SDG&E

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

and In Response to Data Request SDG&E R15-01-008 2017 June Report

3/31/2017

Appendix 3 Rev. 3/31/17

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):
Note - Definitions in Data Request SDG&E R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#3):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request SDG&E R15-01-008 2017 June Report.
Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

The emissions captured on this tab represent the emissions associated with the operational design and function of the compressor. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.
Response:

Transmission Compressor Vented Emissions:

ID	Geographic Location	Compressor Type	Prime Mover	Number of Cylinders	Number of Seals	Seal Type	Operating Mode: Pressurized Operating (hours)	Operating Mode: Pressurized Idle (hours)	Operating Mode: Depressurized Idle (hours)	Emission Factor: Pressurized Operating (scf/hr)	Emission Factor: Pressurized Idle (scf/hr)	Emission Factor: Depressurized Idle (scf/hr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
1	92555	R	C	4	NA	NA	1481	6816	487	44.25	0	0	65.53	GHG Subpart W data
2	92555	R	C	4	NA	NA	1541	6625	618	52.91	0	0	81.53	GHG Subpart W data
3	92555	R	C	4	NA	NA	1409	6926	449	17.74	0	0	25.00	GHG Subpart W data
4	92555	C	C	NA	1	W	1355	NA	7429	208.4	NA	0	282.38	GHG Subpart W data
5	92555	C	C	NA	1	W	1226	NA	7558	200.35	NA	0	245.63	GHG Subpart W data
6	92555	C	C	NA	1	W	1807	NA	6977	387.5	NA	0	700.21	GHG Subpart W data
7	92555	C	C	NA	1	W	1281	NA	7503	133.95	NA	4.2	203.10	GHG Subpart W data
8	92555	R	C	2	NA	NA	546	6958	1280	0	0	8.9	11.39	GHG Subpart W data
9	92555	R	C	2	NA	NA	523	6918	1343	0	0	0	0.00	GHG Subpart W data
10	92555	R	C	4	NA	NA	3418	3567	1799	420.87	0	0	1,438.53	GHG Subpart W data
												Sum Total	**3,053.32**	

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Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

and In Response to Data Request SDG&E R15-01-008 2017 June Report

3/31/2017

Appendix 3 Rev. 3/31/17

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):
Note - Definitions in Data Request SDG&E R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#3):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request SDG&E R15-01-008 2017 June Report.
Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the Compressor is releasing gas or "bleeding" as a result of its design or function then it is not to be captured in this tab.
Response:

Transmission Compressor Fugitive Leaks:

ID	Geographic Location	Compressor Type	Prime Mover	Number of Cylinders	Number of Seals	Seal Type	Operating Mode: Pressurized Operating (hours)	Operating Mode: Pressurized Idle (hours)	Operating Mode: Depressurized Idle (hours)	Emission Factor: Pressurized Operating(scf/hr)	Emission Factor: Pressurized Idle (scf/hr)	Repair Date (MM/DD/YY)	Number of Days Leaking	Explanatory Notes / Comments

Notes: Leaks on compressor piping are reported as "component leaks".

Sum Total

SDG&E

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

and In Response to Data Request SDG&E R15-01-008 2017 June Report

3/31/2017

Appendix 3 Rev. 3/31/17

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):
Note - Definitions in Data Request SDG&E R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#3):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request SDG&E R15-01-008 2017 June Report.
Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
Response:

Transmission Compressor Station Blowdowns:

ID	Geographic Location	Number of Blowdown Events	Annual Emissions (Mscf)	Explanatory Notes / Comments
LNG	92004	1	6.83	Blow down for valve changes
N/A	92555	23	854.20	Blowdowns for Maintenance
ESD	92555	1	713.63	Station ESD (annual)
LNG	92004	1	41.61	Total Gas Lost Due to Filling operations
N/A	92555	3	72.57	Unit 1 & 8 Blowdown for crankcase inspection
N/A	92555	4	121.03	Unit 1, 2, 8, 10 blowdown for annual inspection
N/A	92555	1	52.73	Unit 10 blowdown for yard valve testing
N/A	92555	1	19.78	Unit 2 blowdown for Reg. Testing
N/A	92555	176	1,703.16	Unit 4, 5, 6, 7 & 9 Start/Stop
		Sum Total	**4,299.17**	

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3/31/2017

Appendix 3 Rev. 3/31/17

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):
Note - Definitions in Data Request SDG&E R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#3):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request SDG&E R15-01-008 2017 June Report.
Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.

