Shivani Sidhar
Regulatory Case Manager
San Diego Gas and Electric Company
8330 Century Park Court
San Diego, CA 92123-1530

July 19, 2016

Sent Via Electronic Mail

A.15-09-010
Wildfire Expense Memorandum Account

Ms. Diane Conklin
Mussey Grade Road Alliance
PO Box 683
Ramona, CA 92065

Re: SDG&E Response to MGRA Data Request 01 - WEMA

Dear Ms. Conklin:

Attached please find SDG&E's response to MGRA Data Request 01 dated July 5, 2016. SDG&E's response includes general objections and narrative responses.

As discussed in the meet and confer today (July 19, 2016) documents responsive to MGRA Request #13 are stored on the WEMA SharePoint site. To access the WEMA SharePoint site, please use the link that I will send you today. This link will direct you to a main login page where you will need to create a Microsoft 365 account using your email address. Once this account is created, you will have access to the documents responsive to MGRA Request #13.

As is also noted in the response to MGRA Request #13, certain materials that SDG&E produced in response to an ORA data request (ORA-SDG&E DR-02) contain confidential information and were produced separately to ORA on a harddrive due to the size of those materials. Per our meet and confer, SDG&E will provide a copy of that harddrive to MGRA following receipt of an executed Non-disclosure Agreement, which is being sent to MGRA under separate cover.

If you have any questions or require additional information, please feel free to contact me by phone at (858) 637-7914 or e-mail: SSidhar@semprautilities.com.

Sincerely,

Signed

Shivani Sidhar
Regulatory Case Manager

Enclosures

cc: Chris Lyons – SDG&E
Stacie Atkinson – SDG&E

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

I. GENERAL OBJECTIONS

1. SDG&E objects generally to each request to the extent that it seeks information protected by the attorney-client privilege, the attorney work product doctrine, statutory mediation confidentiality (see Cal. Evid. Code §§ 1115-28) or any other applicable privilege or evidentiary doctrine. No information protected by such privileges will be knowingly disclosed.

2. SDG&E objects generally to each request that is overly broad and unduly burdensome. As part of this objection, SDG&E objects to discovery requests that seek "all documents" or "each and every document" and similarly worded requests on the grounds that such requests are unreasonably cumulative and duplicative, fail to identify with specificity the information or material sought, and create an unreasonable burden compared to the likelihood of such requests leading to the discovery of admissible evidence. Notwithstanding this objection, SDG&E will produce all relevant, non-privileged information not otherwise objected to that it is able to locate after reasonable inquiry.

3. SDG&E objects generally to each request to the extent that the request is vague, unintelligible, or fails to identify with sufficient particularity the information or documents requested and, thus, is not susceptible to response at this time.

4. SDG&E objects generally to each request that: (1) asks for a legal conclusion to be drawn or legal research to be conducted on the grounds that such requests are not designed to elicit facts and, thus, violate the principles underlying discovery; (2) requires SDG&E to do legal research or perform additional analyses to respond to the request; or (3) seeks access to counsel's legal research, analyses or theories.

5. SDG&E objects generally to each request to the extent it seeks information or documents that are not reasonably calculated to lead to the discovery of admissible evidence.

6. SDG&E objects generally to each request to the extent that it is unreasonably duplicative or cumulative of other requests.

7. SDG&E objects generally to each request to the extent that it would require SDG&E to search its files for matters of public record such as filings, testimony, transcripts, decisions, orders, reports or other information, whether available in the public domain or through FERC or CPUC sources.

8. SDG&E objects generally to each request to the extent that it seeks information or documents that are not in the possession, custody or control of SDG&E.

9. SDG&E objects generally to each request to the extent that the request would impose an undue burden on SDG&E by requiring it to perform studies, analyses or calculations or to create documents that do not currently exist.

10. SDG&E objects generally to each request that calls for information that contains trade secrets, is privileged or otherwise entitled to confidential protection by reference to statutory protection. SDG&E objects to providing such information absent an appropriate protective order or non-disclosure agreement.

II. EXPRESS RESERVATIONS

1. No response, objection, limitation or lack thereof, set forth in these responses and objections shall be deemed an admission or representation by SDG&E as to the existence or nonexistence of the requested information or that any such information is relevant or admissible.

