Comment Set B0006, cont.
Mussey Grade Alliance

the time it takes to shut it off – the equivalent of 7.5 pounds (to 22 pounds) of TNT[19]. While full discharge might not be likely, a serious failure on a 230 kV or 500 kV line could release significant heat energy and create fragments capable of igniting vegetation in the time it takes to de-energize the line. B0006-16 cont.

Engineering considerations aside, the fact that 230 kV lines have started two fires due to component failure and wind problems during the last two years means that undeniably this sort of thing *can and does* happen. Furthermore, the calculations put forward in Appendix 2D demonstrate that there is no measurably significant difference between the fire rates for 69 kV and 230 kV transmission lines.

It would be proper to either mention this fact in the Draft EIR/EIS, or to remove the assertion that the primary expected cause of fires due to the lines are expected to be due to construction and human access, with the implication that the lines left to themselves are relatively safe. This is an extremely important point, because fires due to line faults in high winds are over ten times[20] more likely to develop into large fires than fires started by construction (which can be curtailed during red-flag warning days) and access by people along service roads. MGRA's extreme concern regarding power line fires is focused on the issue of catastrophic fires and wind-initiated faults or failures.

2E-3.2. ***Surveys will be biased due to reductions in vegetation due to recent fires*** B0006-17

2E-3.2.1. EIR/EIS Sections Affected

Section D.15(burn probability modeling); Section E.X.15(burn probability modeling).

2E-3.2.2. Analysis Performed by the EIR/EIS

The burn probability models were constructed based upon site surveys as described in Appendix 3 of the Draft EIR/EIS[21]. This was then used to construct burn probability

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[19] We use 4.6 MJ/kg for the specific combustion energy of TNT. It is usually improper to use explosives for energy comparisons, since they actually contain less energy per unit weight than other common substances such as fat (38 MJ/kg). Their destructive power is due to deflagration, or the near instantaneous release of energy. Similarly, a full discharge of 15 MJ within 1/60th of a second could be considered explosive, so we feel comfortable making the comparison.

[20] This can be derived from MG-1; MGRA Phase 1 Direct Testimony; Appendix F. The success of firefighting initial attack is generally 98%. This drops to 64% when there are severe winds near the fire's point of origin. The ratio of failed initial attack is 36% / 2% is 18 times.

[21] Draft EIR/EIS; Appendix 3, attachments 3A and 3B.

Comment Set B0006, cont.
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models, and these were applied to the various routes, and burn probability maps were created for all routes that were evaluated.

B0006-17 cont.

2E-3.2.3. Material Factual Inaccuracy of the EIR/EIS

While this appears to be a sound methodology for gauging the state of current vegetation, it is not adequate for gauging the state of future vegetation if the area has recently been burned. This was a major issue raised in the MGRA Phase 1 direct testimony – that the areas burned in the 2002 and 2003 fires if measured now would show fuel loads that were significantly less than the typical load that would be expected during the SPL lifetime[22]. This was confirmed by SDG&E's witness Hal Mortier during cross-examination[23].

This same bias would be expected to appear in the site surveys performed by the Draft EIR/EIS. This should be adjusted for, and maps regenerated for areas of the route affected by recent fires. If this has already been taken into account in the "burn probability maps", then the exact method used to adjust for the bias should be stated in the final draft.

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[22] MG-1; Appendix D; Section 2.1.5; p. 10.

[23] Cross Examination of witness Mortier; Public Utilities Commission, State of California; A0608010; July 17, 2007; p.1007.
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

Comment Set B0006, cont.
Mussey Grade Alliance

CAL FIRE NEWS RELEASE

California Department of Forestry and Fire Protection

San Diego Unit

CONTACT: (619) 590-3160

RELEASE DATE: November 16, 2007

B0006-18

October Fire Causes

San Diego County – Investigators for CAL FIRE have released the following causes for the rash of wind driven fires that started between October 21st and October 23rd.

The Harris Fire cause is undetermined. The Harris Fire burned 90,440 acres, destroyed 548 structures, valued at over $28 million, costing taxpayers $21 million in suppression costs. There were eight civilian fatalities and 40 firefighter injuries.

