Artesian 230kV Substation Expansion Project
CPUC Minor Project Refinement Form

Minor project refinements *are strictly limited to changes that will not trigger an additional permit requirement (except local government ministerial permits and associated requirements), do not substantially increase the severity of a previously identified significant impact based on criteria used in the IS/MND, create a new significant impact, are located within the geographic boundary of the study area of the IS/MND, and that don't conflict with any mitigation measure or applicable law or policy.*

Date Requested: April 2, 2020

Report No.: MPR-2 (Rev.2)

Date Approved: TBD

Approval Agency: California Public Utilities Commission (CPUC)

Property Owner(s):
San Diego Gas & Electric Company (SDG&E)

Location/Milepost: Bernardo and Rancho Carmel Substations

Land Use/Vegetative Cover:
Developed Substation

Sensitive Resources:
None

Modification From:

☐ **Permit** ☐ **Plan/Procedure** ☐ **Specification** ☐ **Drawing**

☐ **Mitigation Measure** ☒ **Other:** Substation Upgrades

Reference Documents

Initial Study/Mitigated Negative Declaration (IS/MND) for the San Diego Gas & Electric Company's Artesian 230kV Substation Expansion Project. Prepared for the California Public Utilities Commission (CPUC A.16-08-010), dated February 2018.

Notice to Proceed (NTP) request for the Artesian 230/60 kV Substation Expansion Project. Authorized by the CPUC on September 18, 2019.

Describe how project refinement deviates from current project. Include photos.

The requested change is to add additional minor modifications to the existing Bernardo and Rancho Carmel Substations (see NTP Figure 2 – Overview Map in Attachment A) to facilitate connection of the new underground substation getaways. Specifically, the new substation modifications include the following:

- At the Bernardo Substation:
  - Replace an existing oil circuit breaker (CB) with a new gas CB (see Photograph No. 1 below and Figure MPR- 2(a) – Bernardo Substation Circuit Breaker Modifications in Attachment A). The gas CB will utilize sulfur hexafluoride (SF_6), the same as the new CBs being installed at the Artesian Substation.
  - Remove the secondary containment structure for the existing CB; however, the foundation will remain in place. Refer to Figure MPR-2(a) in Attachment A.
  - Install a new surge arrestor for the new gas CB. Refer to Figure MPR-2(a) in Attachment A.
  - Replace the existing terminators for the new gas CB. Refer to Figure MPR-2(a) in Attachment A.
- At the Rancho Carmel Substation:
  - Replace one existing gas CB with a new gas CB (see Photograph No. 2 below and Figure MPR-2(b) – Rancho Carmel Substation Circuit Breaker Modifications in Attachment A). The new CB will utilize the existing foundation.
  - Install new surge arrestor for the new gas CB. Refer to Figure MPR-2(b) in Attachment A.

Photograph 1: Existing oil circuit breaker located at the Bernardo Substation. View looking north.

Photograph 2: Existing gas circuit breaker located at the Rancho Carmel Substation. View looking east.

Construction Equipment and Durations

Anticipated construction equipment and durations are described below for the new work at the Bernardo and Rancho Carmel Substations. Construction at activities at each Substation are not anticipated to exceed two cumulative months of construction activities. Some of the new scope (such as demolition and removal of the secondary containment at the Bernardo Substation) would be conducted concurrent with previously identified activities.

- Bernardo Substation:
  - Secondary containment removal would occur during below grade work (i.e., trenching) that was included in the Artesian Substation IS/MND (see below).
  - Aboveground work (i.e., CB replacement, surge arrestors, and terminators) would require two pick-up trucks, one forklift, one boom truck, one scissor lift, and one flatbed truck.
  - The new work described at Bernardo Substation for MPR-2 is anticipated to have a duration of 4-5 construction days.
- Rancho Carmel Substation:
  - Aboveground work (i.e., CB replacement and install surge arrestors) would require two pick-up trucks, one forklift, one boom truck, one scissor lift, and one flatbed truck.
  - The new work described at Rancho Carmel Substation for MPR-2 is anticipated to have a duration of 4-5 construction days.

