

CONTRACT RIGHT OF WAY MAINTENANCE AT CAROLINA POWER & LIGHT¹

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What type of contracting method is the best to use for right of way maintenance around electrical transmission and distribution systems? This issue is controversial at best and can be accurately addressed in different ways for seemingly similar circumstances. The purpose herein is not to encourage or "sell" any type of contracting method, but to explain how Carolina Power & Light Company has approached this issue. Hopefully, the information provided can be used in helping to determine what may - or may not - be the contracting method best for the situation.

Following are a few facts about Carolina Power & Light which can be used for comparison. CP&L is a medium-size utility serving approximately 900,000 customers in parts of the states of North Carolina and South Carolina. All types of terrain are included in the service area from the coastal plain along the Atlantic Ocean to the steep slopes of the Smokey Mountains. Approximately 6,000 miles of transmission lines and 40,000 miles of distribution lines carry electricity to generate about \$2 billion of revenue annually.

The right of way maintenance program at CP&L is designed and administered based on three basic criteria: 1) it must be economically justifiable, 2) it must incorporate professionally sound trimming techniques, and 3) it must meet the management objectives of maximizing reliability of service, being safe to the public and employees, and being a high quality of work.

The basic contracting philosophy is to use whatever *mix* of contracting methods is most effective in meeting the criteria. However, the main emphasis is customer satisfaction which more specifically means good public relations and quality tree trimming. Trimming must be professional, and it must look good!

Right of Way Maintenance History

In 1977, the Company's Maintenance Program

consisted of six company foresters who were attempting to direct approximately 110 contract maintenance crews working on a cost-plus contract. The main emphasis was to cut or trim whatever knocked the line out and do regular maintenance trimming in any time that remained. In one area, approximately 28% of the crews' time was spent traveling between jobs because they had to move often in response to trouble; 48% of all outages were tree related; and line and service personnel were working about 10% overtime as a result of outages.

At that time Senior Management's practice was to reduce the tree trimming budget if the Company needed money somewhere else. However, in 1978, Senior Management completely changed its philosophy on arbitrarily reducing the right of way maintenance budget. This decision allowed for development of long term (5-10 year) management plans for right of way maintenance and implementation of the cyclic trimming approach, still using cost-plus contract crews.

In 1984 and 1985, which was approximately 5 years after beginning cyclic maintenance, several things occurred. In the previously mentioned area, tree related outages had dropped dramatically from 48% to approximately 19%. Line and service overtime related outages had been reduced by 50%. Also, the Forestry Information Reporting System was implemented at CP&L which, among other things, provided foresters with a tool for indicating crew productivity and a method for establishing a historical data bank.

At about the same time, bid work began to get a lot of attention, in fact, you could say it became "fashionable". An external auditing company examined CP&L management practices and concluded that approximately \$3 million per year could be saved by changing to unit price contracting, such as firm price bidding. This resulted in a mandate by Senior Management for a new con-

1. Presented at the annual conference of the International Society of Arboriculture in Keystone, Colorado in August 1987.

tracting policy which included unit pricing. A Project Quality Team was utilized to research the various contracting methods and evaluate their applicability to CP&L in order to respond to the mandate. The research performed and results discovered by this team are rather interesting.

Methods of Research

Research consisted of gathering both objective and subjective data through the following variety of methods.

1. An indepth look at CP&L was taken to determine what contracting methods were being used and why they were being used.

2. Next, a study of other utilities, primarily in the Southeast, was undertaken to determine what methods they were using, why they were using them, and the effectiveness of those methods. Eleven utilities were reviewed with on site visits to eight of them.

3. Indepth analysis of the consultant's recommendations was performed to determine resources and methodology used.

4. Various contracting companies' operations were reviewed in an effort to better understand their approach to the different contracting methods.

5. The various types of contracting methods were identified and defined, and an attempt was made to quantify the cost of those methods through cost-benefit analysis.

Results and Conclusions

The data gathered through research are still being reviewed; however, there are four basic preliminary conclusions which apply directly to firm price bidding. The following discussion of the research results should help explain the rationale behind the formation of those conclusions.

