

A SMALL BUSINESS PERSPECTIVE ON WORKING ON WIPP AND TRU-RELATED PRODUCTS, PROJECTS AND TECHNOLOGY DEVELOPMENTS

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ABSTRACT

This paper offers a small business perspective regarding the development of technologies and products for TRU-waste and WIPP applications and the lessons learned from these endeavors. The positive aspects will be outlined and reviewed as well as the challenging aspects of dealing with the Department of Energy (DOE).

This paper will offer insight into the dynamics of various manners in which a small business (UltraTech) and various DOE sites and contractors have successfully and unsuccessfully worked together on projects of importance. The majority of experiences will deal with TRU-related projects and products while some other non-TRU waste experiences will also be shared for additional DOE related perspectives.

The goal of this paper is to provide information for understanding the keys to successfully dealing with small businesses whom have limitations and challenges not usually encountered with large contractors or waste management firms. The barriers to success, the conflicts and frustrations will also be discussed in detail in an attempt to put issues on the table for resolution and discussion.

The lessons learned by UltraTech are varied, from developing, obtaining approval and selling rad filters, to offering proprietary technologies and products, to developing custom TRU technologies based on specific DOE criteria. This paper covers products and projects at many sites and offers points and perspectives that may not have been previously understood or considered in dealings with other small businesses.

Along with some of the challenges will be suggestions of solutions for consideration. Perhaps some of the challenges raised and solutions offered will be broad enough to have merit in how the DOE interfaces with companies of any size.

The presentation will specifically address areas such as:

- Bringing a new technology or concept to the DOE
- Funding and co-share of projects/product development
- Potential for conflicts of interest within the DOE
- The biggest areas of bureaucracy
- How to unleash the creativity of small businesses
- How to speed up the joint development effort
- How to avoid scaring off small businesses

- What specific benefits can small businesses offer to the WIPP and TRU-waste challenges

Real experiences, mixed with observations, criticisms and suggestions, are discussed with respect to the nuances of the small business and DOE relationship.

INTRODUCTION

This paper offers a small business perspective regarding interactions with the Department of Energy (DOE) on the development of technologies and products for TRU-waste and WIPP applications and the lessons learned from these endeavors. The positive aspects as well as the challenging aspects of dealing with the DOE and its contractors are explored.

Insights are provided into the dynamics in which a small business (UltraTech International) and various DOE sites and contractors have successfully and unsuccessfully worked together on projects of importance. The majority of experiences will deal with TRU-related projects and products requiring NQA-1 quality plans while some other non-TRU waste experiences will also be shared for additional DOE related perspectives.

It is hoped that offering insights into these aspects of small business/DOE relationships and interactions will encourage constructive dialogue to enhance the ability for these entities to work together. The focus is based more on a small business with products and technologies that could benefit most DOE sites rather than the scope of a small business dealing with its local DOE site only.

Along with detailing some of the challenges will be suggestions of solutions for consideration. This paper specifically addresses areas such as

- Bringing a new technology or concept to the DOE
- Funding and co-share of projects/product development
- Potential for conflicts of interest within the DOE
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- What specific benefits can small businesses offer to the WIPP and TRU-waste challenges

BRIEF BACKGROUND ON ULTRATECH

UltraTech International, Inc., of Jacksonville, Florida, is a small business with ten employees and has been in business for eleven years. It derives about 15 % of its business from DOE related activities. For the DOE, UltraTech primarily produces products such as rad filters, radwaste containers, filter bags and liners, specialty sorbents, spill containment products and other custom DOE products. UltraTech has also developed a few technologies such as Macroencapsulation, Advanced Containers and an inner layer of confinement breaching technology known as the Ultra-BagBuster. UltraTech has done business with most of the larger DOE sites and numerous

contractors. It has had its share of successful endeavors within the DOE as well as a few disappointments.

SMALL BUSINESS VIEW OF DEALING WITH THE DOE

For those small businesses that have made a long-term choice to seek out TRU-related DOE business, there are several factors that will become part of the process:

- There are no guarantees. Projects, funding and personnel are usually in flux at most DOE facilities and no project seems safe from drastic changes.
- Many of the projects or products will be developmental. A small business may have to invest time and R & D money without any revenue for several years.
- A small business needs to be very responsive. They may quote something with a ten-week lead time and then a year later get a phone call indicating the DOE wants it, but need it in four-weeks.
- It is expensive to call on and establish relationships with various sites. Marketing and selling to the DOE sites is not like industrial selling where there usually is a known demand and a known return for sales and marketing efforts. There are so many pockets of personnel and projects on a site that it is a challenge getting to them to see if there is potential to work together.
- A business may need to invest time and money into developing and maintaining an NQA-1 quality plan without a known return on the investment.
- A small business will need to find and develop a relationship with a “champion” at each site to help them understand who is doing what and where there may be opportunities.
- View any DOE business as “gravy”, since it is difficult to build annual sales volumes that are consistent. Be wary in making the DOE your primary source of sales.