2. SDG&E reserves the right to modify or supplement its responses and objections to each request, and the provision of any information pursuant to any request is not a waiver of that right.

3. SDG&E reserves the right to rely, at any time, upon subsequently discovered information.

4. These responses are made solely for the purpose of this proceeding (A.15-09-010) and for no other purpose.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

III. RESPONSES

Request 1:

Please provide detail of what specific information was unavailable to SDG&E in October 2007 that SDG&E would have found necessary to prepare for wildfire conditions and deploy appropriate resources.

Objection: SDG&E objects to this request on the grounds set forth in General Objection 3. Subject to the foregoing objection, SDG&E responds as follows.

Response:

SDG&E is unable to identify what, if any, specific information was unavailable to it in October 2007 which SDG&E would have found necessary to further prepare for wildfire conditions and deploy appropriate resources. Based on information available prior to the 2007 wildfires, SDG&E believed it was reasonably prepared for wildfire conditions and had the appropriate resources in place. As discussed in the prepared direct testimony of several SDG&E witnesses in this proceeding, including Messrs. Geier, Weim, Walters and Akau, the 2007 wildfires led to many updates to policies and procedures at SDG&E, as well as in regulations promulgated by the CPUC. These witnesses further explain that SDG&E's engineering, construction and maintenance of its facilities were undertaken with great care and with the goal of maximizing safety in light of the risk known prior to the fires.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 2:

Please provide documentation supporting the assertion that SDG&E in 2007 believed that strong Santa Ana winds would be funneled through passes and canyons rather that result from downslope windstorms. Include all relevant references and citations.

Objection: SDG&E objects to this request on the grounds set forth in General Objection 2. Subject to the foregoing objection, SDG&E responds as follows.

Response:

Although it has long been understood by the meteorological community that there is a downslope component to Santa Ana winds, it was often stated that the strongest winds occurred through and below passes and canyons. The following National Weather Service products or media reports from 2007 provide examples of such statements.

- Excerpt from Issuance of the High Wind Warning for San Diego County issued October 2007: "SANTA ANA WINDS WILL DEVELOP SUNDAY MORNING WITH AREAS OF NORTHEAST WINDS INCREASING TO 25 TO 35 MPH WITH STRONGEST GUSTS TO 70 MPH THROUGH AND BELOW PASSES AND CANYONS." *See* https://mesonet.agron.iastate.edu/vtec/#2007-O-NEW-KSGX-HW-W-0011/USCOMP-N0R-200710211000. (Click Text Data > Issuance)

- Excerpt from the National Weather Service San Diego's "The Weather Guide": "Santa Ana winds are strong, dry offshore winds that blow from the east or northeast. These winds are strongest below passes and canyons of the coastal ranges of Southern California." *See* http://www.wrh.noaa.gov/sgx/document/The_Weather_Guide.pdf (p. 43).

- Excerpt from the San Francisco Chronicle: "Santa Ana wind makes October the cruelest month in California" published on October 24, 2007. *See* http://www.sfgate.com/news/article/Santa-Ana-wind-makes-October-the-cruelest-month-3237215.php ("It is the dread Santa Ana wind, moving down the canyons and through the gaps in the mountains, driving wildfires before it like a fiery torch."

- American Meteorological Society's Online Glossary of Meteorology: "Santa Ana - a dry, foehnlike desert wind in southern California, generally blowing from the northeast or east, especially in the pass and river valley of Santa Ana, California, and other nearby passes, where it is further modified as a mountain-gap wind." *See* http://glossary.ametsoc.org/wiki/Santa_ana.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

- Excerpt from the City of San Diego's After Action Report to the October 2007 Wildfires: "The October 2007 San Diego Wildfires, consisting of seven separate fires within San Diego County, began on October 21, 2007, during a major Santa Ana wind event that lasted for three days. These winds are characterized by warm temperatures, low relative humidity, and increased wind speeds. As the Santa Ana winds are channeled through the mountain passes they can approach hurricane force." *See* https://www.sandiego.gov/sites/default/files/legacy/fire/pdf/witch_aar.pdf (p. 5).

