

Bidding *Out* and Bidding *On* A Unit Price Contract

By Bob Bell

There is more than one way to de-bark a tree. Of course, everyone thinks their way is the best. I guess we're no different. After using hourly tree trimming contracts for 49 years, Public Service Company of New Mexico (PNM) decided it was time for a change.

A series of difficult years spurred PNM to rethink its vegetation management efforts. Our tree related outages were consistently high, sometimes representing as much as 25% of electric system down time. In 1994 PNM hired a consultant to complete a workload inventory of PNM's system. An internal task force made recommendations to management based on the consultant's report and other findings. In January of 1996, PNM hired a professional forestry staff, adopted natural pruning methods, and implemented a unit price contract.

I often hear this question from tree contractors: "How do I bid on a unit price contract?" From my utility counter parts I hear "How do I bid out and manage a unit price contract?" My answer to both... "Very Carefully."

Here's how it works.

The Unit Price Alternative

Utility managers and contractors alike tend to recoil from a system that they do not understand. Hourly billing is nice and straightforward for the most part. Even if there is a certain art to the process, it is familiar. After working together for decades, it's no wonder that both the utility and the contractor become comfortable with the arrangement. I contend that we are all equally familiar with unit pricing; some of us just don't realize it.

Think back to your last visit to the grocery store. You bought several items (units), each item with it's own price based on the description and quantity of the item that you purchased. Nothing could be more natural. Each and every time you go to the grocery store, you are personally entering into a unit price contract with the store.

Now, imagine walking into that same store. You approach the manager and say, "hi, I'd like to shop around for a couple of hours. I'll pay you \$25 per hour." The first couple of time this works out OK, but then the store manager realizes that you are going straight to the meat department. So he raises your rates and takes the wheels off of your shopping cart. Years of negotiation ensue.

Let's try lump sum grocery shopping. Then again, let's not. You get the point.

Going Out to Bid

Remember your first kiss? Going out to bid is nothing like that. Creating the technical specifications, or spec's, for a unit price bid is a painstaking process. But before you get discouraged, think about the specifications for an hourly contract. I've seen hourly contracts that specify the number of ropes, the size of the saws and the type of chipper required to do the work. I've even seen spare parts requirements. Don't tell me that isn't painstaking. Writing up an hourly contract is an exhaustive process the first time it is written. Subsequent versions are easier, of course. But someone had to bite the bullet the first time. So it goes with any new system.

First: Define the Standards. It is amazing how many utilities and their contractors will agree on what a properly pruned tree is right up until they have to put a price tag on the work. What is the minimum clearance requirement? Is it six feet to the side of the line? Is it three years worth of clearance? Do you expect the contractor to use natural pruning methods? What about overhang? Do clearances differ based on line voltage? Spell it all out.

The first section of your spec's after the introduction should be Definitions. Define all questionable terms in the definitions section. Redefine them in the body of the text. Be redundant. Hammer your point home. Leave no room for ambiguity. Get it? For example, in the definition section "pruning" may be defined as: *cutting branches and/or removing limbs of a tree in order to reduce tree size and manage growth.* "Natural Pruning" is: *a method by which branches are cut at the branch collar...* "Clearance" is: *the distance between the branches and the conductor.*

By having these definitions as your foundation and by asking yourself the questions above which help define the standards; you end up with a pruning specification that looks like this:

When pruning to provide clearance around primary distribution lines, contractor shall prune trees to prevent any involvement with the line within three years time of the pruning. This clearance shall be a minimum of six feet to the side, ten feet below and fifteen feet above the conductor. Contractor shall utilize natural pruning techniques. Contractor shall adhere to ANSI standards for tree pruning and utility line clearance.

This is just the beginning. From this point the spec would continue by addressing other voltages, the neutral wire, specific tree conditions such as hazard trees or climbable trees, coniferous vs. deciduous, etc., etc.

Second: Identify and Define the Work Units. The utility company must clearly identify what a particular unit is and the term used to signify that type of work. Be consistent. Don't call a tree removal a "removal" on page 2 and a "take down" on page 10. Be clear in your spec and be sure to conduct at least one comprehensive pre-bid meeting. Once the contract is in place, you will be challenged... be prepared.

At PNM for example, a trim is a trim regardless of the size of the tree or the voltage of the line being cleared. But, a tree that is lift-truck accessible is separate from a tree that must be climbed. Therefore we have just identified two units: a “lift trim” and a “manual trim”. When our contract goes out to bid, our competing vendors will price each of these units separately. In addition, our contractors price six separate removal categories based upon tree diameter. Each of these is again differentiated based on accessibility vs. inaccessibility. And finally, our vendors provide a brush unit price.

All tolled, PNM has identified fifteen units of measure which we use to categorize the workload on our system. At the present time, approximately 70% of the tree work on our system is done under the unit pricing system. Approximately 30% of the work is still done on an hourly rate. The hourly work consists primarily of emergency work, customer requests and new construction. Considering that PNM has just completed its first pruning cycle; the 70/30 split is not so surprising. Our goal for second cycle is 90% unit, 10% hourly.

