analysis.** The Commission should consider the EIR/EIS adequate and complete only if it contains a wind hazard analysis that uses wind gusts data during extreme events and not averages as a function of location. This analysis should be applied to the entire proposed route and all alternative routes to determine the confluence of wind-hazard and fire-hazard areas.

- **The EIR/EIS should include a comprehensive analysis of the earthquake threat to the proposed project.** The Commission should consider the EIR/EIS acceptable and complete only if it contains a seismic hazard analysis that addresses the issues raised by El-Attar. This analysis should contain dynamic calculations -- and not simply static wind and ice loading, and should be applied to the proposed route and all alternative routes to determine the confluence of wind-hazard and fire-hazard areas.

- **The dual threats of fire and earthquake should be analyzed together in the EIF/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it contains engineering studies for the proposed route and all alternative routes that specify where the extreme wind and earthquake hazard zones are within fire hazard zones. Engineering solutions should be devised for these zones that significantly reduce the hazard from high wind and earthquake and the costs of applied engineering should be added to the project.

- **The Commission should specify at least a 200-year return-level for extreme wind and earthquake events for the purposes of engineering.** This is necessary because of the extremely high costs to the public that can be incurred as a result of Santa Ana and earthquake induced wildland fires. (A 200-year return level would mean that there is an 18% probability of design limits being exceeded during the 40-year lifetime of the project assuming occurrences are randomly distributed in time.)

The costs of these enhancements should be incorporated into the cost/benefit analysis for this project.

- **A "no single point-of-failure" engineering requirement for the project, along with additional costs that may be incurred should be required.** The Commission should require SDG&E to include in the project's engineering criteria a "no single-point-of-failure" requirement: that no single component failure in the power lines or support structure should result in contact between hot materials and flammable vegetation in order to reduce the probability of catastrophic fire. The additional costs of meeting this requirement should be added to the project.

c) The costs of the line should explicitly include sufficient mitigation to cover the cost of habitat recovery and replacement. A proper actuarial calculation for losses that estimates costs weighted by probability should be used in the cost/benefit analysis. The EIR/EIS should only be considered complete if unique habitats that could require rehabilitation rather than replacement are identified within the scope of the EIR.

Another potential cost of the line was identified in the Alliance testimony – specifically the cost of mitigating for land that might undergo "type conversion" as a result of wildland fire[44]. The theory is that if wildland fires are too frequent, then the native Southern California vegetation can be replaced by invasive weeds and grasses that are even more flammable than the chaparral that they replace. A fire created by SPL operations could potentially permanently alter habitat. Since much of the SPL runs through or is adjacent to public preserves that have been set aside for the purpose of habitat and species conservation, and particularly because significant portions of the proposed route pass through the Cedar and Pines fire footprints, we must regard these preserves as particularly vulnerable to type conversion.

Top find out how much fires producing type conversion would cost, we can apply the same approach adopted in a), i.e. to calculate a "risk premium" based upon the cost of the event and the probability of the event occurring. Two potential remedies could be applied here: the first would be

[44] Exhibit MG - 1; pp. 41-45.
Exhibit MG - 1; Appendix H; pp. 9-20.

replacement of the land, and the second rehabilitation. Rehabilitation currently costs approximately $50 k/acre, while replacement costs about 1/10 this amount. We might expect this to shift as time passes, since habitat-worthy parcels will become rarer as time goes on and San Diego development continues. Rehabilitation may also be required if there are unique habitats contained in these parcels that cannot easily be replaced.

It could be argued that routing to avoid the Cedar and Pines fire scars would reduce exposure to type conversion. While this is true initially, this would become less so as the scars re-vegetate and a new mosaic of fire perimeters from future fires take their place. Hence, this is a problem that is not mitigated by rerouting the line, so long as that line passes through and near native habitat and public preserves.

For our cost estimate, we assumed a habitat loss of 1,000 acres, since this is a typical size for open space preserves in our area. However, this does not take into account that a wind-driven powerline fire could easily burn many preserves. The cost estimate was also done for the proposed route, which means that the early part of the SPL operation period would be a time of greater risk of type conversion – 67%, which drops to 50% in the latter part of the SPL projected lifetime, based upon local fire recurrence rates. We also assumed that liability arising from the theory of inverse condemnation[45] (which allows triple damages) could be applied by public agencies against SDG&E. We used the admittedly worst-case scenario of requiring rehabilitation versus replacement, and obtained a risk premium of about $1 M/year. For replacement this would be more typically $100 k/year, assuming that current land prices remain stable, also an unrealistic assumption. Weighing these, and also the risk of much larger and multiple losses, $500 k/year would be a reasonable conservative estimate.

