

Southern California Gas Company
2022 Natural Gas Leak Abatement Compliance Plan
Safety Policy Division Evaluation Report Revision 11.30.22

EXECUTIVE SUMMARY

The CPUC Safety Policy Division (SPD) approves¹, with some exceptions, the emissions reduction measures proposed in the Southern California Gas Company (SoCalGas) Amended 2022 Natural Gas Leak Abatement (NGLA) Compliance Plan, filed on August 12, 2022. The Plan was filed according to the NGLA program requirements established in Decision (D.)17-16-015 and expanded in (D.)19.08-020.

The SoCalGas 2022 Compliance Plan forecasts an annual emission reduction of nearly one million MCF (thousand cubic feet) of natural gas by 2025, a 55 percent reduction from the 2015 Baseline². This forecast exceeds the Commission's target of 20 percent by 2025 and the statewide greenhouse gas reduction goal of 40 percent by 2030. While the NGLA Program requires that Compliance Plans indicate how the company expects to achieve the Statewide goal³, it does not offer guidance on proposals to exceed that goal. SPD observes that the forecasted reduction may be difficult to achieve in practice, so that it is appropriate to approve measures that may exceed the goal to some extent. To support this high forecast, SoCalGas explained that they are anticipating future emissions reduction and carbon neutrality goals⁴.

In the 2022 Plan, emission reduction measures approved in the 2020 Plan are proposed to continue, along with expansions and new activities. However, some of these proposals seek funding for measures based on cost-effectiveness studies not yet completed as of the Plan filing; SoCalGas is requesting Commission approval through AL 5950 for funding these measures in a Two-Way Balancing Account. SoCalGas proposes that they will decide if a measure is cost effective and return funds from the Balancing Account if they determine it is not. SPD recommends that the Commission, rather than the utility, should decide if a measure's cost-effectiveness is acceptable and only then approve funding for a measure.

A notable program introduced in the 2020 Compliance Plan that is proposed to be expanded in scope is Aerial Monitoring which identifies both company and customer leaks from an airborne survey. The identification of customer leaks may provide incremental safety benefits to disadvantaged communities due to the expectation of older and poorly maintained gas appliances in those communities. The emissions from customer leaks have been estimated from preliminary data at double the amount from the company's infrastructure. However, the expected results from the

¹ Approval authority delegated to SED Staff, now SPD Staff, in D.19.08-020 at 19.

² SoCalGas used a preliminary adjusted baseline which has since been refined in the Draft Joint Emissions Inventory Report of November 15, 2022. The refined forecasted reduction is 60 percent.

³ D.17-06-015 Ordering Paragraph 6(c).

⁴ October 3, 2022, data request response to SPD Staff.

2020 Plan have not yet been presented; and the incremental emission reductions are not included in the already impressive forecast that exceeds the Statewide goal.

SPD approves the adoption of the SoCalGas Compliance Plan, with exceptions described below.

MEASURES NOT APPROVED

SPD does not approve the following measures because of insufficient cost-effectiveness information:

1. The expansion of Aerial Monitoring beyond the 2020 approval level described in Chapter 14.
2. Chapter 21, Leak and Vented Emission Reduction, Transmission Compression Facilities.
3. Chapter 26, High Bleed Device Replacement (applied to intermittent devices).

RECOMMENDED APPROVAL PROCEDURES

To secure approval and funding for the non-approved measures above, SPD advises the following conditions and procedures:

1. The Commission will require a separate Tier 3 Advice Letter filing for funding these measures, concurrent with or after submission of engineering studies that demonstrate reasonable cost effectiveness. The studies will be reviewed for approval by SPD Staff.
2. Because SoCalGas is forecasting a reduction from the set of SPD-approved measures that already exceeds the Commission target of 20 percent and the Statewide goal of 40 percent, SPD recommends that no ratepayer funding should be expended for new or expanded measures that exceed the break-even⁵ standard cost effectiveness of approximately \$22/MCF.
3. SoCalGas will provide a presentation and a written report for each measure to document the expected cost-effectiveness at the 2023 NGLA Program Winter Workshop, normally scheduled in February each year. If more time is needed, SoCalGas will provide the presentation and written report by no later than June 15, 2023.
4. Within 30 days of receipt, SPD Staff will review the reports for sufficiency of data and analysis that support the estimated cost-effectiveness and the utility's rationale for adoption of the measure. Staff may request CARB assistance with these reviews.
5. SPD Staff recommends that, where possible, safety benefits from reduction of leaks should be quantified and included in the calculation of cost-effectiveness in a similar manner to that used in the Risk Assessment Mitigation Phase (RAMP) process.
6. The engineering studies should include an analysis of the safety benefits to disadvantaged communities (DACs), including the volume of emissions found in DACs vs. Non-DACs.
7. SPD Staff will evaluate the proposed measures based on a comparison of the expected cost-effectiveness to previously adopted measures, the break-even cost, the contribution to the 2030 Statewide reduction goal, and the benefits to disadvantaged communities. Staff will also

⁵ "Break-even" occurs when the standard cost effectiveness is offset to a zero balance from avoided cap-and-trade costs (currently \$1.14/MCF), and social cost of methane savings (currently \$21/MCF).

consider the impact on the Commission’s duty to ensure safety, reliability, and just and reasonable rates.

8. Following staff evaluation of the engineering studies, the Director of Safety Policy Division will communicate approval of the measures by letter to Sempra and the Energy Division.

BACKGROUND

In accordance with Decision (D.)19.08-020, which established Phase II in the CPUC’s proceeding to address Senate Bill (SB) 1371⁶, SoCalGas filed a Compliance Plan as required on March 15, 2022. After initial feedback by SPD Staff, SoCalGas submitted an amended plan on August 12, 2022. The purpose of the NGLA Compliance Plan is to propose how the utility will achieve emissions reductions, primarily through implementation of the Best Practices for leak abatement described in the Phase I NGLA Program Decision (D.) 17-06-015.

The Phase II Decision added requirements for the Compliance Plans, including specifications for determining the cost-effectiveness for each proposed compliance measure, when emissions reduction can be attributed to the measure. D.19.08-020 requires use of a specified cost-effectiveness methodology and two cost-benefit tests to provide information when evaluating proposed methane reduction measures and for evaluating the Biennial Methane Leaks Compliance Plans (Compliance Plans), while maintaining full discretion for the Commission to also consider qualitative factors and policy goals. The two cost-benefit tests are: Cap and Trade savings and avoided social cost of methane. D.19.08-020 did not specify a cost-effectiveness threshold but required the proposals to be evaluated on qualitative and quantitative bases.

