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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Adopt Rules and Procedures Governing Commission-Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas Leakage Consistent with Senate Bill 1371.

Rulemaking 15-01-008
(Filed January 15, 2015)

ADMINISTRATIVE LAW JUDGE'S RULING ENTERING STAFF WORKSHOP SUMMARY AND WORKSHOP MATERIALS ON TARGETS, COMPLIANCE, AND ENFORCEMENT INTO THE RECORD AND SEEKING COMMENTS

Background

On April 12, 2016, the California Public Utilities Commission (Commission) Safety and Enforcement Division (SED) and California Air Resources Board (CARB) hosted a workshop at CARB headquarters in Sacramento, California on Methane Emissions and Leak Abatement Targets, Compliance and Enforcement. Following that workshop, SED and CARB prepared the attached Staff Workshop Report (Attachment 1) summarizing the joint agency workshop and the key points covered in the presentations and discussions consistent with Scoping Memo objectives for this proceeding.

Both the Staff Workshop Report and PowerPoint Materials presented by the following workshop participants are entered into the record for this proceeding:

- California Air Resources Board;
- California Public Utilities Commission;
- Environmental Defense Fund;

- Sempra Utilities; Pacific Gas and Electric Company; and
- Independent Gas Storage Providers.

These workshop materials are posted on the Commission's website under the Safety Enforcement Division/"Methane Leak Proceeding" tab at <http://www.cpuc.ca.gov/General.aspx?id=8829>.

Based on comments, a final workshop summary will be published and entered into the record.

Comments on the Staff Workshop Report

Parties' comments on the Staff Workshop Report should respond to the following questions:

1. What suggested edits, clarifications, and comments do you have in response to the summary?
2. Explain your position on CARB's statement at the workshop that a 40% reduction in 2015 emissions by 2025 is a reasonable targetⁱ. If such a target (whether it is this one or similar) is established in the foreseeable future, should it be set:
 - a. Against a company's total baseline reported emissions profile, allowing it to meet an aggregated reduction target?
 - b. For specific functional components (*i.e.* emission source/equipment type) of the gas system operated by each individual company?
 - c. On an industry-wide basis using information on potential emission reductions, emissions impact, costs by functional component, such that the total industry achieves a 40% reduction even though specific targets for each company may vary?

Please provide an explanation of how the method could be developed/implemented.

3. How could the proposed CARB target be coordinated with other emission targets and state policy (*e.g.*, Governor's

Executive Order B-30-15 for a 40% reduction below 1990 levels by 2030, CARB's Short-Lived Climate Pollutant (SLCP) Plan for a 40-45% GHG reduction levels by 2025)?

4. How should emission levels, if any are set, interact with the utilities' natural gas safety plans and other gas pipeline work?
5. How might technology-specific or work practice requirements interact with a target reduction amount?
6. Explain your parties' position on establishing targets given the following concerns raised at the workshop:
 - a. How can targets be set when accurate and comparable emissions measurements are still in progress? Should the target-setting process wait until the June 2016 data reports (2015 inventories) have been vetted by CARB and the Commission anticipated late 2016?
 - b. Which functional component (*i.e.* emission source/equipment type) can utilize direct measurements of leaks and emissions for establishing targets?
 - c. Should interim targets be developed, as Environmental Defense Fund (EDF) suggests, based on the information gained in the reports from June 2016?
 - d. Before targets are established, to what extent should cost effectiveness and affordability (including consideration of rate impacts) methodologies and criteria be developed and implemented? What approaches should be used to account for the fact that technologies, tools, and information will improve over time, potentially quickly over the next few years? What options are there to ensure rate impacts are affordable, while achieving significant emissions reductions?
7. Explain your opinion on the individual emission reduction projections illustrated on CARB's "An Example of Compliance Plan" on Slide 19. Are they realistic? Why or why not?

8. How should the Commission structure incentives for reductions beyond a target level?
9. What enforcement models might most effectively ensure reductions are achieved and maintained? Should the Commission revise GO 112-F to include a compliance and enforcement model to address SB 1371 requirements? Or should it establish a new general order specific to meeting SB 1371 requirements similar to the Commission's existing GO 167, Enforcement of Maintenance and Operation Standards for Electric Generating Facilities? What role, if any, should ARB or local air districts, or other entities, play in helping to ensure reductions are achieved and maintained?

IT IS RULED that:

1. The California Public Utilities Commission Risk Assessment and Safety Advisory Section "Methane Emissions & Leak Abatement Targets, Compliance and Enforcement April 12, 2016 (R.15-01-008) Staff Workshop Report" dated June 13, 2016 is accepted into the record of this proceeding as Attachment 1.

2. The April 12, 2016 workshop materials on Methane Emissions and Leak Abatement Targets, Compliance and Enforcement, as posted on the Commission's website under the Safety Enforcement Division/"Methane Leak Proceeding" tab at <http://www.cpuc.ca.gov/General.aspx?id=8829> are accepted into the record of this proceeding.

3. Initial comments of not more than 20 pages in response to this ruling may be filed and served no later than July 15, 2016.

4. Reply comments of not more than five pages in response to comments may be filed and served no later than July 22, 2016.

5. In cooperation with stakeholders, the California Public Utilities Commission's Safety and Enforcement Division shall notice and conduct a cost-effectiveness for the best practices workshop in August or September, 2016.

Dated June 23, 2016, at San Francisco, California.

/s/ COLETTE E. KERSTEN

Colette E. Kersten

Administrative Law Judge

ⁱ The 40% reduction target is consistent with the SLCP goals, the federal methane reduction goals, and the Governor's 2030 target. As a starting point, ARB staff examined if these goals were realistic with the available data and concluded they were realistic and in line with achieving the maximum technologically feasible and cost effective reductions as required in SB 1371.

Safety and Enforcement Division

Risk Assessment and Safety Advisory Section

Methane Emissions & Leak Abatement Targets, Compliance and Enforcement Workshop April 12, 2016 (R.15-01-008)

California Public Utilities Commission Staff Workshop Report



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June 13, 2016

Introduction

As requested by Administrative Law Judge Colette Kersten, Safety and Enforcement (SED) Division Risk Assessment and Safety Advisory section staff prepared this report summarizing the joint agency workshop on Compliance and Enforcement issues for Methane Leak Targets, held on April 12, 2016, at the California Air Resources Board (CARB) in Sacramento. The goal of this workshop report is to capture the essence of the presentations, the main discussions, and key issues that were germane to the workshop topics. However, this report is not a complete or verbatim transcript of the workshop.

The workshop agenda and presentations can be found on the California Public Utilities Commission's (CPUC) Methane Leak Proceeding (R.15-01-008) website at <http://www.cpuc.ca.gov/General.aspx?id=8829>. Staff assumes that the reader has access to the appropriate presentations as reference is made to specific slides in the report. Footnotes were also added to clarify some of the presentation material.

In addition to the hosts, CARB and CPUC, parties and stakeholders who attended the workshop included: Sempra Energy Utilities (Southern California Gas and San Diego Gas & Electric aka, SoCalGas/SDG&E), Pacific Gas and Electric (PG&E), Southwest Gas, Independent Storage Providers (ISPs, including Wild Goose Storage, Lodi Gas Storage, Gill Ranch Gas Storage, Central Valley Gas Storage), Sacramento Municipal Utilities District (SMUD), Environmental Defense Fund (EDF), California Department of Conservation Division of Oil, Gas & Geothermal Resources (DOGGR), Bay Area Air Quality & Management District (BAAQMD), Coalition of California Utility Employees (CCUE), Office of Ratepayer Advocates (ORA), The Utility Reform Network (TURN), Utility Consumers' Action Network (UCAN), and others on the conference line.