The Witch, Guejito and Rice Fires were determined to be caused by powerlines. The Witch Fire burned 197,990 acres, destroyed 1,650 structures, valued at over $236 million, costing taxpayers $18 million in suppression costs. There were two civilian fatalities, 40 firefighters injured. The Witch Fire burned together with the Guejito Fire. The Rice Fire burned 9,472 acres, destroyed 248 structures, valued at over $30 million, costing taxpayers $6.5 million in suppression costs. There were six firefighters injured.

The Poomacha Fire was started by a structure fire, which spread into the brush. The cause of the structure fire is undetermined. The Poomacha Fire burned 49,410 acres and destroyed 217 structures, valued at over $5 million. Suppression costs totaled $21 million for the Poomacha Fire. There were injuries to 15 firefighters.

The Witch Fire is the second largest in San Diego County history, the Harris Fire is the fifth largest and the Poomacha Fire is the twelfth largest county. The 2003 Cedar Fire remains the largest fire in County history as well as California history.

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Responses to Comment Set B0006
Mussey Grade Alliance

B0006-1 The Alliance's support for the non-wires alternatives and praise for the Lead Agencies' allowing Staff time to explore the issues of a second substation, future transmission expansion, and renewables in Imperial Valley are acknowledged.

B0006-2 The Alliance's request that the Commission take into consideration all of the relevant factors concerning fire when making a decision on the Sunrise Powerlink Project is acknowledged.

B0006-3 The Alliance's comment suggests that although the potential for future expansion of the various transmission alternatives is acknowledged, the environmental effects are not analyzed in the Draft EIR/EIS. To the contrary, the environmental effects of the future transmission system expansions are analyzed in Sections D.2.18, D.3.11, D.4.11, D.5.11, D.6.11, D.7.15, D.8.11, D.9.11, D.10.11, D.11.11, D.12.11, D.13.11, D.14.11, and D.15.13 of Volumes 2 and 3 of the Draft EIR/EIS.

B0006-4 The Alliance's submission of a newspaper article addressing the After Action reports and possible changes to firefighting capabilities in San Diego County is acknowledged.

B0006-5 Please see Response to Comment B0006-1 and General Response GR-9, which provides an explanation of why recirculation based on the changed conditions since the 2007 fires is not necessary, and which presents a discussion of how Santa Ana winds are analyzed in the Draft EIR/EIS.

B0006-6 The Future Transmission System Expansions were evaluated at an appropriate programmatic level in the Draft EIR/EIS. The CEQA Guidelines explain that the "degree of specificity required in an EIR will correspond to the degree of specificity involved in the underlying activity which is described in the EIR." (CEQA Guidelines § 15146.) When the general impacts of a project are reasonably foreseeable, but the specific details have not yet been defined, "the EIR need not be as detailed as an EIR on the specific construction projects that might follow." (Id., sub. (b).) Because the routes are not well defined and any future transmission project would require an independent permitting and environmental compliance process, the level of detail in the analysis of the Future Transmission System Expansions as carried out in the Draft EIR/EIS is appropriate. No changes to the level of analysis have been made. See also Response to Comment B0012-10.

B0006-7 MGRA suggests that, when the expansion route is identical to the primary transmission route, the impacts are just classified as Class I without a critical examination of whether the expansion route will have impacts above and beyond the original line. To the contrary, the Draft EIR/EIS evaluated the additional impact of the future expansion routes. Impact F-1 (fires from construction) would occur for the future expansion routes because, even where the route follows the route of the Proposed Project, new towers and conductors would be installed, requiring new excavations, equipment, and personnel in wildland areas. Impact F-2 (fires from operation and maintenance) would also occur for the future expansion routes because, even where the route follows the Proposed Project, conductors would be located on unique towers with sufficient spacing from the original towers to provide a unique set of potential ignitions from hardware failures, windblown debris, and vegetation contact. Impact F-2 (interference with firefighting operations) is

clearly defined as being Class I for routes that deviate from the Proposed Project and Class III for routes that are collocated with the Proposed Project, because significant areas of conflict could occur when new high-voltage transmission lines are placed across the landscape; however, conflict areas would already exist where future lines are collocated with existing high-voltage lines, and although the presence of an additional line would be adverse, the impact would be less than significant.

B0006-8 Please see Response to Comment B0006-6.