Original Condition:

Photograph No. 1 above depicts the existing oil CB that is to be replaced as part of MPR-2. Photograph No. 2 depicts the existing gas CB that is to be replaced as part of MPR-2. The following is verbiage from the IS/MND (page 2-27):

> *"Upgrades are required at the existing Bernardo Substation (Figure 2-5f) in order to facilitate the required 69kV reconductoring between Bernardo and Artesian substations. The construction at the Bernardo Substation would require rearrangements and trenching inside the existing substation boundary, but would not require additional grading or other site development activities. All existing structures, with the exception of two wood monopole structures that would be removed from service, would be unchanged. […] Upgrades are required at the existing Rancho Carmel Substation (Figure 2-5g) in order to upgrade the line rating for the existing 69kV power line between Poway and Rancho Carmel substations. The proposed construction would require rearrangements inside and outside of the existing substation boundary, but would not require additional grading or other site development activities."*

As shown by the excerpt above, replacement of the existing oil CB with the new gas CB at the Bernardo Substation, and the existing gas CB with a new gas CB at the Rancho Carmel Substation are changes to the permitted scope of work. However, as indicated in the first and fourth sentences of the excerpt above and by the excerpt below, work at the Bernardo and Rancho Carmel Substations, including minor modifications, were contemplated, analyzed, and approved by the CPUC.

IS/MND (page 2-3):

> *"The Proposed Project would require modifications at the existing Bernardo Substation, which is located in the City of San Diego on an approximately two-acre developed site zoned for industrial uses.[…] The Proposed Project would also require modifications at the existing Rancho Carmel Substation, which is located in the City of San Diego on an approximately 1.0 acre industrial site."*

Justification for Change:

The additional minor modifications inside the existing Bernardo and Rancho Carmel Substations are required to facilitate the connections to the new 69kV underground getaways and power line reconductors. The secondary containment structure at the Bernardo Substation will be removed because it is not needed for the gas CB. The existing CB foundations will remain in place and be utilized for the new CBs.

Maps & Figures:

Refer to NTP Figure 2 (Project Overview) as well as Figures MPR-2(a) [Bernardo Substation Circuit Breaker Modifications] and MPR-2(b) [Rancho Carmel Substation Circuit Breaker Modifications] included with this request (Attachment A). Because the MPR-2 Area is within the fenced footprint of the Bernardo and Rancho Carmel Substations, MPR-2 is located within the geographic study area of the IS/MND for the Project.

Environmental Impact:

The minor modifications included with MPR-2 are all located within the existing Bernardo and Rancho Carmel Substations. No biological, aquatic, or cultural resources are present, or could be present, at this location. Implementation of MPR-2 is not anticipated to affect any buried resources and excavation beyond the surface is not required. Construction equipment needs, beyond what was analyzed in the IS/MND, are minimal including work trucks, a flatbed truck, a forklift, a scissor lift, and a boom truck. Noise and air pollutant emissions will be the same as was analyzed and disclosed for other work occurring at the two substation sites. Cumulative construction activities for substation modifications at each substation is not anticipated to exceed two months of total construction days. MPR-2 would result in the installation and operation of one new gas CB at the Bernardo Substation, which would slightly increase emissions of SF_6, which is a greenhouse gas. However, the small increase from the new gas CB at the Bernardo Substation would not change the impacts from emissions of GHG, which remain far below the threshold of significance. Additional information is provided below and in the tables included as Attachment B. Note

that because the CB being replaced at the Rancho Carmel Substation is a gas CB, SF6 emissions from the Rancho Carmel Substation would be reduced slightly, because the newer CB will have a lower leak rate.

Concurrence (if appropriate): Concurrence for the additional minor substation upgrades is not required. All work is within the existing SDG&E Bernardo Substation, and does not trigger permits from any other agencies.

Resources:

Biological ☐ No Resources Present ☐ Resources Present ☒ N/A, Change would not affect resources

Previous Biological Survey Report Reference:

Chambers Group, Inc. 2016. *Biological Technical Report for the San Diego Gas & Electric Company Artesian Substation Expansion Project*, San Diego County, California. July 2016.

