ED08-SDGE 03/25/15 Partial Response
A.14-04-011 SXPQ 230kV Transmission Line CPCN Project
Energy Division Additional Data Request 8 (ED08) Dated March 4, 2015
ED08-SDGE – Alternatives Questions: 1, 2, (Q3-8 all partial), 10 & 11
Please note that the attachments in response to Question 1contained information considered confidential under the provisions of PUC Section 583 and G.O. 66-C as well as other applicable Federal and State Laws and Regulations and Non-Disclosure Agreements.

Q#	Summary of SDG&E Response Submittals	Confidential	Pending status as of last submittal
1-11	**03/25/15 – Submittal 1: Q1, Q2, (Q3-Q8 all partial), Q10 & Q11**	Q1 Attachments	Pending: (Q3-8 partial) & Q9

REPORT OVERVIEW

The California Public Utilities Commission (CPUC) has identified several areas where more information is needed to prepare a complete and adequate analysis of the potential environmental effects of a range of alternatives in accordance with the requirements of the California Environmental Quality Act (CEQA). Data needs are identified in bold. Clarifying information is provided below the data need.

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1	N/A	**Provide supporting assumptions used in the power flow analysis for pre- and post-implementation of the Sycamore-Peñasquitos 230-kV Transmission Line Project.** Specifically, provide the following: • Study assumptions, including load forecast, specific years studied, generation levels and generation type and location, renewable energy resources and location, import assumptions for each import cut-plane line into San Diego load pocket, and transmission configurations. • Any and all sensitivity studies performed including any analysis associated with alternative options to the Sycamore-Peñasquitos 230-kV Transmission Line Project**.** • Category B and C contingency files used in the transmission planning analysis for the Sycamore-Peñasquitos 230-kV Transmission Line Project.	• Study assumptions used in the power flow analysis are outlined in the SDG&E's opening testimony by John Jontry and Huang Lin dated 08/06/2014, section III: Updated Need Analysis; • ORA proposed an alternative to Sycamore-Peñasquitos 230-kV Transmission Line Project in its testimony by Christopher Myers and William Stephenson dated 12/12/2014**.** Study was performed to evaluate this alternative and the results are outlined in the SDG&E's rebuttal testimony by Willie Thomas, John Jontry and Huang Lin dated 01/30/2015; • Category B and C contingency files used for the transmission planning analysis supporting the opening testimony are as attached (Please note that the contingency files contain confidential information)
2	Data Needs #1, Item 67	**Provide validation and clarification and/or preliminary engineering estimates of cost and time for CAISO identified mitigation alternatives to identified area overloads.** The CAISO's 2012/2013 Final Transmission Plan identified alternatives to the Proposed Project to mitigate identified high voltage system overloads in the Policy-Driven Powerflow and Stability Assessment Results and	1) The CAISO's Transmission Planning Process (TPP) is governed by the requirements of the CAISO's FERC-approved tariff and Business Process Manual (BPM). The most recent version of the tariff and BPM may be found at the CAISO's website, www.caiso.com. The CAISO planning staff performs an annual independent assessment of the California bulk power system, including the San Diego system, as a part of the TPP. SDG&E's role in this process is to