SDG&E has not addressed this issue formally; however we may assume that their arguments as to economic approach, and our counterarguments, also apply to this issue.

- **Costs for replacement or rehabilitation of preserved habitat should be added to the project.** The Commission should require SDG&E to add a risk premium cost estimate of $500 k / year to the costs of the project line to cover potential liability for

[45] Exhibit MG - 1; pp. 34-35.

replacement or rehabilitation of lost habitat in a wildland fire(s) caused by the project.

- **A probability study of the loss of multiple habitats due to a potential catastrophic fire event caused by the project should be required for the EIR/EIS and the costs of such an event should be calculated and added to the cost of the project.** The EIR/EIS should be deemed acceptable and complete only if it contains an estimate of the probability of loss of multiple habitats due to a large conflagration caused by the project, and that the potential cost impacts be weighted and included in the project's cost estimates.

- **Identification of unique and irreplaceable habitats both within and outside of preserve areas should be done in the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it identifies unique and irreplaceable habitats both within and outside of preserves that could not be mitigated by replacement and that would require rehabilitation in the event that they are under threat of type conversion due to fire.

d) Worst-case estimates for potential damages that could accrue to SDG&E as a result of wildland fire liability should include the possibility that multiple damages (2-3 times) may be assessed. These should be applied both to potential property damage and habitat replacement costs.

It was shown in the Alliance testimony[46] that SDG&E could be held liable and pay damages for fires started by its power lines. Applicable case law including relevant text was listed in Appendix G of the Alliance testimony, and may be found in the Table of Authorities (section XI.B). Specifically applicable statute law includes CACI 416 and Cal Health & Safety Code § 13007. Case law includes Lozano v. PG&E Co.[47], Ireland-Yuba Gold Quartz Mining Co., v. PG&E[48], and Beresford v. PG&E[49]. There is an undisputed history of utility companies being held liable for damages when they are found that they have negligently started wildland fires.

[46] Exhibit MG – 1; pp. 32-35 and MG - 1; Appendix G (all)
[47] Lozano v. PG&E Co., 70 CA.2d 415(1945)
[48] Ireland-Yuba Gold Quartz Mining Co., v. PG&E, (1941) 18 C.2d 557.
[49] Beresford v. PG&E (1955) 45 C.2d 738

Additionally, damages can exceed loss replacement. The theory of trespass, which allows double damages, was found applicable to fire in the case Elton v. Anheuser Busch etc.[50] The theory of inverse condemnation, which can lead to triple damages being applied has also been applied to utility-caused wildland fires, as in Barham v. So. Cal. Edison[51]. According to this theory, utilities are held to be public agencies for the purpose of liability due to their ability to condemn and appropriate private property. Marin Mun. Water Dist. v. City of Mill Valley[52] implies that one public agency may seek inverse condemnation damages from another, thus opening the doorway for public land agencies (such as the US Forest service or Bureau of Land Management) to seek restitution for damaged lands.

Prudent planning for likely scenarios that might occur after catastrophic fires must include all potential damages that SDG&E might be subject to.

- **Recoverable damages due to potential wildland fires ignited by the project should be added into the project's cost estimates.** The Commission should require SDG&E to include estimates for damages in all cost/benefit or risk analyses for the proposed project, including contingencies for multiple damages up to a ceiling of triple damages.

e) Undergrounding of the proposed line in areas where it would be exposed to hazardous vegetation should be analyzed for the proposed and alternative routes.

Breaking the causal chain that leads from winds and power lines to catastrophic fires can be accomplished by several methods, among which undergrounding of the line is one of the most effective. This solution removes the power line from exposure to both wind and vegetation, thereby decreasing the overall risk of fire and especially the risk of fire under Santa Ana wind conditions. However, undergrounding is planned for only relatively short segments of the proposed route and its alternatives[53]. Serious consideration should be given to putting the line underground in all areas

[50] Elton v. Anheuser Busch etc. (1996) 50 CA.4th 1301
[51] Barham v. So. Cal. Edison, (1999) 74 CA.4th 744
[52] Marin Mun. Water Dist. v. City of Mill Valley (1988) 202 Cal App 3rd 1161
[53] Exhibit SD – 9; Proponent's Environmental Assessment; Part 1; Figure 2.3-1A to Figure 2.3-1H

where it would be exposed to flammable vegetation, and particularly in those areas where wind is observed to be most intense.