CARB, Win Setiawan: SB 1371 Workshop

Workshop Topics¹ (CARB Slide 3)

Presenters were asked to address the following questions:

- How should the target be set up? (i.e. industry wide; company; or emission source/equipment type)
- Should small utilities have a different target?
- Should storage companies have a different target?
- How can we go further than a 40% reduction?
- Should there be interim targets?
- How does your company plan to prioritize emission reductions in Environmental Justice (EJ) or Disadvantaged Communities?

Workshop Outline (CARB Slide 4)

- Emissions Target.
- Emissions Sources.
- Best Practices.
- Compliance.

¹ Same as in Workshop Notice with additional topic of Environmental Justice (EJ).

- Enforcement.
- Environmental Justice.
- Next Steps.

Emissions Target (CARB Slides 5-6)

- Executive Order B-30-15 requires 40% GHG reduction below 1990 levels by 2030.
- CARB Short Lived Climate Pollutant Plan requires 40-45% GHG reductions below 2012 levels by 2025. This is similar to U.S. EPA goals.
- Harmonizing both targets is required.
- CARB also believes there are potential reductions beyond the target.
- There are options to achieve emissions target including setting up targets industry-wide, per company or by system or emissions source category.
- There are also considerations for how to achieve emissions target including for small companies or certain activities.

Emissions Sources (CARB Slides 7-12)

- Types of emissions include graded leaks, ungraded leaks, and vented emissions.
- Graded leaks are hazardous or potentially could become hazardous.
- In the first data report (May 15, 2015), utilities provided emissions inventory (EI) for at least two calendar years (CYs 2013 and 2014 and earlier). However, non-standardized emission factors (EFs) used and incomplete activity data from certain emission source category, among other factors, make the reported EI difficult to interpret and emission comparison across utilities impossible. As a result, CARB/CPUC provided new templates using standardized EFs with input from the industry. CARB/CPUC staff will assist the companies in the use of these templates.
- Major sources of emissions in 2014 are shown on Slide 9 with the largest three sources being from customer meters, blowdowns and pipeline leaks. CARB noted that it is challenging to combine EIs from several companies as they used different emission categories for the same emissions source.
- Data discrepancies are many. Staff has not decided which EFs to use. The approach is to come up with standard EFs for California.² This is not set in stone and will be revisited next year. Also, industry may not extrapolate EFs to all sources.³
- New Reporting Templates start out with a baseline emission inventory as of calendar year (CY) 2015. Comprehensive emission sources – have to explain how determine extrapolation and also, explain unusual large leaks.
- If possible, CARB will determine California specific EFs. The Gas Technology Institute (GTI) found that below-ground leak measurements are usually larger than above-ground measurements.⁴ Preliminary results are that some EFs are lower and some higher than U.S. EPA EFs.⁵ CARB is developing another contract with GTI to study leaks at customer meter sites⁶ including at least 200 meters from SoCalGas, 100 from SDG&E and 200 from PG&E. GTI will also try to identify which specific meter manufacturers and meter system assemblies have the most leaks.

² Weather has impact to EFs, too, with areas that have very cold winters (i.e. not California) sometimes having fewer emissions.

³ Sometimes actual engineering calculations are utilized.

⁴ CARB staff stated above-ground leak are typically 75%-80% of below-ground measured emissions.

⁵ Gas Research Institute (GRI, 1996), GRI is the previous name for GTI.

⁶ Customer meter site evaluations include entire meter sets (threaded connectors, flanges, and risers).

Best Practices (CARB Slides 13-17)

- CPUC is in consultation with CARB to establish and require the use of Best Practices (BPs) for leak surveys, leak patrols, leak prevention and leak reduction. CARB stated that we (CARB and the CPUC) will require that BPs and repair standards be incorporated into the utilities' gas safety plans.⁷
- During the five BP Working Group meetings, more than 100 BPs were identified, some of which have already been implemented while others will follow in the future.
- BPs Selection Criteria slide identifies various areas where BPs can be applied.
- The CPUC and CARB, will consider incentives for reductions beyond the current emission targets.
- Recommended BPs are categorized into mandatory or voluntary BPs. Also, will try to be consistent with DOGGR and U.S. EPA.
- Some Examples of BPs are included in the table on Slide 17.⁸
 - Recommended BPs for customer meters' emissions include trying to encourage the use of better materials. SoCalGas has said that it is developing sensors and algorithms using Smart Meter data to detect any leaks at customer meters and further downstream.
 - As for blowdowns, try to have large releases captured.
 - As for pipeline leaks, phase out cast iron, Aldyl A and another other problem material. Shorter repair times are also encouraged. For example, Grade 1 ASAP; Grade 2 within 1 month and Grade 3 within 1 year.
 - As for compressors, dry seals are better than wet seals.
 - No bleeds should be used for pneumatic devices.
 - Additional requirements should be considered for gas storage, if any, to prevent future leaks beyond DOGGR and ARB regulations.
 - For all other emission sources, encourage the use Leak Detection and Repair (LDAR) for above ground facilities.

Compliance (CARB Slides 18-20)

- Proposed submission of annual compliance plans to the CPUC/CARB, possibly beginning May 2018.
- Emission reduction records must be maintained and be verifiable.
- Unfulfilled emission target must be offset (especially if unusual large leaks).
- An example of a possible Compliance Plan chart was shown on slide 19. Red portions of the bar chart⁹ show the amount CARB believes can be reduced by 2025 and the green portions represent the remaining emissions. CARB assumed that the 2015 EI will be in different magnitude as the 2014 EI, but they both may have a similar breakdown. Basically, Slide 19 shows that 40% reduction by 2025 is the target, but CARB believes much more can be accomplished.
 - Customer meters are the largest potential reduction (i.e. 90%) because the locations are known. When Smart Meters are inspected or replaced, CARB encourages the utilities to fix any leaks at the same time. For customer meters, CARB estimates about 10% remaining emissions would continue to occur that would need periodic monitoring and inspection, a two- to five-year inspection cycle.

⁷ SB 1371 added this requirement in Public Utilities Code Section 975(f): "The rules and procedures, including best practices and repair standards, shall be incorporated into the safety plans required by Section 961 and the applicable general orders adopted by the commission."

⁸ Mandatory BPs are identified as red text on the color slides which are not visible on B/W print-outs.

⁹ On B/W print-outs, red portions are darker portions on the tops of the bars while green is the lighter portion on the bottom of the bars.

- For blowdowns, the potential reduction (i.e. 80%) is high because the location is known and the emissions are controllable.
- For pipeline leaks, a potential 60% reduction is estimated if leaks are repaired sooner. This possibly could be improved in the future with new leak detection technology.¹⁰
- Unusual Large Leaks are defined as any event at a gas storage facility or gas transmission system that results in the uncontrollable release of natural gas to the atmosphere for more than 24 hours.

Enforcement (CARB Slide 21)

Enforcement might include unannounced random inspections.¹¹ For large blowdowns or compressor station modifications, the industry must provide prior notification to CPUC/ARB at least two weeks in advance, unless the blowdown is for emergency reasons.

Environmental Justice (CARB Slide 22)

Part of CARB's regulations is to address impacts to Environmental Justice (EJ) / disadvantaged communities. CARB encouraged companies to address this issue as CARB would like to see that no disadvantaged communities are left out.

