APPENDIX 2D – 2007 FIRE DATA

2D-1. Data Sources

2D-1.1. *Cal Fire October Fires Data Set*

Distribution: Provided upon request

Location: Cal Fire FRAP project:

CDF Attn: FRAP; PO Box 944246; Sacramento CA 94244-2460
Phone: (916) 327-3939 Fax: (916) 324-1180

Description: These are the preliminary data files created by Cal Fire that describe the fires associated with the October 2007 fire storm. These are identical to other FRAP fire perimeter data in format.

Fields: Name, acres, agency, cause, year, month, day

Version: Provided in January, 2008. Preliminary.

Restrictions and Limitations: This is public yet uncirculated Cal Fire data. Cal Fire ordinarily updates its public records for a given year in April of the following year, however that would not be timely for the Sunrise Powerlink proceedings. This data set is restricted in time to only those fires associated with the "October 2007 Firestorm", occurring throughout Southern California during the fourth week of October 2007. Due to its specificity, it cannot simply be added to the general Cal Fire data set for use in rate or other calculations without introducing a sampling bias. However it can be analyzed on its own. Another shortcoming is that not all cause information has been finalized and included.

Processing: Analyzed with ArcView.

2D-1.2. ***Mesowest Weather Data***

Distribution: Open

Location: http://www.met.utah.edu/mesowest/

Description: Data for RAWS and other weather stations in a database searchable by web interface. Hourly data can be obtained for any date extending back to the time that collection started for a particular station. This data is displayed in graphical (and optionally tabular) form for windows extending from 12 hours up to 30 days.

Fields: Temperature, relative humidity, wind speed (sustained & gust), wind direction, precipitation

Restrictions & Limitations: Data for SD County RAWS stations goes back to 1999, with many coming on-line between 1999 and 2001. Non-RAWS stations sometimes lack wind gust data. Data quality is considered marginal for older data. Anomalous functioning can often be identified by "wild swings" in measurements for one parameter or another, or by missing blocks of data.

Processing: RAWS data was downloaded for a window surrounding key wind events with a width of at least 12 hours.

2D-1.3. ***Raws Weather Data***

Distribution: Western Regional Climate Institute

Location: http://www.raws.dri.edu/wraws/scaF.html

Description: DRI offers downloads of the most recent 30 days of weather station data from any specified weather station free of charge. It also offers historical data for a fee.

Fields: Temperature, relative humidity, wind speed (sustained & gust), wind direction, precipitation

Restrictions & Limitations: Data for SD County RAWS stations goes back to 1999, with many coming on-line between 1999 and 2001. Non-RAWS stations sometimes lack wind gust data. Data quality is considered marginal for older data. Anomalous functioning can often be identified by "wild swings" in measurements for one parameter or another, or by missing blocks of data.

Processing: Data for specified weather stations was downloaded in the aftermath of the 2007 fires in Excel spreadsheet format.

2D-1.4. *Cal Fire Press Release – Cause of October 2007 Fires*

Distribution: Public, issued by Cal Fire

Location: On request from Cal Fire. Attached for convenience as File 2A-1 in Appendix A.

Restrictions and Limitations: These results are preliminary.

2D-1.5. *Poisson statistics calculator*

For determining confidence levels and statistical uncertainties for small values, the Poisson.rb[1] calculator was used (available from M-bar Technologies & Consulting). This calculator estimates the probability of a random event occurring within a specified interval for a given distribution mean. It is used iteratively to determine 90% confidence levels. For a two-tailed distribution, this entails determining the 95% upper and 95% lower interval.

2D-1.6. *SDG&E 2007 Outage Data*

Distribution: Provided by MGRA data request MGRA-42.

Location: http://www.sdge.com/sunrisepowerlink/info/MGRADR5Responses12-21-07.doc

Also attached below:

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[1] Attached as Poisson.rb

SDGE_Outages_200
7.xls

File 2D-1 – SDG&E outage data for 2007.