- **The feasibility of undergrounding the proposed route and any remaining alternative routes in order to completely avoid above-ground fire ignitions caused by wind induced line faults should be studied.** The Commission should require SDG&E to draw up plans for the undergrounding of the proposed route and all alternative routes within San Diego County. The costs of the undergrounding should be included in the project costs

6. Results – NOT ADDRESSED

B. Risk and uncertainty

a) Wildland fire risks present the greatest potential risk of liability losses for the project. Because of the nature of wildland fire losses, in which costs increase more rapidly than probability falls, even events with small probabilities must be taken into account in the economic analysis.

Wildland fire costs are the largest source of potential liability that SDG&E can face, with costs of several billion dollars possible[54]. The extreme steepness of the cost-per-event curve showed in Appendix H of the testimony demonstrates that the distribution shows characteristics associated with "criticality", in which rare catastrophic events dominate the overall effects. A simple example of this dependency in this case is that the sum of the two adjacent events at any place in Table H-1 will be as large as or larger the sum of all events smaller than those two events. The costs of events in such distributions rise faster than their probability falls. Hence, it is not appropriate to ignore events because they are rare or very unlikely, since it is these very events that dominate the statistics.

The Alliance made a good-faith effort to calculate probabilities of catastrophic fires and their likely costs by extrapolating from known data. Because the data we have are limited there is considerable statistical uncertainty in the result, and this has been clearly quantified and stated in

[54] Exhibit MG - 1; Appendix H; pp. 5-7; Table H-1, Figure H-1.

the Alliance testimony[55]. Additionally, alternative data analysis techniques were used, some of which predict longer fire recurrence times than the favored analysis[56]. Factors and systematic uncertainties that affect the result were tabulated in Table F-4[57].

In the interest of obtaining the most accurate result possible for the cost of wildland fire and the inclusion of this into the cost of the project:

- **Baseline fire hazard risk estimates performed by the Alliance should be adopted.** The Commission should require SDG&E to adopt the baseline estimates performed by the Alliance regarding the project's fire hazard as a canonical risk estimate unless assumptions regarding SPL fire hazard that are listed in Exhibit MG - 1, Table F-4 are analyzed within the scope of the EIR and better baseline estimates are obtained.[58].

b) Several factors may argue for the Alliance estimate being overly optimistic in its assessment of risk.

All Alliance predictive analyses assume that SPL would be no more or less likely to start a fire than other line in the network[59]. However a number of factors imply that this might not be the case, and that the Alliance estimates might be overly optimistic:

1. Because the SPL and alternate routes run through San Diego County's densely vegetated back country, their exposure to vegetation will likely be greater than that of parts of the SDG&E network servicing urban and suburban areas[60].
2. The SPL and alternative routes all run through the windiest parts of San Diego County, exposing the line to high wind stress in heavily vegetated areas[61].
3. The fire data collected by SDGE between February 2004 and December 2006 used in the Alliance testimony is not typical of the longer period for which outage data is

[55] Exhibit MG – 1; p. 8.
[56] Exhibit MG - 1; pp. 30-32.
Exhibit MG - 1; Appendix F; pp 21-24.
[57] Exhibit MG - 1; Appendix F; p. 25; Table F-4.
[58] Exhibit MG - 1; p. 31.
[59] Exhibit MG - 1; pp. 31-32
[60] Exhibit MG - 1; Appendix F; p. 25; Table F-4
[61] Exhibit MG - 1; Appendix F; p. 9; Figure F-2

available (since 1999). Specifically, there were major wind storms causing multiple outages in 2002-2003, for which no fire data is available[62].

IX. CONSIDERATIONS UNDER PUB. UTIL. CODE § 1002 and G.O. 131-D

This section contains issues that the Alliance would like to see fully addressed in the EIR/EIS and in the Phase II testimony.

A. Community Values

a) The community values of Mussey Grade Road are antithetical to this proposed massive power line project and it is inappropriate to route a transmission line through historic rural communities

Mussey Grade Road is loved by those who live along the winding, stagecoach road. The values of the community spring from that love of place and the obvious and deep affection residents hold for the area is clear in the thoughts of long time residents Carol Levin, Dr. Betty Meador, and Pearl Ellis, who have all submitted testimony in these proceedings about the community, historical and aesthetic values of the area.[63]

All of these testimonies attest to the love affair the witnesses have with the Mussey Grade Road community and the values they talk about include respect for those in the community and for the land itself. As a testament to their commonly held community values, they have all lived here a considerable amount of time. Of the three, Carol Levin has lived here the longest – over 39 years. Betty Meador has lived in the area over 34 years, while Pearl Ellis, who served as the local volunteer fire chief for the Mussey Grade community and the first woman volunteer fire chief in California, has lived in the area 33 years. In today's fast paced world, these are rare examples of people who have found their home in the world and have stayed because it remains special to them.