Next Steps (CARB Slide 23)

As for next steps, CARB stated that we will need to decide which BPs become mandatory and harmonize them with state and federal regulations. If companies are using the template, just plug in numbers.

Discussion after CARB Presentation

In response to a question about defining Environmental Justice communities, CARB pointed to the availability of the CalEnviroScreen, a screening methodology that can be used to help identify disadvantaged communities in California that are disproportionately burdened by multiple sources of pollution.¹²

There was an extended discussion about pipeline replacement policies, and recognition that many problematic pipe types and other outdated equipment types have been replaced. SoCalGas in particular argued for flexibility, as it is concerned about balancing safety requirements and reliability of service against emissions reductions. CPUC staff reiterated that SB 1371 represents new expectations that go beyond safety practices, and that the law specifically allows for utilities to request funding to meet the new standards. CARB believes that an emissions reduction of 40 to 45 percent below 2015 levels by 2025 is possible.

There were still unanswered questions about exact enforcement mechanisms, with further discussion following the CPUC presentation.

¹⁰ Staff referenced the potential of new more accurate detection technology that is still under development.

¹¹ CPUC staff pointed out that enforcement could include unannounced and announced inspections (i.e. typically 4-8 hours) and scheduled audits (i.e. typically 3-5 days).

¹² <http://oehha.ca.gov/ej/ces2.html>.

CPUC, Charles Magee: Compliance & Enforcement Model

Introductory Comments

The reporting template was issued on April 11, 2016. CPUC staff acknowledged that a lot of hard work by CARB staff went into the development and refinement of the template. ALJ Kersten revised the due date for filing to June 17, 2016,¹³ but the expectation is that following years will have May filing due dates. In addition, Charles announced that he will be retiring this summer and that Wendy al-Mukdad, a CPUC Senior Utilities Engineer (Specialist) will be replacing him.

Compliance & Enforcement Plan Summary (CPUC Slides 2-4 & 7)¹⁴

The CPUC staff proposed a mandatory best practice for companies to file methane reduction compliance plans.¹⁵ The proposed Compliance Plan is similar to the CPUC Power Plant Compliance Plan. Three components of the natural gas leaks and emissions abatement compliance plan are: (1) overall natural gas leaks and emissions reductions targets as determined by CARB; (2) mandatory best practices (BPs) to reduce leaks and emissions; and (3) voluntary BPs to reduce leaks and emissions. Mandatory best practices would be enforced using Compliance Plans, inspections and audits. Utilities would be able to choose voluntary BPs but they have to choose something. Doing nothing is not an option. Since there is a wide variety of business models ranging from very large gas T&D companies to very small distribution companies, there would be a need to have exceptions.

Respondents would file Compliance Plans annually with the CPUC that describe how their companies are complying with the mandatory leak and emissions abatement BPs, and which voluntary BPs they are using. The Compliance Plans would not be the same as the annual gas leak and emissions report. That is a separate requirement.¹⁶

The Compliance Plans would then be reviewed by the CPUC, in consultation with CARB, where they will be checked for thoroughness to see if there are any problems. Then the proposed submitted Compliance Plans would be approved or returned to the company for revisions.

After a company revises its Compliance Plan to the satisfaction of the CPUC, it would be required to submit a Certificate of Compliance, signed by a company V.P. or higher, stating that the company complies with the requirements of the R.15-01-008 natural gas emissions and leak abatement program. It is important that a Company Officer be held accountable.¹⁷

The proposed program would also include inspections and audits to verify that leak and emission data submitted by the gas companies every year is accurate and to observe and verify that BPs are being employed to reduce natural gas leaks and emissions.

¹³ ALJ Ruling, April 8, 2016.

¹⁴ Actual slide numbers are not accurately reflected on page numbers on bottom of CPUC slides.

¹⁵ Natural Gas Leakage Abatement Summary of Best Practices Working Group Activities and Staff Recommendations, March 2016.

¹⁶ For an example of a Compliance Plan Matrix, see Appendix A, which is a reproduction of CPUC Slide 7. The required matrix table would list the Best Management Plan (BMP) document type, document number and brief description of what the document does and how it satisfies the BMP. Also, employees need a policy on why this is important.

¹⁷ For an example of a Certification, see Appendix B. Note that Staff has drafted this example for this report.

Compliance Plan Details (CPUC Slides 5-6)

The proposed Compliance Plan must include the following three components:

1. A matrix that contains:
 - A list of the mandatory best practices and voluntary best practices.
 - Identification of the company document(s) that satisfy the requirements of each best practice, including a description of the document and the latest revision number.
 - Identification of the equipment, components, and infrastructure, if applicable, that satisfies each best practice.
2. Copies of the documents themselves (e.g. policies, procedures, instructions, etc.).
3. A certification signed by a company Vice President, or above, certifying that the company complies with the requirements of the program (final program requirements may be included in a Commission General Order, to be determined).

Inspections (CPUC Slide 8)

The CPUC and/or CARB would inspect gas company facilities to observe operations and infrastructure and to become acquainted with facilities and witness best practices in use. Inspections could include witnessing transmission line blowdowns (including checking/witnessing line pressure before blowdowns), leak surveys, training classes and other activities to be determined.

Companies would be required to submit construction and transmission line clearance schedules to be used to notify the CPUC/CARB of impending blowdowns of gas lines. They would also be required to submit gas leak survey schedules and other work schedules to be determined.

The proposed CPUC and/or CARB inspections would include scheduled and unscheduled inspections of gas facilities. Inspections would typically last from 3 to 6 hours. A part of the enforcement process is to see what is going on when no one is looking.

Audits (CPUC Slides 9-10)

The CPUC and/or CARB would audit gas company compliance plans and facilities to ensure compliance with the program. Audits may include, but not be limited to, the following activities:

- Verification that annual leaks and emissions reports are accurate including spot checks.
- Reviewing engineering calculations including engineering estimates and associated assumptions.
- In-depth review of compliance plans to ensure they make sense.
- Investigation of gas leak and emission problem areas.
- Attending training classes to determine their effectiveness and give feedback, when necessary.¹⁸
- Ensuring that staff is attending training on schedule and assess whether staff seems to understand training. This is important as gas safety is paramount.
- Ensuring that best practices are actually being used and that equipment is functional.
- Reading policies and procedures to ensure that they are effective and understandable and interviewing staff to ensure they understand the policies and procedures.
- Ensuring that records are complete and being kept in accordance with program requirements.

¹⁸ Another purpose of taking safety classes is to make it safe for CPUC staff when on-site.

The CPUC and/or CARB audits would typically be scheduled, as opposed to unscheduled, and would most likely last from 3 to 5 working days. This is based on staff experience with power plant audits which usually last 1 week.

Discussion after CPUC Presentation

CPUC staff noted that General Order (GO) 112-F requires that certain records be retained for 75 years, far longer than required by the Code of Federal Regulations (CFR).

While the specifics of the Compliance Plan and enforcement proposal are subject to comment/revision and a final determination by the Commission, it is proposed as very similar to the CPUC's existing Power Plant Compliance Plan requirement. There were not many changes to the Power Plant Compliance Plan from when it was issued and then set up in GO 167. Companies were very cooperative, particularly Plant Managers. Many things that staff witnessed at the power plants were common sense problems. Plant Managers seemed to be open to [improvements], too.

An exact enforcement compliance mechanism has not been identified. According to SB 1371, there are two places where it could be considered: 1) Gas Safety Plans and 2) General Orders. There could be a revision of GO 112 or creation of a new General Order that is complimentary and specific to gas leak abatement.

