ST. LOUIS FUSRAP THE CONSOLIDATION OF TWO PROJECT SITES

J. Eberlin, M. Lyerla, J. Farris
Shaw Environmental Incorporated
110 McDonnell Boulevard, Hazelwood, MO

D. Mueller, S. Roberts
US Army Corps of Engineers, St. Louis District
8945 Latty Avenue, Berkeley, MO

D. Overmohle
US Army Corps of Engineers, Kansas City District
601 East 12th Street, Kansas City, MO

ABSTRACT

The St. Louis FUSRAP sites are comprised of the St. Louis Downtown Site (SLDS) under the Kansas City TERC and the St. Louis Airport Site (SLAPS) under the Omaha TERC V. The St. Louis District United States Army Corps of Engineers (USACE) is the customer for both projects and Shaw Environmental, Inc. is conducting the work at both sites. This presentation outlines USACE and Shaw's strategy in consolidating both project teams in order to provide USACE with an annual cost savings of $5 million and still accomplish the USACE production requirements for both sites.

SLDS and SLAPS have been active since 1998 and have a combined total value of over $250M. Project completion is scheduled for SLAPS in 2006 and SLDS in 2011. The SLDS contract is a former IT endeavor while the SLAPS contract is former Stone & Webster project. Under Shaw Environmental, Inc., both projects have been working to explore better ways to share resources and work more efficiently. Until recently, each project has maintained separate staff for management, health and safety, quality control, health physics, and engineering. Both projects are funding constrained and are staffed to support each site's activities throughout the fiscal year. Consolidating the staff at each site into a single project team offers significant advantages to the USACE.

The consolidation strategy assumed that each site could be operated more efficiently sized to match production constraints. The production requirement at SLAPS includes the transportation and disposal of approximately 1,000 railcars per year. This scope is normally completed in approximately 8 months. The production requirement for SLDS is the transportation and disposal of 170 railcars per year that can be accomplished in less than 4 months. The final concept theorized that the combined scope for both projects represented 12 calendar months of work which could be executed within a fiscal year.

There were many benefits to the client to consolidate the projects. For example, staffing levels for the two separate jobs was right at 120 personnel. A consolidated project team would see a reduced staff size by 30 positions to 90 total personnel. Another benefit would be that the

consolidated project team would only work at SLAPS, or SLDS, allowing the closure of either site during periods of no activity thus showing another savings opportunity. The team also recognized that a consolidated craft labor team will provide USACE with consistent labor performance and minimize changes in crew size between the two jobs. The cost savings items mentioned herein meant that the consolidation would provide the ability to execute the SLDS scope within four months thus dropping the current cost to work from $750/cy to less than $400/cy. The SLAPS costs are expected to drop to less than $200/cy. It became apparent that the combined project efficiencies could net an annual cost savings of $5M.

To further gain from the consolidation, these cost savings could then be utilized by USACE to bring out-year scope into the current fiscal year. Execution of the out-year scope will accelerate project completion by 6 months for each year of cost savings. USACE will benefit from exceeding headquarter milestones while demonstrating a lower cost per yard for transportation and disposal. The St. Louis FUSRAP sites are now one year into the consolidation. This paper will present the successes and challenges of the consolidation process.

BACKGROUND

From 1942 through the late 1950s, several chemical processing and manufacturing operations were conducted at the Mallinckrodt facility, now part of the St. Louis Downtown Site (SLDS). These operations included the processing and production of various feed materials from which uranium was extracted and subsequently purified. The activities were performed under contract to the Manhattan Engineer District (MED) and the Atomic Energy Commission (AEC). In 1947, the MED acquired property in the area of the St. Louis Airport (now SLAPS) to store uranium-processing residues generated at SLDS. SLAPS was used to stockpile the radioactive material until the late 1960s.

As a result of many surveys and investigations, the St. Louis sites were designated for cleanup under the Formerly Utilized Sites Remedial Action Program (FUSRAP) in the early 1980's and placed on the Comprehensive Environmental Responsibility, Compensation, and Liability Act's (CERCLA) National Priorities List in the late 1980's. Soil characterization results were initially performed by the Department of Energy (DOE) with additional preliminary design investigations being conducted by USACE as necessary to support site remediation.