Environmental Science Associates (ESA). *San Diego Gas and Electric Artesian 230kV Substation Expansion Project Final Initial Study/Mitigated Negative Declaration*. Prepared for the California Public Utilities Commission (CPUC). March 2019.

San Diego Gas & Electric Company (SDG&E) 1995. *San Diego Gas and Electric Company Subregional Natural Community Conservation Plan*.

SDG&E 2016. SDG&E *Proponents Environmental Assessment for the Artesian 230 kV Substation Expansion Project* (A.16-08-010) Volumes I and II.

Cultural ☐ No Resources Present ☐ Resources Present ☒ N/A, changes would not affect resources

Previous Cultural Survey Report Reference:

Foglia, S.E. and J. Hennessey. 2014. *Archaeological Survey for Artesian 230kV Substation Expansion, San Diego, San Diego County, California.*

SDG&E 2016. SDG&E *Proponents Environmental Assessment for the Artesian 230 kV Substation Expansion Project* (A.16-08-010) Volumes I and II.

San Diego Natural History Museum 2015. *Paleontological Records Search – Transmission Line 6961 Sycamore to Bernardo*

Williams, Brian and Isabel Cordova. 2012. *Inventory of the Cultural Resources along SDG&E's Tie Line 6961, San Diego County, California.*

Williams, Brian. 2015. *Survey for Four Gee Yard in SDG&E's Proposed Artesian Substation Project, San Diego County, California.*

Williams, Brian. 2015. Supplemental *Survey for Camino del Sur Yard in SDG&E's Proposed Sycamore to Penasquitos Transmission Line Project (SX to PQ), San Diego County, California.*

Disturbance Acreage Changes: ☐ Yes ☒ No

Original disturbance acreage: 3 acres

New disturbance acreage: 3 acres

CEQA Section	Applicable	(Y) Define potential impact or (N) briefly explain why CEQA section isn't applicable. If (Y), describe original and new level of impact, and avoidance/minimization measures to be taken.
Geology, Soils, and Seismicity	☐ Y ☒ N	The MPR-2 scope of work would not affect CEQA impacts relating to geologic hazards, including seismicity. MPR-2 would occur within the fenced Bernardo and Rancho Carmel Substations, which were included in the IS/MND as Project features and work areas. Implementation of MPR-2 would not expose either substation to any new or increased risk from geologic hazards. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Agency approval (i.e., grading permit or similar process) is not required for implementation of MPR-2. The new gas CBs will utilize the existing CB foundations; therefore, no new geotechnical study is required.
Hazardous Materials and Waste	☒ Y ☐ N	MPR-2 will result in a very slight increase in waste due to construction activities to remove the old CBs and secondary containment structure at the Bernardo Substation. There would also be a slight increase in overall construction equipment and vehicles used onsite, including utilization of hazardous materials (i.e., fuels and other materials used during operation of construction equipment). However, these would be the same types of equipment and materials analyzed for use at both the substations in the IS/MND. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	The slight increase in construction waste due to MPR-2 would not require additional agency consultation or approval. There would be no significant increase of threat or risk derived from the use of hazardous substances.
Hydrology	☐ Y ☒ N	Use of the MPR-2 Area would not affect impacts related to hydrology and water quality. Installation of the gas CB would not increase the amount of impervious area at either of the substations. There would not be an increase in water usage or any additional activities that would degrade water quality. Removal of the existing oil CB will result in a net decrease in threat to water quality as the SF_6 gas is not a threat to water resources. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Use of MPR-2 Area will not affect the SWPPP, project coverage under the Construction General Permit, or the Water Reclamation and Recycling (WRR) permit. No additional agency consultation or new permits would be required.
Cultural Resources	☒ Y ☐ N	Implementation of MPR-2 would not affect cultural resources. The Bernardo or Rancho Carmel Substations are not within 100 feet of any previously documented cultural resource. The native soils below either of the substations could contain paleontological resources, and paleontological resources monitoring will occur consistent with MM CUL-8. MM CUL-8 already covers below-grade construction activities at the substations, and the addition of the work covered by MPR-2 would not change the potential impacts to paleontological resources. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Because the MPR-2 Area is not within 100 feet of any previously-document cultural resource, use of the Area would not affect any cultural resources and additional consultation would not be required.
Traffic and Circulation	☐ Y ☒ N	Implementation of MPR-2 would not require a significant increase in trips in and out of the project area by workers or delivery vehicles. There would be no change in the level of service on streets surrounding the project area. There would be no effect on public transportation, as all work will occur within the existing fenced substations. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Agency Consultation is not required for implementation of MPR-2. There would be no new encroachment permits or changes to traffic control plan requirements.
Noise and Vibration	☒ Y ☐ N	Construction equipment used for implementation of MPR-2 would be similar to the equipment analyzed in the IS/MND. Because the MPR-2 work would be physically located in the approximate center of the existing Bernardo Substation and existing Rancho Carmel Substation, construction noise would not affect any noise sensitive land