Audits of compliance plans or policies would be planned in advance, with notice to the companies. Inspections could be announced or unannounced. For unannounced inspections, no one will know which site or event staff will attend. Staff could witness blowdowns; hence schedules are required. At the same time, staff understands that emergencies cannot be scheduled.

There are no plans for a third-party auditor.

EDF, Timothy O'Connor & Amanda Johnson: Targets, Compliance and Enforcement

Introductory Comments (EDF 2nd & 3rd Slides after Cover Slide)

EDF's presentation is based on the set of questions issued to the service list. This is the first [opportunity for comment] following the Best Practices (BPs) proposal in the just released ruling.¹⁹ EDF expressed its goal to ensure that targets, compliance and enforcement follow from the previous implementation documents including the SB 1371 BP proposal, the ruling on annual reporting requirements and the related staff report. EDF acknowledged that this is a large undertaking and also pointed out that today has historical significance for both being the anniversary of the first U.S. space flight and the start of the U.S. Civil War.

Principles for Target Setting (EDF Slide 3)

EDF stated SB 1371 requires the CPUC to minimize leaks, so targets must not limit the amount of reductions that can be made. EDF expressed concern that a 40% reduction target goes against the idea of minimization. EDF would rather companies reduce emissions as much as possible. EDF claimed that this requires quantification of emission reductions. EDF stated setting targets will require accurate and comparable measurements of emissions, which will not be available until the next reporting period. EDF also recommended that when possible, targets should be based on direct measurements of leaks and emissions.

How Should the Targets Be Set Up? (EDF Slides 5-13)

EDF recommended that targets should be set up by emission source and/or equipment type. EDF stated that leak targets established in R.15-01-008 should comport to the text of the enacting legislation (e.g. SB 1371) that says: "reduce emissions of natural gas ... maximum extent feasible" and with due consideration of cost. EDF claimed it cannot find an example of leakage that cannot be stopped. EDF acknowledged that some leaks may be extremely expensive to stop and some could be very difficult to stop. EDF stated that is why a cost-effectiveness [requirement] was included in SB 1371. EDF stated that a cost effectiveness test should be applied to compare benefits versus costs. EDF stated that the CPUC has a lot of experience. EDF stated that the CPUC generally utilizes program benefit analysis. EDF thinks that a more societal cost test is needed. EDF stated that a traditional cost test doesn't look at societal costs but a societal cost test is the most relevant to a GHG emissions reduction cost-effectiveness analysis. EDF pointed out that New York State has adopted use of a societal cost test for demand-side management programs.

EDF stated that in a societal cost test framework, the examination of benefits should be expanded. EDF claimed that benefits would include both avoided cost plus non-energy benefits. EDF stated the latter could include sales value/energy savings, greenhouse gas, ancillary services, reliability, safety, and social/environmental.

¹⁹ ALJ's 3/24/2016 Ruling Entering Summary of Best Practices Working Group Activities and Staff Recommendations into the Record and Seeking Comments

EDF's Target Setting Conclusion: EDF concluded that in setting targets and thresholds, all emission sources / equipment types must be repaired – a repair threshold by which an action becomes infeasible on cost-effectiveness (C/E) grounds must be established. EDF stated the test to establish the threshold must include the full range of factors in the benefits calculation.²⁰ EDF also concluded that proper application of C/E test should have all leaks above certain size thresholds get fixed – and allow for *de minimis* size leaks to be considered independently or in classes.²¹

Industry Wide and Company Targets (EDF Slides 14-15)

EDF supported industry wide targets as an informative piece of information to track rule implementation. However, EDF stated industry wide targets should inform whether the implementation of the utility leak practices is sufficient to reduce emissions and meet the goals of protecting the climate. EDF stated that the targets should be compared to climate warming potential and sector targets that are established in statute. An ISP asked how EDF suggests the industry targets account for mobilization (i.e. diesel impacts, etc.) from GHG emissions of transportation vehicles needed to fix leaks. EDF did not have an answer at this time.

As for company targets, EDF stated that this is also another informative piece of information, to track rule implementation, and utility practices, but it is not compliance based. EDF suggested that company targets should be compared to the best achievable emission rate observed – and comparison to other companies, both in California and outside of California.

Should Small Utilities Have a Different Target? (EDF Slide 16)

EDF suggested that if targets are based on emission source/equipment type, there is no need to treat any one utility differently – regardless of size. EDF stated small utilities should have the same targets. EDF stated, “All leaks [must] be repaired unless they fall under the threshold determined by the C/E (cost effectiveness) test.” Also, EDF pointed out that since targets for the industry and by company are informative (i.e. not for compliance but for tracking and evaluation against goal setting) – there is no need to change treatment based on size. Newer storage facilities probably have less to do to be compliant since these facilities may have achieved *de minimus* [leak levels].

Should Storage Companies Have a Different Target? (EDF Slides 17-18)

EDF suggested that all leaks be repaired unless they fall under the threshold as determined in the C/E test. EDF stated that natural gas fields are leak prone per the South Coast Air Quality Management District (SCAQMD) and CPUC/DOGGR. But EDF stated they can be leak free. EDF pointed out that as shown at Aliso Canyon, natural gas storage is a higher risk category, making the avoided costs associated with leak elimination very high. EDF suggested that the application of the C/E test likely yields

²⁰ EDF also claimed that “Although traditional CPUC C/E tests have declined to include the full range of benefits, SB 1371, as an environmental matter, requires it. EDF also claimed that the utilities have recognized this – arguing GHG impacts should be considered in C/E.”

²¹ EDF also stated “Avoided GHG costs should include consideration of the societal impact of methane – using best scientific information on technical warming potentials, social cost of methane.”

mandatory repair of all leaks. EDF presented a table on Slide 18 showing that 207 of 229 leaks were repaired in only 10 days.

How Can We Go Further than a 40% Reduction? (EDF Slides 19-20)

EDF stated that by requiring repair of all leaks – and applying a C/E test that looks at societal costs, it is possible to go further than a 40% reduction. At present, EDF stated that the 40% reduction target is not a statutory target to the sector – but rather a target that is applied as a goal to the value chain. In fact, EDF claimed that California doesn't have that as a target yet – and in some cases, a 40% target is not enough. EDF stated that the goal should be to minimize leaks – possibly even lower than 40%. Basically, EDF stated the goal should be to minimize all leaks. EDF also emphasized continuing to improve leak detection technology, improve repair timelines, updating BPs as new technologies and procedures become available, and requiring transparency in the entire process.

Should there be Interim Targets? (EDF Slide 21)

EDF claimed there should be interim targets as they are good to ensure the companies are on track. EDF stated the interim targets should use the information gained in the reports from June 2016. EDF said that informative targets should be updated as utilities better understand their emissions.

Prioritizing Emission Reductions in Disproportionally Impacted Communities (EDF Slide 22)

EDF stated that mapping leaks will ensure the public and utilities know where the leaks are [located] and this also will provide transparency and ensure that no communities are left out. EDF said that the CPUC should consider CalEnviroScreen to ensure leaks are not left in overly burdened communities. EDF stated that applying targets to require every leak to be fixed unless cost considerations prevent it will ensure that no area of California is disproportionately impacted by emissions from the transmission and distribution systems.

Discussion after EDF Presentation

EDF responded to several questions about application and enforcement of its proposed framework, proposing that societal costs of carbon and methane should be included in cost analyses, and that the system would require a comprehensive leak database. EDF stated that costs of compliance would be borne by gas ratepayers since it is a gas system and it will need to be fixed or repaired. SoCalGas expressed concerns about ratepayer impacts.