Yet while these women have lived here for as long as they have, they should not be mistaken for parochial people. They are well traveled and have visited and lived abroad. They have had choices in their lives as to where they wanted to settle down and they chose to live in this

[62] Exhibit MG - 1; p. 9
[63] Exhibits MG - 2, MG - 3, MG - 4

valley for their individual reasons but which are similar to each other. As Carol Levin said, "I have done a lot of traveling to Europe, Africa, Asia and South America and there is no other place where I would rather live. My children also have ranches today and none of them ever wants to see this ranch go out of the family. When I go into the city, I can't want to get home where I see no progress. That's how lucky I am and I can't wait to come home to this area and my remote and wild ranch.[64]

The beauty of the Mussey Grade Road area and its rarity today in San Diego County is an important element of the testimonies. The area is associated with a lifestyle that is vanishing in Southern California, a rural life where people live with the wildlife as they live with each other. As Dr. Betty Meador says, "Life here is uncomplicated. The people I know along Mussey Grade Road all have this common sense of possessiveness about the road, about the land and about the way we live. There's much more involvement in nature and in the preservation of the wild areas and the wild animals. There's a love for the land and a respect – I have the sense that there are roots growing into the ground from my feet – a sense of being rooted and loved altogether. And regarding the landscape, as one of our friends said, 'There's an Ansel Adams out every window.'"[65]

Pearl Ellis describes the people who are attracted to the area. "The people are individualist, yet interested in maintaining a closer-knit group, especially in regard to the preservation of Mussey Grade and its environment. The residents have common causes such as wildland fire protection and deep environmental concerns."[66]

The community values also include action on behalf of the community to protect what they love. As Carol Levin says in her testimony, "Whenever an issue arose, like the proposed off-road vehicle park that a group wanted to put in, we fought it and won and then the land it was going to be on became part of the Boulder Oaks County Open Space Preserve. When there was a road proposed to go to Barona Indian Reservation, we fought the idea and prevailed. When it was determined that people were speeding on Mussey grade Road, we got the speed limit reduced. When we felt there was a threat to the historic oak trees along the road that might be cut down, we the road designated as a historical point of interest by the state. This road used to be a stagecoach road from San Diego to the gold mines in Julian. And now we are fighting the Sunrise Powerlink.

[64] MG - 2, p. 3
[65] MG - 3, p.3
[66] MG - 4, p. 2

After my ranch burned down in the Cedar fire, when I rebuilt I put in a solar system. I have done my part and I think this is a better way to go."[67]

A tangible example of the community values of the Mussey Grade Road community is the website maintained by the community: www.musseygraderoad.org Contrary to most websites, this site contains no political or promotional information, but is made up of photographs of community landmarks, of neighbor get togethers and an in memoriam page of two beloved and outstanding members of the community and of the Alliance.

B. Recreational and Park Areas

a) Routing a transmission line through public open spaces degrades these areas.

As noted in the Alliance testimony[68], the proposed SPL route (and many alternative routes) passes either through or near a large number of San Diego County parks and open space preserves. Public lands affected by the preferred route are owned by the City of San Diego, the County of San Diego, and the BLM, and include the Mt. Gower Open Space Preserve, Los Penasquitos Canyon Preserve, Boulder Oaks Open Space Preserve, and Sycamore Canyon Preserve among many others. Alternative routes have similar impacts on these and other preserves.

As previously stated in the Alliance protest, [69]according to SDG&E, Mussey Grade Road falls within their Inland Valley Link area, an extensive area. Two of the largest county owned and maintained open space preserves are located in the Inland Valley Link: Sycamore Canyon and Boulder Oaks. SDG&E's application recognizes the importance of the open spaces in the vicinity of Ramona. The application states:

> Open space is a primary factor contributing to the rural character of Inland Valley Link landscapes. Outside of urban and residential areas, the study area contains open spaces that provide high-quality scenic settings characterized by the varied topography and vegetation of the ecoregion.[70]

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[67] MG - 2, p. 4
[68] Exhibit MG - 1; p. 43
Exhibit MG - 1; Appendix H; p. 14
[69] Mussey Grade Road Alliance Protest, September 22, 2006
[70] See, 4.9.2.1.1 Landscape Visual Quality, Inland Valley Link

The fact that the proposed preferred route travels through so many county open space preserves is itself a matter of grave concern, especially because by doing so the project avoids contending with people in favor of burdening preserved open space. Another discouraging aspect of running a power line through open space preserves is the extraordinary precedent this activity would set. While easements may exist in the open spaces of San Diego County, those easements are generally now occupied by a 69kV line. This existing line, while noticeable and unattractive in the wild spaces preserved by taxpayer money, is hardly comparable to the industrialized corridor SDG&E plans for the five county open space preserves. This corridor would contain both the existing 69kV line, possibly improved and enlarged, along with a 230kV line, as far as the Alliance can determine.[71]