B0006-9 Please see General Response GR-9, which presents a quantitative comparison of fire risk amongst route alternatives.

B0006-10 Please see General Response GR-9, which presents a quantitative comparison of fire risk amongst route alternatives.

B0006-11 Type conversion is addressed in Section D.2.5 of Volume 1 and Section G.14 (Impact F-6) of Volume 5 of the Draft EIR/EIS, and is identified as a significant, unavoidable (Class I) impact in both sections. Although Mitigation Measure B-3a (Weed Control Plan) will reduce the project's contribution to type conversion, a new mitigation measure (B-1k) has been added to reduce the project's contribution to type conversion. Please see Responses G0013-2 and G0013-3.

B0006-12 The commenter states that a probability study of the loss of multiple habitats as a result of type conversion due to a potential catastrophic fire caused by the project should be required, and that the costs of such an event should be calculated and added to the cost of the project. The commenter also states that there are certain areas of recent burn that should be treated specifically, rather than generally as was done in the Draft EIR/EIS, with regard to type conversion. Table D.15-24 (page D.15-69) of Volume 3 of the Draft EIR/EIS summarizes the impacts related to fire and fuels management for the Proposed Project area. Nearly all impacts related to the presence of an overhead transmission line for the Proposed Project and alternatives that would increase the probability of a wildfire are considered Class I, significant, unmitigable impacts. Section D.15.4.3 of Volume 3 of the Draft EIR/EIS explains the approach to data collection and analysis, which included using fire behavior modeling, a burn probability model, a fire behavior trend model, and wildfire containment conflict model to analyze potential impacts for six fireshed assessment areas and an additional 10 alternative route firesheds, encompassing a total of 744,742 acres. Attempting to quantify the amount of habitat that would be lost due to a fire caused by the project would be extremely speculative since it would depend on so many factors (fuel load, weather conditions, access for firefighting, etc.), so the Draft EIR/EIS has not been changed based on the commenter's statements, except that Mitigation Measure B-1k, which treats recently burned areas specifically rather than generally, has been added to reduce the project's contribution to type conversion. See Response to Comment G0013-3.

B0006-13 Refer to Response to Comment B0006-11.

B0006-14 Please refer to General Response GR-9, which addresses the difference between the typical extent of Santa Ana fires in San Diego County and the extent of the burn area presented in the Fire Behavior Trend models in the Draft EIR/EIS.

The Alliance suggests that financial contributions to defensible space (Mitigation Measure F-1e) is insufficient mitigation for structure protection from a project-caused wild-

fire, citing several studies that conclude that vegetation clearance is only one factor in structure survival. To address the risk of floating embers igniting rooftops, the text of the mitigation measure has been updated to allow contributions to be used toward retrofitting rooftops with fire-proof materials and other retrofits. A post-fire assessment study showed that a combination of defensible space and fire-safe building codes protected a large portion of homes during the recent fires (Wildland Fire Lessons Learned Center, 2007). The text of Mitigation Measure F-1e has been changed, as follows:

> **F-1e** **Contribute to defensible space grants fund.** SDG&E shall contribute an annual sum to a fund that shall be distributed as homeowner grants for the creation of defensible space around homes, to promote compliance with PRC 4291, and to facilitate firefighting efforts and reduce structure damage from wildfires potentially ignited by the transmission line. The dollar value of the contribution is set forth in Table D.15-25. Grants from the fund shall be distributed to those homeowners at highest risk of sustaining structure damage from an ignition-related to the transmission line, as demonstrated by the Fire Behavior Trend Model results. Grants may alternatively be used toward retrofitting rooftops with fire-proof materials, fire shutters, double pane windows, cave boxing, removal of attic vents and/or installation of alternatives, automatic or remotely operated water sprinklers and automatic or remotely operated generator-supported water systems, and removal or replacement of wood fencing and decks with fire-resistant materials, at the discretion of the homeowner and under advisement by the agencies. The mechanism for grants distribution shall be determined through agency negotiations and detailed in the Memorandum of Understanding (Mitigation Measure F-3b).