Some of the best practices such as record-keeping or training do not have directly associated emissions reductions; rather these practices serve as foundational support for the overall goal. The Phase II Decision also provides for grouping multiple Best Practices into integrated measures, with each measure described in its own chapter.

APPROVAL AUTHORITY

Decision (D.)19.08-020 authorizes the CPUC’s Safety Enforcement Division (SED) to approve or reject NGLA Compliance Plans.⁷ Since the Decision was issued, the SED Staff who had that responsibility are now part of the Safety Policy Division (SPD) and have continued that role. When funding is required outside of a General Rate Case (GRC), the utility will file a Tier 3 Advice Letter with Energy Division. Pursuant to CPUC General Order 96-B, a Tier 3 Advice Letter is subject to disposition by Resolution, which requires a Commission vote.

COMPLIANCE PLAN SUMMARY

The SoCalGas Amended 2022 Compliance Plan presents a total of 26 chapters detailing measures to address the 26 Best Practices to begin or continue in 2023. Eight of the chapters provide an emissions reduction estimate, with five of those chapters also providing corresponding cost-effectiveness estimates. Overall, the Plan forecasts emissions reduction of 55 percent by 2025, with

⁶ Leno, chapter 525 statutes of 2014

⁷ [D.19.08-020](#), at p. 19.

no additional reduction expected by 2030. This forecast exceeds both the statewide greenhouse gas (GHG) reduction goal of 40 percent by 2030 and the mandated reduction target of 20 percent by 2025 established in the Phase II Decision.

Until this most recent 2022 Compliance Plan, approximately 60 percent of the baseline emissions level and subsequent reported emissions were estimated from population-based emission factors, which rigidly linked emission volumes to the number of devices or miles of pipeline in the operator's system rather than measurement of actual leaks. Thus, no reduction from those sources could be measured until better quantification methods were established. Research and pilot studies aimed at developing such quantification methods have since been conducted and presented by SoCalGas for approval by SPD Staff in consultation with California Air Resources Board (CARB) Staff.

These improved methods have allowed for better measurement of the performance of SoCalGas's measures and will better inform decisions about Compliance Plan proposals as may be needed to reach the 2030 goal.

A summary table of the chapters offering emissions reduction estimates and cost-effectiveness values follows in Appendix A, Table 2.

COST-EFFECTIVENESS DEFINITION AND USE

D.19.08-020 defines a cost-effectiveness calculation method and requires presentation of the social cost of methane and Cap-and-Trade cost-benefit tests. The Decision does not establish a threshold cost-effectiveness value or limit.

STANDARD COST-EFFECTIVENESS

The standard cost-effectiveness is the total program costs less direct savings over the expected benefit period divided by the total emissions reduction for the same period. Program costs are defined as the average annual revenue requirement (AARR) times the number of years of the benefit period. Cost-effectiveness is expressed in dollars per thousand standard cubic feet of natural gas emissions or \$/MCF.

CAP AND TRADE BENEFITS

An avoided Cap-and-Trade cost benefit test is required by (D.)19-08-020, to be used for information and comparison purposes.⁸ For SoCalGas, an annual Advice Letter forecasts the rate impact of the Cap-and-Trade expense. This expense is added to rates per CPUC approval. Emissions reductions are accounted for in this Advice Letter as part of the total gas throughput. In the Compliance Plan, the utility is required to show the value of the avoided Cap-and-Trade cost as a benefit in \$/MCF. The Decision specifies that the Cap-and-Trade cost benefit test shall use the same Emission Conversion Factor and Proxy Greenhouse Gas Allowance Price as is used for the gas utilities' forecast revenue requirements pursuant to Decision 15-10-032.⁹ That decision values Cap-and-

⁸ D. 19-08-020 at 36

⁹ [D.15-01-008](#), Ordering Paragraph 3, p. 82.

Trade costs on the assumption that all gas throughput is combusted and emitted to the atmosphere as CO₂.

The Proxy Greenhouse Gas Allowance Price is variable based on market valuation. To determine the Cap-and-Trade benefit for the Compliance Plan, SoCalGas used a December 2022 futures value based on the five-day average of trading days January 10-16, 2020, from the International Exchange: \$20.82 per metric ton CO₂ equivalent (MT CO₂(e)). Compliance with the Commission instructions produces a Cap-and-Trade benefit value of \$1.14/MCF. In the “Common Assumptions for Cost Estimates” section of the 2022 Compliance Plan, SoCalGas gives an erroneous Cap-and-Trade benefit value of \$13.61/MCF. However, examination of the cost-effectiveness values presented in the Plan shows that SoCalGas used the correct \$1.14/MCF value in the calculations and simply miswrote the incorrect value in the introductory section.

SOCIAL COST OF METHANE BENEFITS

The second cost-benefit test required by Phase II is the value for avoided social cost of methane (SCM). While not an immediately tangible savings to the ratepayer, the future cost to society from the environmental impact of GHGs is an important component of any GHG program. The Phase II Decision provides a SCM value of \$21/MCF to use in Compliance Plans.¹⁰ SoCalGas used that value in the Plan.

REVIEW OF PLAN CHAPTERS

A complete list of all chapters with their Average Annual Revenue Requirement, Standard Cost-effectiveness, and Best Practices (BPs) addressed, is provided in Table 1 below. Given that many of the programs presented have been approved in previous with similar levels of funding, this report will only examine the eight programs that are either new or proposed to have a significant expansion in cost. For all proposals not reviewed in depth in this evaluation, staff approves their adoption as proposed by SoCalGas in their Compliance Plan.

A description of all 26 Best Practices is provided in Appendix B for reference.

¹⁰ D. 19-08-020 at Page 16.

