

SED EVALUATION REPORT
FOR SOUTHWEST GAS COMPANY
2018 LEAK ABATEMENT COMPLIANCE PLAN

I) EXECUTIVE SUMMARY

On March 15, 2018, Southwest Gas Company (SWG) submitted a Methane Leak Compliance Plan, as directed by Commission decision (D.) 17-06-015 in R. 15-01-008, the Rulemaking to Adopt Rules and Procedures Governing Commission-Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leakage Consistent with Senate Bill 1371.¹ Pursuant to D. 17-06-015, the Commission's Safety and Enforcement Division, in cooperation with the California Air Resources Board, has evaluated the Compliance Plan and provides this written response.

SWG and other gas utilities participated in an April 19 workshop to review major elements of the Compliance Plan, especially proposals for Pilot/Research & Development programs and plans for addressing the 26 Best Practices for methane emissions detection, quantification and reduction, as well as for operations and training, as detailed in D. 17-06-015.

SED has evaluated and approves the SWG 2018 Methane Leak Abatement Compliance Plan, with the following key observations or modifications:

Best Practices Compliance

Southwest Gas states it had adopted many of the Best Practices prior to the Decision. The company began a three-year leak survey cycle (BP-15) in 2012. SWG currently perform special leak surveys (BP-16) on leak-prone segments identified through their integrity management program. 100% of the excavators in the service territory are aware of the Call-Before-You-Dig program (BP-24). Five additional best practices are already part of the standard procedures.

Emissions Reduction

While the SWG Plan indicates difficulty in estimating future reductions as required by the Decision, SED expects the 2020 Compliance plan will provide a comprehensive in-depth analysis for how SWG plans to meet the 2030 goal, possibly including new ideas beyond the current 26 Best Practices and alternatives to the emission factor methods now in use.

Pilot and R&D Projects

SWG proposes to research techniques which address the two largest contributors to the leak inventory, which could lead to changes in the emission factors. SED approves the proposed Pilot

¹ The Plan is available online at <http://www.cpuc.ca.gov/riskassessment/>

and R&D projects. All such projects will be subject to regular progress review by SED Staff with SWG R&D representatives not less than every six months, the first review to occur before December 30, 2018.

Exemptions from Best Practices

The Decision permits exemptions from certain best practices for those operators classified as Class B or C due to the lower annual emissions reported on the Leak Inventory. SWG is a Class B operator and has requested exemption from BP-14, BP-17, and BP-20a, which are permitted for Class B. SED approves this request.

II) INTRODUCTION

BACKGROUND: D. 17-06-015 ordered jurisdictional gas pipeline operators to file a Biennial Compliance Plan, detailing how they would adopt the Decision's 26 Best Practices for methane emissions methane emissions detection, quantification and reduction, as well as for operations and training. The Compliance Plans were required to be part of the operator's annual Gas Safety Plan under CPUC GO 112-F. Some of the Best Practices included allowance for Pilot or R&D programs to evaluate potential methods and technologies for cost effectiveness and application to the utility's specific operating conditions before adoption.

EVALUATION APPROACH: SED reviewed the SWG Compliance Plan in collaboration with California Air Resources Board (CARB) and considered comments received from members of the Best Practices Working Group. Elements of the Compliance Plan which raised concerns will be discussed in detail in below.

III) EMISSION REDUCTION ESTIMATES

The Decision orders that the "Compliance Plans shall include information on how each Respondent plans to achieve a 40% reduction of emissions below 2013 levels by 2030, what level of reduction would be achieved by 2020, and how they plan to achieve the 2020 reduction level." For convenience of measurement, it has been established that the 2013 baseline will be represented by the 2015 emissions inventory as reported in the annual Leak Inventory Report under D. 17-06-015, since 2015 is the first year that the emissions inventory was compiled for.

SWG has made a very modest, 111 MCF, estimate of emission reduction for the two years 2018-2019, and states they are unable to estimate long-term emissions reductions through 2030 due to unpredictable economic growth.

Staff notes that SWG has already adopted some of the Best Practices. The 2015 Baseline emissions for SWG were 214,315 MCF, 3% of the 2015 Baseline leak inventory for all ten California gas utilities. A 40% reduction from SWG's baseline would provide a 1.3% reduction in the total California gas utility emissions.

Staff analysis of the 2015 Baseline emissions finds that 98.6 percent of the SWG emissions were based on fixed emissions factors determined by the California Air Resources Board, a method established to provide an estimate of emissions when direct measurements are impractical. For example, emissions estimates for customer meter set assemblies is calculated from the count of meter sets times a fixed emissions factor. If there is no change in the method of measuring these emissions, the reported emissions will remain the same every year.