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		Mitigations (Section 4.4.1); and Deliverability Assessment (Section 4.4.2) of the 2012-2013 Transmission Plan. 1. Provide an explanation of SDG&E's Transmission Planning Engineering contribution and collaboration with the CAISO's transmission planning process for SDG&E service territory. 2. Confirm that the mitigation for the Cat. A Bay Blvd-Miguel 230 kV line overload (Section 4.4.1) is already mitigated via the Generation Interconnection process and not dependent on the Proposed Project. Does the identified mitigation apply to the Commercial Interest portfolio given that the renewable levels are essentially the same as the Environmentally Constrained portfolio 3. Under the base portfolio (Section 4.4.3) deliverability assessment, Table 4.4.3, the CAISO notes that many of these overloads can be mitigated by way of Special Protection Schemes (SPS) to trip generation for the 230 kV overloads and line upgrades for the 69 kV line overloads. For comparative assessment, provide SDG&E's estimate of the cost and time to implement these identified mitigation alternatives. Failure to provide the requested information will result in delays and additional costs for preparation of the EIR.	provide the base cases and other information as requested by CAISO staff. SDG&E, as a Transmission Planner, also performs an independent assessment limited to the SDG&E-owned transmission system. The analysis, results, and recommendations of both study efforts are performed independently. The results and recommendations are presented to the stakeholders during the TPP at one of several public meetings. 2) No. The Miguel-Silvergate 230 kV line is currently rated at 912 MVA under normal conditions. The Bay Boulevard 230 kV project will sectionalize this line and create two 230 kV lines – Miguel-Bay Boulevard and Bay Boulevard-Silvergate. The normal rating of the Miguel-Bay Boulevard 230 kV line will then increase from 912 MVA to 1175 MVA and therefore mitigate the future Cat. A overload on this line segment. This mitigation was identified by the generator interconnection process, but the Bay Boulevard project is not related to any specific generator interconnection. Note that the deliverability upgrade identified during the generator interconnection process does not increase the emergency rating of the Miguel-Bay Boulevard line. **The Proposed Project is necessary to mitigate future Cat. B violations on the Miguel-Bay Boulevard line, as described in the testimony of SDG&E witness Ms. Lin and ORA witness Mr. Stephenson.** With regards to the second portion of this question, SDG&E does not have sufficient information to answer affirmatively, but notes that the rating increase in the Miguel-Bay Boulevard line is independent of the renewable portfolio under study. 3) The SPS referred to in this table is not an existing SPS. CAISO did not provide sufficient details on the scope and function of the SPS necessary to mitigate all of the overload conditions identified in Table 4.4-3 as potentially addressed by implementation of an SPS instead of the SX-PQ project. Note that the CAISO's planning guidelines at ISO SPS6 recommend that, "There should be no more than 6 local contingencies (single or credible double contingencies) that would trigger the operation of a SPS"; in Table 4.4-3 there are at least eight

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			conditions, including the base case, that could trigger the SPS. Also, note that the costs of this alternative should also consider the cost of procuring additional generation resources to replace generation that would have to be tripped off during contingency conditions, or might become undeliverable due to implementation of the SPS. If it becomes necessary to include tripping renewable generation as part of this SPS, it could negatively impact state RPS goals. Finally, note that the SPS will not address base-case overloads on the Penasquitos-Old Town 230 kV line, which CAISO identified in this table as needing to be mitigated by installing either the proposed project or upgrading the Penasquitos-Old Town 230 kV line.
3	N/A	**Provide preliminary engineering for a Mercy Road Underground Alternative under consideration by the CPUC environmental team.** Preliminary engineering is required for an underground alternative from Segment A to Peñasquitos Junction via Mercy Road, Black Mountain Road, and Park Village Drive. The alternative alignment is shown in Attachment A. The alternative follows the proposed alignment of Segment A from Sycamore Substation to Scripps-Poway Parkway. The line would transition to underground and continue west on Scripps-Poway Parkway to Mercy Road. The line would continue on underground west on Mercy Road to Black Mountain Road where the line would remain underground heading north to Park Village Road. The line would remain underground in Park Village Road to SDG&E ROW at Peñasquitos Junction where the line would transition back to overhead in Segment D. Preliminary engineering should include the following: • Underground alignment within the roadway • Cable pole approximate locations and heights • Depth and width of the ductbank • Approximate location of underground vaults. • Width of the underground construction area	Attachment ED08 – Q3(a) contains a preliminary underground alignment for the Mercy Road Underground Alternative, including the following data: • Preliminary underground alignment, • Approximate location of underground vaults, and • Areas requiring additional ROW or new/expanded underground rights. Attachment ED08 – Q3(b) contains details for the new cable pole structures that would be utilized for the Mercy Road Underground Alternative, including the following: • Structure locations (northing/easting), • Structure height, • Retaining wall dimensions, and • Cut and fill estimates. Attachment ED08 – Q3(c) contains GIS data for the proposed cable pole structures, including: • Temporary work limits,