The emissions captured on this tab represent the emissions associated with the operational design and function of the component. Any intentional release of natural gas for safety or maintenance purposes should be included on the Blowdowns worksheet.
Response:

Transmission Compressor Station Component Vented Emissions:

ID/Number of Devices	Geographic Location	Device Type	Bleed Rate	Manufacturer	Engineering or Manufacturer's based Estimate of Emissions (Mscf/day/dev)	Annual Emissions (Mscf)	Explanatory Notes / Comments
42	92555	P	I	Misc.	0.0576	885.43	
2	92555	P	L	Misc.	0.0336	24.60	
					Sum Total	**910**	

SDG&E

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leaks Consistent with Senate Bill 1371, Leno.

and In Response to Data Request SDG&E R15-01-008 2017 June Report

3/31/2017

Appendix 3 Rev. 3/31/17

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):
Note - Definitions in Data Request SDG&E R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#3):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request SDG&E R15-01-008 2017 June Report.
Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
The emissions captured on this tab represent the emissions associated unintentional leaks that if repaired would not leaking. If the component is releasing gas or "bleeding" as a result of its design or function then it is not to be captured in this tab.
Response:

Transmission Compressor Station Component Fugitive Leaks:

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day/dev)	Annual Emissions (Mscf)	Explanatory Notes / Comments
compressor #3 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
compressor #4 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #4 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #4 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #4 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #5 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #5 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #5 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #5 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #5 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
compressor #4 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
compressor #4 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
compressor #4 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
compressor #6 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #6 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #6 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #6 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #6 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
compressor #7 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #7 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #7 - valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.3562	130.35	GHG Subpart W data - Table 3 for Compressor Component - 14.84 scfh
compressor #9 - connector	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1342	49.10	GHG Subpart W data - Table 3 for Compressor Component - 5.59 scfh
non-compressor, 1" plug	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" cap	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.

ID	Geographic Location	Device Type	Bleed Rate	Manufacturer	Discovery Date (MM/DD/YY)	Repair Date (MM/DD/YY)	Number of Days Leaking	Emission Factor (Mscf/day/dev)	Annual Emissions (Mscf)	Explanatory Notes / Comments
non-compressor, 1" plug	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" elbow	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" plug	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 0.5" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 3/4" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-comrpessor, 3/4" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-comrpessor, 3/4" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" thread	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-comrpessor, 2" union	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 3/4" union	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 1" needle valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 1" plug valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 12" ball valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 1" needle valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 1" ball valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 12" ball valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 12" plug valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 4" ball valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 3" ball valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 20" check valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 30" ball valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
non-compressor, 1" reducer	92555	C	N/A	N/A	12/1/2016	N/A	366	0.1399	51.20	Appendix 9 EF.
non-compressor, 12" plug valve	92555	V	N/A	N/A	12/1/2016	N/A	366	0.1572	57.54	Appendix 9 EF.
							Sum Total		**3,758**	

SDG&E

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3/31/2017
Appendix 3

Rev. 3/31/17

Pursuant to SB 1371, Leno - Natural gas: leakage abatement, the California Public Utilities Commission (CPUC) requests that the following information be transmitted to the CPUC and the State Air Resources Board (ARB):
Note - Definitions in Data Request SDG&E R15-01-008 2017 June Report

The following question in the above mentioned data request is answered using the spreadsheets in this Appendix (#3):
(6) Calculable or estimated emissions and non-graded gas leaks, as defined in Data Request SDG&E R15-01-008 2017 June Report.
Notes:
Use a formula-derived value with the formula used in the Annual Emissions column. Do not use a copy and paste-as-value.
At the end of Annual Emissions Column, add a summation total in a cell for a column total, and then highlight orange.
Response:

Transmission Compressor Station Storage Tank Emissions:

Total Number	Discovery Date (DD/MM/YY)	Repair Date (DD/MM/YY)	Number of Days Emitting	Emission Factor (Mscf/yr)	Annual Emissions (Mscf)	Explanatory Notes / Comments
1	1/5/2016	1/5/2016	1	NA	0.0387	LNG Tank Pressure Release Due to Temperature Fluctuation
1	1/8/2016	1/8/2016	1	NA	0.0289	LNG Tank Pressure Release Due to Temperature Fluctuation
1	1/12/2016	1/12/2016	1	NA	0.0674	LNG Tank Pressure Release Due to Temperature Fluctuation
1	1/12/2016	1/12/2016	1	NA	0.0212	LNG Tank Pressure Release Due to Temperature Fluctuation
1	1/12/2016	1/13/2016	1	NA	0.0168	LNG Tank Pressure Release Due to Temperature Fluctuation
1	2/1/2016	2/1/2016	1	NA	0.0338	LNG Tank Pressure Release Due to Temperature Fluctuation
1	2/9/2016	2/9/2016	1	NA	0.0395	LNG Tank Pressure Release Due to Temperature Fluctuation
1	2/17/2016	2/17/2016	1	NA	0.0169	LNG Tank Pressure Release Due to Temperature Fluctuation
1	3/2/2016	3/2/2016	1	NA	0.0613	LNG Tank Pressure Release Due to Temperature Fluctuation
1	3/16/2016	3/16/2016	1	NA	0.0716	LNG Tank Pressure Release Due to Temperature Fluctuation
1	3/18/2016	3/18/2016	1	NA	0.1315	LNG Tank Pressure Release Due to Temperature Fluctuation
1	3/21/2016	3/21/2016	1	NA	0.0930	LNG Tank Pressure Release Due to Temperature Fluctuation
1	3/28/2016	3/28/2016	1	NA	0.0725	LNG Tank Pressure Release Due to Temperature Fluctuation
1	4/4/2016	4/4/2016	1	NA	0.0493	LNG Tank Pressure Release Due to Temperature Fluctuation
1	4/12/2016	4/12/2016	1	NA	0.0272	LNG Tank Pressure Release Due to Temperature Fluctuation
1	4/13/2016	4/13/2016	1	NA	0.0288	LNG Tank Pressure Release Due to Temperature Fluctuation
1	5/20/2016	5/20/2016	1	NA	0.1254	LNG Tank Pressure Release Due to Temperature Fluctuation
1	5/22/2016	5/22/2016	1	NA	0.0208	LNG Tank Pressure Release Due to Temperature Fluctuation
1	6/9/2016	6/9/2016	1	NA	0.0204	LNG Tank Pressure Release Due to Temperature Fluctuation
1	6/22/2016	6/22/2016	1	NA	0.0239	LNG Tank Pressure Release Due to Temperature Fluctuation
1	6/24/2016	6/24/2016	1	NA	0.0318	LNG Tank Pressure Release Due to Temperature Fluctuation
1	6/29/2016	6/29/2016	1	NA	0.0390	LNG Tank Pressure Release Due to Temperature Fluctuation
1	6/30/2016	6/30/2016	1	NA	0.0241	LNG Tank Pressure Release Due to Temperature Fluctuation
1	7/23/2016	7/23/2016	1	NA	0.0218	LNG Tank Pressure Release Due to Temperature Fluctuation
1	7/29/2016	7/29/2016	1	NA	0.0829	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/1/2016	8/1/2016	1	NA	0.0424	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/3/2016	8/3/2016	1	NA	0.0723	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/5/2016	8/5/2016	1	NA	0.0206	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/8/2016	8/8/2016	1	NA	0.0471	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/11/2016	8/11/2016	1	NA	0.0389	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/17/2016	8/17/2016	1	NA	0.0506	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/19/2016	8/19/2016	1	NA	0.0443	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/24/2016	8/24/2016	1	NA	0.0314	LNG Tank Pressure Release Due to Temperature Fluctuation
1	8/31/2016	8/31/2016	1	NA	0.0569	LNG Tank Pressure Release Due to Temperature Fluctuation
1	12/6/2016	12/6/2016	1	NA	0.0788	LNG Tank Pressure Release Due to Temperature Fluctuation
1	12/12/2016	12/12/2016	1	NA	0.0674	LNG Tank Pressure Release Due to Temperature Fluctuation
1	12/27/2016	12/27/2016	1	NA	0.0717	LNG Tank Pressure Release Due to Temperature Fluctuation
				Sum Total	**1.8112**	