TABLE 1. COMPLIANCE PLAN SUMMARY

CH.	DESCRIPTION	Avg. Ann. Revenue Reqt., Millions	Std. Cost Eff, \$/MCF ¹¹	Best Practices Addressed	New Program or Sig. Expansion
1	Leak Inventory Reduction	\$36.70	\$74	15, 16, 20a, 21	Yes
2	Increased Leak Survey	\$8.10	\$28	15, 16	Yes
3	Blowdown Reduction Activities	\$8.10	\$41	23, 3-7	Yes
8	Geographic Tracking	\$10.40	NA	9, 20b	Yes
14	Aerial Monitoring ^{12 13}	\$19.62	\$619	16, 17, 20a	Yes
21	Leak and Vented Emission Reduction – Transmission Compressor Facilities	\$2.10	NE	21, 23	Yes
26	High Bleed Device Replacement	\$20.30	NE	23	Yes
4	Large Leak Prioritization	None	NA	15, 16, 20a, 21	No
5	Damage Prevention Algorithm and Proactive Intervention	\$2.50	\$357	24, 25, 26	No
6	Advanced Meter Analytics Algorithm	\$0.30	NA	17	No
7	Recordkeeping IT Project	\$3.70	NA	9	No
9	Competency-Based Training Development	\$0.30	NA	13	No
10	Training Facility Enhancements	\$0.30	NA	13	No
11	Blowdown Reduction Projects at Storage Facilities	\$1.40	NE	23	No
12	Stationary Methane Detectors	\$1.10	NA	18	No
13	Electronic Leak Survey	\$1.90	NA	20b	No
15	Damage Prevention Public Awareness	\$1.70	NE	24, 25, 26	No
16	Pipe Fitting Specifications	\$1.70	NE	22	No
17	Repeat Offenders IT Systems	\$0.30	NE	26	No
18	Accelerated Leak Repair - Transmission	\$0.30	NE	21	No
19	Gas Speciation	\$0.50	NE	17	No
20	Public Leak Maps	\$0.30	NE	20b	No
22	Vapor Collection Systems	None	NA	23	No
23	Distribution Above Ground Leak Survey	None	NA	19	No
24	Storage Above Ground Leak Survey	\$1.60	NE	19, 21	No
25	Distribution Above Ground Leak Repair	None	NA	19, 21	No
	TOTAL	\$123.22			

NA = Cost-effectiveness not applicable. NE = Emission reduction could not be estimated.

¹¹ Standard Cost-effectiveness is the average annual revenue requirement less direct savings divided by the annual emission reduction.

¹² See discussion of Chapter 14.

¹³ The Average Annual Revenue Requirement and Standard Cost-effectiveness reflect updated data provided from a data request by SoCalGas to SPD staff.

SECTION A. EVALUATION OF CHAPTERS WITH SIGNIFICANT EXPANSIONS

SPD staff identifies six chapters that propose significant increases in revenue requirement.

CHAPTER 1. LEAK INVENTORY REDUCTION

This chapter addresses one of the fundamental concerns of SB 1371 and the NGLA program: gas leaks allowed to remain open indefinitely. Prior to the NGLA program, leaks that were not defined as hazardous by safety regulations did not have to be repaired promptly; these leaks (typically referred to as Grade 3) were too low in gas concentration to support ignition. Now under the NGLA program, Best Practice 21 (“Find it, Fix it”) requires all leaks to be repaired as soon as possible but no more than three years after discovery, with some exceptions for unusually high cost repairs. SoCalGas achieved this three-year standard as of June 2020, and has since continued to improve its response time, forecasting that it will reduce this number to 15 months by the end of 2022.

The estimated emissions reductions for this chapter, 492,946 MCF by 2025, is the largest of all the proposed measures in the Compliance Plan and amounts to about half of the total reductions. SoCalGas intends to reduce the leak inventory period to 12 months by the end of 2023, six months by the end of 2024, and three months by the end of 2025. The sooner a leak is repaired, the lower the resultant emissions. Three months is considered a practical limit due to permitting and other construction limitations, therefore SoCalGas forecasts reductions from this program will peak and level off starting 2025. The chapter incorporates the current leak inventory as well as new additional leaks to be discovered by more frequent leak surveys in accordance with Best Practice 15 (Leak Survey Interval) and 16 (Special Leak Surveys).

The standard cost-effectiveness is presented as \$74/MCF based on an AARR of \$36.7 Million. This value compares favorably with the 2018-2020 historical achieved standard cost-effectiveness of \$124/MCF for leak backlog reduction. The net cost-effectiveness with Cap-and-Trade and Social Cost of Methane is \$52/MCF.

SPD Staff approve adoption of the Chapter 1 measures.

CHAPTER 2. INCREASED LEAK SURVEY

This chapter incorporates Best Practice 15 (Leak Survey Interval) and 16 (Special Leak Surveys). BP 15 requires a three-year leak survey period or an alternative survey period if more effective in special cases. SoCalGas plans to continue with the alternative annual leak surveys as approved in the 2018 Plan for two types of pipe material known to be leak-prone: unprotected steel and pre-1986 vintage Aldyl-A plastic pipe.

Unprotected steel pipe means that no anti-corrosion system, such as cathodic protection, is installed on that pipe. Aldyl-A, one of the earliest forms of plastic pipe used instead of steel, has been found to develop leaks more often than other materials. The older, “vintage,” supplies of Aldyl-A are particularly subject to developing leaks.

The practice of performing annual surveys on pre-1986 Aldyl-A was begun under SoCalGas' regulatory Distribution Integrity Management Program (DIMP) and is a good example of what can be achieved with increased leak survey intervals. SPD staff note that the pre-1986 Aldyl-A survey is funded under the General Rate Case as a DIMP-related program.

Although SoCalGas does not propose increasing its pipeline survey cycles, it requests additional funding to support the initiative, including automation of the process to improve its precision and speed as well as expanded efforts to replace Population-Based emission factors with more accurate Leaker-Based emission factors.

For the leak survey frequency measures in Chapter 2, the expected reduction by 2025 is 267,750 MCF, the second-largest contributor to reductions.

The standard cost-effectiveness is presented as \$28/MCF based on an AARR of \$8.1 million. This makes the program among the lower cost-effectiveness values of all the proposed measures. For comparison, the historical achieved standard cost-effectiveness reported for 2018-2020 for the program was \$33/MCF. The net cost-effectiveness is stated as \$6/MCF.

SPD Staff approve adoption of the Chapter 2 measures.

CHAPTER 3. BLOWDOWN REDUCTION ACTIVITIES

Another set of BPs involve reduction of intentional gas releases, usually for maintenance purposes, known as blowdowns. This chapter implements BPs 3, 4, 5, 6, 7, and 23. These practices include such activities as bundling of several projects, reducing pressure before the blowdown, and containing the emissions with portable compressors.