The application describes the area this way:

> The alignment between N27 and N28 follows the existing SDG&E 69 kV transmission corridor that crosses through agricultural lands and open space. The existing transmission corridor is viewed by isolated rural residences on privately owned lands and by the public within the five open space preserves that are crossed by the alignment. **The preserves include Sycamore Canyon, Goodan Ranch, Barnett Ranch, San Vicente Highlands Open Space, and Boulder Oaks preserves. The preserves <u>provide solitude</u> and recreation in a variety of settings that include the most scenic within the Southern California Mountains and Valleys ecoregion and range from grand vistas, oak woodlands, grassy meadows, and abundant wildlife**.[72] (Emphasis Added)

Solitude or not, SDG&E plans to run a 230kV line through these five preserves.

Even if the 69kV line were to disappear (which doesn't seem likely), the much larger and more obvious 230kV line planned by SDG&E would not only impact view sheds, it would slice through these precious open spaces in a completely incongruous way – alerting the taxpayers whose dollars ultimately paid to preserve the land for generations to come that the preservation was only partial promise. A portion of these lands were purchased to fulfill the promise of the County of San Diego Multiple Species Conservation Program ("MSCP") and are mitigation for present or future development in the county. The industrialization of these lands obviously lowers their mitigation

[71] Mussey Grade Road Alliance Protest, September 22, 2006, p. 6
[72] Proposed Project Inland Valley Link (page 4.9.9)

value not only the in the power line corridor itself, but in any direction in which the corridor is viewed from either inside or outside of the open space preserves.[73]

In the case Boulder Oaks, a 2,200 acre preserve of mountains, meadows, valleys and hills, lying in the shadow of Iron Mountain and overlooking the San Vicente Reservoir, the upgraded power line would indeed be unattractive, unappealing, unwelcome and unnatural. While it is true that the Boulder Oaks open space was established by the county following the acquisition of the power line easement, the fact that SDG&E wants to enlarge their infrastructure within the existing easement many years later after purchasing the easement leaves little comfort that this will be the last and final "improvement".

In fact, common sense tells us that where an easement has been established, it will be used again and again. Arguments will be made that it pre-exists and therefore can legitimately be used for the purposes for which it was acquired. This logic is already in operation in other parts of the county in other easements, such as Torrey Hills, where SDG&E proposes to add yet more lines to already existing lines and infrastructure within their easement because they assume they can.

The fact that in the Boulder Oaks example the easement occurs in publicly financed preserved open space is of no comfort when SDG&E has boldly planned the same treatment of enlarged infrastructure within their easement located in the preserve. The message is sent in this choice of route by SDG&E that nothing is sacred and the company's plans trump the county's plans for preservation.

This means that we can expect that Boulder Oaks open space and all the other county open spaces through which this proposed line runs on the preferred route will not have seen the last of this issue. We can expect that bit by bit more enlargement will occur; the same arguments being presented now will be presented again in the future, including threats of brownouts and blackouts should SDG&E not get its way.

For the residents of the Mussey Grade Road valley who worked on preservation of the 2,200 acres of Boulder Oaks, including in cooperation with Supervisor Dianne Jacob and supporting her efforts to preserve the land through purchase, the industrialization of this open space preserve is a

[73] Mussey Grade Road Alliance Protest, September 22, p. 7

bitter pill indeed. It also serves as a reminder to all taxpayers that nothing is what it seems in terms of preserving open space for future generations of San Diego County residents to enjoy.

If this kind of degradation is allowed to occur without compensation to the public who paid for the land, it would be unfair to taxpayers and unfair to their government, which worked with them to preserve the various open spaces that would be adversely and permanently impacted if the project were approved by the Commission. It would also signal that open space is vulnerable to devaluation by industrial usage – precisely because no one lives there. The message would be sent to local officials that the land they worked to preserve has no inherent value that would be detrimentally affected by power lines crossing it on 150' towers – and that this should be completely acceptable to everyone involved.

In fact, the degradation of open space preserves through the establishment of industrial power line corridors hosting massive poles and infrastructure is not acceptable. Such activity degrades the value of the open space generally while it destroys the open space at the industrial corridor specifically. There is no reason for this type of unauthorized and unanticipated action on the part of SDG&E to be permitted.