The measures that PNM uses work for PNM. That isn't to say that there are not clearer unit descriptions out there. For example, should units of brush be measured by the square foot, square yard, cubic yard, acre, lineal foot, or some other measure? Each utility needs to decide what works best for their given vegetation conditions. This applies not only to brush but to trims and removals as well.

Third: Know Your Operating Requirements. You're going to need a database. You're going to need people to collect and enter the data. You're going to need new forms. You're going to work a lot closer with your accounting department. You're going to have to do a whole lot of training.

In order to contract on a per unit basis, somebody will have to inventory the workload prior to the work being done. The contractor doing the work cannot be expected to do the inventory unless there is adequate protection in the contract (i.e. severe penalties for falsification) and significant post-work field inspections. The preferred method, in my opinion, is to have utility company employees or an independent contractor inventory the workload. I believe this is the cleanest way to address audit concerns. To paraphrase George W. Bush (completely out of context): *I recognize that good people disagree on this issue.*

At PNM, we contract with a professional service to do the inventory. This service provider supplies qualified professionals who record the workload, explain the work to our customers and act as the primary communication link between PNM, our contractors and our customers. The inventory is entered into our database by PNM accounting. Doing the inventory up front does not eliminate the need to do field inspections after the work is complete. But it does allow PNM's inspectors to focus on the quality of the work since the quantity is accounted for at the front end of the process.

Be prepared to let your contractors manage their own work force. You know what I'm talking about, and the offenders know who they are. How many utility managers have

fallen into the trap of telling their contractors how to run their crews and how to run their business? Under the unit pricing scheme, the utility must break itself of that habit. It is the utility's job to manage the process and evaluate the results. The contractor must be allowed to manage its day-to-day field operations.

I cannot overemphasize the importance of having your database up and running prior to going out to bid. When I say up and running, I mean that you have actually done successful field trials. Big bucks are riding on the accuracy of the data.

Fourth: Don't Get Cold Feet. I remember the first time I ever jumped off a ten-meter platform diving board. That's the equivalent of a three-story building. You have approximately three seconds on the way down to wonder if, perhaps, you've suffered a lapse in judgment. It is a very long three seconds.

The first time I took this leap, I walked to the edge of the platform, looked over the edge and said to myself "No way." I walked back toward the ladder to the jeers of my so-called friends who were standing safely at poolside. I turned back to face my nemesis and ran. I ran straight to the edge of the platform and when I got there, there was no turning back. I flew off the edge, dropped thirty plus feet, and screamed like a thirteen-year-old girl the whole way down. Then I did it again. It was quite a thrill.

I also remember arriving at PNM five years ago. They gave me an office, twelve phones (which I wore all over my body), a white Ford Bronco and a contract to manage. If I had a choice, I probably would have suggested that we continue to operate for one more year under the hourly contract. But that was not a choice, the unit price contract was signed and in use a month prior to my arrival. I was already past the edge of the platform... no turning back.

The next two years were stressful, difficult and expensive for PNM and our contractor. We learned a great number of lessons and applied that knowledge to a partial bid of our system in 1997. At that time we were able to bring a second contractor on to the property and learn some new lessons. For reasons too lengthy to list here, I generally recommend more than one contractor. In early 1999, we bid out our entire system. Both PNM and our contractors had worked many of the kinks out of the system. As of today, I can comfortably say, "it works".

I can only speculate that the transition would have been much less painful if we had begun evaluating the workload on a unit basis while still operating on hourly contracts. We could have then gone out to bid with a working knowledge of the system. On the other hand, we might have just kept postponing implementation until it faded away like a memory. I know one thing; I could have stood at the edge of that platform for a lifetime. Sometimes you just have to run and jump.

The Contractor's Perspective

I am not a contractor, but I used to be. And I work very closely with the contractors on our property. Close enough to know that unit pricing presents significant challenges to them. I know that a unit price contract can be productive for a utility company and lucrative for the contractor if properly bid. I also know that a bid that is too tight is an expensive lesson for the contractor and very difficult to manage for the utility. Here are some suggestions.

First: Bid Honest. Of course the contractor is being honest with the utility. But are they being honest with themselves. When times are lean, businesses sometimes get hungry. This can lead to optimistic bidding. The contractor needs to bid real prices which means you have to do your homework. If a utility company begins talking about unit pricing, find out as much information as you can about the standards and unit definitions, then begin evaluating yourself by these standards and definitions before the contract goes out to bid.

Go out to the crew and do some productivity studies. Get a stopwatch and see how fast a particular job can be done under ideal circumstances. Observe and record crew activity without making your presence known to the crew. Have your crews begin recording the time associated with their daily activities; look at the actual cost associated with trimming trees, then allocate in their non-productive costs and overheads. Don't forget the cost of supervision.