SoCalGas proposes continuing its high-pressure pipeline blowdown reduction efforts, as well as a significant expansion of the program (from an AARR of \$1.6 million proposed in 2020 to an AARR of \$8.1 million in the 2022 Compliance Plan) to increase the use of technologies such as gas capture or cross compression on more projects, as well as exploring efforts on distribution operations.

Estimated emissions reduction by 2025 is 188,232 MCF, about 20 percent of the total reductions expected. It should be noted that the number of blowdowns can vary from year to year as different maintenance activities may require.

Standard cost-effectiveness for this chapter is forecasted as \$41/MCF, which contrasts with the historical 2018-2020 actual standard cost-effectiveness of \$18/MCF. This difference is expected as SoCalGas expands its efforts beyond projects that focused on the most cost-effective measures first. When the cost benefits of Cap and Trade and social cost are included, this chapter has a net cost-effectiveness of \$19/MCF.

SPD Staff approves adoption of the Chapter 3 measures.

CHAPTER 8. GEOGRAPHIC TRACKING

This chapter addresses geographic tracking of leaks per BP 20a and supports digital record keeping per BP 9. The records in this case are digital forms of the numerous Piping and Instrumentation Drawings of gas lines and stations, including GIS (Geographic Information System) integration and 3-D modeling of high-pressure facilities. These activities will promote better management of gas assets and better-informed response to leak events.

In the 2022 Compliance Plan, SoCalGas proposes continuation of the program as approved in 2020, as well as additional staff to conduct back modeling on an additional five compressor stations and one storage facility that were not included in the 2018 or 2020 Plans.

While in 2020, SoCalGas requested a total program revenue of \$15.8 million with an AARR of \$7.9 million, in 2022 it has expanded the cost to \$20.7 million with an AARR of \$10.4 million. No abatement figures or cost-effectiveness can be estimated, as the program supports overall emission reduction efforts as opposed to having reductions directly attributable to the program.

SPD Staff approves adoption of Chapter 8.

CHAPTER 14. AERIAL MONITORING

SoCalGas proposes significant expansion in the use of aerial-based methane sensing technology (also called Aerial Methane Mapping, or AMM) to identify methane leaks on system facilities as well as beyond-the-meter customer appliances. In the previous compliance plan cycle of 2020, SPD Staff approved the initial AMM program. While SoCalGas has estimated significant emission reduction potential from the expansion¹⁴, the actual performance reported to date has not met the 2020 Plan expectations. Further, the 2022 Plan's total reduction forecast exceeds the Statewide goal without including the expanded AMM program, so the Commission should have the opportunity to carefully consider additional funding to go beyond the goal.

Therefore, Staff does not approve the expansion of the AMM program at this time but recommends SoCalGas complete an engineering study to document results that support the program expansion at a reasonable cost effectiveness and file a concurrent Advice Letter to request incremental funding.

This chapter addresses Best Practice 16, 17, and 20a. An advantage of aerial monitoring over traditional ground-based foot and vehicle measurement is that since natural gas leaks upwards it is not always visible from the ground, especially when the wind is blowing away from the surveyor, or when a structure stands between the leak and the measurement. Aerial surveys provide a view of leaks that may not have otherwise been found.

SoCalGas states that Gas Mapping LiDAR (GML) technology used for AMM has been demonstrated successfully in pilot programs carried out in 2019 and 2020. In the 2021-2022 Compliance Period, SoCalGas began broader implementation of the program, but experienced delays and difficulties from a variety of sources, so that the full effects of the measure have not yet

¹⁴ Expansion results estimated in an October 3, 2022 data request response.

been realized. The result for 2020 reported in the 2022 Compliance Plan was only 5,191 MCF reduced; 2021 and 2022 results have not yet been reported.

In 2022 SoCalGas plans to deploy an updated version of the LiDAR system, GML2.0, with two times lower methane detection sensitivity which should improve performance.

SoCalGas proposes a significant expansion of the program's size and cost, from an AARR of \$11.3 million proposed in 2020, to an AARR of \$19.6 million¹⁵ in the 2022 Compliance Plan. The cost increase is largely from a doubling of the technical staff required to follow up the aerial leak indications with investigations on the ground, including leaks on customer facilities. Total program revenue requirement is \$54.3 million.

SoCalGas forecasts a standard cost-effectiveness of \$619/MCF, significantly more expensive than any other program in the Plan. This figure is also a notable increase from the \$130/MCF that SoCalGas estimated in its 2020 proposal for the original AMM program and is far outside the range of cost effectiveness levels that Staff considers reasonable (the break-even standard cost effectiveness is about \$22/MCF, most measures are less than \$100/MCF). One of the reasons for the difference is that the 2020 estimate included reductions from leaks on customer facilities, while the 2022 Compliance Plan calculation only includes leaks expected on SoCalGas assets. SoCalGas states that behind-the-meter leaks on customer facilities make up a significant portion of emissions detectable by the program, and in an October 2022 data request response estimates that this program will reduce annual customer emissions by between 284,103 MCF and 568,207 MCF, which will improve the standard cost-effectiveness to between \$24/MCF and \$48/MCF. However, those estimates are preliminary and not supported with an engineering study.

While the NGLA Program does not account for emission reductions that are achieved outside of the utility's system, SPD staff acknowledge the greenhouse gas reduction benefits that aerial monitoring will produce are in the spirit of SB 1371. Furthermore, detection of leaks that would otherwise not be included in standard utility survey practice offers additional safety advantages.

SPD Staff does not approve expansion of the AMM measure beyond the 2020 levels at this time. Staff recommends continuation of the measure at the 2020 approved level so that the expected results at that level can be realized and reported. Staff also recommends that SoCalGas prepare and present a research paper to document the results through 2022, and the expected performance of the expansion, at the 2023 Winter Workshop or no later than June 15, 2023, with a subsequent Advice Letter filing if SoCalGas wishes to fully implement the proposed program.

CHAPTER 26. HIGH BLEED DEVICE REPLACEMENT

Best Practice 23 requires the replacement of pneumatic devices that are designed to vent or "bleed" a high flow of gas to the atmosphere continuously. These devices are typically older gas pressure control units that can be replaced by more modern low- or no-bleed designs. Replacement of all

¹⁵ AARR Cost revised to \$19.6 million in the October 11, 2022, response to a data request by SoCalGas to SPD staff.

high-bleed devices was completed in 2020. This measure achieved an annual emission reduction of 1,500 MCF.