Description: The file provided by SDG&E comprises similar outage data to that presented in Appendix A of the MGRA Phase 1 Direct Testimony. It describes the outages that occurred within the SDG&E service area between January 1, 2007 and the end of November.

Fields: Line voltage, outage and repair times, description, component, and field notes.

Processing: This file was cross-referenced with the SDG&E fire data to identify power line fires.

2D-1.7. ***SDG&E 2007 Fire Data***

Distribution: Provided by SDG&E in response to MGRA data request MGRA-41.

Location: http://www.sdge.com/sunrisepowerlink/info/MGRADR5Responses12-21-07.doc

Also attached below:

MGRA DR5-41 SDGE
Fire Cause Data 2004

File 2D-2 – SDG&E power line fire cause data for February 2004 to November 2007. The data has been color-coded by MGRA, and several sheets of analysis have been added to the file, as described in Sections 2D-2.1 and 2D-2.2.

Description: This data set is an extension of the data provided by SDG&E and presented by MGRA in Appendix B of its Phase 1 Direct Testimony.

Fields: Date started, incident number, incident name, district location, system (distribution or transmission), acres, and comments.

Limitations: Line voltage is not specified. However, this can be determined by cross-referencing with the outage data described in the previous section.

2D-1.8. *SDG&E Transmission Line History (FERC Form 1)*

Distribution: Provided by SDG&E in response to MGRA data request MGRA-39.

Location: http://www.sdge.com/sunrisepowerlink/info/MGRADR4Responses7-27-07.doc

Description: In response to a request for historical transmission line length data, SDG&E provided its annual report made to FERC, in five year intervals from 1959 to 2005.

Fields: Line Designation, line voltage, length of segment.

Processing: Segment information was summed and tallied for each year provided. This tally is shown in the attached file:

SDG&ETransmissionHistory.xls

File 2D-3 – History of the SDG&E transmission network, showing the lengths of different categories of transmission lines from 1959 to 2007.

2D-2. Analyses

2D-2.1. *Transmission and Distribution Line Fire Rates - 2007*

2D-2.1.1. Goal

To calculate power line fire rates in the SDG&E service area using the data that includes all 2007 power line fires.

2D-2.1.2. Description

Fire rates for transmission lines in the SDG&E network based on SDG&E fire history data were calculated as part of the MGRA Phase 1 testimony[2]. This showed that power line fires – even those from 230 kV lines – did not have a negligible rate of occurrence and could well be an issue for the SPL project. This assertion was challenged

[2] MG-1; MGRA Phase 1 Direct Testimony, Appendix B – SDG&E Power Line Fires; pp. 5-9; Sunrise Powerlink Transmission Line Project Application No. 06-08-010.

by SDG&E in its rebuttal testimony[3]. The EIR/EIS also makes the statement, unsupported by data, that fires from larger transmission lines are unlikely[4].

Two things have happened since the Phase 1 testimony was submitted that confirm and solidify our original conclusions:

- The October 2007 fire storms demonstrated clearly the link between power lines, vegetation, and Santa Ana winds that was put forward in the MGRA testimony.
- Yet another significant fire occurred due to a 230 kV line in the SDG&E service area. This is very important, in that it means that the Camp Pendleton event in 2006 is not a singular event. This allows us to make more accurate predictions of the actual fire rates expected for 230 kV lines.

2D-2.1.3. Methods

Our methodology is identical to that which we applied in Appendix B of the Phase 1 MGRA Direct Testimony. We take the SDG&E fire history from March 2004 to November 2007 and have separated out events caused by human or animal activity (vehicle collisions, construction, gun shots, plane crashes, kites, balloons, birds) from those due to mechanical failure, wind damage, trees, or other. This is shown in the fire history file as modified by the MGRA (File 2D-2) to highlight these separate categories.

SDG&E has specified which fires were caused by transmission lines and which were caused by distribution lines. Unfortunately they did not specify the voltage of the transmission lines. This was easily remedied in this analysis by cross-referencing the fire record to the outage history (attached as File 2D-1).

