

RESTRUCTURING THE PGE LINE CLEARANCE PROGRAM¹

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On June 21, 1982 Portland General Electric Company (PGE) completely reorganized the line clearance program. This paper discusses the evolution of PGE's line clearance program through the years, events leading up to the restructuring, and a look at our progress after one full year under the new system.

Portland General Electric Company is an investor-owned utility located entirely within the State of Oregon. PGE's service area covers 3,350 square miles, of which 2,700 square miles have both trees and power lines. Our irregularly shaped service area is roughly 90 miles long by 100 miles wide. PGE has approximately 12,000 miles of distribution line and 1,500 miles of transmission line. At year-end 1982, PGE had 507,000 customers using 14,907,000,000 kilowatt-hours annually.

The Pacific Northwest has always been known for its spectacular scenery and lately for its volcanoes. In the forestry profession, the region is known worldwide for its rapid-growing forests. The native and many introduced species of trees will grow in excess of 100 feet with some attaining heights in excess of 150 feet. Unfortunately, many miles of our lines go through these forested areas. It is obvious that this potential for growth comes into direct conflict with the power lines.

Line clearance evolution. PGE's line clearance program evolved along the same lines as many other utility tree programs. Trimming was initially done by hand with linemen turned tree trimmers. Eventually, PGE aerial lift crews started to replace many of the PGE climbing crews. PGE started a gradual switch to contract crews in 1958. Company crews were slowly replaced as people retired, transferred, or quit. Today, we employ

one remaining PGE tree crew and approximately 15 contract crews.

Our service area population has increased dramatically in the last 35 years. Many acres of farmland and cutover timberland were converted to suburban housing developments. As people moved in, trees were planted, most often without regard for the overhead power lines. Concurrent with this population growth was rapid growth in cutover timberland. Many of these lands are adjacent to our power lines. So, while trees were growing toward our lines in the suburbs, they were also headed that way in the countryside. A third factor developed in the early 1960s. Prior to the publication of Rachel Carson's *Silent Spring*, PGE and the various county road departments had an active foliar-spray program on county right-of-way under the distribution lines. With increased customer opposition to this spray program, PGE stopped distribution line spraying altogether. By the mid-70s, this third factor was adding literally thousands of new trees to the numbers we had to trim. These three factors led to constantly increasing line clearance needs.

I have brought you through a quick description on the history of PGE's line clearance program. Now we will proceed through the steps leading to the complete reorganization of PGE's line clearance program followed by a progress report after one year of operation.

Need for change. PGE currently has five divisions. Each of these divisions handled one to five tree crews at any given time. The division was responsible for scheduling the crews, supervision of the quality and quantity of tree trimming, and handling customer requests. At the corporate level, a manager of Landscape Services and

1. Presented at the annual conference of the International Society of Arboriculture in Indianapolis, Indiana in August 1983.

System Line Clearance and a line clearance supervisor performed strictly a staff function. We did budget preparation and advised the divisions, but had little to do with day-to-day operations. Our department did have direct control of all pesticide application by three PGE spray crews.

In the mid-70s, we had started back into the distribution line spraying business using a selective basal application of herbicides. Unfortunately, the spray program and the tree-trimming efforts did not always mesh. All too often, trees were sprayed one week and trimmed or cut down the next week.

Program inefficiencies. There were a number of other problems and inefficiencies in PGE's line clearance program. The people who supervised the crews in the division were normally line people with little or no experience or education in arboriculture. Field supervision was limited and usually amounted to checking to see that the crews left on time in the morning and returned in the afternoon. Hot-spot trimming was the norm, with some lines trimmed every year or two and others never trimmed at all. Crews were asking permission to trim. This was time-consuming and never permitted complete trimming of an area. Tree-trimming specifications had been developed, but were ignored or interpreted differently by each of the five divisions. Contract crews were usually shopped out of the division service centers, not at the nearest legitimate shop. Many times trees were topped repeatedly under both distribution and transmission lines rather than being removed. Program funding was never assured and was used as discretionary funds to improve cash flow. On top of all this, the Oregon Public Utility Commission (PUC) was concerned that our line clearance efforts were inadequate. They were putting pressure on PGE to spend more money and trim out the system as soon as possible.