In the 2022 Compliance Plan, SoCalGas proposes replacement of intermittent-bleed devices that vent at high rates. SoCalGas is currently performing a Transmission M&R Station study to assess cost-effectiveness of device replacement and plans to present the results of this study at the 2023 Winter Workshop. For this measure, SoCalGas forecasts a total revenue requirement of \$40.5 million with an AARR of \$20.3 million.

SPD Staff does not approve Chapter 26 because of insufficient cost effectiveness information. Staff recommends that SoCalGas prepare and present a research paper to document the expected reductions and cost-effectiveness from the intermittent bleed device replacement program at the 2023 Winter Workshop or no later than June 15, 2023, with a subsequent Advice Letter filing if SoCalGas wishes to fully implement the proposed program.

SECTION B. REVIEW OF CHAPTERS PROPOSING NEW MEASURES

SPD staff identified one chapter describing a measure that was not previously proposed and approved.

CHAPTER 21. LEAK AND VENTED EMISSION REDUCTION – TRANSMISSION COMPRESSION FACILITIES

SoCalGas anticipates significant and repeatable reduction through 2030 from a list of projects to be performed at transmission compression facilities but states it is unable to reasonably forecast emission reductions due to insufficient data. The chapter presents a total revenue requirement of \$90.7 million and an AARR of \$2.1 million.

SPD does not approve Chapter 21 based on insufficient cost effectiveness data. Staff recommends that SoCalGas prepare and present research to document the expected reductions and cost-effectiveness for the transmission compressor projects at the 2023 Winter Workshop or no later than June 15, 2023, with a subsequent Advice Letter filing if SoCalGas wishes to fully implement the proposed program.

CONCLUSION

SPD Staff have reviewed all the chapters of the 2022 Compliance Plan for consistency with the 26 Best Practices, cost-effectiveness, and qualitative safety benefits.

SPD approves all chapters except for the Chapter 14 expansion, 21, and 26 as described in the respective sections.

APPENDIX A: FORECASTED EMISSIONS REDUCTIONS

TABLE 2. Major Efforts to Reduce Emissions (2015 Official Baseline) - SoCalGas

Chapter	2025 Reductions, MCF	Percent Reduction from Baseline	AARR, \$Million	Standard Cost-effectiveness \$/MCF	Net Cost-effectiveness \$/MCF
Chapter 1 – Leak Inventory Reduction ¹⁶ Chapter 4 - Large Leak Prioritization	492,946	27.3%	36.7	74	52
Chapter 2 - Increased Leak Survey	267,760	14.8%	8.1	28	6
Chapter 3 - Blowdown Reduction Activities	188,232	10.4%	8.1	41	19
Chapter 5 - Damage Prevention Algorithm	11,562	0.6%	2.5	357	335
Chapter 14 - Aerial Monitoring	31,599 ¹⁷	1.8%	19.6	619	597
Summary	992,099				
Percentage Reduction from Baseline	55%				

¹⁶ Due to overlapping activities, Chapter 1 – Leak Inventory Reduction and Chapter 4 – Large Leak Prioritization share both expenditure and emission reduction estimates

¹⁷ Emissions estimate only accounts for before-the-meter leaks

APPENDIX B: BEST PRACTICES FOR THE NATURAL GAS LEAK ABATEMENT PROGRAM

No.	Best Practices	Rationale
	Policies and Procedures (P&P)	
BP 1	<p><u>Compliance Plan</u> Written Compliance Plan identifying the policies, programs, procedures, instructions, documents, etc. used to comply with the Final Decision in this Proceeding (R.15-01-008). Exact wording TBD by the company and approved by the CPUC, in consultation with CARB. Compliance Plans shall be signed by company officers certifying their company’s compliance. Compliance Plans shall include copies of all policies and procedures related to their Compliance Plans. Compliance Plans shall be filed biennially (i.e. every other year) to evaluate best practices based on progress and effectiveness of Companies’ natural gas leakage abatement and minimization of methane emissions.</p>	<p>Each company is of a different size and has a different business model. Compliance Plans will require Companies to include those Best Practices (BPs) mandated by the Commission, noting applicable exemptions and alternatives, and any additional measures proposed by each Company to abate natural gas leakage and minimize methane emissions. However, companies must submit a Compliance Plan for approval by the CPUC, in consultation with CARB, to ensure that they are complying with the decisions of this proceeding and SB 1371. The Compliance Plan filing also incorporates many requirements for other BPs including policies and procedures, recordkeeping, training, experienced/trained personnel. In addition, other specific requirements in many leak detection, leak repair and leak prevention BPs are incorporated into the Compliance Plan filing.</p>
BP 2	<p><u>Methane GHG Policy</u> Written company policy stating that methane is a potent Green House Gas (GHG) whose emissions to the atmosphere must be minimized. Include reference to SB 1371 and SB 1383. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of Compliance Plan filing.</p>	<p>Written company policies, referencing both SB 1371 (2014, Leno) and SB 1383 (2016, Lara), are needed to guide company activities and ensure effective implementation to abate natural gas leakage and minimize methane emissions.</p>
BP 3	<p><u>Pressure Reduction Policy</u> Written company policy stating that pressure reduction to the lowest operationally feasible level in order to minimize methane emissions</p>	<p>Written company policies are needed to require minimization of methane emissions from company activities (e.g. blowdowns, other operational emissions, etc.), and</p>

