Exhibit VV: Response to 1.4.7-7

1.1 ESTIMATED GREENHOUSE GAS CONSTRUCTION EMISSIONS

The anticipated greenhouse gas (GHG) emissions associated with construction of the San Diego Gas & Electric Company (SDG&E) and Southern California Gas Company (hereinafter referred to as "the Applicants") Pipeline Safety & Reliability Project (Proposed Project) will result from multiple sources. The subsections that follow document the calculation methods used to identify the anticipated emissions from the Proposed Project, as reported in Table 3.7-1: Estimated Greenhouse Gas Construction Emissions from the Proposed Project's Proponent's Environmental Assessment (PEA) Supplement. Calculations and anticipated emissions are provided for the Proposed Project without implementation of Applicants-Proposed Measure (APM-) PUS-01[1] and for the Proposed Project with implementation of APM-PUS-01, which would result in additional vehicle miles traveled during construction of the Proposed Project.

1.1.0 Proposed Project without the Implementation of APM-PUS-01

Proposed Project (without Distribution System Modifications)

Construction Vehicle Emissions

Construction vehicle emissions from the Proposed Project were taken from Table 4.7-3: Estimated Greenhouse Gas Construction Emissions in the PEA.

Cold Tie-In Emissions, Pre-Lay Purge, and Pigging

As described in response to Deficiency Request #1, approximately 1,020,000 standard cubic feet (scf) of natural gas will be released into the atmosphere from purging the approximately one-mile-long pre-lay segment. Approximately 65,800 scf will be released as part of the cold tie-in process, and 18,775 scf will be released during the pigging process. Carbon dioxide (CO_2) and methane (CH_4) were the two GHGs that were calculated from the anticipated releases of natural gas. For each release, the molar fraction and density of these two compounds were used to convert the total volume of natural gas (in scf) to pounds of each compound. These values are presented in Table 1: Natural Gas Compound Constants.

Table 1: Natural Gas Compound Constants

Compound	Molar Fraction	Density (pounds/scf)
CO_2	0.0075	0.116
CH_4	0.94	0.042

Table 2: GHG Emissions from Natural Gas Releases provides the resulting GHG emissions from the planned releases associated with the cold tie-in, pre-lay purge, and pigging. For CO_2, CH_4,

[1] APM-PUS-01 requires the Applicants to use recycled water for fugitive dust control and hydrostatic testing if adequate supplies are available and if it will not result in a new significant impact to air quality, GHG emissions, or traffic.

and nitrous oxide (N_2O), each GHG was multiplied by its global warming potential (GWP) to generate its CO_2 equivalent (CO_2e) emission.

Table 2: GHG Emissions from Natural Gas Releases

Activity	Release Volume (scf)	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)	N_2O Emissions (metric tons)	CO_2e Emissions (metric tons)
Cold Tie-In	65,800	0.026	1.187	0.000	25.020
Pre-Lay Purge	1,020,000	0.403	18.397	0.001	386.769
Pigging	18,775	0.007	0.339	0.000	7.150

Notes: There are eight sections of pipe that would need to be blown down to complete the pigging process. These eight sections contain approximately 131,425 scf of natural gas. Because this process will occur every seven years, an annual average release from pigging was used for this calculation. The following GWPs were used: $CO_2 = 1$, $CH_4 = 21$, $N_2O = 310$.

Water Conveyance

Water conveyance emissions from the Proposed Project were taken from Table 4.7-3: Estimated Greenhouse Gas Construction Emissions in the PEA.

Distribution System Modifications

Construction Vehicle Emissions

Construction vehicle emissions were conservatively estimated by assuming that one of the four crews from the Proposed Project will continue working for approximately three months following completion of the transmission components of the Proposed Project. As a result, construction emissions were divided by 48 to obtain a monthly emission rate for one crew, then multiplied by three to achieve total emissions. The resulting emissions are summarized in Table 3: Distribution System Modification Construction Vehicle Emissions.