When asked if there were any initial responses to EDF's proposals, a representative of the ISPs said they were still digesting the information. But their position is that their facilities are already extremely efficient and not major sources of methane. "We are storing someone else's gas so we have an economic incentive to ensure there is no leakage. Some leaks are straight forward to repair and don't require blowdown. Blowdowns have largest emissions. An example is a leakage of 10 cubic feet per day. Lead times can be 7-8 months. We can nurse a valve slow leak until we have another reason to do blowdown. It is a complex equation that we have to deal with every day since we are stewards of others' gas."

Sempra (SoCalGas/SDG&E), Ed Newton: Targets, Compliance & Enforcement

Emissions Sources & Reductions (Sempra Slides 2-3)

Sempra recommended focusing on the intent of this proceeding by actively looking for ways to reduce emissions [to achieve a 40% reduction from 1990 levels]. Based on the Natural Gas STAR framework, SoCalGas has reduced cumulative emissions by 2.5 Bcf since 1990. Sempra presented a pie chart on Slide 3 detailing SoCalGas' efforts [to reduce emissions] since the 1990s. The largest reduction was from simulated ESD/pipeline pressure reductions equal to about 1.37 Bcf or 55% of the cumulative emission reductions. The next largest reduction was from on-going reductions from turbine replacements equal to about 0.53 Bcf or 21% of the cumulative emissions reductions. The third largest reduction identified was from compressor rod packing replacements equal to approximately 0.37 Bcf or 15% of the cumulative emission reductions. Most of the remaining emission reductions are identified as being from: maintenance of distribution gate stations; replacement of high bleed pneumatics; replacement of leaking distribution pipes; and replacement of compressor ignition systems and reduction of false starts.

Principles for Target Setting (Sempra Slide 4)

Sempra recommended developing a sound basis for targets. Sempra stated the reporting framework is quickly evolving, but gaps remain in some areas before a sound basis exists for overall reported emissions. [For example, gaps exist for] EFs for customer meters and regulator stations versus leak detection and repair data. From an operational perspective, [it may be ideal to] fix and detect [leaks], but then it may [turn into] double counting since EFs are applied to all equipment even those items which were fixed. [This may be different,] if only annual counting was used. AB 32 Subpart W restrictions [exist] on using the repair date for the emission end point. Sempra stated that there are differences between operational data and practices and engineering estimates which could create an apples and oranges mix within the reported data.

Sempra stated that metrics must account for upward pressure on methane emissions. Sempra stated that there may be an opportunity to factor in [this upward pressure] when talking about a target. Sempra stated that one challenge is to be able to capture the impact of ongoing integrity, reliability, and safety-driven activities, i.e. the process puts pressure on the Pipeline Safety Enhancement Plan (PSEP), Transmission Integrity Management Plan (TIMP), and Distribution Integrity Management Plan (DIMP) programs to increase inspections and detections. Sempra stated that this is especially the case with increased frequencies of safety driven activities (such as DIMP) which also have emissions involved. Also, Sempra stated that another challenge is the growth in the system and throughput. And Sempra pointed out where there are other changes in activities and operations (including inspection requirements), this could impact and drive changes in reported emissions. Sempra stated that changes in activities including possibly increased frequency (e.g. survey cycles from 5 years to 3 years or from annually to quarterly). Sempra stated that there are also cost impacts so need to incorporate into cost-effectiveness analysis.

How Should the Targets Be Set Up? (Sempra Slides 2, 5 & 10-11)

Sempra stated that the basis for a baseline must be well-defined with meaningful metrics. Sempra said that if 2015 is the baseline, there needs to be a phased-in implementation approach that applies metrics to assess progress year-over-year. Specifically, Sempra recommended leveraging existing models to phase-in implementation and enforcement. In terms of EPA Methane Challenge Model (existing BMPs), Sempra said there is a 5-year sunset because the EPA wants to achieve the challenge in 5 years. If additional resources are required from a policy perspective, then Sempra proposes many essential portions including training. See Sempra Slide 5 for comparison of EPA Methane Challenge Model versus Sempra proposed SB 1371 Model. Basically, the latter slide identified the following steps to achieve SB 1371 goals: 1) Rule Adoption Date; 2) Conduct Analysis/Identify Emission Reduction Opportunities/Develop Implementation Plan; 3) Determine whether alternative practices are needed & if additional resources are required; 4) Implement Plan/Change Procedures/Add Resources/Train Personnel; 5) Implement BMPs/Monitor & Record Relevant Data; and 6) Annual Emission Reduction Reporting/Continuous Improvement.²²

Sempra recommended focusing on reduction of known emissions that are achievable by additional resources, implementation of alternative practices, or new technologies. Sempra recommended allowing each operator to focus first on alternative(s) that will yield the greatest emissions reduction. Sempra also recommended establishing a basis for an implementation timeframe consistent with Scoping Question #9 and considering the impact on customer rates.

Sempra stated that **previous reduction efforts** must be considered in setting any reduction goals and targets. Also, Sempra recommended building a **framework** for consistent reporting from the various methane emissions sources to increase industry knowledge and **to create a basis** for future reduction efforts. Sempra recommended recognizing that **changes in reporting requirements** do not necessarily translate into actual changes in system emissions. For example, a factor in a formula may change because there were lessons learned but it doesn't necessarily mean a reduction of [actual] emissions. Sempra also recommended identifying **affordable practices** that can help reduce methane emissions even further and creating a **mechanism** that encourages system operators to identify methane emissions reduction opportunities (e.g. new technologies, etc.) that are **affordable**.

How do we go beyond the 40% reduction? (Sempra Slides 6-8)

Sempra presented a graph showing that 20 percent reductions from 2014 levels are possible, if all other sources remain at the same level. Sempra stated this is possible because of the elimination of the pipeline (i.e. buried main and distribution service lines) leakage backlog over time.

As for moving forward, Sempra recommended continuing to apply "continuous improvement" philosophy. Sempra provided an example where it was able to use data analytics to pick up anomalous energy or gas usage which could be as a result of a problem. Sempra provided this example to show the

²² Staff notes that there were problems during Sempra's presentation with the projector so some slides were not shown during the workshop.

benefits of using big data to perform consumption analytics awareness to identify unusual patterns of usage compared to key markers in their analysis.

Specifically, Sempra's Slide 7 identified details for customer meter emissions reduction [potential] based on gas consumption data analytics results (i.e. from SoCalGas Smart Meters) through December 31, 2015. Based on their analysis they identified 953 customers' data that prompted SoCalGas to make a field visit. Out of 953 total field visits generated by the consumption analytics awareness, SoCalGas identified a number of high use cases identified. Of these, SoCalGas found 33% were due to "excessive registration."²³ The second largest finding was "Hot water leaks where the hot water heater was in continuous demand" with 30% of the field visits having this finding. The third largest was "Gas or hot water leaks corrected by the customer as a result of SoCalGas field visit" with 21.9%. The fourth largest finding was "Gas leak found by SoCalGas field technician."