No.	Best Practices	Rationale
	is required before non-emergency venting of high-pressure distribution (above 60 psig), transmission and underground storage infrastructure consistent with safe operations and considering alternative potential sources of supply to reliably serve customers. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of Compliance Plan filing.	ensure effective implementation consistent with Operations & Maintenance (O&M) safety, system integrity and reliability requirements.
BP 4	<u>Project Scheduling Policy</u> Written company policy stating that any high pressure distribution (above 60 psig), transmission or underground storage infrastructure project that requires evacuating methane will build time into the project schedule to minimize methane emissions to the atmosphere consistent with safe operations and considering alternative potential sources of supply to reliably serve customers. Projected schedules of high-pressure distribution (above 60 psig), transmission or underground storage infrastructure work, requiring methane evacuation, shall also be submitted to facilitate audits, with line venting schedule updates TBD. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing.	Written company policies to schedule projects for high pressure distribution, transmission or underground storage infrastructure projects to minimize methane emissions are needed to guide company activities and ensure effective implementation consistent with O&M safety, system integrity and reliability requirements. This scheduling projects BP applies to non-emergency venting of high pressure distribution (above 60 psig), transmission or underground storage infrastructure requiring methane evacuation.
BP 5	<u>Methane Evacuation Procedures</u> Written company procedures implementing the BPs approved for use to evacuate methane for non-emergency venting of high pressure distribution (above 60 psig), transmission or underground storage infrastructure and how to use them consistent with safe operations and considering alternative potential sources of supply to reliably serve customers. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing.	Written company procedures are needed to guide company activities for methane evacuation implementation and ensure effective implementation consistent with O&M safety, system integrity and reliability requirements. This methane evacuation implementation BP applies to non-emergency venting of high-pressure distribution (above 60 psig), transmission or underground storage infrastructure requiring methane evacuation.
BP 6	<u>Methane Evacuation Work Orders Policy</u> Written company policy that requires that for any high pressure distribution (above 60 psig), transmission or underground storage	Written company policies are needed for methane evacuation work orders to guide company activities and ensure effective implementation consistent with O&M

No.	Best Practices	Rationale
	<p>infrastructure projects requiring evacuating methane, Work Planners shall clearly delineate, in procedural documents, such as work orders used in the field, the steps required to safely and efficiently reduce the pressure in the lines, prior to lines being vented, considering alternative potential sources of supply to reliably serve customers. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing.</p>	<p>safety, system integrity and reliability requirements. This methane evacuation work orders BP applies to non-emergency venting of high pressure distribution (above 60 psig), transmission or underground storage infrastructure requiring methane evacuation.</p>
BP 7	<p><u>Bundling Work Policy</u> Written company policy requiring bundling of work, whenever practicable, to prevent multiple venting of the same piping consistent with safe operations and considering alternative potential sources of supply to reliably serve customers. Company policy shall define situations where work bundling is not practicable. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing.</p>	<p>Written company policy is needed for bundling work to guide company construction and O&M activities for coordination of multiple venting of lines to minimize excess methane emissions consistent with O&M safety, system integrity and reliability requirements. This bundling work BP requires companies to define situations where work bundling is not practicable.</p>
BP 8	<p><u>Company Emergency Procedures</u> Written company emergency procedures which describe the actions company staff will take to prevent, minimize and/or stop the uncontrolled release of methane from the gas system or storage facility consistent with safe operations and considering alternative potential sources of supply to reliably serve customers. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing.</p>	<p>Most natural gas companies have gas systems containing large volumes of methane. An uncontrolled release can negate the methane reductions of other utilities and increase GHG emissions. Written emergency company procedures are needed to guide company staff to prevent, minimize, and/or stop the uncontrolled release of methane and ensure effective implementation consistent with O&M safety, system integrity and reliability requirements.</p>
	<p><u>Recordkeeping</u></p>	
BP 9	<p><u>Recordkeeping</u> Written Company Policy directing the gas business unit to maintain records of all SB 1371 Annual Emissions Inventory Report methane emissions and leaks, including the calculations, data and assumptions used to derive the volume of methane released. Records are to be maintained in accordance with G.O. 112 F and succeeding revisions, and 49 CFR 192. Currently, the record</p>	<p>Accurate reporting of methane emissions and leaks, including estimation methodologies and assumptions, is critical for regulatory audits to ensure compliance. Written company policy is needed to ensure these records are maintained for all SB 1371 relevant actual measured emissions and leaks and estimated emissions and leaks including calculations,</p>

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	retention time in G.O. 112 F is at least 75 years for the transmission system. 49 CFR 192.1011 requires a record retention time of at least 10 years for the distribution system. Exact wording TBD by the company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing.	data and assumptions to derive the volume of methane released.
	Training	
BP 10	<p><u>Minimize Uncontrolled Natural Gas Emissions Training</u></p> <p>Training to ensure that personnel know how to use company emergency procedures which describe the actions staff shall take to prevent, minimize and/or stop the uncontrolled release of natural gas from the gas system or storage facility. Training programs to be designed by the Company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing. If integration of training and program development is required with the company's General Rate Case (GRC) and/or Collective Bargaining Unit (CBC) processes, then the company shall file a draft training program and plan with a process to update the program once finalized into its Compliance Plan.</p>	<p>Most natural gas companies have gas systems containing large volumes of methane. An uncontrolled release can negate the methane reductions of other utilities and increase GHG emissions. This training BP is needed to ensure personnel know how to use emergency procedures to prevent, minimize and/or stop the uncontrolled releases of methane. This training BP allows for companies to submit draft training programs along with a process to update the program once finalized to allow companies opportunities to integrate changes to their existing training and program development through their existing GRC and/or CBC processes.</p>
BP 11	<p><u>Methane Emissions Minimization Policies Training</u></p> <p>Ensure that training programs educate workers as to why it is necessary to minimize methane emissions and abate natural gas leaks. Training programs to be designed by the Company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing. If integration of training and program development is required with the company's GRC and/or CBC processes, then the company shall file a draft training program and plan with a process to update the program once finalized into its Compliance Plan.</p>	<p>Training programs are necessary to help employees understand why it is important to abate natural gas leaks and minimize methane emissions. If they understand the reasoning behind the goals, they are more likely to comply with the company's policies and procedures. This training BP is needed to ensure workers knows methane emissions reductions policies. This training BP allows for companies to submit draft training programs along with a process to update the program once finalized.</p>
BP 12	<p><u>Knowledge Continuity Training Programs</u></p> <p>Knowledge Continuity (Transfer) Training Programs to ensure knowledge continuity for new methane emissions reductions best</p>	<p>New workers need to be trained in how to abate natural gas leakages and minimize methane emissions. Knowledge continuity (transfer) training programs are also needed</p>