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		• Additional ROW or easements (if needed) The preliminary design should also identify any utility conflicts and corrosion or cathodic protection systems that may be installed to protect other existing underground facilities. Provide the following information on potential impacts resulting from construction of the Mercy Road alternative: 1. Peak daily and annual air pollutant emissions 2. Approximate duration and timing of construction 3. Annual GHG emission estimates 4. Maximum noise emissions	• Permanent operation and maintenance pads, and • Retaining walls. Attachment ED08 – Q3(d) contains typical dimensions for underground construction work area requirements and Attachment ED08 – Q3(e) contains typical duct bank dimensions. ***Underground Details*** • 5.9 miles • 19 manholes/vaults ***Additional ROW*** Additional right of way, including adding underground rights in an existing overhead corridor, or securing a new underground easement is required at the following locations: 1. from the proposed cable pole (P19) to Ivy Hill Drive. 2. from the end of Park Village Rd. to the south edge of the 300 ft. wide easement. ***Potential Conflicts*** Steel natural gas mains are parallel with a majority of the proposed alternative miles. The effect of AC interference on the existing DC cathodic protection systems will have to be studied to determine the magnitude of mitigation required. ***Cost Impact*** Based upon preliminary engineering performed to date and typical construction costs per mile, implementation of the Mercy Road Underground Alternative would have approximately 29 percent higher costs than the Proposed Project. ***Assumptions*** Key design assumptions are provided in Attachment ED08 – Q3(f).

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			PENDING – SDG&E is working on construction schedule and potential environmental effects for this alternative and will submit this as soon as it is complete. SDG&E anticipates that the remaining information will be provided by April 24, 2015. SDG&E will submit additional items as they are complete.
4	N/A	**Provide preliminary engineering for a Stonebridge – Mira Mesa Combined Underground and Overhead Alternative under consideration by the CPUC environmental team.** Preliminary engineering is required for an alternative extending underground from Stonebridge Parkway in Segment A to Vista Sorrento Parkway (south of Segment D) and overhead from Vista Sorrento Parkway to the Peñasquitos Substation via Mira Mesa Blvd. The alternative alignment is shown in Attachment A. The alternative follows the proposed alignment of Segment A from Sycamore Substation to Stonebridge Parkway. The alternative would transition to underground in Stonebridge Parkway via a cable pole approximately 340 feet east of Stonecroft Terrace. The alignment would travel west via Stonebridge Parkway to Pomerado Road, then west within Pomerado Road to and continuing within Spring Canyon Road. Where Spring Canyon Road turns north the route would follow Scripps Ranch Blvd to the west to the intersection with Mira Mesa Blvd. The route would continue west in Mira Mesa Blvd to Vista Sorrento Parkway. At Vista Sorrento Parkway the line would transition to overhead and follow an existing SDG&E ROW to the north to Peñasquitos Substation. Provide preliminary engineering, design, and impact information as requested under item 3 above. In addition, identify what circuits are in the existing right-of-way from the area of Vista Sorrento Parkway to Peñasquitos Substation and what types of structures exist in the right-of-way. Identify the width of the existing right-of-way and dimensions between the existing lines and right-of-way boundaries.	Attachment ED08 – Q4(a) contains a preliminary underground alignment for the Stonebridge – Mira Mesa Combined Underground Alternative, including the following data: • Preliminary underground alignment, • Approximate location of underground vaults, and • Areas requiring additional ROW or new/expanded underground rights. Attachment ED08 – Q3(b) contains details for the new cable pole structures that would be utilized for the Stonebridge – Mira Mesa Combined Underground Alternative, including the following: • Structure locations (northing/easting), • Structure height, • Retaining wall dimensions, and • Cut and fill estimates. Attachment ED08 – Q3(c) contains GIS data for the proposed cable pole structures, including: • Temporary work limits, • Permanent operation and maintenance pads, and • Retaining walls. Attachment ED08 – Q3(d) contains typical dimensions for underground construction work area requirements and Attachment ED08 – Q3(e) contains typical duct bank