CEQA Section	Applicable	(Y) Define potential impact or (N) briefly explain why CEQA section isn't applicable. If (Y), describe original and new level of impact, and avoidance/minimization measures to be taken.
		uses, which are over 500 feet distant (at Bernardo) and 300 feet distant (Rancho Carmel). Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☐ N	The Project must comply with the City of San Diego's noise ordinance. The addition of the MPR-2 work scope would not require consultation with the City, as work would conform to City's noise ordinance, including allowable hours for construction activities.
Aesthetics/ Visual Resources	☐ Y ☒ N	Work performed under MPR-2 would not result in any additional impacts to the visual character in the project area. The physical changes that would result from MPR-2 would not be visible from outside of the fenced substations. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Agency Consultation is not required for use of the MPR-2 Area. The CPUC has exclusive jurisdiction over the siting, design, and construction of the Project.
Air Quality	☒ Y ☐ N	Construction activities associated with implementation of MPR-2 would result in a minimal increase in construction activities (4-5 working days). However, the additional MPR-2 work is far less than was analyzed in the IS/MND associated with the underground getaways at the Bernardo and Rancho Carmel Substations. The temporary emission of criteria pollutants associated with the construction of MPR-2 would not affect the associated impacts, which are less than significant (IS/MND, Table 3.3-4). The MPR-2 work would not occur at the Artesian Substation site, and as such would not contribute to the specific health risk impacts associated with emissions of diesel particulate matter, or DPM at the Artesian Substation site (refer to mitigation measures AIR-1 and HAZ-1). The MPR-2 work is not anticipated to create a health risk impact at either the Bernardo or Rancho Carmel Substations sites because the total cumulative duration of construction activities at each site is below the 2-month threshold used in the Final IS/MND (refer to Table 1 in Attachment B). Where construction activities occur at one location for longer than 2 months, a detailed construction phase Health Risk Assessment is required to determine if significant impacts could occur. The new work included in MPR-2 would add 4 to 5 days of construction work at each substation. The Final IS/MND analyzed up to 30 working days at each substation site, including adjacent power line getaways. Therefore, conservatively each substation would now have a total of up to 35 work days (or 1.63 months) and no significant health risk impacts would occur. Operational use of the new gas CB at the Bernardo Substation would result in additional GHG emissions associated with the leaking of SF_6 (conservatively assumed to be 1%). See Table 2 and Table 3 in Attachment B for updated GHG emission calculations for the new gas CB. The new gas CB will result in an additional 3.6 metric tons of carbon dioxide equivalent (CO_2e) per year. The Project as analyzed in the IS/MND would result in 268 metric tons of CO_2e per year (IS/MND, Table 3.8-3). Therefore, new gas CB would only account for an approximate 1.3% increase in annual GHG emissions. The threshold for annual emission is 900 metric tons per year. As shown, the addition of the new gas CB does not change the overall GHG emissions, or associated impacts. The replacement of the gas CB at the Rancho Carmel Substation would result in a decrease in GHG emissions because the new CB will have a lower leak rate, Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Additional agency consultation or approval would not be required for implementation of MPR-2.