Try to convince the utility to implement unit pricing on a trial basis before going out to bid. This may sound contrary to what I recommended above, but that was from a utility perspective this is from the contractor's perspective. A trial run helps to answer questions and reduce risk. It also gives the incumbent contractor a competitive advantage (I am not passing judgment, just stating the facts as I see them).

Finally, here is one thing not to do. Don't sit down, figure out the numbers to the best of your ability, then cut 10% for good measure. That is the road to ruin.

Second: Rethink Workforce Management. There is a huge difference between being busy and being productive. A crew can look busy all day long without getting a single productive thing done. On an hourly contract, getting the trucks rolling and the workers moving is the minimum requirement for getting paid. On a unit price contract, they actually have to trim trees before the utility cuts a check.

The workers must be made to understand what is being paid for and what isn't. They need to be fully trained in the new record keeping systems. They need to know how you, the contractor will be evaluating their productivity and how the utility will be evaluating their work quality. At PNM, a tree isn't a trim unit until it is pruned properly and has adequate clearance. A removal isn't a removal unit until the stump is sprayed.

If you are new to the area, you need to do some research. Is the work force union or non-union? What are the wages and cost of living? What is the workforce availability and what level of skills do they have? Does the utility require that prevailing wage be paid? What is the proposed duration of the contract? How much will it cost to move equipment and where will you keep it? What permits and licenses are required, etc., etc. This is no small task. The operating expenses are especially important because these will have an ongoing influence on cost per unit.

I strongly recommend instituting an incentive program to reward productive workers. And, you need to consider how you will deal with non-productive workers... easier said than done, especially in some environments.

But, Why?

The purpose of this article is not to convince you to switch your system to unit price or, if you're a contractor, to go out looking to bid on unit price work. The article assumes that for your own reasons, you are in the process of evaluating the costs and benefits of bidding out or bidding on a unit price contract. Here are some straightforward considerations.

Economic Considerations. PNM trims or removes tens of thousands of trees every year. Trees worked on an hourly rate are consistently twice as expensive as those worked on unit price. The reasons are many, but the fact is hard to argue.

By bidding out the work on a unit basis, we can clearly evaluate the economic benefits of our activities. The clearest example is the question of pruning versus removal. We know, on our system, that it is always more economical to remove trees that are less than 18" d.b.h. (diameter at breast height) and it is always more economical to trim trees that are greater than 18" d.b.h. Economic considerations are not the only criteria that we use in determining if a tree should be pruned or removed, but it sure is nice to know the economic impact of that final decision.

Quality Considerations. PNM's specifications have never been as closely or consistently followed as they are today. Sending a crew back to rework a job is rare. Herbicide application is finally up to standard system wide. I literally cannot guess which crew, or even which contractor, completed a particular job when I perform a random field inspection. Their work is uniform across the board.

Once the economic benefit of tree removal became apparent, we were able to increase removal rates from a paltry 5% to an impressive 30%. Prior to unit pricing, there simply was no incentive to do this.

Also, although there is no way to link the pricing strategy to electric reliability, the fact remains that the tree department has exceeded its reliability goals for six consecutive years. This may not have anything to do with how the bills are paid, but at least no one can say unit pricing has hurt reliability.

Conclusion

in-er-tia (in-ur'sha) *n.* **1. Physics.** The tendency of a body at rest to remain at rest or of a body in motion to remain in motion unless disturbed by an external force. **2.** Resistance to motion, action or change.

Before asking, “Why change?” first answer the question, “Why not?” (and be honest). If you, your department, your company have expended a great deal of effort developing a contract system that works well for your operation, fits your corporate culture, is cost justified, is reliability centered and withstands audit... you may want to stay the course. Companies that have perfected their lump sum procedures probably fall into this category. If, on the other hand, you do what you do because that's the way it's always been done, you're not hitting on anyone's radar screen and no external force is influencing you to do otherwise... please reconsider.

I am familiar with multiple utilities, including PNM, who waited for an external force or event to influence the status quo. This is almost always more painful than taking the initiative to explore new methods voluntarily. Externalities that often shine an unfriendly light on the tree department include catastrophic storms, chronic outage problems, transmission outages, forest fires, severe budget cuts, PUC investigations, electrocution of an employee or customer, and – as if these are not painful enough – internal audits. Don't fool yourself. If you refuse to change without justification and simply succumb to the power of inertia, eventually change will be forced upon you.

Our operation has certainly benefited from the unit price contracting method. Change has been good. We have the ability to determine economic justification; we can estimate individual circuit workload from one cycle to the next; and we can more effectively do a whole range of cost comparisons. Contract administration has provided it's challenges, but as Frederick Nietche said, “That which does not kill me makes me stronger.”

Think of it this way. As much as it irks you that utility foresters report to engineers (instead of the other way around), take some solace in the knowledge that the engineers report to the accountants. And accountants love unit pricing.

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