A major shift to firm price bidding is not economically justifiable. In areas where both cost plus figures and firm price figures were available, firm price bids were approximately 15% higher than cost plus work after adjusting for inflation. As an example, in one area cost plus work was accomplished at a cost of \$.55 per trimmed foot as compared to \$.70 per trimmed foot for firm price work. These figures do not take into account utility company cost for administering either program,

which is expected to be greater for firm price bidding. Manpower forecasts indicate that a 6% increase in personnel is needed for administering the bid contract.

However, firm price bidding can easily be justified as a "catch-up" method in areas that have had no existing long range program, such as an area in which extensive trimming is needed immediately. Also, firm price bidding can easily be justified in areas where crew productivity is below average due to interference by utility employees. Without exception, utility companies interviewed who have switched to firm price bidding, did so reactively rather than proactively, indicating the need for a "quick fix".

Firm price bidding will not improve public relations. The majority of utilities interviewed indicated an increase in customer complaints. However, bid work on the CP&L system has not created a significant change in the number of customer complaints. The firm price bid crew was found to have less flexibility to spend time with a customer which may be needed in sensitive areas. Finally, the definition of quality is directly related to customer perception making that definition very difficult to write into the specifications of a contract.

There is no increase in reliability of service when using firm price bidding. Where an effective long range program has been in place for at least one trim cycle, comparisons indicate that there is no decrease in tree-related outages after switching to firm price bidding. Additionally, less flexibility in utilizing bid crews for trimming the "unforeseen" problem tree is a potential problem.

Firm price bidding has the potential for reducing the quality of tree trimming. Defining "quality" in relationship to trimming trees is difficult at best, because each tree is unique and each property owner is unique. Successful firm price bidding requires that definite and broad-reaching specifications be written- a difficult task! Interviews with utilities using extensive firm price bidding indicate a lack of agreement among employees about the definition of quality trimming, resulting in confusion among the contractors about how to interpret the contract specifications.

These four conclusions are directly applicable to a comparison of cost-plus and firm price bid

methods. Numerous other conclusions of a general nature were also readily visible. For example, a long range right of way management plan is more essential than the contracting method in assuring the most successful and cost effective maintenance program. Relative to this, the bid process forces planning, whereas cost plus requires individual initiative as well as teamwork in planning and completing a successful program. However, no plan or method can be successful without "top-down" management support, which is the single most influential factor in determining the effectiveness of a maintenance program.

No program can be adequately evaluated without accurate and pertinent quantifiable data. Historical data, when accurate, are irrefutable. Data which provide complete knowledge of actual trimming requirements are essential. Number of line miles is often deceiving because it does not refer to the actual miles of trimming, therefore it should not be used when comparing quantitative values of contracting methods.

Collectively, the personal initiative of people in the field actually doing the work will have a significant impact on the success of a maintenance program. Firm price bidding provides the best vehicle for offering financial incentives to crew members.

On the other hand, the cost plus method appears to offer greater job security, therefore attracting and retaining the more qualified worker, particularly in non-unionized locations.

Summary

Firm price bidding at CP&L is in its infancy but will become an integral part of the long range right of way maintenance program. An estimated 15% of the company's system is compatible to firm price bid work. Present practices of using "cost plus" are sound, and this will most likely continue to be a major contracting method. The contracting program at CP&L is continuously evaluated and as new data become available the program, hopefully, will remain flexible enough to change and take advantage of the most effective contracting methods.

What is good for CP&L is not necessarily good for all utilities. Each Company must evaluate its individual needs and resist jumping on a bandwagon simply because it offers a "free" ride.

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Abstract

WIDIN, KATHARINE D. 1987. **Integrated pest management: A preventative maintenance approach to landscapes.** *Am. Nurseryman* 165(10): 38-40, 42-43.

You can use IPM to manage residential and commercial landscapes. IPM controls plant insects and diseases through a combination of cultural, biological and chemical control measures. These controls are properly timed to hit insects and diseases at their most vulnerable stages. Periodic monitoring, during which all plants at a site are inspected for health problems, determines which insects and diseases are present and if they constitute a hazard to the plants. The IPM approach is not anti-pesticide but uses knowledge of pest and disease life cycles to properly time all control measures. The most effective chemicals are used to treat only plants that have problems. Biological and cultural control measures are used whenever possible. This approach is preferable to the spraying approach that blankets a landscape. A good IPM program is a total tree and shrub health-care program, dealing not only with pests but also with proper site and variety selection, fertilization, pruning and other cultural practices that enhance the growth and appearance of landscape plants.