CEQA Section	Applicable	(Y) Define potential impact or (N) briefly explain why CEQA section isn't applicable. If (Y), describe original and new level of impact, and avoidance/minimization measures to be taken.
Vegetation and Wildlife	☐ Y ☒ N	The MPR-2 work area is within an already disturbed area (existing Bernardo and Rancho Carmel Substations). There are no sensitive vegetation communities or potential for habitat of sensitive plants or wildlife. Therefore, no change to CEQA impacts would occur as a result of MPR-2.
Agency Consultation?	☐ Y ☒ N	Because the MPR-2 Area is disturbed habitat, no new or additional consultation, reporting, or permitting is required with the Wildlife Agencies.

Approvals	Date	Name (print)	Signature	
San Diego Gas and Electric Project Manager		Irina Peterson		☒ Reviewed
San Diego Gas and Electric Environmental Project Manager		Eden Nguyen Kilburg		☒ Reviewed
CPUC Project Manager				☐ Approved ☐ Approved with conditions (see below) ☐ Denied

For CPUC Compliance Manager Use Only		
☐ **Refinement Approved**	☐ **Refinement Denied**	☐ **Beyond Authority**

Conditions of Approval or Reason for Denial:

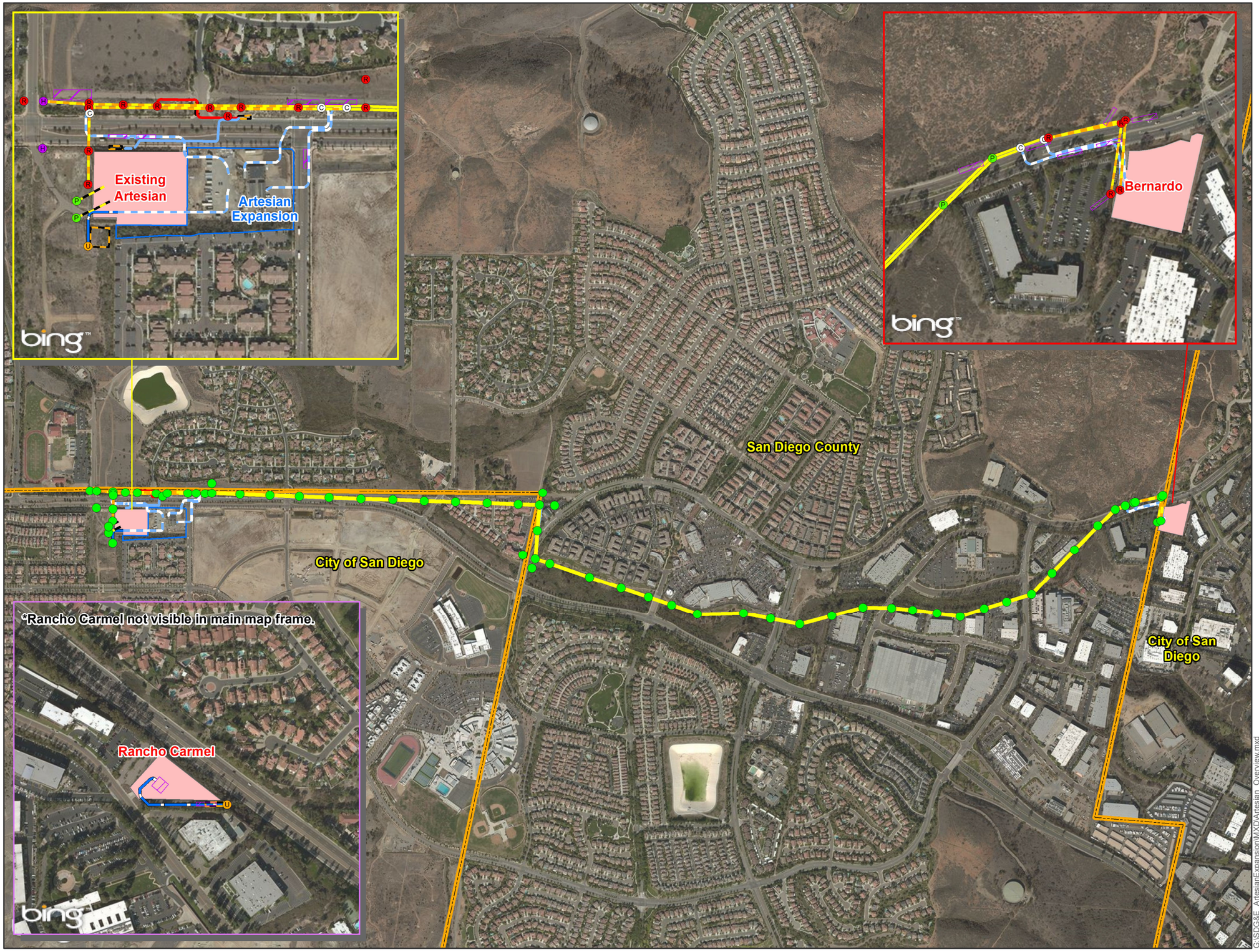
Prepared by: **Date:**

Attachment A: Figures

Artesian 230kV Substation Expansion Project

Overview Map

NTP Figure 2



Project Features

- Project Structure
- Foundation Cable Pole (New)
- Overhead Work Only (Existing Structure)
- Pier Foundation Pole (New)
- Remove From Service (Existing Structure)
- Overhead Work; New Underground Cable
- Overhead 69kV Power Line (Reconductor)
- Overhead 69kV Power Line to be Removed
- Overhead 230kV Transmission Line Loop-in (New)
- Underground Distribution Line (New)
- Underground Distribution Line to be Removed
- Underground Power Line (New Cable in New Trench)
- Underground Power Line (New Cable in Existing Conduit)
- Stringing / Pulling Site
- Work / Staging Area
- Other Project Areas
- Artesian Expansion
- Municipal Boundary

* Guard Structures, Access roads, Distribution Features, and Vaults not shown

TRC

SDGE A Sempra Energy utility

7/29/2016

0 500 1,000 1,500 Feet

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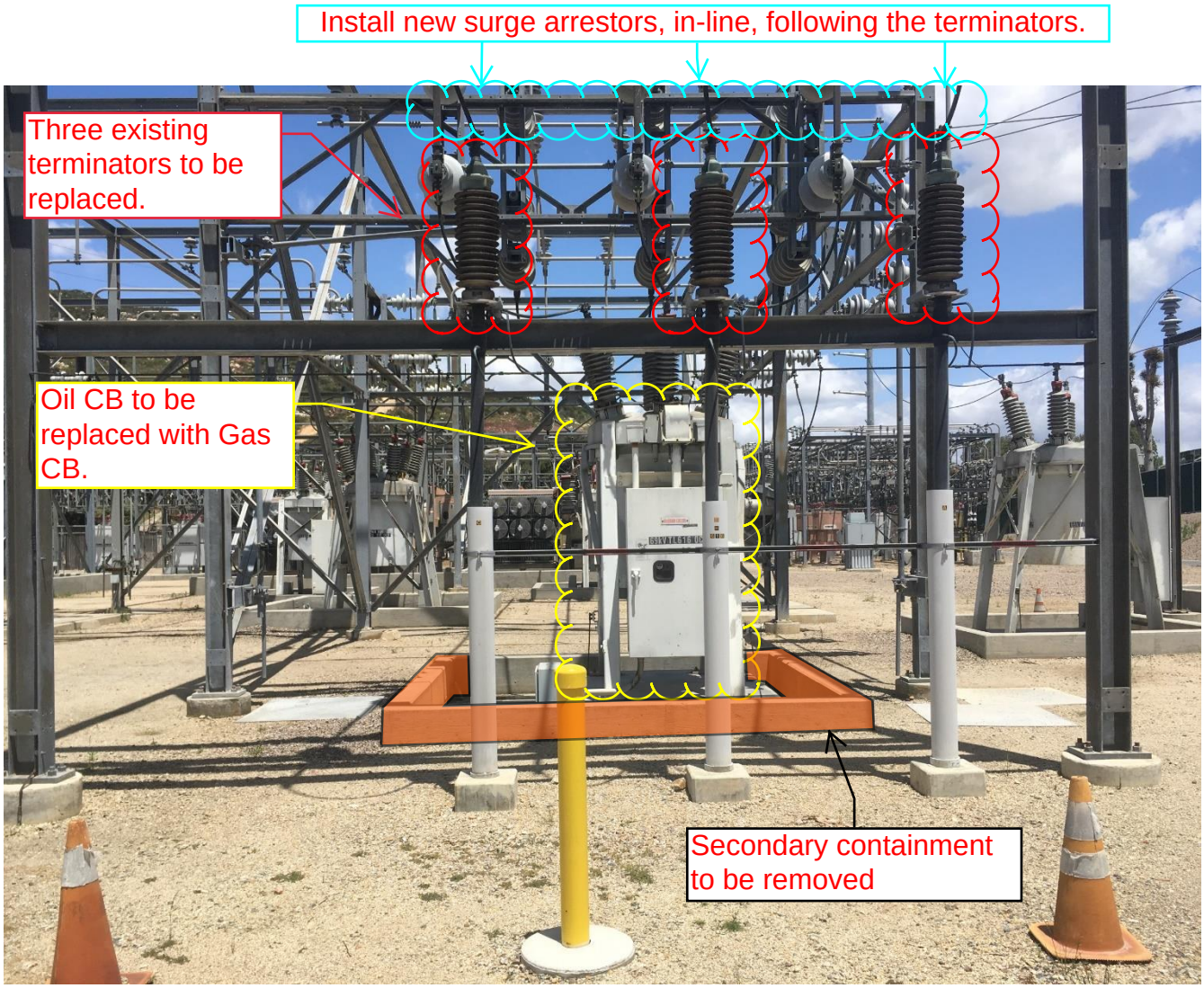