The categories of were further broken down into distribution, 69/138 kV, and 230 kV initiated fires. Once again, there were no 500 kV fires in 2007.

In response to MGRA Data Request 39, SDG&E provided fifty years of transmission line length data, in five year intervals. This is in the form of "Form 1" annual reports supplied to the FERC (see section 2D-1.8). This data was extracted and

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[3] SD-32; PREPARED REBUTTAL TESTIMONY OF HAL MORTIER ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY; July 15, 2007; Sunrise Powerlink Transmission Line Project Application No. 06-08-010; pp. 6-7.

[4] Draft Environmental Impact Report / Environmental Impact Statement [EIR/EIS] and Proposed Land Use Plan Amendment; Section D-15 – Fire and Fuels Management; pp. D.15-2 – D.15-4; California Public Utilities Commission and Bureau of Land Management; Prepared by: Aspen Environmental Group; San Francisco, California; January 2008.

tabulated in order to provide the total length of the 69 kV, 138 kV, 230 kV and 500 kV network in the SDG&E service area. These are shown in File 2D-3.

Additionally, SDG&E has supplied the length of their distribution network in their response to data request MGRA-39 (6757 miles of overhead lines in 2007)[5].

2D-2.1.4. Analysis

The fire histories for the SDG&E network have been collected by SDG&E, and MGRA presents these in File 2D-1. This shows the raw SDG&E data classified into various categories. These have been summarized in the file by MGRA, and an additional tab, "Fire Statistics", has been created. The summary of fire types and associated line voltages is given below:

Dist - Failure/Wind/Tree	**75**
Dist - Human/Bird	**33**
69/138 kV - Human/Bird	**6**
69/138 kV - Failure/Wind	**4**
230 kV - Failure/Wind	**2**

Table 2D-1 – Number of fires in the SDG&E service area as tabulated by SDG&E. This is divided into two classes of causes: those due to humans, birds or animals and those due to component failure, wind, or tree contact.

We tally all transmission line fires in the SDG&E service area in the table below, with the voltage of the line, the size of the fire, and the cause as determined by SDG&E in the table below. New data that was not presented in Phase 1 is highlighted in violet.

[5] SDG&E; MGRA-DR4Responses9-24-2007.doc. Available at http://www.sdge.com/sunrisepowerlink/info/MGRADR4Responses9-24-07.doc

Date	Incident	Location	Voltage[6] (kV)	Acres	Cause
3/15/2005	Otay Substation	Metro	69	0.1	Mylar balloon into 69 kV, 10 x 60 spot
7/3/2005	Miller Valley	Mountain Empire	69	19	Mid-line slap, static line (Contractor)
7/12/2005	Eastlake	Metro	69	0.1	Dust, dirt on insulator/relay, sm. Spot
7/28/2005	San Clemente	Orange County	69	1	Corrosion/wire down, 1 acre brush fire
8/5/2005	Corte Chrisalida	Northeast	69	0.1	Mylar balloon into conductor, sm.spot
2/7/2006	Hidden Valley	North Coast	69	0.1	Kite tail into insulators
9/9/2006	Grapevine	Ramona	69	5	Wire down, gun shot, 5 acre fire
10/27/2006	Boulder Creek	Mountain Empire	69	2	Hvy. wind, wire down, 2 acre fire
12/27/2006	Cmp. Pendleton	North Coast	230	3	Hvy. wind, wire down, 3 acre fire
6/14/2007	Sweetwater	Eastern	?	0.1	Mylar Balloon
6/25/2007	Ladera Ranch	Orange County	138?	0.1	Mylar Balloon suspected
6/30/2007	Stuart Mesa	North Coast	230	5	Static line failed in wind
7/6/2007	Carlsbad Plane Crash	North Coast	138	0.1	Plane crashed into tower & ignited fire
9/7/2007	Clairemont	Beach Cities	69	0.1	Bird contact
10/21/2007	Witch	Ramona	69	163,240	Under investigation.