B0006-15 MGRA requested in its opening brief that: more computer data from Santa Ana events be collected; maximum values of these data be averaged, in map format, to create an "average" Santa Ana threat map; and, wind values be added to the Route Hazard Analysis grid, so that they can be correlated with vegetation. This approach would yield a ranking of routes by wind hazard, which is correlated with the ignition of power line fires and fire size. A different approach was taken in the Draft EIR/EIS, but one that nonetheless made use of spatially specific Santa Ana wind data in combination with vegetation data (fuel type, fuel load, and fuel moisture) and topographical data to yield a metric of fire hazard: the Fire Behavior Trend model output. This approach, while different than the one suggested by MGRA, accounts for differences in the fire hazard posed by the project in combination with high winds across the landscape and between alternative routes.

In the response to MGRA Data Request 6 (response dated March 19, 2008) regarding potentially deficient wind-based project engineering, SDG&E revised its wind loading criterion upward, noting:

> Although the 56 mph value for Peñasquitos to Santa Maria Valley segment, which was provided on the previously submitted map, is compliant with CPUC General Order ("GO-95"), SDG&E has chosen to apply a more conservative value for this project based on the wind speed study for a 50 year return period. The design value being used for our transmission structures along this segment is 80 mph maximum wind gust, based on using the 50 year return period value measured at Lindbergh

field (49.95 mph, see previous response to MGRA-48) multiplied by the gust factor (1.6, explained previously in response to MGRA-48 of this data request).

Although the 68 mph value for Santa Maria Valley to Central Substation site segment, which was provided on the previously submitted map, is compliant with GO-95, SDG&E has chosen to apply a more conservative value for this project based on the wind speed study for a 50 year return period. The design value being used for our transmission structures along this segment is 87 mph maximum wind gust, based on using the 50 year return period value measured at Campo (54.30 mph, see previous response to MGRA-48), multiplied by the gust factor (1.6, explained previously in response to MGRA-48 of this data request).

This more conservative wind loading value will contribute to a lower probability of structure failure. Other potential component failures are further mitigated in this Final EIR/EIS, as well. Please refer to General Response GR-9, which addresses changes made to all of the Fire and Fuels Management sections of the Draft EIR/EIS in response to new data about fires caused by wind-correlated component failures. General Response GR-9 imposes a new mitigation measure on the project that will reduce the incidence of wind-related component failures.

B0006-16 Based on new data provided by SDG&E since publication of the Draft EIR/EIS, the text of the third and fourth paragraphs of Section D.15.1.1 have been modified, in accordance with the Alliance's suggestion, as follows:

On a per mile basis, annual ignition rates are similar for distribution lines and transmission lines in SDG&E's territory. While distribution lines have physical attributes that make them more likely to fault, transmission lines tend to be located in remote, wildland areas where faults are more likely to result in ignitions. Table D.15-1 presents a comparison between SDG&E's distribution and transmission system fault and ignition rates.

Table D.15-1. SDG&E System Fault and Ignition Rates

System	Faults/ 100 miles/year[a]	Ignitions/ 100 miles/year[b]
Distribution	Unavailable	0.3
Transmission	1.5	0.2
69/138 kV	1.9	0.3
230 kV	0.7	0.2
500 kV	0.4	0

Source: MGRA, 2008.
[a] Years 1998-2006.
[b] Years 2004-2007.

~~There is a public perception that all power lines can be a direct cause of wildfire ignitions, but power line-caused fires are much more prevalent for distribution and lower-voltage transmission lines compared with higher-voltage transmission lines such as the Proposed Project.~~

Also, the text of the eleventh paragraph of Section D.15.1.1 has been modified as follows:

~~The primary i~~Ignition threats associated with higher-voltage transmission lines like the Proposed Project are both direct, including sparks caused by component failures and wind-blown debris contact, ~~are~~ and indirect~~, consisting of~~ including human-caused accidents during construction and maintenance activities and as a result of increased access to wildlands.

B0006-17 Please see General Response GR-9, which specifically addresses MGRA's concern about the potential Cedar scar vegetation bias in the fire modeling carried out in the Draft EIR/EIS.