BENEFITS TO A SMALL BUSINESS WHEN SELLING TO THE DOE

Because of the factors listed above, the number of small businesses seeking out DOE business is limited. This can allow participating small businesses to carve out niche opportunities that will not be pursued by the larger firms and not heavily competed by other smaller companies. Profit margins can be adequate and projects/products can be worthwhile business opportunities.

In many cases, due to the uniqueness of the projects in the TRU-waste area, the first company to get the business can usually keep the business without much competitive pressure. This doesn't mean the DOE is overpaying, it is just that some products or opportunities are better supported by one company focused on it rather than potentially having more companies involved that are not qualified.

For the most part, invoices are paid within a reasonable time frame making that aspect of dealing with the DOE and its contractors positive.

Once you are into a site's system, on an approved list or have developed a reputation, you can reap the benefits of the time and effort it took to position your company in that regard. In other

words, once you are in, you're in. This is one of the stronger benefits for a small business provided they are viewing the opportunity with the DOE as a long-term commitment.

BARRIERS FOR A SMALL BUSINESS DEALING WITH THE DOE

The barriers for small businesses trying to sell to the DOE on a national scope offers many more challenges than a small business trying to sell only to its local DOE site. Small businesses will typically have inadequate resources and personnel to provide the needed contact and travel to open up opportunities at DOE sites around the country due to the following:

- The high cost and high risk of marketing and selling to DOE sites. It is a tough call for a small company to put \$ 150,000 + at risk to cover the cost of a DOE specific salesperson and the high cost of travel to get to many of the DOE sites. Ever price a flight from the east coast into Idaho Falls, Carlsbad or Richland?
- It is hard to find sales personnel that are affordable and have experience within the DOE environment. Many are gobbled up by the bigger firms or have such a high compensation requirement that it creates an even bigger risk for a small business.
- The buyers and project managers at many DOE sites are moving targets. It seems some sites reorganize and move personnel every quarter. Constant changes in personnel can unravel significant sales efforts discouraging those efforts further.
- There does not seem to be a comprehensive way to introduce new products, services and technologies to buyers across the DOE spectrum in a timely and cost-effective manner. Waste Management conferences are about the best way, but every other year it seems cutbacks pull 200 – 300 potential attendees out of the mix. Very few buyers every make it and there are thousands of project managers and engineers that never know what has been shown at these conferences.
- Past practices at DOE sites can shut out new technology from being introduced. Specifications that are written around a specific product can be one of the biggest barriers to entry for a new product or concept. For example, UltraTech was the second company to develop radwaste filters for TRU-waste packages about ten years after the initial company started providing filter vents. UltraTech almost dropped out due to barriers 1-4 above, but the biggest challenge was that the specifications at sites and at WIPP were all written to specify the original company's specific part numbers. Equivalent performance was not allowed. It took almost five years for specifications to be changed to a performance-based standard that allowed competition and encouraged innovation.

NEGATIVES FOR A SMALL BUSINESS DEALING WITH THE DOE

You could include all of the "barriers" mentioned above as a negative for dealing with the DOE. But other negatives include:

New product and technology developments seem to be well funded for the large projects that big management and engineering companies can pursue, but the smaller projects and developments seem to be woefully under funded as cutbacks continue to make funding decisions challenging. This places small business in the precarious position of having to self-fund many development projects with no guarantee of a return. The small business owner is being wooed by sites that

insist the product or technology is needed, but follows that up with the caveat that they cannot help fund or guarantee any business. In other cases, there is cost sharing that creates a more compelling case for a small business to get sucked in, only to find the investment is for naught. This “damned if you do and damned if you don’t” dilemma may be driving many small businesses from continuing their development or sales efforts to the DOE.