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	<p>practices as workers, including contractors, leave and new workers are hired. Knowledge continuity training programs to be designed by the Company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing. If integration of training and program development is required with the company's GRC and/or CBC processes, then the company shall file a draft training program and plan with a process to update the program once finalized into its Compliance Plan.</p>	<p>to alleviate knowledge gaps and improve safety for new methane emissions minimization best practices. This training BP allows for companies to submit draft training programs along with a process to update the program once finalized to allow companies opportunities to integrate changes to their existing training and program development through their existing GRC and/or CBC processes.</p>
BP 13	<p><u>Performance Focused Training Programs</u> Create and implement training programs to instruct workers, including contractors, on how to perform the BPs chosen, efficiently and safely. Training programs to be designed by the Company and approved by the CPUC, in consultation with CARB, as part of the Compliance Plan filing. If integration of training and program development is required with the company's GRC and/or CBC processes, then the company shall file a draft training program and plan with a process to update the program once finalized into its Compliance Plan.</p>	<p>Training programs are necessary to instruct workers, including contractors, on how to perform BPs, efficiently and safely. This training BP is needed to ensure companies instructs workers, including contractors, on how to perform BPs, efficiently and safely. This training BP allows for companies to submit draft training programs along with a process to update the program once finalized to allow companies opportunities to integrate changes to their existing training and program development through their existing GRC and/or CBC processes.</p>
	<p><u>Experienced, Trained Personnel</u></p>	

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BP 14	<p><u>Formal Job Classifications</u> Create new formal job classifications for apprentices, journeyman, specialists, etc., where needed to address new methane emissions minimization and leak abatement best practices, and filed as part of the Compliance Plan filing, to be approved by the CPUC, in consultation with CARB.</p>	<p>According to the Unions, there is a significant need for experienced, qualified people working in the field, and also for participation in the evaluation of existing practices and development of better (best) practices. Experienced gas system workers have first-hand knowledge of how system equipment operates, what the O&M problems are and how to fix them resulting in less methane leaks. If this is accurate, then methane leaks and emissions are not entirely infrastructure issues. Experienced workers are critical to help train, improve procedures, maintain and operate equipment and to address new methane emissions reduction and leak abatement best practices.</p>
	<p><u>Leak Detection</u></p>	
BP 15	<p><u>Gas Distribution Leak Surveys</u> Utilities should conduct leak surveys of the gas distribution system every 3 years, not to exceed 39 months, in areas where G.O. 112-F, or its successors, requires surveying every 5 years. In lieu of a system-wide three-year leak survey cycle, utilities may propose and justify in their Compliance Plan filings, subject to Commission approval, a risk-assessment based, more cost-effective methodology for conducting gas distribution pipeline leak surveys at a less frequent interval. However, utilities shall always meet the minimum requirements of G.O. 112-F, and its successors.</p>	<p>This leak detection BP recommends leak survey intervals of 3 years for all distribution pipelines formerly under the five-year leak survey requirement, unless the utility proposes and gets approved more effective leak survey cycles at a less frequent interval using a risk assessment approach. Different leak survey cycles may be appropriate for various districts or areas of a utilities' distribution system based on risk considerations of leak history, pipe material and age, soil conditions, etc.</p>
BP 16	<p><u>Special Leak Surveys</u> Utilities shall conduct special leak surveys, possibly at a more frequent interval than required by G.O. 112-F (or its successors) or</p>	<p>This leak detection BP requires utilities to conduct special leak surveys, possibly more frequently than G.O. 112-F or BP # 15, in coordination with their integrity</p>

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	<p>BP 15, for specific areas of their transmission and distribution pipeline systems with known risks for natural gas leakage. Special leak surveys may focus on specific pipeline materials known to be susceptible to leaks or other known pipeline integrity risks, such as geological conditions. Special leak surveys shall be coordinated with transmission and distribution integrity management programs (TIMP/DIMP) and other utility safety programs. Utilities shall file in their Compliance Plan proposed special leak surveys for known risks and proposed methodologies for identifying additional special leak surveys based on risk assessments (including predictive and/or historical trends analysis). As surveys are conducted over time, utilities shall report as part of their Compliance Plans, details about leakage trends. Predictive analysis may be defined differently for differing companies based on company size and trends.</p>	<p>management and other utility safety programs. Also, this BP states that the use of special leak surveys (for the purpose of SB 1371 compliance) shall be predicated on risk assessments, including predictive and historical trends analysis, if possible. This BP also allows for predictive analysis to be defined differently for differing companies based on company size and trends.</p>
BP 17	<p><u>Enhanced Methane Detection</u> Utilities shall utilize enhanced methane detection practices (e.g. mobile methane detection and/or aerial leak detection) including gas speciation technologies.</p>	<p>This leak detection BP requires utilities to use enhanced methane detection practices including enhanced gas speciation technologies. This BP allows utilities to propose specific technologies that are most suitable for their gas systems and geographical areas.</p>

No.	Best Practices	Rationale
BP 18	<p><u>Stationary Methane Detectors</u> Utilities shall utilize Stationary Methane Detectors for early detection of leaks. Locations include: Compressor Stations, Terminals, Gas Storage Facilities, City Gates, and Metering & Regulating (M&R) Stations (M&R above ground and pressures above 300 psig only). Methane detector technology should be capable of transferring leak data to a central database, if appropriate for location.</p>	<p>This leak detection BP requires utilities to utilize Stationary Methane Detectors for early detection of leaks. This BP applies to locations including compressor stations, terminals, gas storage facilities, City Gates and Metering & Regulating (M&R) Stations (M&R above ground and pressures above 300 psig only). This BP recommends that methane detector technology is capable of transferring leak data to a central database, if appropriate for location.</p>
BP 19	<p><u>Above Ground Leak Surveys</u> Utilities shall conduct frequent leak surveys and data collection at above ground transmission and high pressure distribution (above 60 psig) facilities including Compressor Stations, Gas Storage Facilities, City Gates, and Metering & Regulating (M&R) Stations (M&R above ground and pressures above 300 psig only). At a minimum, above ground leak surveys and data collection must be conducted on an annual basis for compressor stations and gas storage facilities.</p>	<p>This leak detection BP requires utilities to conduct frequent leak surveys and data collection at above ground transmission and high pressure distribution (above 60 psig) facilities including Compressor Stations, Gas Storage Facilities, City Gates, and Metering & Regulating (M&R) Stations (M&R above ground and pressures above 300 psig only). This BP also requires a minimum of annual surveys to be conducted for compressor stations and gas storage facilities.</p>
BP 20a	<p><u>Quantification & Geographic Tracking</u> Utilities shall develop methodologies for improved quantification and geographic evaluation and tracking of leaks from the gas systems. Utilities shall file in their Compliance Plan how they propose to address quantification. Utilities shall work together, with CPUC and ARB staff, to come to agreement on a similar methodology to improve emissions quantification of leaks to assist demonstration of actual emissions reductions.</p>	<p>This leak detection BP requires utilities to develop methodologies for improved quantification of leaks. This BP also requires utilities to work together, with CPUC and ARB staff, to come to agreement on a similar methodology to improve emissions quantification of leaks to assist demonstration of actual emissions reductions. Improved quantification technologies are very much needed in the industry. Quantifying the amount of natural gas emitted from a leak is dependent on equipment sensitivities and the ability to utilize equipment successfully to measure leakage. Therefore, it is critical to improve accurate emissions inventory data as lessons learned from reviewing Annual Emissions Inventory Report data is that</p>