And, in the worst case, if it is permitted and the project is approved by the Commission, SDG&E should be required to compensate the taxpayers for the loss of the value of these publicly owned and supported lands that would be detrimentally and permanently impacted by a power line project, if approved by the Commission.

b) Recreational and park areas may be lost or degraded due to wildland fire.

As addressed in the testimony[74], and previously in this brief (Section VIII ECONOMICS, A. 5 c), the proposed route and alternative routes for the SPL run either through or near many open space preserves which are dedicated to habitat preservation. Fires originating from SPL operation could potentially lead to "type conversion" and habitat loss within these preserves, reducing or eliminating their value for both preservation and recreational purposes. We reiterate our request

[74] Exhibit MG - 1; pp. 41-45.
Exhibit MG - 1; Appendix H; pp. 9-20.

stated in the ECONOMICS section for the EIR/EIS to address key issues relating to habitat and type conversion:

- **A study should be undertaken for the EIR/EIS regarding the historical exposure of lands in San Diego County to "type conversion".** The Commission should consider the EIR/EIS acceptable and complete only if it contains a study of the average historical exposure to lands in San Diego County to type conversion by looking at fire history throughout the county.[75]

C. Historical and Aesthetic Values

a) Mussey Grade was the main road from the coast to the Julian gold mines in the 19th century. Bisected in 1943 by the San Vicente Reservoir, the some five miles of remaining stagecoach route was recognized by the California State Historic Preservation Commission as a historical "Point of Interest" in 2003.[76]

This historic road, which is located at approximately the mid-point of San Diego County, is also part of the unincorporated area of Fernbrook, a small village established in the late 19th century and which paralleled the development of the unincorporated town of Ramona itself. Mussey Grade is lined by ancient oaks and winds through a richly forested riparian area, which is surrounded by mountains. The road dead ends into the San Vicente Reservoir, and thus the Mussey Grade Road valley is its own unique and natural cul-de-sac. The valley is made up in the main of large rural ranch holdings, with the exception of Fernbrook and some recent housing built within the last decade.

The Alliance was formed in 1999 to preserve and protect this special area. To date the Alliance has engaged in a number of activities in furtherance of this goal, including intervening with the County of San Diego for the purpose of preserving some 2,200 acres of ranchland eventually purchased by the County as open space and known to locals as Boulder Oaks Ranch. The SDG&E proposed power line would run through this preserve, along with other open space preserves in San Diego County.

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[75] Exhibit MG - 1; p. 44.
[76] Mussey Grade Road Alliance, Prehearing Conference Statement, September 11. 2006

The Mussey Grade Road community is also known for a number of 19th century landmark buildings, including an original schoolhouse. The historic buildings are exhibited on the community's website: www.musseygraderoad.org

There is no doubt that the proposed transmission line is completely out of character with the bucolic views and natural features of Mussey Grade Road. As Carol Levin stated, "Our beautiful mountains will be defaced and it would increase the fire danger….The proposed transmission line doesn't fit in with the character of the land and the community living here. It would go over our beautiful rocks and be completely out of place. The thing is there aren't many places like this left in San Diego County. This is a special road through a canyon just like it was hundreds of years ago. There are humans, but it retains its wildness. I have seen deer, mountain lions, foxes, rattlesnakes, skunks, possums, coyotes, bobcats, haws and buzzards and lot of other bird life in this canyon. There are no stores; it is real countryside and the line would scar the land and the character of our special community."[77]

D. Influence on the Environment

1. Critical Environmental Concerns that Should Inform the CEQA Review Process

Pursuant to the November 1, 2006 Scoping Memo and Ruling at item 10: "Critical environmental concerns that should inform the review process" will be addressed in the Phase I hearings[78]. Accordingly, the recommendations the Alliance listed throughout its testimony that constitute critical environmental concerns that should inform the CEQA review process are presented here:

a) Wildland fire induced by a power line fault can cause permanent habitat loss, particularly if it occurs where wildland fires have recently burned, such as in the scars of the Cedar or Pines fires.

[77] MG – 2, p.4
[78] ASSIGNED COMMISSIONER AND ADMINISTRATIVE LAW JUDGE'S SCOPING MEMO AND RULING; DGX/SAW/tbo/dhn 11/1/2006; Application 06-08-010; p. 20

The issue of type conversion has already been addressed in Section B, Parks & Recreation, and also in the ECONOMICS section. However, these analyses and requirements drew primarily on the loss of parks, recreation areas, and preserves, and also touched upon the liability that SDG&E could assume were these to be degraded or lost. Much of the habitat in San Diego County is in private hands, or is not designated specifically as preserve areas[79]. These areas are just as subject to loss from type conversion as preserves are, however it would be much harder to assess any sort of economic or public impact from these losses. Nevertheless, the damage would be there, and could permanently affect the San Diego back country.