A timely proposal. This all came to a head during the fall of 1981. Our vice president of Operations proposed an approach to improve both line clearance and system line patrolling by having a joint pole and line clearance person in each division. Larry Rowse and I did not feel that this approach would really solve many of the line clearance problems or appease the PUC. We set about to develop another option for our vice presi-

dent to consider. Fortunately, I had surveyed approximately 85 percent of the system during the first half of 1981 and had recorded the average line clearance conditions and estimated trimming requirements for each square mile surveyed.

Our proposal was based on a three-year trimming cycle. The line clearance function would be handled under central authority out of our office with three PGE arborists in the field. The service area was broken down by work load, which did not necessarily follow division boundaries.

The key points of our proposal were:

1. We would hold to an area trimming concept.
2. A three-year trimming cycle would be developed and implemented.
3. Uniform standards would be applied to all line clearance activities.
4. All work would be laid out by the arborists. They would remove as many trees as possible when the cost/benefits ratio was in PGE's favor.
5. Arborists would check on quality and quantity of all tree work.
6. All customer requests would be handled with uniform standards. Customers would get the same consideration throughout the service area.
7. Arborists would be competent professionals with background and education in arboriculture and line clearance operations.
8. Tree trimming and removal and chemical applications would be closely coordinated.

We projected an increase in productivity of 15 to 20 percent by the completion of the first three-year cycle.

Gaining management endorsement. We presented the program to our vice president of Operations. He was interested, but wanted to know if any other utilities had undergone a similar restructuring. I checked with a number of utilities and found that San Diego Gas & Electric Company had restructured its program and was pleased with the outcome.

The information received by our vice president was convincing enough that he proceeded to explore the ramifications of the restructuring. He requested a tour of representative areas to see the line clearance problems first hand. After some

deliberation, he gave his tentative approval and requested we outline the program for his superior, the vice chairman of the Board of Directors. The meeting that followed made upper management aware of the problem. The key was management's involvement in and understanding of the entire line clearance problem.

Program implementation. We were given the final go-ahead for the program in March 1982 with a target date for implementation in late June. Needless to say, it was a busy three months. Job descriptions had to be written, evaluated, and approved for the arborist position. Three positions had to be advertised, people interviewed, and selections made. We ended up recruiting two people, Tom Mathews and Dave Johnson, from outside PGE and one, Ken Darrow, from within PGE. It also became evident that a dispatcher would be needed to handle customer calls, radio communications, record keeping, and many miscellaneous functions so vital to a successful program. Don Johnson, a PGE employee, was selected for this position.

Once Dave Johnson was on board, he and I set about completing the system survey. We correlated all the survey information with outage reports to arrive at a tentative priority map. This priority map of the system covered the first three-year cycle. Maps were then taken to each of the five divisions to see if our tentative priorities corresponded to what they perceived as their line clearance problem areas. The three-year schedule for trimming was thus firmed up. The understanding was that this schedule was flexible and would be changed as need arose due to outages, safety hazards, and other unforeseen problems.

No-permit trimming. Tree-trimming permits were the next item tackled. We had decided to go system-wide with no-permit maintenance trimming, but were required to get permits by interpretations of city ordinances in Portland and Salem, the largest cities in our service area. We convinced Steve Goetz, Portland City Forester, to allow us to trim an area without permits on a trial basis to see the customer (voter) response. We approached the City of Salem with a similar request, but were rebuffed.

We did continue to get permits under two condi-

tions, removals and back-lot work. We need a signed permit to enter from the road to our back-lot lines. Unfortunately, this is necessary since in most areas our back-lot easements were not kept clear of fences, trees, hedges, etc.