B0006-18 MGRA's submittal of the Cal Fire news release about the cause of the 2007 fires is acknowledged and addressed in Sections D.15.1.1 and D.15.1.2 of Volume 3 of the Draft EIR/EIS. Based on recent updates to those investigations, the text of the ninth paragraph of Section D.15.1.1 has been modified as follows:

> Both distribution and transmission systems are designed to withstand high winds, and it is extremely rare for higher-voltage transmission structures to blow over. When this rare event does occur, the protection system on a transmission line is designed to shut off power flow in a fraction of a second. However, a fraction of a second can be enough for an energized conductor to cause sparks and ignite nearby vegetation. Distribution structure failures are also infrequent but due to their placement in narrower corridors in close proximity to trees and other tall vegetation they may be pushed down in storms by wind-blown trees. Assisted by high winds, distribution line ignitions have caused three of the 20 largest wildfires (measured by acreage burned) in California's history from 1932 to ~~2006~~ 2007 (CAL FIRE, ~~2006~~2007, 2008). These fires were the ~~Clampitt (1970),~~ Witch (2007; which merged with the Guejito Fire, also ignited by a power line), Laguna (1970), ~~and~~ Campbell Complex (1990), and Clampitt (1970) ~~fires~~Fires. Two of these occurred in SDG&E territory. Power lines have been responsible for four of the State's 20 largest wildfires measured by the number of structures destroyed, including the Witch, City of Berkeley (1923), Laguna, and Rice (2007) fires. Three of these occurred in SDG&E territory. In the case of the Clampitt Fire, high winds blew down a section of the distribution line, and the Laguna and Campbell Complex Fires were ignited when trees fell across the distribution lines. A detailed investigation report into the cause of the Witch, Guejito, and Rice Fires issued by Cal Fire July 9, 2008 explains that the cause of the Witch Fire was an SDG&E 69 kV transmission line, the cause of the Guejito Fire (which ultimately merged with the Witch Fire) was a combination of an SDG&E 12 kV distribution line and a Cox Communications cable television line, and the cause of the Rice Fire was an SDG&E 12 kV distribution line in combination with a failure to adequately maintain vegetation around the distribution line in accordance with Public Resources Code 4293. A subsequent investigation report into the cause of the Witch, Guejito, and Rice Fires issued by CPUC's Consumer Protection and Safety Division (CPSD) on September 2, 2008 generally supports CAL FIRE's findings, and further states that Cox Communications was in violation of GO 95 Rules 31.1 and 31.2 at the time of the Guejito Fire (no violation was cited for SDG&E for this fire), SDG&E was in violation of GO 95 Rules 31.1 and 38 at the time of the Witch Fire, and SDG&E was in violation of GO 95 Rule 31.1 at the time of the Rice Fire. ~~The Witch Fire (2007) has been determined by California Department of Forestry and Fire Protection (CAL FIRE) to have been ignited by a power line; however, the details of the ongoing investigation are currently unavailable, and it is not known whether a distribution or a transmission line was at fault.~~

The text of the fifth, sixth, and seventh paragraphs of Section D.15.1.2 has been modified as follows:

> The power line–ignited **Witch Fire** started in the community of Witch Creek on SR78 and combined with the Guejito Fire. The fire burned 197,990 acres, destroyed 1,040 homes, and resulted in two deaths. The Witch Fire was ignited by an SDG&E

69 kV transmission line and the Guejito Fire was ignited by an SDG&E 12 kV distribution line according to CAL FIRE. ~~As of December 2007 the voltage of the power line and the details of the ignition are unknown.~~ For a detailed description of the Witch Fire location in relation to the Proposed Project and alternative routes, refer to Sections D.15.2.5 through D.15.2.8 and Sections E.1.15.1 and E.3.15.1, respectively.

The **Rice Fire** was ignited by an SDG&E distribution line in combination with a Cox Communications television cable in the Rice Canyon area. The Rice Fire burned 9,472 acres and destroyed 206 homes and two commercial properties. The Rice Fire did not burn in the immediate vicinity of the Proposed Project nor alternatives.

The **Harris Fire** started at Harris Ranch Road and Highway 94 in Potrero in San Diego County. The cause of this fire is ~~undetermined~~ under investigation as of ~~December 2007~~October 2008. This fire caused a three-day outage on the Southwest Powerlink. This fire burned 90,440 acres. For a detailed description of the Harris Fire location in relation to alternative project routes, refer to Section E.4.15.1.