Sempra noted that the percent listed is not reduction but rather is the percent of cases for each use case. This could be translated into emissions reductions. Also, Sempra stated that there are safety incident benefits. And finally, Sempra said that there are water reduction and combustion reduction benefits, as a result of identifying and fixing leaking water heaters. Sempra emphasized that the Smart Meter hourly reads enable the foregoing analytics to be done.²⁴

Sempra said that a "continuous improvement" philosophy would: continue implementing strategic pipeline replacement of "leak-prone" pipelines (i.e. replace highest risk pipe and vintage pipe first); identify BPs and new technologies (i.e. sensors that can integrate in with Smart Meters (SMs) not just at customer sites but also throughout infrastructure using SM network) that can further reduce methane emissions; and continue to fund and participate in research projects that will result in technology solutions for emissions reductions.

Sempra recommended a surgical approach by focusing on the riskiest causation variables such as highest risk pipe, most leak-prone, aged, and other factors. Sempra stated that through the continuous iterative process, the risks are addressed such that overall risk is reduced and manageable. Sempra said this is what TIMP and DIMP plans are about, to fund research and technology solutions, e.g. integrating sensors into smart meters for early detection of MSAs.

Regarding the measurement of progress and how it is reflected to report emission reductions, Sempra suggested that if the EF doesn't consider this, then the ability to show improvement may not be

²³ Per Sempra Utilities Data Request Response of 5/5/2016, these cases were for premises which were unoccupied and the account had been "soft closed" (meaning the service valve was still on). The analytics detected abnormal consumption and because the technician could not gain access to the facility the gas service was then "hard-closed" (meaning the service valve was locked off). Later, when the account is reactivated by the owner or a new tenant, access to the property will be gained by a technician and then the service and all the appliances will be checked for leaks. Then the cause of the abnormal consumption can be determined.

²⁴ CARB (Win) commented that it is important to sort out whether the indoor emissions reduction is due to the CEC energy efficiency standards so that there is no double counting.

realized. Sempra stated a weighted EF based on MSA type, age or when last tested or fixed should be taken into consideration.

Asked if using average emission factors makes it difficult or problematic, Sempra stated it is not suggesting EFs are a barrier. Rather, Sempra stated static EFs could be an issue when setting up reduction goals, or a framework of BPs to reduce emissions. Sempra stated that if the goals for a framework are set up when the target isn't based on an underlying objective, then the target will be hard to meet. Sempra recommended prioritizing reduction of emissions as much as possible, even though we don't know all of the [sources] of emissions now, in order to meet the goal.

CARB staff stated that a 40% emissions reduction in all sectors would be from 2015 to 2025. CARB believes it is possible to go beyond the target with ongoing technology improvements.

Should Small Utilities Have a Different Target? (Sempra Slide 9)

Sempra stated a framework should be developed that works for both larger and smaller operators. Sempra also said that SDG&E is a small operator example since SDG&E's system is 16% of the total approximately 160,000 SDG&E/SoCalGas system miles. (For context, the total Sempra system miles are approximately 6 times the circumference of the earth.) Also, the Sempra systems are not static systems. CPUC staff (Wendy) asked if this is because SDG&E's system is a newer system. Sempra stated that this is true for some cases but they would have to look at where each has to focus. For example, Sempra pointed out that SoCalGas focuses more on storage and transmission.

Sempra noted on Slide 9 that SDG&E's 2014 reported emissions were only 8% compared to what SDG&E/SoCalGas reported and noted that SDG&E has no UG storage and that SDG&E has only 7% of combined transmission pipeline mileage. SDG&E's adjusted estimated emissions are about 18% lower than SoCalGas because SDG&E has no unprotected steel pipelines and has no leakage backlog.

Sempra stated that SDG&E has less infrastructure and has an operational find-it/fix-it practice versus SoCalGas which currently has a larger back log and doesn't necessarily have man power for utilizing a find-it/fix-it practice. Sempra also stated SDG&E is further along the improvement continuum and has less 'low hanging fruit' to fix, so it has a higher incremental cost to reduce each incremental gas leak.

Should there be Interim Targets? (Sempra Slide 10)

Sempra said there should be interim targets by assessing year-over-year progress.

Prioritizing Emission Reductions in Disproportionally Impacted Communities (Sempra Slide 10)

Sempra stated methane emissions are a global issue. Sempra expressed concern that low-income customers would be disproportionately impacted in rates if reduction measures are not cost-effective.

Discussion after Sempra Presentation

CARB staff discussed the challenges of estimating emissions and acknowledged that it is an evolving process and is not perfect. CARB staff stated one challenge is that the bottom-up (e.g. emissions inventory methodology) versus top-down (e.g. ambient methane measurements) numbers are diverging rather than converging. CARB staff stated they would like to simplify the report but since the ambient methane are increasing, more detailed study is needed. CARB staff stated that they have many lessons learned and they have allowed companies to take credits based on fixed leaks which were not the case in the old approach, using a lower tier methodology. CARB stated that their motive is to encourage companies to fix leaks as quickly as possible.

At this time, CARB stated that they are still using average leakage EFs, but at least the process is better. CARB acknowledged that the EFs are not cast in stone; they will be periodically updated in the future. CARB also noted that by allowing companies to get credits based on the timeline of their repair, they still recognize that typically a leak has occurred sometime before it's discovered; thus, the real emissions could be higher than what was estimated. CARB staff stated there are ways to address past efforts toward reductions, and allow for reduction actions. But CARB staff also stated that it is necessary to include mitigated leaks as they still could potentially have another leak in the future.

CARB staff stated that there are three factors which impact emission factors:

1. Equipment: For example, a high flow sampler can malfunction.
2. Human Factor: If the equipment is fine but there is a human error.
3. Random sample: Is it representative or not? Unless the industry allows a verification process, where a contractor can independently find and measure leaks, it will be difficult to obtain full confidence in the various EFs. This process takes time, effort, and resources.

Sempra stated this needs to be considered from a global emissions perspective, a systems perspective, which means to continually improve and achieve incremental improvements over time. For instance, Sempra said that the Pipeline and Hazardous Materials Safety Administration (PHMSA) wanted utilities to report on leak repair information, but with the change in reporting, it made it look like leaks increased. Sempra stated the cause was increased inspections and changed in inspection policy and procedures. Sempra stated CARB/CPUC should allow for [improved emissions estimations by learning and experience] and allow [companies to] increase their understanding which will help achieve real emissions reductions. PG&E also stated it is difficult to define BPs and reduce targets at the same time especially with hard targets.

A discussion then began about whether or not hard targets are being proposed. CPUC staff stated the belief that companies can improve emissions reductions. CARB staff stated there is a proposed hard target of 40% reduction by 2025 and that companies are encouraged to comment on this [for the record]. CPUC staff gave examples within CPUC jurisdiction where there are either targets (e.g. [electric] Energy Storage) or requirements (e.g. Renewable Portfolio Standards) and stated that companies have been exceeding the energy storage targets. CARB staff stated that targets could be translated into requirements or regulations.

PG&E, Sonal Patni: Targets, Compliance & Enforcement

How Should the Targets Be Set Up? (PG&E Slides 2-4)

PG&E stated that when they [initially] read the Commission's order, they weren't sure what it meant. PG&E stated that they now believe that to make targets meaningful, they should be developed to optimize abatement and effectiveness. In optimizing abatement, PG&E believes the focus should be on the major sources that emit the largest volume of methane. PG&E stated this would be done by looking at and building upon measures in place to effectively improve emission reductions from the largest sources. PG&E said it has voluntarily signed up for the EPA's Methane Challenge that sets targets to drive reductions. PG&E stated there is a phased-in implementation which allows flexibility for operators in their abatement choices and also ensures good practices are in place. PG&E is actively involved in proposed oil and gas regulations, DOGGR initiatives, and the Short Lived Climate Plan. Also, PG&E stated it is working to increase carbon neutral (e.g. renewable) natural gas.