Customer calls. We receive 400 to 500 customer line clearance calls per month. To handle this volume of calls, we decided to send out a letter similar to ones used in other utilities. If the call for trimming came from an address scheduled for area trimming within one year, a letter was then sent stating our intentions to trim the area and look at the customer's tree problem at that time. If this was unsatisfactory, they could return the lower portion of the letter, and we would pay them a visit. We initially sent about 100 letters per month and only had 5 to 10 percent returned.

Division concerns. During the first few weeks of our three-month preparation period, the divisions voiced a number of concerns about the new program. The vice president called a meeting for division line superintendents, general line foremen, and dispatchers. Our program was outlined and questions answered.

The main concerns expressed by the divisions were:

1. They would not be able to get a tree crew when they needed one.
2. The arborists would not know enough about the lines.
3. Customer calls in their division would go unanswered.
4. All tree crews would be pulled out of their division.
5. How could they be held accountable for outages if they did not control tree trimming?

The bottom line was resistance to loss of control over tree-trimming crews and resistance to change. Some were convinced that the current program was acceptable and our program was doomed to fail. Most, though, were willing to give the program a chance, especially after the vice president emphasized that their cooperation was needed and expected.

One year later. The new program was instituted on June 21, 1982. The following are highlights of the first full year of our new program.

No-permit trimming was successfully instituted

system-wide. The trial area of 3 square miles in Portland was successful with no complaints received. In November, the City of Salem finally agreed to a no-permit trial area, and it, too, was successful. Our Claims Department had expected the worst from no-permit trimming, but no claims were filed as a result of no-permit trimming.

We successfully handled from 300 to 500 calls per month. Twenty-five percent of these calls were resolved over the phone by the dispatcher. Ninety-eight percent of the calls requiring a visit were checked within 10 working days.

All work, both roadside and cross-country transmission and distribution, is completely laid out for the crews by the arborist. The arborist, using an area map, checks each line noting where trimming or removals are needed. As the crew works out the map, the arborist checks on both the quantity and quality of trimming and removal.

Chemical application is an integral part of the operation. After a sprouting species is removed by a tree crew, they immediately treat the stump with a premixed herbicide, usually Tordon RTU. After a given area is trimmed out, it is then laid out for one of our three company spray crews.

The spray crew selectively treats small trees that are coming in under the distribution lines. We normally use a basal oil application and recently have added Garlon thinline and Spike or Hyvar spot application, depending on location, weather, time of year, and species. This spray crew follow-up to area trimming significantly reduces our future line clearance requirements.

Crew productivity. The simplest way we found to increase crew productivity immediately was to shop them out as near as possible to the job site. Mileage per crew per month was reduced from 750 miles to less than 500 miles. This one simple step increased productivity by 5 to 10 percent.

Overall productivity has taken a significant jump.

After one year, bucket crews are now working on 49 percent more trees per day. (We define a tree as being over 6 inches in diameter at breast height.) Trees worked per day have risen from 22 to 33 with a threefold increase in number of trees removed. Back-lot crew productivity has been increased by 24 percent.

Division response. What has been the division response to the new program over the last year? They kept a critical eye on the program. They soon found that they were able to get a crew whenever one was needed, more areas were getting thoroughly trimmed, and the routine tree-related outages were decreasing. The vast majority of division line personnel now support the line clearance effort and recognize the benefits of the program.

PUC response. The PUC is also favorably impressed with the new program. Our relationship with them on line clearance has gone from an adversarial to a supportive role. We have made a point of keeping them informed on our progress every step of the way. One sidelight, the PUC has adopted our tree-trimming specification statewide.

Summary

Summing up the last year, we are right on target with our line clearance efforts; 961 square miles were completely trimmed. We have removed in excess of 30,000 trees. We have had no customer claims. The division and PUC are favorably impressed. Most important, upper management is pleased with the program and its progress and is continuing to provide the necessary funding.

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