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			dimensions. ***Underground Details*** • 10.7 miles • 33 manholes/vaults ***Additional ROW*** Additional right of way, including adding underground rights in an existing overhead corridor, or securing a new underground easement is required at the following locations: 1. from the proposed cable pole (P05) to Stonebridge Parkway. ***Potential Conflicts*** Steel natural gas mains are parallel with a majority of the proposed alternative miles. The effect of AC interference on the existing DC cathodic protection systems will have to be studied to determine the magnitude of mitigation required. ***Cost Impact*** Based upon preliminary engineering performed to date and typical construction costs per mile, implementation of the Mira Mesa Combined Underground Alternative would have approximately 100 percent higher costs than the Proposed Project. ***Assumptions*** Key design assumptions are provided in Attachment ED08 – Q3(f). PENDING – SDG&E is working on construction schedule and potential environmental effects for this alternative and will submit this as soon as it is complete. SDG&E anticipates that the remaining information will be provided by April 24, 2015. SDG&E will submit additional items as they are complete.
5		**Provide preliminary engineering for a Pomerado Road – Miramar Area North Combined Underground and Overhead Alternative under**	Attachment ED08 – Q5(a) contains a preliminary underground alignment for the Pomerado Road – Miramar Area North Underground Alternative, including the

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		consideration by the CPUC environmental team. Preliminary engineering is required for an alternative extending underground from Stonebridge Parkway in Segment A to Vista Sorrento Parkway (south of Segment D) and overhead from Vista Sorrento Parkway to the Peñasquitos Substation via the Miramar Area North commercial roadways. The alternative alignment is shown in Attachment A. The alternative follows the proposed alignment of Segment A from Sycamore Substation to Stonebridge Parkway. The alternative would transition to underground in Stonebridge Parkway via a cable pole approximately 340 feet east of Stonecroft Terrace. The alignment would travel west via Stonebridge Parkway to Pomerado Road, then west within Pomerado Road to I-15. The line would be attached to the Pomerado/ Miramar Road bridge over I-15 or on an overhead structure crossing I-15. The route would continue westward underground beneath Miramar Road, turn north on Kearny Villa Road, west on Black Mountain Road, west on Activity Road to Camino Ruiz. The line would continue underground north under Camino Ruiz, west on Miralani Drive, west on Arjons Drive, south on Trade Place, west on Trade Street, south on Camino Santa Fe, and west on Carroll Road/Carroll Canyon Road to Vista Sorrento Parkway. At Vista Sorrento Parkway the line would transition to overhead and follow an existing SDG&E ROW to the north to Peñasquitos Substation. Provide preliminary engineering, design, and impact information as requested under item 3 above. In addition, identify what circuits are in the existing right-of-way from the area of Vista Sorrento Parkway to Peñasquitos Substation and what types of structures exist in the right-of-way. Identify the width of the existing right-of-way and dimensions between the existing lines and right-of-way boundaries.	following data: • Preliminary underground alignment, • Approximate location of underground vaults, and • Areas requiring additional ROW or new/expanded underground rights. Attachment ED08 – Q3(b) contains details for the new cable pole structures that would be utilized for the Pomerado Road – Miramar Area North Underground Alternative, including the following: • Structure locations (northing/easting), • Structure height, • Retaining wall dimensions, and • Cut and fill estimates. Attachment ED08 – Q3(c) contains GIS data for the proposed cable pole structures, including: • Temporary work limits, • Permanent operation and maintenance pads, and • Retaining walls. Attachment ED08 – Q3(d) contains typical dimensions for underground construction work area requirements and Attachment ED08 – Q3(e) contains typical duct bank dimensions. ***Underground Details*** • 11.5 miles • 35 manholes/vaults