Table 2D-2 – Fires related to transmission lines in the 2004-2007 fire history provided by SDG&E. Voltage levels were determined by cross-referencing to the Outage History. 2007 data is highlighted in violet.

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[6] Obtained by cross-referencing to the SDG&E Outage History.

The most important result to be noted from this data is that there was a second fire due to a 230 kV line. This first nullifies the argument that these events are so rare that they do not have to be taken into account for SPL. It also reduces the uncertainty as to fire rates predicted on the basis of past observation by increasing the size of the data sample.

Fire rates can be obtained from the length of transmission and distribution lines. Summarizing the results shown in File 2D-3 and including the distribution line data provided by SDG&E gives the following data for line lengths in the transmission network. Rates (per-mile per-year) can be determined by dividing the number of fires in Table 2D-1 by the line length and by 3.75 years, which is the duration of the data sample. These calculations are shown on the 'Fire Statistics' sheet in File 2D-2.

Line Type	**Length (mi)**	**Rate ($yr^{-1}mi^{-1}$)**	**Low 90%CL**	**High 90%CL**
Distribution	6757	2.96E-03	2.42E-03	3.59E-03
69 kV + 138 kV	1155	9.24E-04	3.16E-04	6.27E-03
230 kV	387	1.38E-03	2.48E-04	2.01E-02

Table 2D-3 – This table shows the length of different line types in the SDG&E service area, and calculates the observed fire rates per year per mile for each different class of line. The 90% confidence level range was calculated by determining the 5% low and high boundaries for statistical fluctuation probability using the Poisson statistics calculator.

A 90% confidence interval was also calculated for each rate by determining the 5% low and high boundaries for observing the recorded number of events. The 90% confidence interval is defined as the region bounded on the low side by the rate that would have a 5% probability of producing the observed number of events or more, and on the high side by the rate that would have a 5% probability of producing the observed number of events or fewer. These results are displayed graphically in the figure below.

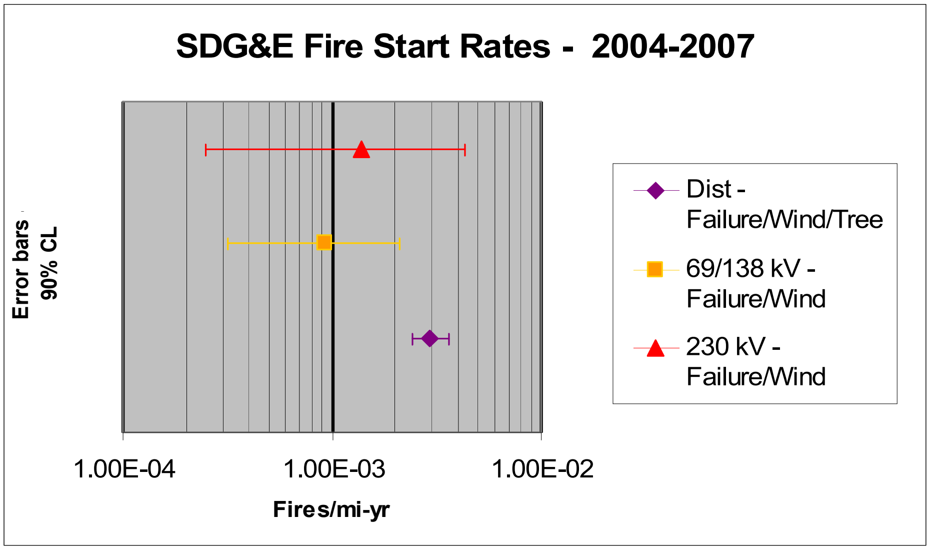

Figure 2D-1 – This figure shows the fire start rates per mile of line per year as observed between 2004 and 2007 in the SDG&E service area. Rates are shown for distribution lines, 69 kV and 138 kV lines combined, and 230 kV lines. Only fires due to component failure, wind, or tree contact are shown. The error bars represent a 90% confidence level range.