Here are a few real-life examples of how a small business can get burned in the pursuit of DOE business:

- A DOE site has a need for a large diameter, thin-wall screw-top stainless steel can. A small business steps up and after great effort and cost develops a way to achieve such a challenging design. A small initial order is placed. Everything looks good. After two years of work on this project, a two million dollar order is expected within a week. But a series of meetings is called at the site and it is decided the cans are not needed after all. The small business has lost approximately \$ 50,000 in hard costs and all of the opportunity costs from spending time on a project that was for naught.
- A small business develops a technology that is needed by the DOE and can offer a real cost savings for many sites. A competitive company develops a similar technology, effective in its own manner. DOE hires a consulting company to evaluate both technologies to decide which technology should be funded for full development and testing. The consulting firm recommends the DOE use the small business technology for a variety of reasons including lower cost, more flexibility and ease of use. To the consulting company and the small business’s dismay, the competitive company gets DOE funding and testing because it has the backing and influence of a U.S. Senator.
- The DOE puts out a request for any and all firms to develop a solution to a TRU waste problem and outlines a list of 15 criteria that the technological solution must address. A small business comes up with a viable solution, does initial development on its own, and gets a small award from the DOE to perform validation testing. The DOE Mixed Waste Focus Area (MWFA) takes the lead and a project manager is assigned by the MWFA to oversee the final development and testing. Things move along and look promising. WIPP is supportive. Unexpectedly, the project manager retires and a new project manager is plugged in. The MWFA is dismantled. The new project manager is confident that significant funding for this project is available and presents a plan and budget that inadvertently submerges the project. The technology had been proven and was ready for the next step in deployment, but the project manager misjudged the situation and saw an opportunity to turn the project into a two-year multi-million windfall for his team to assure work at their site. The result.... a promising technology is unfairly represented and does not get funded. A small business is strung along for three years and spent over \$ 100,000 of their money and effort into a project that succumbed to poor representation by the DOE project management. The inherent conflict of interest by a project manager to keep a project going in slow times vs. seeing the project be successfully concluded as quickly as possible is a problem area in technology development.

Any one of these cases would try the patience and perseverance of any small company. Any one of these examples can cause a company to become cynical and turn its back on the DOE market.

WHY USE A SMALL BUSINESS OVER A LARGE ONE?

Why should the DOE and their contractors care about working with small businesses other than for legal requirements? Where is the value?

From our perspective, one key role for small business and the DOE is in development areas, new product development and project support in the form of providing needed products in a timely manner.

Every project manager loves to have a set of small businesses they can count on for many of their project needs. Whether it is for a standard item or more importantly when they need something custom. A small business can shine because it can provide very quick service and custom service, even on a small dollar job. In many cases the small business becomes, in essence, a valuable extension of the project manager's staff. If the project has a need for some specialty material, product, machined part, etc., a quick call and explanation and the manager has a quote, source and lead-time in short order.

In many TRU-waste related projects, a project manager may have a need for an unusual product, but requires a vendor who has an approved NQA-1 plan and has a track record of performance. In UltraTech's case, they have been asked to produce small graphite rods, customized absorbents, unique mixtures for back filling, GAC Pads and one of a kind rad filters. All are needed right away, in \$50,000 or less quantities and need to be done right the first time. None of these were products UltraTech had ever made before. But UltraTech had developed a reputation for coming through on unusual requests and was able to build on that. Most larger waste management companies are not interested in jobs below the \$100,000 – \$200,000 sale level. They are simply not built to provide quick turn around on small jobs. In many cases a small business can get a quote back in a day or so and have the job done before a large company could have had the appropriate number of meetings to discuss how to price the job, who would be the lead and what is the critical path.

Another positive for working with small businesses is that you often are dealing with the owner, an officer or someone who can make instant decisions. These key people have a lot of experience and are usually more resourceful than a mid level staffer from a large company. These guys also have started and run their own businesses and know how to overcome obstacles, meet customer's needs and many times are very creative and skilled in providing solutions.

An example that was recognized by the DOE in their recent national newsletter outlined how UltraTech helped save the DOE several million dollars on a project that was budgeted to cost \$5,000,000. A DOE site had been working on developing a 55-gallon shield container and needed a 6" thick polyethylene form for internal shielding. Their initial option was costing them \$5000 each and was off-gassing undesirable fumes. They asked UltraTech to develop a solution for under \$2500 and UltraTech responded within two weeks with a proposal that provided two concepts for under \$1,500 each. With a thousand parts purchased, the savings was considerable and the project was successful for all involved.

Small business can fill a niche in providing quick turnaround on new products, solutions to challenges and will gladly work on small dollar projects.