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 3:

Mr. Vanderberg's testimony on page 7 states, regarding variability between nearby weather stations that "This variability is not random, however, and in many cases is now predictable based on historical observation and the local, known characteristics of downslope winds." Please provide supporting calculations and worksheets that support the assertion that the variability between weather stations is not random but allows prediction of wind values during specific events.

Response:

In this context, "variability" refers to the observed difference in wind speed between Ramona, Santa Ysabel, and Julian mentioned earlier in the same paragraph. In other words, the pattern of strong winds in the Santa Ysabel area with much weaker winds in Julian to the east and in Ramona to the west is not random, but is a common feature of Santa Ana wind events. This can be seen through an examination of historical observations following the installation of SDG&E's weather stations and by reading recently published research of Santa Ana winds in San Diego County, including the following:

- Fovell, R. G., Y. Cao, 2016: The Santa Ana winds of Southern California: Winds, gusts, and the 2007 Witch fire. Wind and Structures in press. (http://www.atmos.albany.edu/facstaff/rfovell/papers/2016-fovell-cao-santa-ana_WS.pdf)

- Cao, Y., R. G. Fovell, 2016: Downslope windstorms of San Diego County. Part I: A Case Study. Mon. Wea. Rev. 144, 529-552. (https://www.researchgate.net/publication/293944387_Downslope_Windstorms_of_San_Diego_County_Part_I_A_Case_Study)

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 4:

Following on to the previous question MGRA-3, define what differentiates Santa Ana events where the variability is "predictable" and those in which it is not.

Response:

The two research papers referenced in response to Request 3 above address issues of variability and predictability.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 5:

Please provide the dates and times that characterize all Santa Ana events that were used in the analysis referred to on page 7.

Response:

The dates and times are already provided on pages 6-7 of Mr. Vanderburg's prepared direct testimony, as well as in Appendix 2 to that testimony.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 6:

What is the basis for the "atmospheric rapids" model referred to in the testimony? Please cite all relevant sources.

Response:

Hydraulic Theory is often used to describe the dynamics of downslope windstorms. The term "atmospheric rapids" was used instead of "Hydraulic Theory" to make it easier to visualize and understand the behavior of Santa Ana winds in San Diego County. There are many examples of people using Hydraulic Theory to describe downslope windstorms. Two examples are provided below.

- Excerpt from the Encyclopedia of Atmospheric Sciences, 2003, pp. 644-650, Elsevier Science Ltd. - Downslope Winds: "The dynamics governing the development of strong downslope winds in the atmosphere are analogous to those governing the rapid increase in speed that occurs when water flowing over a rock in a river undergoes a transition from a relatively slow velocity upstream to a thin layer of high-velocity fluid over the downstream face."

- Excerpt from Mountain Weather Research and Forecasting: Recent Progress and Current Challenges, 2012, pg. 163, Springer Science & Business Media: "[T]he fundamental dynamics are qualitatively explained as an analog to the hydraulic flow of water over an obstacle resulting in rapid, supercritical flow along the obstacle's lee slope, which terminates in a turbulent, hydraulic jump."

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 7:

Was Mr. Vanderberg aided in the preparation of this testimony by other experts? If so, please name them and their affiliation.

Response:

No.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 8:

Based on your current understanding of variation and spatial wind patterns across San Diego County, please rank the weather stations listed below in the order of highest to lowest peak wind gust speeds you would expect to occur during Santa Ana events:

Valley Center (VLCC1), Alpine (ANEC1), Goose Valley (GOSC1), Pine Hill (PIHC1), Santa Rosa Plateau (SRUC1), Descanso (DENC1), Campo (KCZZ), Potrero (POTC1), and Ramona (KRNM).

Objection: SDG&E objects to this request on the grounds set forth in General Objections 2, 5 and 9. Subject to the foregoing objection, SDG&E responds as follows.

Response:

Any potential ranking would be speculation and may not be representative of true wind speeds and patterns in the area. Accordingly, SDG&E does not rely on these weather facilities; rather, SDG&E relies on data from its own installed weather stations. Data from these wind stations, however, is publicly available through http://mesowest.utah.edu/

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 9:

Regarding the answer to the previous question MGRA-8, based on your understanding of SDG&E's state of knowledge in 2007, would you expect the relative ranking of highest and lowest wind areas to differ? If so, which weather stations would have in 2007 been expected to have the highest and lowest peak wind speeds?