Artesian 230kV Substation Expansion Project
Minor Project Refinement Request No. 2

Figure MPR-2(a):
Bernardo Substation Circuit Breaker Modifications

Artesian 230kV Substation Expansion Project
Minor Project Refinement Request No. 2

SDGE
A Sempra Energy utility

Figure MPR-2(b):
Rancho Carmel Substation Circuit Breaker Modifications

Attachment B: Tables

Table 1:
Construction Schedule & HRA Analysis Threshold

Phase No.	Phase Name	Construction days (Final IS/MND)	New MPR-2 work days	Total work days	Total Months	HRA Analysis Threshold	Threshold Exceeded?	Additional HRA Analysis Required?
7	Bernardo Substation Getaways	30	5	35	1.63	2 months	No	No
16	Rancho Carmel Getaways	30	5	35	1.63	2 months	No	No

Notes:
Both tasks 7 and 16 include substation modifications as well as 69Kv powerline work within and adjacent to each respective substation.
Construction durations per Final IS/MND Table 2-11.

Ave Calendar days/ Mo	Work work days/ Mo
30	21.43

Table 2:
SF_6-Insulated Circuit Breaker Emissions - Greenhouse Gas

				Emissions (metric tons/year)	
Equipment	**Qty.**	**SF_6 Capacity (lbs/breaker)**	**Leak Rate**	**SF_6**	**CO_2e**
Circuit Breaker, 69kV at Artesian	13	128	1.0%	0.0075	180.4
Circuit Breaker, 69kV at Bernardo	1	33	1.0%	0.0001	3.6
Circuit Breaker, 230kV at Artesian	5	161	1.0%	0.0037	87.3
Total (no APM)				**0.0113**	**271**

Notes:

The Global Warming Potential of SF_6 is 23,900 (CFR Title 40 Part 98 Subpart A).

Table 3:
Proposed Project Amortized Annual Emissions

Emission Source	CO_2e metric tons/year
Construction Emissions: Total Amortized (20 Year Period)	79
SF_6 Circuit Breaker Emissions	271
Total	**350**
Significance Threshold	900
Significant Impact?	No

Notes:

Updated version of Final IS/MND Table 3.8-3.

SF_6 Circuit Breaker Emissions include the new Gas CB at Bernardo Substation.