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			Additional ROW Additional right of way, including adding underground rights in an existing overhead corridor, or securing a new underground easement is required at the following locations: 1. from the proposed cable pole (P05) to Stonebridge Parkway. ***Potential Conflicts*** Steel natural gas mains are parallel with a majority of the proposed alternative miles. The effect of AC interference on the existing DC cathodic protection systems will have to be studied to determine the magnitude of mitigation required. ***Cost Impact*** Based upon preliminary engineering performed to date and typical construction costs per mile, implementation of the Pomerado Road – Miramar Area North Underground Alternative would have approximately 116 percent higher costs than the Proposed Project. ***Assumptions*** Key design assumptions for underground design are provided in Attachment ED08 – Q3(f). PENDING – SDG&E is working on construction schedule and potential environmental effects for this alternative and will submit this as soon as it is complete. SDG&E anticipates that the remaining information will be provided by April 24, 2015. SDG&E will submit additional items as they are complete.
6		**Provide preliminary engineering for a Pomerado Road – Miramar Road Combined Underground and Overhead Alternative under consideration by the CPUC environmental team.** Preliminary engineering is required for an alternative extending underground from Stonebridge Parkway in Segment A to Vista Sorrento Parkway (south of Segment D) and overhead from Vista Sorrento Parkway to the Peñasquitos	Attachment ED08 – Q6(a) contains a preliminary underground alignment for the Pomerado Road – Miramar Road Combined Underground Alternative, including the following data: • Preliminary underground alignment, • Approximate location of underground vaults, and

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		Substation via Miramar Road. The alternative alignment is shown in Attachment A. The alternative follows the proposed alignment of Segment A from Sycamore Substation to Stonebridge Parkway. The alternative would transition to underground in Stonebridge Parkway via a cable pole approximately 340 feet east of Stonecroft Terrace. The alignment would travel west via Stonebridge Parkway to Pomerado Road, then west within Pomerado Road to I-15. The line would be attached to the Pomerado/ Miramar Road bridge over I-15 or on an overhead structure crossing I-15. The route would continue westward underground beneath Miramar Road to Carroll Road/Carroll Canyon Road where it would continue west on Carroll Road to Vista Sorrento Parkway. At Vista Sorrento Parkway the line would transition to overhead and follow an existing SDG&E ROW to the north to Peñasquitos Substation. Provide preliminary engineering, design, and impact information as requested under item 3 above. In addition, identify what circuits are in the existing right-of-way from the area of Vista Sorrento Parkway to Peñasquitos Substation and what types of structures exist in the right-of-way. Identify the width of the existing right-of-way and dimensions between the existing lines and right-of-way boundaries.	• Areas requiring additional ROW or new/expanded underground rights. Attachment ED08 – Q3(b) contains details for the new cable pole structures that would be utilized for the Pomerado Road – Miramar Road Combined Underground Alternative, including the following: • Structure locations (northing/easting), • Structure height, • Retaining wall dimensions, and • Cut and fill estimates. Attachment ED08 – Q3(c) contains GIS data for the proposed cable pole structures, including: • Temporary work limits, • Permanent operation and maintenance pads, and • Retaining walls. Attachment ED08 – Q3(d) contains typical dimensions for underground construction work area requirements and Attachment ED08 – Q3(e) contains typical duct bank dimensions. ***Underground Details*** • 10.8 miles • 33 manholes/vaults ***Additional ROW*** Additional right of way, including adding underground rights in an existing overhead corridor, or securing a new underground easement is required at the following locations: 1. from the proposed cable pole (P05) to Stonebridge Parkway.

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			Potential Conflicts Steel natural gas mains are parallel with a majority of the proposed alternative miles. The effect of AC interference on the existing DC cathodic protection systems will have to be studied to determine the magnitude of mitigation required. ***Cost Impact*** Based upon preliminary engineering performed to date and typical construction costs per mile, implementation of the Pomerado Road – Miramar Combined Underground Alternative would have approximately 105 percent higher costs than the Proposed Project. ***Assumptions*** Key design assumptions for underground design are provided in Attachment ED08 – Q3(f). PENDING – SDG&E is working on construction schedule and potential environmental effects for this alternative and will submit this as soon as it is complete. SDG&E anticipates that the remaining information will be provided by April 24, 2015. SDG&E will submit additional items as they are complete.
7	N/A	**Provide preliminary engineering for a partial 69-kV underground alternative via Carmel Mountain Road under consideration by the CPUC environmental team.** This alternative proposes placing the two 69-kV circuits underground from the area of Del Mar Mesa (Pole 48) to Peñasquitos Substation as shown in Attachment A. The line would transition to underground in the area where a new housing development is being constructed. A short segment of 69-kV underground, approximately 850 feet, would be located along an existing SDG&E access road to Carmel Mountain Road. The underground route would then be located within Carmel Mountain Road to a cable pole near Segment D.	Attachment ED08 – Q7(a) contains a preliminary underground alignment for the Segment D Partial 69kV Underground Alternative, including the following data: • Preliminary underground alignment, • Approximate location of underground vaults, and • Areas requiring additional ROW or new/expanded underground rights. Attachment ED08 – Q3(b) contains details for the new cable pole structures that would be utilized for the Segment D Partial 69kV Underground Alternative Underground Alternative, including the following:

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		Provide preliminary engineering information and impacts as requested under item 3 above. In addition, identify the number and configuration of underground cables. What are the maximum and minimum lengths of roadway that will be disturbed/ blocked during an underground 69-kV ductbank installation?	• Structure locations (northing/easting), • Structure height, • Retaining wall dimensions, and • Cut and fill estimates. Attachment ED08 – Q3(c) contains GIS data for the proposed cable pole structures, including: • Temporary work limits, • Permanent operation and maintenance pads, and • Retaining walls. Attachment ED08 – Q3(d) contains typical dimensions for underground construction work area requirements and Attachment ED08 – Q3(e) contains typical duct bank dimensions. ***Underground Details*** • 3.1 miles (69 kV) • 20 manholes/vaults ***Additional ROW*** Additional right of way, including adding underground rights in an existing overhead corridor, or securing a new underground easement is required at the following locations: 1. from the north edge of the 300 ft. wide easement that's adjacent to proposed cable pole P48 to Carmel Mountain Rd. ***Potential Conflicts*** Steel natural gas mains are parallel with a majority of the proposed alternative miles. The effect of AC interference on the existing DC cathodic protection systems will

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			have to be studied to determine the magnitude of mitigation required. ***Cost Impact*** Based upon preliminary engineering performed to date and typical construction costs per mile, implementation of the Segment D 69kV Partial Underground Alternative would have approximately 9 percent higher costs than the Proposed Project. ***Assumptions*** The 69kV underground can be installed as either single circuit (TL 6906 only) or double circuit (TL675 and TL6906). If only TL6906 is relocated underground, TL675 would remain on the existing wood H-frame structures through Segment D. If both circuits were relocated underground, SDG&E would leave the H-frames in place for potential future need. Key design assumptions are provided in Attachment ED08 – Q3(f). PENDING – SDG&E is working on construction schedule and potential environmental effects for this alternative and will submit this as soon as it is complete. SDG&E anticipates that the remaining information will be provided by April 24, 2015. SDG&E will submit additional items as they are complete.
8	N/A	**Provide preliminary engineering for pole relocation alternatives for proposed poles within Segment A and Segment D under consideration by the CPUC environmental team.** Preliminary engineering is needed for an alternative pole locations in Segments A and D as shown on Attachment B: 1) Pole #5, Segment A – SDG&E's proposed location of Pole #5 was reviewed due to the extent of retaining wall required. It appears that this pole location could be shifted ahead-line towards the existing H-frame location. This pole shift could reduce the earthwork necessary without further negatively affecting the visual impact of the new 230 kV transmission line.	Attachment ED08 – Q8(a)_Relocated Structure Table, includes preliminary pole heights and coordinates for the proposed pole shift alternatives within Q8 (pole relocation alternative). Attachment ED08 – Q3(c) contains GIS data for structures (except P48 – P56), including the following: • Temporary work limits, • Permanent operation and maintenance pads, and • Retaining walls. SDG&E has identified some global issues relating to the proposed pole shifts which include the following:

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		2) Poles #17 thru #21, Segment A – These poles are shifted 30 feet towards residences and are adjacent to Scripps Poway Parkway within a greenway. It appears there is room between the existing H-frames and the roadway for these poles to be shifted within the greenway 30 feet away from residences, toward Scripps Poway Parkway. In the case of Pole #17 the recommended shift may place the pole relatively close to the roadway. In this case an additional shift ahead-line may be worthwhile to increase the distance from the road. 3) Pole #24, Segment A - This pole is located adjacent to Poway Road and is on a slightly elevated area and is also the location for a wire stringing site requiring a large amount of grading and a retaining wall. It is recommended that this pole be shifted back-line to a somewhat less sloped area to reduce earthwork and retaining wall. 4) Poles #48 thru #57, Segment D - The poles in this section are shifted away from Peñasquitos Canyon, 40 feet from the existing H-frames and towards residences. An alternative to shift this section 30 to 40 feet towards Peñasquitos Canyon was reviewed. In general these shifts would require either a small extension of existing access road or restoration of a slightly longer section of existing road. Additional retaining walls may also be necessary for some of the crane pads. Preliminary engineering should include the following: • Revised pole heights for relocated poles • Locations and dimensions at each relocated pole of revised permanent and temporary work areas including stringing sites, maintenance pads, and access roads • Revised estimated quantities of cut and fill for each relocated pole • Length and height dimensions of any retaining walls for each relocated pole	• ***Existing ROW Utilization*** – SDG&E currently has existing ROW for all overhead segments of the Proposed Project (Segments A, C and D). These ROWs and their associated widths are an asset to SDG&E's ratepayers for current and future use. All of the pole shift alternatives that have been proposed out of line (not in the Proposed Project's alignment) will materially reduce the future usable space within the existing ROW. With this reduced space, the ability to install any future infrastructure could be inhibited and the acquisition of additional land rights that would make up for the loss caused by these alternative shifts would be extremely difficult given the existing adjacent conditions. Within Segment A, the ROW is adjacent to existing large streets (Scripps Poway Parkway) and existing neighborhoods which have properties on both sides of the ROW. Obtaining additional land rights in Segment D would require the existing easement to be extended further down the canyon, within the Coastal Zone, and further into the existing preserve. If these alternatives are to be considered, SDG&E strongly suggests that these alternatives be re-designed in order to stay in-line with the Proposed Project. • ***Constructability*** – Some of the proposed pole shifts have been spotted directly in line with the existing H-frame structures which could potentially cause schedule delays and increase the cost of the project due to the overhead electric support that would be required for foundation construction and pole installation. For traditional concrete pier foundations, a minimum safety clearance of 35-45 feet to the overhead wires is typically required in order to avoid taking additional outages for construction. Additionally, some of the proposed pole shifts would require shoo-flys (temporary poles) to support the conductor during construction which could potentially introduce additional impacts (increased work areas, grading, etc.). Construction of related structures in certain areas could require larger temporary work areas, new temporary poles, additional crews, additional work days, increased equipment use and truck/vehicle trips. These increased construction requirements could increase air and noise emissions on a site by site basis. Additional comments and observations are listed below for specific pole shift alternative

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			locations: ***1) Pole #5, Segment A*** • Pole shifted in line; therefore there are no ROW concerns. ***2) Poles #17 thru #21, Segment A*** • Poles shifted out of line creating ROW usage concerns (All). • Potential issues with overhead clearance for drill rig and rebar cages requiring additional line outages for construction (All). • Requires additional impacts for temporary shoo-fly pole installations (P17, P20, P21). • Impacts to existing concrete drainage swale along road side for construction and maintenance pad (P18). ***3) Pole #24, Segment A*** • Potential blow out issues due the proposed pole shift not soldiering (adjacent) with the existing 230 kV structures. • Pole height increased by 20 feet (see Attachment ED08 – Q8(a). ***4) Poles #48 thru 57, Segment D*** • Poles shifted out of line creating ROW usage concerns (All). • Additional impacts (ground disturbance) anticipated within the California Coastal Zone. • Pole heights increases at P49, P50, P53, P54, and P56 (refer to Attachment ED08 – Q8(a). • Potential modifications of adjacent structure P56 could be required in order to accommodate the proposed shift of P55 and P57. The potential shift of P56 would potentially also result in an increase in pole height of approximately 5 feet.