PG&E recommended optimizing effectiveness by having the CPUC/CARB align measures and objectives on other agencies' requirements (e.g. DOGGR). PG&E stressed the need for time to allow IOUs to implement measures and develop a way to track progress. PG&E stated that cost recovery mechanisms are very much needed. Also, PG&E said there is a need to ensure work is being done right. PG&E stated that a framework with flexibility [is needed] and expressed concern that some [mitigation measures] have significant impact to their work. PG&E said it wants to reach the overall goal for emissions reduction as well as [utilize] new technologies.

PG&E stated the following are outstanding issues in need of resolution:

- Establish cost recovery mechanisms for incremental activities either through special program authorization or through the GRC.
- Work policy and procedures that ensure proper implementation of best practices that are sustainable and incorporate quality checks.
- Ensure a flexible framework that allows for incorporation of new activities, best practices and technologies as they evolve, and include provisions for consistent/standard reporting.

Challenges (PG&E Slide 5)

PG&E emphasized utilities methane reduction activities have been in motion for some time. PG&E stated support for the initiatives but expressed their concern that implementing these changes will take time. PG&E said utilities should be allowed time to implement measures and develop tracking mechanisms of efforts already in progress. Also, PG&E complained that there was a proposed three-year leak survey cycle which was not approved by the CPUC. In the last General Rate Case, PG&E stated that it proposed a four-year leak survey cycle but the Office of Ratepayer Advocates (ORA) has proposed a five-year cycle. Hence, the timing of the leak survey cycle is still subject to debate whether it should be a 3-year cycle, 4-year cycle or 5-year cycle.

PG&E gave the example of blowdowns which take significant resources. PG&E stated that for leak repair, it needs to balance application of resources towards safety or abatement work. Also, PG&E stated that its management really focuses on policies and procedures especially since the San Bruno gas pipeline explosion.

Recommendation (PG&E Slide 6)

PG&E recommended a phased-in approach which will recognize that these investments don't happen overnight; provide opportunities to review targets and compliance over time to determine areas of improvement; and provide flexibility to adapt as new legislation approaches. PG&E stated that the process should build in flexibility to adapt to new legislation as it unfolds.

Proposed Next Steps (PG&E Slide 7)

PG&E proposed next steps to include enhanced measurements by the end of 2017 and additional BP workshops. PG&E stated BP workshops should focus on maximizing reductions and affordability of measures. A key point should be the balance of safety and emissions reduction work and how to get resources.

Conclusion (PG&E Slide 8)

In conclusion, PG&E stated that proceedings and measures should be looked at holistically. PG&E stated that measures should be reviewed prior to determining enforcement. PG&E stated it is important to ensure there is flexibility to review and update targets, if needed. PG&E also stated that cost-effective measures with recovery mechanisms are key.

Discussion after PG&E Presentation

A discussion over leak survey cycles was initiated by CPUC staff. Sempra talked about the options of having 5-year cycles, 3-year cycles and/or 1-year cycles. Sempra stated that as new technology is developed, including new sensor technology, which can remotely detect leaks, improvements will be immense. Sempra stated that there is a diminishing return on repeat surveys and that initial spikes of detection [are common]. Also, Sempra stated that the sensitivity of equipment has to be greater than background emissions. CPUC staff inquired as to whether, given the current survey cycle and implementation of more sensitive technology, the utilities have noticed improvement over time (e.g. the diminishing return effect). Sempra stated that it has not done a study, but with GIS, they could probably do a study and they could even potentially do analysis now. CARB agreed that technology has improved but that data would have to be analyzed to confirm improvements.

Sempra then stated that more analysis needs to be done to assess models in the Integrity Management Program. Sempra stated that GIS Enterprise Systems increase capability. Sempra also stated that heat maps should be developed for those areas to show linkages. EDF stated that the purpose of legislation is to minimize leaks and to go to a shorter survey cycle. EDF stated that if technology is available, then it should be used to meet the law. EDF claimed that two utilities have not followed the [required] format.

PG&E stated it prefers a voluntary program and that some BPs are premature, but after a few years they could be solidified. PG&E also stated that a lot of good work is already being done (e.g. EPA Methane Challenge) and that aggregate information [would be helpful]. CARB staff inquired as to what PG&E's [planned/proposed] timeline is and PG&E replied it is not feasible to develop targets this year. CARB staff stated that it should not be difficult to integrate proposed BPs into PG&E's goals like the U.S. EPA Methane Challenge. CARB staff stated that it would be helpful to receive concrete suggestions. Specifically, CARB staff stated that we want to maximize technology for feasible reductions. EDF stated that BPs only work if based on valid targets. EDF stated that it is possible to avoid setting targets as long as there is the rigorous implementation of BPs. But EDF stated that the challenge then is how to measure efficacy and results if there isn't a target.

PG&E stated that a program to use specific technology should not be mandatory and BPs should not be required, because not every BP suits every situation. PG&E stated the programs and practices should be reviewed and solidified after being reviewed for a few years. PG&E stated that the current requirements do not recognize the good work already done. PG&E asked how a utility would get the cost recovery to support the cost of these measures. PG&E stated that they will support a program but they need to have some flexibility. For example, PG&E stated that what applies for blowdowns, [could not] apply everywhere. PG&E again stated that since it is not feasible, flexibility should be allowed. CPUC staff stated that if CPUC mandates BPs, then that would provide the impetus for utilities requesting funding for the requirement. CARB staff stated that there should be an enforceable regulatory process that incentivizes implementation of policies and BPs.

CARB staff has not seen objections to the BPs that would be used to achieve targets. CARB staff asked whether there should be targets or required BPs, which are not around enforceable hard requirements. Also, CARB staff asked whether the important question is how these translate into sector or company targets. CARB staff stated the inclusion of targets into utilities' goals should be similar to doing that for EPA's Methane Challenge. It is a policy question regarding whether or not there is a translation to a particular numeric target. CARB staff stated that there haven't been comments on the staff proposal.²⁵ In particular, CARB staff asked whether the utilities have any concrete suggestions for developing and rolling out leaks/emissions targets.

An ISP company wondered what the results [would] be if companies implemented BPs, including new technologies. The ISP company representative stated that they assume that if a company meets the BP and makes progress, then they don't have to get sanctioned. Another ISP representative expressed concern that if the target has been assigned to each utility and ISP equally, then if an entity's emission rate is low, then even with implementing BPs it could be difficult to meet the mandatory reduction target. The ISP representative stated that if the BP is to survey every so many years, then emissions could go undetected over the cycle time and increase. The ISP representative stated that with continuous monitoring/sensing, any leaks are detected in real-time which minimizes overall emissions.

The ISP representative stated that there is a perception that this proceeding needs to establish hard targets in order to appease legislators, whether that is reasonable or not. Already, CARB staff has shown that some benchmarking has been done. The ISP representative stated that not all utilities or sites have real-time monitoring of all places that could have leaks. Some ISP companies send a technician out to the well heads every day to check emissions. The ISP representative stated that so far, the threshold for reporting has not been determined, such that a one cubic feet per day leak (very small) could be detected. The ISP representative stated that it is unclear how to report a very small leak and whether every minor leak, no matter how small, needs to get reported. As for some technologies, the ISP representative stated that a skilled person would have to discern where gas is emitting from and whether it is from the ground, the pipe, the valve, the compressor, etc. When the ambient emissions are very low, it is very difficult to pinpoint the source. Hence, the ISP representative stated that the emissions may get bigger. Lastly, the ISP representative expressed concern about cost effectiveness of BPs and required technologies and how this would be addressed so that optimal and affordable solutions are achievable.