SLDS and its associated Vicinity Properties (VPs) are located in an industrial area in north St. Louis City. Several soil characterization studies have been performed at SLDS and the SLDS VPs. The SLDS Record of Decision (ROD) defines the nature and extent of radiological contamination and describes proposed remedial actions. The selected alternative was developed in accordance with the Comprehensive Environmental, Response, Compensation, and Liabilities Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and, to the extent practicable, the national Oil and Hazardous Substances Pollution Contingency Plan (NCP). Shaw (formerly the IT Group) is conducting the actual cleanup of SLDS under the direction of USACE.

The SLAPS is located adjacent to Lambert-St. Louis International Airport in northern St. Louis County. The removal of uranium processing residues at SLAPS actually began during 1966 and 1967, and the site was remediated to the standards of that time. Over the last 30 years, additional

radiological surveys and investigations have been conducted at SLAPS and additional remediation goals have been developed. The extent of contamination has been determined and the removal actions are underway. Shaw (formerly Stone & Webster Engineering) is conducting the actual cleanup of SLAPS under the direction of USACE.

INTRODUCTION

The St. Louis District USACE, its contracted architect/engineer firm Science Applications International Corporation (SAIC), and Shaw Environmental Inc. (the Removal Action contractor) collectively make up the St. Louis FUSRAP Team. The goal of the Team is to continue the successful remediation of both projects while developing continuous improvement strategies to further the cost savings and production.

Continuous improvement (CI) as it applies to St. Louis is defined as the ability to adjust to the clients changing and increasing expectations and thereby maintaining customer satisfaction. In the literal meaning of the term, it means constantly adjusting a process in order to achieve efficiencies not otherwise obtainable through static, unchallenged goals and objectives. CI is about exceeding all expectations set for the project, including individual and overall organizational expectations. CI means never being complacent about the processes and plans. It is about always looking for a better way to conduct business in all areas of the work. CI means streamlining the activities over and over to find an improved or more efficient way.

Each fiscal year the St. Louis FUSRAP Team decides on a focus for their CI strategies in order to concentrate attentions on one aspect of the project. This past year's continuous improvement focus has been on the consolidation process of combining the staff and operational strategies of both sites now working under one company – Shaw Environmental Inc.

Combining the operational efforts of the two sites became a new source of cost savings identified by Shaw. Historically each site's resource needs were managed separately, and resource leveling was determined through funding constraints rather than production constraints. As separate projects, each site experienced highs and lows in production and operations which meant shifts in staffing requirements. The training cost and impacts to quality control (QC) and health and safety (H&S) from the growing and shrinking of the craft and professional labor force provided incentive to attempt stable staffing levels throughout the year when consolidating the sites.

It was also recognized that each individual site could complete construction activities with-in a portion of the year and still meet USACE expectations for production goals and milestones. The consolidation allowed Shaw to combine the schedules of the two sites in order to maintain one full year of productivity.

The consolidation simply made sense from an operational point of view while providing huge cost savings incentives. The combined production potential, resource utilization, and funding between both sites offers advantages that neither site could obtain separately. In theory, efforts could be combined so that as one project was being worked the other would be idle. This approach would allow Shaw to share resources between the two sites and save costs. Estimates

were prepared and presented to USACE illustrating potential savings of over $5M. USACE and Shaw accepted the challenge and in May 2002 implementation began.

CONSOLIDATION CONCEPT

The working environment is extremely different for each site. Since SLDS is located in the midst of an operational industrial area where there are constant constraints to the work. The Team must deal with restrictions from property owners, a maze of utility lines within excavation areas, intensive engineering to work within current operating facilities, complex investigations, and difficult remediations. These factors severely hinder production efforts and task planning requires multiple contingencies to minimize production impacts. The Team recognized that accurate contingency planning could allow construction activities (USACE milestones) to be completed within four months. Construction support during this period would require increased craft and professional resources. The remainder of the year could be spent conducting engineering activities such as investigations, developing designs, and preparing the areas for work commencement. This approach would require alternate work tasks for the construction and engineering during construction resources.

In contrast SLAPS is completely production driven. The entire area of the site is under USACE control and the property is wide open for unconstrained construction activities. Since there aren't any buildings or businesses nearby, there are minimal utility concerns. Designs have been prepared years in advance with little changes once work commences. The SLAPS work can be done at such a rapid pace that the Team could increase staffing and complete funded construction tasks within eight months. This approach would require either additional staff (and alternate work tasks when funding is depleted) or additional funding to allow construction throughout the year.

