

THE PACIFIC GAS & ELECTRIC COMPANY

Streamlining Gas Leak Detection and Repair

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Pacific Gas & Electric Company (PG&E) serves approximately 4.3 million (MM) natural gas customer accounts in northern and ventral California, the second-largest customer base in the country. The Gas Operations department oversees the daily transport of 2.6 billion cubic feet of natural gas per day over 42,000 miles of distribution pipelines and 6,700 miles of transmission pipelines. Pressurized gas is a highly flammable commodity, with the potential for serious safety risks if system integrity is not managed appropriately. PG&E sought to streamline its gas leak survey and repair processes to maintain a high safety standard and reduce complexity, which would reduce costs, improve visibility, and reduce rework.

Gas leaks can develop on many different types of infrastructure in a wide variety of ambient conditions, all of which influence repair procedures and the resulting planning, scheduling, and documentation of the repair. The process of finding and fixing leaks grew to meet the individual requirements of each unique situation, which created redundant steps and complexities. Reducing these inefficiencies represented a major opportunity for the Gas Operations department to begin its “lean” journey.

The Tauber team conducted nearly 100 interviews and 30 site visits, and facilitated a kaizen event, to define the current process, identify areas for improvement, and brainstorm solutions. The team classified issues according to the eight wastes of lean, categorized solutions according to feasibility and impact, and selected eight solutions with the highest potential for process improvement. These solutions targeted scheduling and coordinating repair work, reviewing survey and repair paperwork, and matching resource capacities throughout the process to improve flow. In conjunction with developments from PG&E’s internal mobile application department, Digital Catalyst, the team expects these solutions to simplify the process from 52 to 31 high-level steps.

The team completed one solution and began pilots for two others, which are expected to generate cost savings of around \$90,000 in 2018. By following implementation plans for other solutions and continuing to develop technology that streamlines documentation, PG&E could save an additional \$1.4 million per year. Further, the team projects that the company can reduce total processing and waiting time by 38% per leak, which will increase the proportion of value-added to non-value-added time. Finally, while this project focused on gas leaks occurring on smaller, “local” infrastructure, there may be significant opportunities to expand the solutions to other groups within the Gas Operations department.