²⁵ CARB staff was referencing CPUC ALJ's Ruling Entering Summary of Best Practices Working Group Activities and Staff Recommendations into the Record and Seeking Comments, filed 3/24/2016.

ISP Representative, David Weber: Targets, Compliance & Enforcement

How Should the Targets Be Set Up? (ISP Slides 2-3)

The ISP representative stated that a lot of discussion has been about reactive measures. The ISP representative stated that ISPs have a financial incentive to not leak gas. (See Slide 2 for a list of design and facility build out measures utilized by the ISPs that focus on eliminating potential emission sources.) The ISP representative stated that ISPs support methane emission reduction. The ISP representative stated that ISPs have walk-throughs every day. The ISP representative stated that SCADA is also utilized to [detect] and minimize leaks. The ISP representative stated that if there is a leak, ISPs repair them in a timely manner. The ISP representative stated that sometimes there are a lot of small leaks (e.g. valve stem leaks). The ISP representative stated that he believes a cost-effective measure is important to consider. The ISP representative stated that if there are cost-effective best practices (BPs), ISPs will implement the measures. The ISP representative stated that some BPs cause concern because ISPs are unsure how much leakage will decrease.

Should Storage Companies Have a Different Target? (ISP Slides 4-8)

The ISP slides show that the total California emissions for all ISPs in 2015 equaled 30,660 Mcf or less than 1% of all California emissions. Three areas were the main sources for ISPs 2015 emissions: 1) Blowdowns (65% of all emissions from blowdowns as required for reliability and safety); 2) Compressors (very high pressure); and 3) Valves. Slide 5 is a duplicate of the CPUC's past graph of non-graded leak and emission sources.²⁶ The ISP slide highlighted three sources (e.g. see yellow highlights and arrows) and identified them as the largest [three sources for their companies]: #1) Transmission Blowdowns and M&R Station Blowdowns; #2) Storage – control vents, leaks, blowdowns, storage compressors; and #3) Dehydrator Vents – Storage. The ISP representative stated that hardware doesn't always work the way it is supposed to work.

The ISP representative stated that ISPs have limited opportunities to further reduce emissions. He stated that ISPs understand that we have to have targets but ISPs want to make sure that we look at the opportunities [for emissions reductions]. The ISP representative stated that ISPs don't recover costs for leak reduction, unlike some other companies. Also, customers of ISPs have choice and can go somewhere else and don't have to buy services. He showed slide 7 and pointed out the two trees with one full of apples, symbolizing many emissions to be reduced versus the other tree with a few apples, symbolizing few emissions to be reduced.

The ISP representative stated that the overall target structure must reflect reduction opportunities and should be industry wide and by emission source / equipment type and not by company, with the most cost effective measure taken first. He stated that there are places that [regulators] will get bigger

²⁶ Original graph available at <http://www.cpuc.ca.gov/General.aspx?id=8829>, September 23, 2015, Workshop on Methane Leak Reporting Issues (R.15-01-008), presentations: 1. SED Workshop Slides with Agenda and Timeline.

[emissions] decreases and some places will get less decreases. He stated ISPs are already driving either a Prius or a Tesla (referring to EDF's previous analogy). Specifically, he stated ISPs believe some industry players with better reduction opportunities may need to reduce by more than 40% to yield the best chance of meeting the overall state objective (i.e. 40% industry wide reduction).

Should Small Utilities Have a Different Target? (ISP Slides 9-11)

The ISP representative stated that ISPs believe that storage companies are small utilities. (See Slide 9 for more details.) Due to economies of scale, he stated some things work well for PG&E, SoCalGas and/or SDG&E. He stated that these other utilities have large physical size and engineering resources with enough occurrences where tools are useful. He stated that some things that become BPs work well when there is an economy of scale. The ISP representative stated that there is a concern regarding a disproportionate impact on small utilities. (See Slide 10 for a few specific concerns). The ISP representative stated that ISP targets should be based on balance of cost and opportunity for reductions. The ISP representative stated that if real-time monitoring technology developed by DOGGR catches up, then there is a potential for small utilities to meaningfully reduce emissions even with a small footprint. (See Slide 11 for more specifics.)

How Can We Go Further than a 40% Reduction? (ISP Slides 12-13)

The ISP representative stated that a 40% reduction for ISPs from 2015 levels would be equivalent to 12,000 Mcf. The ISP representative stated this is a huge number [to achieve]. He stated that one specific ISP's entire facility had 3,000 Mcf annual emissions. He stated 65% of all 2015 ISP emissions (e.g. 20,477 Mcf) were from blowdowns that were necessitated by mandatory repairs and maintenance activities. He stated this doesn't mean that there couldn't be a good discussion of [potential emissions reductions opportunities] for blowdowns. See Slide 12 for more info.

The ISP representative recommended establishing effectiveness metric for small emitters because some things are out of their control. For example, he stated if a fire detection system alarms, then it will blow down the compressor station. An ISP company stated that, at 3,000 psi, this is a significant amount of gas to blow down. See Slide 13 for more info.

Should there be Interim Targets? (ISP Slide 15)

The ISP representative stated that concentrating reduction targets on the best opportunities statewide to achieve meaningful emission reductions provide the best chance of meeting and exceeding the 40% statewide objective.

How does your company plan to Prioritize Emission Reductions in EJ or Disadvantaged Communities? (ISP Slide 14)

The ISP representative stated that ISPs do not operate in multiple communities, nor do they have long line transmission nor do they have distribution systems. He stated that in Madera, the closest city to one ISP (where there is a sink hole right now), the transmission line goes to PG&E.

Discussion after ISP Presentation

CPUC staff asked whether ISPs have studied flaring and whether there is a way to potentially push some gas back into a transmission line (such as a PG&E transmission line). The ISP representative stated that one ISP (i.e. Lodi Gas Storage) does flare but another, Gill Ranch Gas Storage, does not flare. An ISP company again stated the significance of having 3,000 psi as the working pressure and the issue of having air mixing with the gas at that high of pressure. Also, the ISP company representative stated that the biggest blow down is at the compressor stations. Wild Goose Gas Storage stated that the problem is that there are environmental sensitivities from Fish and Wildlife and that is why they can't flare. Someone asked if at a lower pressure, such as 800 psi, whether or not flaring could be done but no one responded.

CARB staff commented that slide 5 [shown by ISP from 9/23/2015 Workshop] is industry-wide. The ISP representative stated that reservoir engineers do inventory analysis and that monitoring will be done for DOGGR. The ISP representative stated we can leverage technology including no-bleed devices. CPUC staff stated we will need to analyze and companies will have to include rationale.

CARB/CPUC Staff Workshop Closing Comments

CARB and CPUC staff noted again that the new template was issued to parties. Staff stated that the new template is available on the CPUC Risk Assessment website²⁷ as a Microsoft Excel spreadsheet. Staff also asked companies to inform CARB (Win or Andrew) of contact persons by phone or email. Staff stated that if companies have any issues, then contact CARB and/or CPUC staff.

(END OF ATTACHMENT 1)

²⁷ <http://www.cpuc.ca.gov/General.aspx?id=8829> See Appendices 1 to 9 under April 11, 2016, ALJ Ruling Issuing Staff Data Request Regarding 2016 Annual Reporting Requirements and Directing Responses by June 17, 2016, R.15-01-008.