The most remarkable result shown by this analysis is that the measured rate for fire starts from 230 kV lines actually exceeds that from 69 kV and 138 kV lines. While the statistical uncertainty in this result is significant, it clearly demonstrates that any claim that 230 kV lines do not start fires, or that they start fewer fires than 69 kV lines, would not be supported by SDG&E's own fire history data.

Interestingly, the lack of initiated fires along the 500 kV SWPL route in the 2004-2007 period does not put a significant constraint on the fire rate for 500 kV lines. SWPL has roughly 60 miles of exposure to flammable vegetation[7]. One observed fire would suggest a rate of 1 / 3.75yr * 60mi = 4.4E-03 $yr^{-1}mi^{-1}$. The 90% confidence limit on a null observation is 2.3 times larger than this, or 1.02E-02 (.0102). This does not rule out a base fire rate that is equal to or even exceeds the rate of other transmission lines. Even if SWPL were to have caused no fires in its 20 year history, the 90% confidence level limit for fire rate would still be 1.9E-03 (.0019), which still does not exclude the best estimates for 69 kV and 230 kV fire rates.

[7] Appendix 2C, Section 2C-2.1, attached file RouteAnalysis_SPLAlt.xls; tab SWPL_Hazard.

2D-2.1.5. Limitations

The limitations of this type of analysis are laid out in Section 2.2.5 of Appendix B in the Phase 1 Direct Testimony[8].

2D-2.1.6. Conclusions

An assertion that that "the big lines" – 230 kV and above – are much less likely to start wildland fires than lower voltage lines has been put forward by SDG&E in their testimony and in their statements to the press. We find this echoed in the EIR/EIS. However, examination of SDG&E's own fire data does not support such a claim. Two 230 kV line fires have been observed in a 3 ¾ year period, leading to a fire rate (per mile per year) slightly higher than that observed for 69 kV and 138 kV lines. While this excess is not statistically significant, these results conflict with any claim that 230 kV lines are much less likely to cause fires than 69 kV or 138 kV lines.

The EIR/EIS points out that the engineering of 230 kV lines makes them less subject to the types of faults that often cause fires on 69 kV lines[9]. It argues that the primary danger arising from the SPL will be due to human activity and construction. The fire data analyzed by MGRA, on the other hand, *excludes* human activity as a fire cause, with the reason being that the primary risk to life and property posed by power lines is due to lines initiating fires during Santa Ana wind conditions. Regardless of the supposed engineering superiority of 230 kV transmission lines, they are still subject to design flaws, defects in construction materials or workmanship, or insufficient or improper maintenance. While fire rates from 230 kV lines *should* be less than those of other transmission lines based on engineering considerations alone, this is not what the SDG&E fire data shows. This needs to be pointed out in the final EIR/EIS.

2D-2.2. *Revised SPL and Alternative Route Fire Rate Prediction*

2D-2.2.1. Goal

Using the results from the previous section, we predict a revised rate for fire along the SPL, for major alternatives to SPL, and for major SPL expansions.

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[8] MG-1; MGRA Phase 1 Direct Testimony, Appendix B – SDG&E Power Line Fires; p. 8; Sunrise Powerlink Transmission Line Project Application No. 06-08-010.

[9] Draft EIR/EIS; pp. D.15-2 – D.15-4.

2D-2.2.2. Description

Extrapolating from the results in the previous section, we predict fire rates for the SPL. Additionally, we will predict rates for the major SPL alternatives identified in the EIR/EIS. Finally, the EIR/EIS points out that there are likely to be significant expansions of the SPL, since the 500 kV infrastructure is sufficient to supply up to six 230 kV circuits, while only two are being built as part of the immediate SPL project. While these expansions are not currently planned, they may be necessary within ten years, and so are included in the EIR/EIS because the construction of SPL or another transmission alternative would make the construction of additional 230 kV circuits much more likely along the existing 230 kV route[10].

