From: Doll, Laura
Sent: 3/3/2014 5:25:44 PM
To: Magee, Charles H. (charles.magee@cpuc.ca.gov)
Cc:
Bcc:
Subject: RE: Notes from 2/28/14 Meeting at PG&E - Picarro Gas Optimization Pilot in Sacramento

Hi Chuck –

Thanks for letting us take a look. You did a great job!

Here are some suggestions – in the body of your message.

Let us know if you need anything further.

And thanks again for coming out in the rain.

Laura

From: Magee, Charles H. [mailto:charles.magee@cpuc.ca.gov]
Sent: Monday, March 03, 2014 10:35 AM
To: Doll, Laura
Subject: Notes from 2/28/14 Meeting at PG&E - Picarro Gas Optimization Pilot in Sacramento

Hi Laura,

When you have time, please take a look at this. I want to make sure I have my facts straight. It was quite a bit of information to absorb in a short time.

Thanks,

Chuck

Attendees:

Laura Doll - PG&E Director of Regulatory Relations

Redacted - ? didn't catch his title PG&E Superintendent, Leak Management

Steve Redding - PG&E Director of Leak Management and Process Improvement

Ditas Katague - Chief of Staff for Commissioner Sandoval

Summary:

Ditas Katague and I attended a presentation by Dennis MacAleese and Steve Redding to update us on the Picarro Gas Optimization Pilot Project in Sacramento. This is the second of 3 planned pilots to optimize the use of the Picarro Technology to identify gas leaks and to develop a comprehensive leak repair model that could significantly reduce cost as well as complete more leak repairs in a short timeframe. The first pilot was in Oakland, the second is in Sacramento and the third will be in Sacramento. In addition, PG&E and Picarro Inc. are making progress to make the Picarro leak surveys even more accurate in pinpointing gas leak locations. Finding large numbers of leaks in relatively small areas (square grids of approximately 2500 services) allows PG&E to repair the leaks using team methods to repair them more quickly and drive down costs. PG&E's pilot programs are attracting representatives of utilities all over the U.S. and Australia. Here are some ~~of~~ key developments:

•□□□□□□□ PG&E has 6 vehicle-mounted Picarro technology equipped Picarro units. PG&E leases each Picarro unit for $200K per year. Leasing is better than buying because this is a changing technology, and PG&E can get software updates and new equipment regularly.

•□□□□□□□ PG&E has given Picarro valuable input to change their algorithms enabling Picarro to reduce the search area in which the leak is likely to be found. This reduces the amount of time field crews on foot have to spend to actually locate and grade the leaks.

•□□□□□□□ Picarro also has been used to find very hard-to-locate leaks in the PG&E system. They have been chasing some of the leaks for years (people report smelling gas but the leak cannot be found) before locating them with Picarro.

•□□□□□□□ PG&E and Picarro have determined that 2 survey runs of the Picarro vehicle through the same area instead of 3 survey runs is optimal. It was found that the 3rd run did not contribute much to accuracy or survey coverage and actually increased the number of "ghost leaks" (leaks that could not be found and possibly do not exist).

•□□□□□□□ The leak identification pilot project in Sacramento is being performed by dividing the service territory into Grids of approx. 2500 services in each.

•□□□□□□□ The ability to identify large numbers of leaks simultaneously in a Grid has led to improvements in the way that leaks are now being fixed (in the pilot project). When the results of Picarro inspections for a Grid come in, first leak survey crews are sent out to pinpoint the leaks and grade them. Then, a team of engineers, mapping, gas service representatives and repair crews review the information and decide what to do. In some cases, if enough gas leaks are found on a particular gas asset, the team may decide to replace Mains and/or Services instead of repairing them. Next, the pilot team contacts the city and homeowners to notify them to expect repair crews in their neighborhood. Then teams of repair crews go into the neighborhood to perform all of the leak repairs and replacements as soon as possible. All Grade 1, 2, 2+ and above ground 3's are repaired or in those cases where piping will be replaced, all gradable leaks will be repaired, including the below ground grade 3 gas leaks. For the grade 3 below ground leaks that are not repaired, PG&E returns on

the regular leak survey recheck cycle (every 15 months) to ensure the leak has not changed disposition. (Laura, not sure about the Grade 3's. I'm sure Steve said they repair the above ground Grade 3's, but what about the below ground Grade 3's? If they don't fix them, do they just monitor them periodically using the foot leak survey method?)

•□□□□□□□ Crew repair hours (2-person teams) , or time it takes to make necessary repairs, has dropped dramatically during the pilot from 28 hours to 10 hours.

•□□□□□□□ Morale in the team is high because they feel more productive and are working on leading edge technology. Gas crews in PG&E are volunteering to work on the pilot projects.

•□□□□□□□ PG&E is moving away from paper records and going digital all the way from the Picarro maps to the Work Orders, and final disposition of each gas leak record in its repository. Moving to digital processing of work will also cut down on errors because of less manual mark-ups, drawings and human transfers of information.

•□□□□□□□ PG&E is now replacing older gas service lines instead of repairing them. Repair and replace decisions are based on criteria developed by their Integrity Management organization and includes factors such as leak history, age of pipe, material of pipe, and municipal construction plans. (Laura, not sure how PG&E makes the decision to repair or replace. Is it by age, material, or ?)

•□□□□□□□ In an attempt to reduce Dig-Ins, when PG&E installs new gas lines they now bury 6" wide caution tape (says, "Caution – Gas Line") above the gas line to warn people who are digging that they are approaching a gas line.

•□□□□□□□ PG&E has developed plans to reduce the overall backlog of gas leaks in their grid. Over the past 2 years, PG&E has found and repaired approximately 270,000 leaks. Before that the number of leaks repaired over a 2 year period was 20,000 to 30,000 annually. While the use of Picarro was not a factor in reducing the previous backlog of leaks, it will be a significant facor moving ahead in 2014 and beyond. (Laura, how much of the increase was due to Picarro? I don't think Steve said).