SWG does not discuss how it expects the 40% by 2030 reduction will be achieved, as required in the Decision. SED expects the 2020 Compliance plan will provide a comprehensive in-depth analysis for how SWG plans to meet the 2030 goal, possibly including new ideas beyond the 26 Best Practices, and proposals for more direct emission measurements to replace the current reliance on estimates based on emissions factors.

Included in the analysis, SWG may propose alternative means of determining emission volumes that currently rely on emissions factors, such as the application of results from the pilot and R&D projects. These proposals to change the emission measurement methods would be reviewed by interested parties in Workshops and if uniformly applicable would be approved for use by CARB.

IV) BEST PRACTICES COMPLIANCE

BP-1 to BP-13 Policies and Procedures

SED finds these BP statements are consistent with D. 17-06-015 expectations.

BP-15 Three-Year Leak Survey

SWG reports it adopted a three-year survey cycle instead of the minimum five-year requirement for their distribution pipelines in 2012. The more frequent cycle coincided with the three-year survey requirement for atmospheric corrosion and SWG found it more efficient to conduct leak surveys at the same time.

BP-16 Special Leak Surveys:

SWG identifies candidates for special leak surveys with their on-going Integrity Management program as required by existing safety regulations. Current examples are vintage pipeline materials including Aldyl-A and PVC plastics.

BP-18 Stationary Methane Detection

A pilot program is proposed to evaluate stationary methane detection at some of the M&R stations in California. The study will be conducted by GTI-OTD with participation by several gas operating companies around the country, which will minimize SWG's funding requirement. Staff agrees a pilot study is appropriate to determine the most effective approach to stationary methane measurement.

BP20b Geographic Tracking of Leaks

SWG reports it already has an internal mapping practice and proposes to make this information available to the public. However, Staff notes that this BP requires all operators to work together on a common approach. SED Staff will host a workshop to focus on this topic.

BP-21 "Find-it/Fix-it"

This BP requires repair of any gas leak within 3 years after discovery, with reasonable exceptions for leaks that are costly to repair relative to the estimated size of the leak. The targeted leaks are those that don't already require prompt repair under existing safety regulations. These leaks are usually referred to as "Grade 3" leaks.

SWG reports it currently has two open Grade 3 leaks. The estimated emissions for these leaks is 44.8 MCF. The cost estimate for these repairs is \$265,000 which has a high cost to benefit ratio of \$5,915/MCF of reductions. By comparison, the SoCalGas program to repair "large" Grade 3 leaks has an estimated effectiveness of \$12/MCF. However, the absolute cost of \$265,000 will not have a significant impact on ratepayers as shown in the SWG Advice Letter. The proposal will remove all open Grade 3 leaks. SED approves of this proposal.

BP-23 Minimize Emissions from Operations and Maintenance

This BP is focused primarily on the replacement of "high-bleed" pneumatic devices that routinely release gas to the atmosphere by design. SWG reports no high-bleed devices in its system and said it will adopt a policy that such devices will not be selected in the future.

SWG also reports all estimated reductions from the group of blowdown-related policy BPs under BP-23, because of the related improvements in operations and maintenance practices. The figure of 66.5 MCF was estimated from an expected reduction in blowdown emissions by reducing pressure before blowdown on planned maintenance projects.

V) PILOT AND R&D PROJECTS.

Ordering Paragraph 10, part b, of Decision 17-06-015 requires that justifications for proposed R&D and Pilot projects are consistent with criteria in Pub. Util. Code Section 740.1. SED reviewed the proposed Pilot and R&D projects according to PU Code 740.1 and considered suggestions and comments made by interested parties. SED finds that all the proposed projects meet the required criteria.

Staff notes that the proposed projects are aligned with the two largest contributors to the SWG leak inventory: M&R station emissions and customer meter set emissions. Stationary methane monitors at M&R stations operating at 300 psi and above (BP-18) will help with actual measurement of emissions and could reduce reliance on the fixed emissions factors to determine emissions from this source. Once

the actual volume of emissions can be measured, appropriate cost-effective solutions for reduction can be designed and applied. For stationary monitoring, SWG proposes to do a pilot study at selected M&R stations their own while also participating in a national GTI-OTD research project.

Research into pipe-fitting specification (BP-22) can help with meter-set assembly (MSA) emissions since each MSA includes many fittings such as pipe unions and tees; leaks can occur from loose fittings. If the proposed research shows that superior fitting specifications can reduce leaks, a case could be made for reduction of the standard CARB emission factor for MSAs.

SED and CARB will be conducting review meetings with the SWG R&D team. These project reviews will examine progress towards meeting milestones and discuss whether to continue or cease projects based on trigger points.

###