2D-2.2.3. Methods

We take the fire rate per year per mile calculated in the previous section and multiply it by the length of the proposed SPL route and the number of years the line will be in service.

For 500 kV transmission lines, which had no fires associated with them, we analyze the case where they are and are not the cause of wildland fires.

For alternative routes we adopt a similar approach. As with the proposed SPL route, eastern regions of the route which are not exposed to significant hazardous vegetation will not be included as risk areas. These data are assembled from Appendix 2B[11]. Rates assuming both hypotheses are assembled in tab “Fire Rates” of File 2D-2.

To calculate the effect of expansion, we examine the total number of expected fires over a forty year lifetime assuming 1) no expansion and 2) construction of two additional circuits after 10 years. These calculations are shown on the sheet “Expansion” in File 2D-2.

2D-2.2.4. Analysis

Fire rate calculations based upon fire history for the proposed and alternative routes is given in the table below. We use two hypotheses for 500 kV lines 1) that they are ‘fire safe’ and do not contribute to fire risk, and 2) that they have the same failure rate as the 69 kV network (which, as pointed out in the previous section, is still consistent with observed data). We include only the segment of the 500 kV path for each alternative that traverses flammable vegetation.

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[10] Draft EIR/EIS; p. B-5, p. B-24, pp. D.15-146 – D.15-156, pp. E.1.1-7 – E.1.1-8, E1.15-47 – E.1.15-51; *with many other occurrences – analysis is performed once per alternative.*

[11] Appendix 2C, Section 2C-2.1, attached file RouteAnalysis_SPLAlt.xls.

Route	230 kV length (miles)	500 kV length (miles)	Recurs 230 only (yrs)	Recurs[12] 230 + 500 (yrs)	Low 230 (yrs)	High 230 (yrs)	Low 230 +500 (yrs)	High 230 +500 (yrs)
SPL Proposed	50	20	14.5	11.4	80.6	4.6	53.4	3.9
Environmentally Superior North	32	20	22.7	16.0	125.9	7.2	70.1	5.5
Environmentally Superior South	20	62	36.3	11.8	201.5	11.5	40.7	4.6
SWPL	0	80	NA	13.5	NA	NA	39.5	5.9
LEAPS (230 kV really 69kV)	9	30	80.6	24.9	447.8	85.3	25.6	9.8

Table 2D-4 – This table shows the mean fire return period assuming that the fire rates observed over the last four years are typical of the fire rates to be expected in the future. Two hypotheses are shown – one assuming that the 500 kV fire rate is negligible and one assuming that it is the same as the 69 kV fire rate. Low and High rates represent the extremes of the 90% confidence level range. Note that an observation of zero fires from SWPL would be consistent with either hypothesis. LEAPS has no 230 kV transmission, but does add a 69 kV segment. For purposes of calculation this segment is listed under 230 kV.

The following table takes into account the possible expansion of SPL through the construction of additional 230 kV circuits.

[12] Under the hypothesis that the fire rate for 500 kV is the same as the rate for 69 kV.

No expansion	230 Fires	230+500 Fires	230 Low	230/500 Low	230 High	230/500 High
SPL	2.8	3.5	0.5	0.7	8.7	10.4
ESNA	1.8	2.5	0.3	0.6	5.6	7.2
ESSA	1.1	3.4	0.2	1.0	3.5	8.7
SWPL	0.0	3.0	0.0	1.0	0.0	6.7
LEAPS	0.5	1.6	0.1	0.5	1.6	4.1
10 yr Expansion						
SPL	4.8	5.6	0.9	1.1	15.2	16.9
ESNA	3.1	3.8	0.6	0.8	9.7	11.4
ESSA	1.9	4.2	0.3	1.1	6.1	11.3
SWPL	0.0	3.0	0.0	1.0	0.0	6.7
LEAPS	0.5	1.6	0.1	0.5	1.6	4.1

Table 2D-5 – This table displays the number of fires due to winds and line defects that would be expected for a 40 year lifetime of the SPL assuming that the past 3.75 years of fire history data are typical of that to be expected. The "Low" and "High" columns represent the 90% confidence level upper and lower limits assuming Poisson statistics. Also shown are the number of fires if the 230 kV segments are expanded after 10 years. As in the previous table, the hypothesis of "safe" 500 kV and 500 kV with the same fire rate as 69 kV are both applied.