- **A general study in the EIR/EIS of "type conversion" brought on by wildland fire should be conducted for the proposed route and all alternative routes.** The Commission should consider the EIR/EIS acceptable and complete only if it contains a general study of the vulnerability of the environment to "type conversion" in the event of power line induced fire for all areas within ten miles of any proposed route.

b) All alternative routes need to be fully analyzed with respect to wildland exposure and fire hazards in a way that compares hazard combinations on a mile-by-mile basis.

As discussed fully in our testimony, wildland fire risk is dependent on many different characteristics: vegetation, slope, wind conditions, humidity, etc. Areas of particular concern can be recognized where a number of risk factors are geographically coincident. Because the routes are linear, it is possible to characterize hazards by breaking them out explicitly on a kilometer-by-kilometer basis, as was done in the Alliance testimony[80]. The advantage of this approach is that it allows all parties to clearly see the areas where particular risks occur, without the necessity of using GIS software, of manually overlaying maps, or of relying on metrics that combine different data in a way that may not be optimal for the investigation that the party wants to achieve. In this way, the various threats exposed along every proposed route can be quantitatively compared.

[79] Exhibit MG - 1; Appendix H, p. 14
[80] Exhibit MG – 1; p. 21
Exhibit MG – 1; Appendix E; p. 6,7

- **The proposed and alternative routes should be studied in order to provide comparisons of fire hazards along each in the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if the proposed route and all alternative routes are studied to provide a "Route hazard analysis" chart. The chart should break out the various characteristics and hazards along each route into small (1 km or smaller) segment for comparison purposes. These characteristics shall include, but not be limited to, Cal Fire metrics Fire Threat, Fire Hazard, Fuel load; Landfire metrics such as Scott Burgan and Anderson vegetation models; fault lines and earthquake hazard; slope; elevation; Santa Ana wind gusts and humidity.

c) The applicant should be directed to calculate the exposure of its existing transmission network to hazardous vegetation to improve the accuracy of fire probability assessments.

Citing security concerns, SDG&E has refused to provide data on its existing transmission network that would allow its current exposure to fire hazard to be estimated[81]. Accordingly, the Alliance calculation assumes that the exposure of SPL is equivalent to that of the rest of the network – an assumption that is likely untrue in light of the significant exposure of the line route to flammable vegetation. (Please note that only segments of the line exposed to hazardous vegetation were used in the Alliance fire rate predictions. Desert segments were not included[82].) Because our predicted fire rates have been scaled from the existing network, this causes the Alliance estimates to be overly optimistic.

- **A comparison of vegetation and fuel exposure throughout the SDG&E's network should be undertaken for the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it contains a comparison of the vegetation and fuel exposure of the proposed route and all alternative routes with the rest of SDG&E's transmission network so that outage and fire rates can be appropriately scaled from the existing network.

[81] Exhibit MG - 1; p. 26
[82] Exhibit MG - 1; Appendix B; pp. 9-10

- **Alternatively, the predicted costs of the project in the cost/benefit analysis should be adjusted to include significant exposure to hazardous vegetation.** The Commission should require SDG&E to adopt a multiplier of 1.5X to adjust the predicted costs of the project's proposed route and all alternative routes to the significant exposure to hazardous vegetation.

d) Santa Ana wind data for all weather stations relevant to proposed route and alternative routes should be extracted and entered as part of the EIR/EIS.

According to our study, the greatest threat of ignition of a catastrophic fire by power lines will occur during Santa Ana wind conditions. Our study has shown that these conditions have a strong geographical dependence, and therefore that some routes will be more at hazard than others for Santa Ana wind conditions, and that some route portions will be more at risk than others[83]. Our analysis of relevant weather station data for the Phase I testimony was incomplete, but clearly showed a positional dependence of Santa Ana wind conditions. We request:

- **An analysis of Santa Ana historic wind and humidity conditions should be included in the EIR/EIS.** The Commission should consider the EIR/EIS to be complete only if it contains wind and humidity data indicating Santa Ana conditions collected for the history of all weather stations within 15 miles of the proposed route and all alternative routes, including time spent under "Santa Ana" wind gust conditions of 30 mph, 40 mph, and 50 mph.

e) Santa Ana wind hazard maps, created from NWS computer models by averaging over recent events, should be used to determine hazardous wind areas.[84]

Computer generated maps showing Santa Ana wind conditions are generated for the purpose of weather forecasting by the National Digital Forecast Database (NDFD) and these are archived. The advantage of these grid maps is that they clearly indicate the geographical distribution of

[83] Exhibit MG - 1; pp. 26-28.
[84] Exhibit MG - 1; p. 47.
Exhibit MG - 1; Appendix F; pp. 8-13

hazardous wind and humidity conditions. Normalized with actual weather station data, these can be used to estimate particular hazard zones for power lines and the potential fires they may generate.