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			Assumptions Key design assumptions are provided in Attachment ED08 – Q3(f). PENDING – GIS data for work areas for relocated structures P48 through P56 is anticipated to be provided by March 27, 2015.
9	N/A	**Provide preliminary engineering for two potential underground alternatives from a cable pole located south of Carmel Valley Road at the east end of the underground line under consideration by the CPUC environmental team.** Preliminary engineering is needed for an alternative cable pole location south of Carmel Valley Road at the approximate location of the first existing structure south of Carmel Valley Road. There are two potential underground alignments between the cable pole and Carmel Valley Road as shown on Attachment C: 5) Northeasterly for a short distance (approximately 200 feet) along SDG&E access road to a paved road within the water reservoir facility north of the ROW. The route would be within the road for approximately 450 feet to Carmel Valley Road 6) West and parallel to Carmel Valley Road from the cable pole along an existing access trail to an existing main access road to Emden Road where the route then turns north for approximately 400 feet to Carmel Valley Road. Provide preliminary engineering information as requested under item 3 above.	PENDING – Preliminary Design for the Alternative South of Carmel Valley Road is anticipated to be provided by March 27, 2015.
10	N/A	**For Segment D, indicate whether the existing wood H-frame 69 kV line can be taken out of service while the replacement circuit is installed. If not, identify the minimum distance required between the existing H-Frame and the new double circuit 69 kV steel poles.**	The wooden H-frame is currently occupied by TL675. This line is one of two feeds serving the Mesa Rim substation. This substation is heavily loaded (in excess of 100 MVA) and serves sensitive commercial and industrial customers. Taking this circuit out of service for an extended period of time would radialize Mesa Rim substation, and loss of the remaining feed to Mesa Rim would result in the loss of all customers served by that substation and would additionally increase the risk of an extended outage to those customers.

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			The proposed 40 feet between centerlines of the new double circuit 69kV steel pole and existing H-Frame would be the minimum requirement to enable portions of construction, specifically foundation installation, to be completed without taking outages on the existing line. For pole erection and stringing operations, daily outages will be required during construction.
11	PEA Section 5.2.4.1 No Project Alternative	**Provide additional detail regarding system operation conditions under the No Project Alternative.** Specifically, describe in layman's terms how SDG&E would manage the power flow needs defined by the project objectives in a No Project scenario. • What system operational failures could occur? What would be the probably of each operational failure occurrence be? • What procedures, actions, or mitigations would be implemented in lieu of the proposed project? • How and to what extent would these procedures, actions, or mitigations eliminate operational failures?	Under the No Project alternative, there are many serious potential NERC reliability criteria violations. SDG&E, as a Transmission Owner and Transmission Planner, would then run the risk of being subject to severe fines for each violation (up to $1 million per day per violation). Operational failures that could occur include, but are not limited to: 1) Overloading of transmission lines following the loss of other system elements, causing damage to transmission infrastructure and increasing the risk to utility personnel and the general public. 2) System operators being forced to shed customer load to prevent or mitigate system overloads, causing significant social and economic impacts 3) Additional costs to ratepayer of having to run more expensive gas-fired generation instead of less expensive renewable generation in order to mitigate actual or potential system overloads. Operational actions and other mitigations can be a combination of the following: 1) Dispatching more expensive, less efficient non-renewable generation, thereby incurring significant congestion costs. 2) Load shedding 3) Install additional conventional generation near the San Diego load center. 4) Implementation of other transmission upgrades (see the rebuttal testimony of SDG&E witness Lin for a discussion of one possible set of alternative transmission upgrades proposed in part by ORA) To the extent SDG&E can determine, none of these operational actions or other

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			mitigations, in whole or in combination, address the potential operational failures as efficiently, effectively, and permanently as the proposed project. With regards to the probability of a specific operational failure occurring, under the applicable NERC transmission planning standards (NERC TPL-002-0b and TPL-003-0b), SDG&E, as the Transmission Planner, does not evaluate the probability of the identified Category B and Category C contingencies. Pursuant to the Federal Power Act Section 215, the Federal Energy Regulatory Commission determines the appropriate level of reliability through its review and approval of the NERC Transmission Planning and Transmission Operations Reliability Standards. Under Section 215, SDG&E is required to comply with the FERC-approved NERC Reliability Standards. However, planning studies performed by SDG&E and the CAISO indicate that as the system load increases, OTC generation retires, and the amount of renewable generation imported into the coastal load centers continues to grow, the risk that a given operational failure will result in unacceptable system performance will increase significantly.