Objection: SDG&E objects to this request on the grounds set forth in General Objections 2, 5 and 9. Subject to the foregoing objection, SDG&E responds as follows.

Response:

See response to Request 8 above.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 10:

Please provide all data, calculations and worksheets that indicate that underlie the conclusion stated on page 13 of Mr. Vanderberg's testimony that peak wind gusts would be 1.56 times stronger in West Santa Ysabel than they would be in Julian using RAWS data.

Objection: SDG&E objects to this request on the grounds set forth in General Objection 2. Subject to the foregoing objection, SDG&E responds as follows.

Response:

The 1.56 was based on all Santa Ana wind events where WSY measured a peak wind gust equal to or greater than 45 mph. See attachment "JULC1_WSY_SIL_Comparison." Note: The number has changed to 1.57 as the table has been updated with the latest data.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 11:

What physical parameters or wildfire impacts would you expect the Santa Ana Wildfire Threat Index to be directly proportional to?

Objection: SDG&E objects to this request on the grounds set forth in General Objection 3. Subject to the foregoing objection, SDG&E responds as follows.

Response:

The Santa Ana Wildfire Threat Index measures the probability that an ignition will go beyond initial attack and become a large fire (250+ acres).

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 12:

Please provide documentation and citations supporting the claim that 300 fires were ignited during the October 2007 fire siege.

Response:

SDG&E will respond to this request by July 21 or will indicate on that date when it expects to provide a response.

MGRA DATA REQUEST
MGRA-SDG&E DR-01, Q1-13
SDG&E WEMA PROCEEDING - A.15-09-010
SDG&E RESPONSE
DATE RECEIVED: July 5, 2016
DATE RESPONDED: July 19, 2016

Request 13:

Kindly provide a copy of all received data requests and responses from other parties. Preferably, these can be posted on SDG&E's regulatory website as they were in A.14-11-002.

Objection: SDG&E objects to this request on the grounds set forth in General Objection 10. Subject to the foregoing objection, SDG&E responds as follows.

Response:

Subject to the foregoing objection, these materials are being made available to MGRA through SDG&E's WEMA SharePoint website, with the exception of the hard drive discussed below. Access instructions for the WEMA SharePoint website are set forth within the cover letter accompanying these responses. Please note that SDG&E is not producing at this time its response to one of the five sets of ORA data requests to which it has responded to date (ORA-SDG&E DR-01) on the grounds that those requests, to which SDG&E responded prior to the prehearing conference and issuance of the Scoping Memo, concerned Phase 2 issues.

As discussed during our July 19, 2016 meet and confer, in response to an ORA data request (ORA-SDG&E DR-02), SDG&E produced its document production and relevant discovery responses, as well as deposition transcripts, from the civil litigation associated with the Witch, Rice and Guejito Fires of 2007 on a removable hard drive. As noted in SDG&E's April 29, 2016 objections and responses to ORA-SDG&E DR-02, Requests 2-3, certain materials on the hard drive were marked as "confidential" in the course of the civil litigation under the applicable protective order. SDG&E further noted that in the interest of providing those materials as promptly as possible to ORA, SDG&E did not separately mark those materials as "Confidential Pursuant to P.U. Code § 583 and General Order 66-C" but produced them on the understanding that they would be treated as confidential pursuant to those provisions. SDG&E also indicated that it would be willing to further examine and discuss the appropriateness of any confidentiality designation with ORA.

SDG&E is preparing a copy of this hard drive for MGRA and will provide it to you as soon as possible. As discussed during our July 19, 2016 meet and confer, SDG&E will need to enter into a Non-disclosure Agreement with MGRA due to the confidentiality of certain of these materials prior to providing them and is producing these materials with the understanding that documents or files marked "Confidential" will be deemed "Protected Materials" under the Non-disclosure Agreement. SDG&E is willing to further examine and discuss with MGRA the appropriateness of any such designations of confidentiality (*i.e.*, Protected Materials). Please also note that there is a log of the confidential documents in excel format that was produced to ORA on April 29, 2016 in connection with these responses and which will be available on the WEMA SharePoint website.