Several conclusions can be reached from the above data. One is that the probable system expansions that would occur over the lifetime of the proposed project increase the fire risk (shown above as number of fires expected to be originated by the project over its lifetime). The fractional increase generally depends on the length of the 230 kV segment. This is quite long for the proposed SPL, and so an expansion to four circuits over 10 years would almost double the number of expected fires. The Environmentally Superior Southern Alternative (ESSA), on the other hand, has a much larger fraction of 500 kV transmission along its path, and so the expansion impacts would be slightly less.

Accordingly, the ESSA route demonstrates the sensitivity of rate calculations to assumptions made about the safety of 500 kV lines. The predicted number of fires along ESSA varies by a factor between two and five based upon the assumptions made regarding the safety of 500 kV lines. There is no reason, in principle, that 500 kV lines would not be as subject to similar failure modes to those seen in 230 kV lines. In Phase 1 Direct Testimony[13], the Alliance also discussed the collapse of large lattice transmission towers during high wind conditions in 2006. The main reason, at this point, for believing that 500 kV transmission segments will be less fire prone than 230 kV segments is the absence of fire starts along the SWPL corridor. However, due to the relatively short length of SWPL compared to the rest of SDG&E's transmission and distribution network,

[13] MG-1; MGRA Phase 1 Direct Testimony; p. 10.

one would not necessarily have expected to see fires along SWPL during its 20 odd years of operation. Table 2D-4 shows that the 90% confidence level limit for SWPL *assuming that has the same fire rate as other transmission lines* would be 39 years mean return time between fire starts. Hence, there is no a-priori reason to believe that routes having significant 500 kV transmission segments through hazardous vegetation (such as ESSA) will be significantly safer because of their preponderance higher voltage lines.

Finally, it is quite clear that the statistical uncertainties involved make it difficult to say with what the exact level of risk is. However, the observation of a second fire in the 230 kV transmission network has raised the predicted fire rate for SPL, and additionally the likelihood of expansion would significantly increase the level of risk. Between these two effects, the 90% confidence level lower limit for the predicted number of fires along the proposed SPL route is approaching 1. Consequently, it is possible to say that based upon SDG&E fire history, and assuming future 230 kV system expansion, there is roughly a 90% probability that the SPL will cause at least one fire during the course of its projected 40 year lifetime.

2D-2.2.5. Limitations

The limitations of this approach were discussed in some detail in Section B2.3.5 of Appendix B in the MGRA Phase 1 Direct Testimony[14]. These observations remain valid. Their main point is that this prediction assumes that the past 3.75 years of fire history is typical of what we can expect during the 40 year projected lifetime of the SPL. Since SDG&E did not keep fire history prior to 2004, this is the best estimate we have. However, there are number of considerations that could make the rates higher or lower than those observed during the recorded fire history, and these are fully discussed in the Phase 1 testimony.

2D-2.2.6. Conclusions

Based on fire data collected by SDG&E, and making the assumption of existing climate and vegetation, as well as assuming that SPL would be no more or no less likely than other lines to initiate fire, we predict roughly three fire events over the 40 year projected lifetime of the line. Should 230 kV system expansion occur, this will significantly increase fire probabilities by as much as a factor of two, and would imply that there is a 90% probability of at least one fire being started by the SPL. While the proposed SPL route seems to have the highest risk of fire starts of any of the alternatives, the excess is slight, particularly if reasonable assumptions are made regarding the fire risk from 500 kV transmission segments. These are stronger conclusions than those made in Phase 1 testimony, and are made possible by additional 2007 fire data and the information made available in the EIR/EIS.

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[14] MG-1; Appendix B; pp. 10-11.