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		much of the inventory is based on estimations.
BP 20b	<p><u>Geographic Tracking</u> Utilities shall develop methodologies for improved geographic tracking and evaluation of leaks from the gas systems. Utilities shall work together, with CPUC and ARB staff, to come to agreement on a similar methodology to improve geographic evaluation and tracking of leaks to assist demonstrations of actual emissions reductions. Leak detection technology should be capable of transferring leak data to a central database in order to provide data for leak maps. Geographic leak maps shall be publicly available with leaks displayed by zip code or census tract.</p>	This BP also requires utilities to work together, with CPUC and ARB staff, to come to agreement on a similar methodology to improve geographic tracking and evaluation of leaks to assist demonstrations of actual emissions reductions. This BP also recommends that leak detector technologies are capable of transferring leak data to a central database in order to provide data for leak maps.
	Leak Repairs	
BP 21	<p><u>“Find It/Fix It”</u> Utilities shall repair leaks as soon as reasonably possible after discovery, but in no event, more than three (3) years after discovery. Utilities may make reasonable exceptions for leaks that are costly to repair relative to the estimated size of the leak.</p>	As the only leak repair BP, this “find-it/fix-it” BP applies to all leaks. This BP requires utilities to repair all leaks within a maximum of three years of discovery, allowing for reasonable exceptions. In the short-term, utilities are also required separately to eliminate their backlog of leaks unless leak repairs are cost prohibitive.
	Leak Prevention	
BP 22	<p><u>Pipe Fitting Specifications</u> Companies shall review and revise pipe fitting specifications, as necessary, to ensure tighter tolerance/better quality pipe threads. Utilities are required to review any available data on its threaded fittings, and if necessary, propose a fitting replacement program for threaded connections with significant leaks or comprehensive procedures for leak repairs and meter set assembly installations and repairs as part of their Compliance Plans. A fitting replacement program should consider components such as pressure control fittings, service tees, and valves metrics, among other things.</p>	This leak prevention BP addresses the very large number of threaded fittings and their known propensity to develop leaks. This BP requires companies to review and revise pipe fitting specifications and any available data on utilities’ threaded fittings, as necessary. This BP requires utilities to review their own pipe fittings specifications along with available data and if necessary, propose a fitting replacement program as part of their Compliance Plan. For example, Aeronautical National Pipe Taper (ANPT) threads (ANSI SAE AS71051) may be less leak-prone than National Pipe Taper (NPT) pipe threads (ANSI/ASME B1.20.1) since the former has 2 threads and the latter has 3 threads. However, other types of threads or connections may prove better.

No.	Best Practices	Rationale
BP 23	<p><u>Minimize Emissions from Operations, Maintenance and Other Activities</u> Utilities shall minimize emissions from operations, maintenance and other activities, such as new construction or replacement, in the gas distribution and transmission systems and storage facilities. Utilities shall replace high-bleed pneumatic devices with technology that does not vent gas (i.e. no-bleed) or vents significantly less natural gas (i.e. low-bleed) devices. Utilities shall also reduce emissions from blowdowns, as much as operationally feasible.</p>	<p>Most natural gas companies have gas systems containing large volumes of methane. Large amounts of fugitive and vented emissions from operations, maintenance and other activities, along with unforeseen catastrophic releases, can negate the methane reductions by other measures and significantly increase GHG emissions. This leak prevention BP focuses on minimizing fugitive and vented methane emissions including those from catastrophic releases, high-bleed pneumatics and blowdowns. This BP requires replacement of high-bleed pneumatic devices and also requires reduction of blowdown emissions, as much as operationally feasible.</p>
BP 24	<p><u>Dig-Ins / Public Education Program</u> Dig-Ins – Expand existing public education program to alert the public and third-party excavation contractors to the Call Before You Dig – 811 program. In addition, utilities must provide procedures for excavation contractors to follow when excavating to prevent damaging or rupturing a gas line.</p>	<p>Dig-Ins are a major cause of gas line ruptures. The utilities are already required to implement Dig-In public awareness programs. This leak prevention BP requires utilities to expand their existing public education programs and to provide procedures for excavation contractors to follow when excavating.</p>
BP 25	<p><u>Dig-Ins / Company Standby Monitors</u> Dig-Ins – Utilities must provide company monitors to witness all excavations near gas transmission lines to ensure that contractors are following utility procedures to properly excavate and backfill around transmission lines.</p>	<p>Dig-Ins are a major cause of gas line ruptures. This leak prevention BP is necessary to ensure contractors follow utility excavation and backfill procedures around transmission lines in order to try to prevent damage to a transmission line. (It is possible to nick or damage a transmission line which can be a root cause for a rupture years later.)</p>
BP 26	<p><u>Dig-Ins / Repeat Offenders</u> Utilities shall document procedures to address Repeat Offenders such as providing post-damage safe excavation training and on-site spot visits. Utilities shall keep track and report multiple incidents, within a 5-year period, of dig-ins from the same party in their Annual Emissions Inventory Reports. These incidents and leaks shall be recorded as</p>	<p>This leak prevention BP requires utilities to document procedures to address Repeat Offenders and to track and report multiple incidents in their Annual Emissions Inventory Reports. This BP recommends utilities report egregious offenders to appropriate enforcement agencies. This BP requires these incidents and leaks to be recorded under the Recordkeeping BP.</p>

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	<p>required in the recordkeeping best practice. In addition, the utility should report egregious offenders to appropriate enforcement agencies including the California Contractor's State License Board. The Board has the authority to investigate and punish dishonest or negligent contractors. Punishment can include suspension of their contractor's license.</p>	

(End of Appendix B)