THE CRUCIAL ROLE OF A DOE CHAMPION TO A SMALL BUSINESS

Most small businesses require a “champion” on any given site to help them be successful. These champions recommend the particular small business as a possible supplier in project management meetings, introduces them to buyers, lets them know when a project could use their services or lets them know about a challenge and suggest they submit an unsolicited proposal with a solution. These champions will set-up meetings at a site and invite various engineers, buyers and QA personnel to allow the small business to give a brief “dog and pony” show about who they are what they can do for the site. These champions also tend to get these small businesses on the bidders list for their own projects.

Why do these champions take a small business under their wing? Because they recognize the value that particular business has, usually from past performance with them and they want to let others utilize a company that does it right, at a fair price and is easy to work with.

Another type of champion that is immensely valuable is a project manager for a site or the now-defunct MWFA that is assigned to help develop a technology that is owned by a small company. Getting a new technology to be tested and approved by the DOE is one of the hardest challenges a small business can encounter. As an example, 18 years ago UltraTech received a patent for Macroencapsulation. That was before Macroencapsulation was even listed as an EPA approved treatment. Every year, UltraTech exhibited the Macro technology at the Waste Management conferences. It wasn't until the DOE MWFA sought out UltraTech and assigned a champion to the technology's development that any progress was made. An INEEL representative has been able to get interested parties from all the various DOE sites, the EPA and state regulators to meet by phone every three weeks for the past year while the development and testing has been unfolding. This facilitator has helped stage two independent demonstrations for sites to visit and turned a dormant technology into a viable option for low-level debris waste and for macroencapsulating leads. The UltraTech Macro technology would probably still be obscure if the DOE had not involved one of their own to coordinate and manage the final development and deployment. It wasn't money that was needed as this project had minimal funding; it was the ability of someone within the system to make things happen.

Some might suggest an on-site small business ombudsman is supposed to fill the role of helping small businesses navigate through the DOE maze. Perhaps UltraTech is at fault for not understanding how to utilize these individuals properly, but our experience has not shown them to be an answer for us.

For UltraTech, the dismantling of the DOE MWFA is a setback for development of new technologies and ideas for TRU-waste projects. It seems that the DOE sites are reluctant to use their own funds to develop technologies that would help other sites. It appears sites try and sit back and hope another site will take the first action and fund something that could help them.

SUGGESTIONS FOR HELPING SMALL BUSINESSES MARKET AND SELL TO THE DOE

Many obstacles for small businesses trying to market and sell to DOE sites and their contractors have been discussed herein. The following are a few suggestions for ways to help alleviate that situation.

- Have the DOE start a quarterly in-house magazine that is specifically for suppliers who are or would like to do business with the DOE. Companies could place low cost ads, provide new product releases, advertise in a classified section, write case studies where they have teamed with sites on successful projects, etc. The magazine could have articles about how to sell to the DOE, up-coming projects listed, directories/buyers guides of vendors, listings of DOE site buyers and project managers, etc. This magazine would be distributed to all appropriate personnel at DOE sites and their contractors. The revenue derived from the low cost ads would help offset the amount DOE would have to fund. The increase in competitiveness in the form of more competitive pricing, access to more vendors, and outlets for more solutions should more than overcome the cost of initiating and maintaining the magazine.
- Initiate a DOE run website for small businesses that would complement the magazine. Each small business could have its profile, products or services, ratings and comments by sites that have used them (similar to E-Bay's rating by users concept). A search engine could pull up companies by keywords allowing buyers and project managers to find more sources for their needs.
- Hold Annual Trade Fairs at each DOE Site. Free booth space to those who come from a 150-mile or greater radius to encourage new firms to show their wares.
- Allow qualified small businesses to use government rates for travel when visiting and calling on DOE sites on DOE specific business. Help reduce the high cost of travel to these predominantly out-of-the-way locations.
- Set-up a Champions Program where sites encourage site contractor employees (non-buyers) to "adopt a small business" and become a champion for that business. Help them market on-site, fill them in on project opportunities, help set-up meetings to introduce them to decision makers, etc. Obviously there needs to be guidelines to prevent abuse, unfair practices and illicit dealings, but as long as rules are established and all orders come from buyers, this could be a big boost to small businesses.

CONCLUSION

Small businesses by their very nature can offer DOE sites and contractors unique and valuable services and products that rarely can be matched by the larger engineering and management firms. Doing business with the DOE is challenging and full of risks, but can be rewarding to those small businesses that have the mindset and the stomach for it. There is a need for reducing the costs, risks and obstacles for small businesses that seek DOE business and perhaps fresh ideas and focusing on the relationship between small business and the DOE can make lasting improvements.