Event Start	Event End	SIL Max	WSY Max	JULC1 Max	WSY/JULC1	SIL/JULC1	WSY/SIL
4/17/2016	4/17/2016	51	25	23	1.09	2.22	0.49
4/6/2016	4/6/2016	61	47	30	1.57	2.03	0.77
2/14/2016	2/15/2016	55	35	28	1.25	1.96	0.64
2/4/2016	2/9/2016	68	47	32	1.47	2.13	0.69
1/25/2016	1/26/2016	61	45	33	1.36	1.85	0.74
1/21/2016	1/21/2016	55	44	27	1.63	2.04	0.80
1/11/2016	1/12/2016	60	43	25	1.72	2.40	0.72
12/26/2015	12/27/2015	70	42	39	1.08	1.79	0.60
11/20/2015	11/21/2015	53	37	22	1.68	2.41	0.70
11/12/2015	11/13/2015	54	37	25	1.48	2.16	0.69
11/6/2015	11/7/2015	57	41	26	1.58	2.19	0.72
4/16/2015	4/16/2015	58	41	25	1.64	2.32	0.71
3/26/2015	3/26/2015	63	31	29	1.07	2.17	0.49
3/13/2015	3/13/2015	56	32	33	0.97	1.70	0.57
3/5/2015	3/7/2015	71	51	32	1.59	2.22	0.72
2/11/2015	2/13/2015	82	48	38	1.26	2.16	0.59
1/22/2015	1/26/2015	89	58	41	1.41	2.17	0.65
1/14/2015	1/15/2015	63	34	32	1.06	1.97	0.54
12/26/2014	12/27/2014	60	46	35	1.31	1.71	0.77
12/23/2014	12/23/2014	60	48	30	1.60	2.00	0.80
11/23/2014	11/25/2014	87	51	40	1.28	2.18	0.59
11/16/2014	11/18/2014	59	N/A	31	N/A	1.90	N/A
11/4/2014	11/5/2014	68	44	34	1.29	2.00	0.65
10/2/2014	10/2/2014	53	33	25	1.32	2.12	0.62
5/12/2014	5/15/2014	87	63	41	1.54	2.12	0.72
4/29/2014	5/1/2014	101	75	43	1.74	2.35	0.74
4/14/2014	4/14/2014	64	47	31	1.52	2.06	0.73
3/8/2014	3/9/2014	57	N/A	45	N/A	1.27	N/A
1/23/2014	1/24/2014	51	41	26	1.58	1.96	0.80
1/13/2014	1/17/2014	88	56	33	1.70	2.67	0.64
12/14/2013	12/16/2013	81	61	36	1.69	2.25	0.75
12/9/2013	12/9/2013	75	56	34	1.65	2.21	0.75
10/4/2013	10/6/2013	70	48	33	1.45	2.12	0.69
5/2/2013	5/2/2013	58	42	25	1.68	2.32	0.72
4/18/2013	4/19/2013	64	36	24	1.50	2.67	0.56
2/28/2013	3/1/2013	68	49	31	1.58	2.19	0.72
2/24/2013	2/24/2013	60	36	28	1.29	2.14	0.60
2/15/2013	2/16/2013	91	58	38	1.53	2.39	0.64
1/30/2013	1/31/2013	61	41	25	1.64	2.44	0.67
1/15/2013	1/17/2013	76	55	33	1.67	2.30	0.72
1/1/2013	1/2/2013	64	52	29	1.79	2.21	0.81
11/13/2012	11/13/2012	54	34	28	1.21	1.93	0.63
10/26/2012	10/27/2012	66	49	29	1.69	2.28	0.74
10/14/2012	10/14/2012	51	29	27	1.07	1.89	0.57
Median (all events)					1.52	2.16	0.69
Standard Deviation (all events)					0.22	0.25	0.08
Median (SIL ≥ 65 mph)					1.54	2.19	0.69
Standard Deviation (SIL ≥ 65 mph)					0.19	0.18	0.06
Median (WSY ≥ 45 mph)					1.57	2.18	0.73
Standard Deviation (WSY ≥ 45 mph)					0.14	0.20	0.06
Median (WSY ≥ 50 mph)					1.65	2.22	0.72
Standard Deviation (WSY ≥ 50 mph)					0.15	0.15	0.07