Table 3: Distribution System Modification Construction Vehicle Emissions

Metric	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)
Four crews operating for 12 months	21,521.53	3.30
One crew operating for one month	448.37	0.07
One crew operating for three months	1,345.10	0.21

Natural Gas Releases

The distribution system modifications are anticipated to require the release of approximately 10,063 scf of natural gas. Emissions associated with this release were calculated using the molar fraction and density of these two compounds to convert the total volume of natural gas (in scf) to pounds of each compound. These values are presented in Table 1: Natural Gas Compound

Constants. The resulting emissions are presented in Table 4: Distribution System Modifications Natural Gas Releases.

Table 4: Distribution System Modifications Natural Gas Releases

Activity	Release Volume (scf)	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)	N_2O Emissions (metric tons)	CO_2e Emissions (metric tons)
Distribution System Natural Gas Release	10,063	< 0.01	0.22	0.000	4.60

Total Carbon Dioxide Equivalent Emissions

The total CO_2e emissions were calculated by multiplying the total emissions for each GHG by their associated GWP. Construction emissions were amortized over 30 years in accordance with industry standards. The Proposed Project is anticipated to be in service for more than 30 years; therefore, the reported emissions are conservative. Table 5: Total CO_2e Emissions without Implementation of APM-PUS-01 summarizes the total CO_2e and amortized construction emissions calculations.

Table 5: Total CO_2e Emissions without Implementation of APM-PUS-01

Activity	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)	N_2O Emissions (metric tons)
Proposed Project (without the Distribution System Modifications)	21,564.71	23.24	0.01
Distribution System Modifications	1,345.10	0.42	< 0.01
Subtotal	**22,909.81**	**23.66**	**0.01**
GWP	1	21	310
Total CO_2e	**22,909.81**	**496.96**	**0.11**
Amortization Period (years)	30		
Amortized Construction Emissions	**780.23**		

1.1.1 Proposed Project with the Implementation of APM-PUS-01

APM-PUS-01 was incorporated into the PEA to identify and evaluate sources of recycled water from SDG&E's Major Projects Water Sourcing Plan, and to ensure that the usage of recycled water does not result in new significant impacts to air quality, GHG emissions, or traffic. The subsections that follow document the emissions associated with the implementation of this APM.

Proposed Project (without Distribution System Modifications)

The anticipated emissions associated with construction vehicle use, the cold tie-in process, pre-lay purge, and pigging will not change with the implementation of APM-PUS-01. Emissions

associated with importing water to the Proposed Project site were taken from Table 4.7-3: Estimated Greenhouse Gas Construction Emissions in the PEA and were substituted with the emissions associated with water conveyance.

Distribution System Modifications

The anticipated emissions associated with construction vehicle use and natural gas releases will not change with the implementation of APM-PUS-01.

Total Carbon Dioxide Equivalent Emissions

The total CO_2e emissions were calculated using the previously described process. Table 6: Total CO_2e Emissions with Implementation of APM-PUS-01 summarizes the total CO_2e and amortized construction emissions calculations from the Proposed Project with the implementation of APM-PUS-01.

Table 6: Total CO_2e Emissions with Implementation of APM-PUS-01

Activity	CO_2 Emissions (metric tons)	CH_4 Emissions (metric tons)	N_2O Emissions (metric tons)
Proposed Project (without the Distribution System Modifications)	21,737.20	23.24	< 0.01
Distribution System Modifications	1,345.10	0.42	< 0.01
Subtotal	**23,082.30**	**23.66**	**< 0.01**
GWP	1	21	310
Total CO_2e	**23,082.30**	**496.96**	**< 0.01**
Amortization Period (years)	30		
Amortized Construction Emissions	**785.98**		

1.2 ESTIMATED GREENHOUSE GAS OPERATION AND MAINTENANCE EMISSIONS

Emissions associated with operation and maintenance of the Proposed Project were taken from Table 4.7-4: Estimated Greenhouse Gas Operation and Maintenance Plus Construction Emissions in the PEA. These values were added to the amortized construction emissions presented in Table 5: Total CO_2e Emissions without Implementation of APM-PUS-01 and Table 6: Total CO_2e Emissions with Implementation of APM-PUS-01 to generate the total anticipated Proposed Project emissions with and without the implementation of APM-PUS-01.