- **Past Santa Ana wind conditions should be analyzed through wind hazard zone maps in the EIR/EIS.** The Commission should consider the EIR/EIS acceptable and complete only if it contains an analysis of wind hazard zone maps generated from the NDFD database. These maps should be constructed by summing hazardous conditions over the course of Santa Ana events.

f) The EIR/EIS should address what the maximum strength of an expected Santa Ana event will be within the lifetime of the project, taking into account possible climate change effects[85].

A key thing to understand about mechanical failures is that they are non-linear and will often have a threshold of stress below which the system is resilient and above which sudden failure can occur. This is exemplified by the 30 mph threshold observed in our analysis of power outages as a function of a wind gust metric in the SDG&E outage data[86].

The threat from Santa Ana events is particularly worrisome. An "extreme" Santa Ana event that is capable of causing failure of transmission line components would also be likely to rapidly amplify any ignitions into an unstoppable conflagration. It is therefore vital that the probability of such an event be small within the expected lifetime of the line. Hence designing components for 50 year return-level events is definitely insufficient. A 200 year or more return-level should be mandated for engineering purposes, and the costs should be reflected accordingly.

It is unknown how climate change will affect the intensity of Santa Ana events. The EIR/EIS should note the best current data and theory on this issue.

- **The effects of climate change on Santa Ana wind conditions should be analyzed and applied to the project's proposed and alternative routes in the EIR/EIS.** The Commission should consider the EIR/EIS adequate and complete only if it

[85] Exhibit MG - 1; p. 48.
[86] Exhibit MG - 1; Appendix A; pp. 3-8

contains an analysis of the expected change in the intensity of Santa Ana wind conditions as a result of climate change. The projected results in terms of effects in San Diego County should be applied to the proposed route and alternative routes.

E. EMF Measures - NOT ADDRESSED

F. Other Factors Relating to the Safety, Health, Comfort and Convenience of the Public

The causal effect that Santa Ana winds have both on power line faults and infrastructure failure and its effect on rapid growth and extreme destructiveness of wildland fires have a dramatic impact on public health, safety, comfort and convenience. Our testimony has relayed the common knowledge of the wildland fire community: that fires started under Santa Ana conditions are more likely to escape initial firefighting attack[87]; that these fires with their ember storms are highly damaging to property[88], and that they are deadly[89]. That powerlines are especially likely to cause this type of fire, being the only cause aside from arson correlated with the winds themselves, has been shown for both California in general[90], and for San Diego County, where they were responsible for 17% of the area burned between 1960 and 2006[91].

G. Pub. Util Code § 625 Concerning Eminent Domain - NOT ADDRESSED

X. OTHER ISSUES – NOT ADDRESSED

XI. CONCLUSION

A. Alliance Conclusion

For the foregoing reasons, the Alliance recommends to that the Commission choose local non-wire alternatives and local conventional generation as preferable alternatives to the proposed project to protect the health, safety and security of the people of San Diego County and to provide a more robust energy infrastructure.

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[87] Exhibit MG – 1; Appendix F; p. 16
[88] Exhibit MG - 1; pp. 14-15
[89] Exhibit MG - 1; p. 16
[90] Exhibit MG - 1; pp. 16-17
[91] Exhibit MG – 1; p. 19

Respectfully submitted this 9th day of November, 2007.

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

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CERTIFICATE OF SERVICE

I hereby certify that pursuant to the California Public Utilities Commission's Rules of Practice and Procedure, I have served a true copy of **OPENING BRIEF OF THE MUSSEY GRADE ROAD ALLIANCE ON PHASE 1 ISSUES OF THE SUNRISE POWELINK TRANSMISSION PROJECT** to all parties on the service list for Application No. 06-08-010. Service was completed by overnight mail delivery to: Docket Clerk, Docket Office, Room 2001, California Public Utilities Commission, 505 Van Ness Avenue, San Francisco, California 94102 and by overnight mail delivery or first class mail in accordance with the Assigned Commission and Administrative Law Judge's Scoping Memo and ruling of November 1, 2006, and to all parties on the official service list in the proceeding via electronic mail or first class mail for those for whom an electronic mail address is not provided.

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

Executed this 9th day of November, 2007 at Ramona, California.

/s/ Diane Conklin

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