The consolidation of both sites would also offer some synergies for project(s) administration, QC, and H&S. Being able to complete SLDS activities in a short time would allow USACE to minimize the expense of keeping a site open and staffed with appropriate resources during periods of minimal activity. The ability to share resources across projects could provide the additional resource support required by each site. The Team vision considered the consolidation possible based upon two concepts:

- Consolidation would allow a work force reduction for duplicate positions between each site resulting in a cost savings. The cost savings would increase with a part-time closure of SLDS during periods of no activity.
- Careful resource leveling between projects would require staff to move between sites based on construction support needs.

The consolidation offers a win-win situation by being able to complete the expected production milestones while accomplishing the work with fewer resources and less cost than each site working separately.

The implementation of the consolidation would be complex. The complexity is created through the construction contingencies at SLDS, the uncertainty in the number of resources required due

to the inherent inefficiency of resources sharing time between two sites, the need for the Team to cooperate in establishing priorities between sites, and the questionability of being able to focus work activities on one site at a time. The Team realized that if there was work activity at both sites simultaneously, then more resources would be required and the potential cost savings would be reduced. The team was also concerned with the number of resources considered redundant and the ability for project resources to meet USACE expectations during consolidation implementation.

IMPLEMENTATION

The Team implemented the consolidation in May 2003. The consolidation was phased in for a three-month time frame. The primary concern was the balance between staff reductions and sufficient cross training between remaining staff to keep construction activities productive. Thirty resources were identified for the reduction in force. The implementation proceeded with ten resources reduced each month with an assessment at the end of the month to gauge progress. Site activities at SLDS were scheduled to slow down in the second month (June) and ramp back up in August 2003. SLAPS was scheduled to complete the bulk of the fiscal year (funded) work scope in July with the completion of 1,000 railcar shipments.

The first reductions in force were focused on obvious position redundancies between sites. The next reduction in staff was the most critical step with the elimination of redundancies that assumed that the Team would be focused on one site at a time. For example, two QC and H&S officers (one for each site) should not be required if the Team effort was at one site. To implement this step, significant cross training was required to learn the expected work routine for each site. The remaining staff were given new responsibilities and given time to adjust to working with different staff and USACE representatives. The staff reductions were completed in July 2003.

CHALLENGES

Contingency Planning

Project schedules are frequently dynamic. Contingency planning offers the best alternative to reactionary planning. As always, the devil is in the details. For example, a property owner at one of the SLDS vicinity properties unexpectedly decided to implement a capital improvement project that involved subsurface building excavation. The subsurface soil was contaminated and USACE was required to support the excavation activity. The focus of SLDS contingency planning dealt with planned remediations and not contingencies for remediation at unplanned locations. The property owner was not willing to wait on USACE's schedule to support the excavation, and the Team was in the process of moving operations from SLDS to SLAPS. USACE requested that Shaw support the property owner's excavation and minimize any potential impact to the SLAPS production schedule. Shaw was able to support the property owner and maintain the SLAPS production schedule, but a valuable lesson was learned in the importance of including a contingency to split the construction crew and professional staff to support unplanned work.

The consolidation had severely challenged the available resources by continuing to strive to meet production goals while supporting an unplanned activity. Shaw recognizes that this kind of support is possible for short duration tasks. A longer duration activity would require either additional staff or relief from USACE milestones.

Staff Morale

While the consolidation efforts appeared almost flawless in theory, implementation has had its challenges. The staff reduction by 30 personnel immediately presented cost savings to USACE. The staff that remained was strong, knowledgeable and diverse. Expertise could now be shared across two projects to strengthen the overall resources. However, as implementation began, employee morale plummeted. Most employees who were fortunate enough to stay felt resentful that they would be expected to conduct work on two projects rather than one without increases in pay or promotions in status. After the staff reductions took place, those who remained on staff felt uneasy and at risk to have their position eliminated to save money in the future. Employees were disappointed to see their coworkers forced to leave or to leave on their own accord. Each original site group tended to blame the other for what was happening, and team building between the original two staffs was difficult.

While it is next to impossible to quantify qualities such as project loyalty, employee morale and individual pride in the work being conducted, one year into the consolidation process the Team has seen some new friendships developed. A newfound security is beginning to grow. New loyalties are being formed and morale is slowly improving, yet there are still many obstacles to overcome.

Consistent Requirements

One of the key expectations for the consolidated effort was to achieve standardize approaches and similar client expectations across both sites. The idea was to take the best from each project and make one set of rules that would remain constant at each site. This approach would make compliance easier for staff as well as oversight from USACE. In reality the standardization process has been much slower than anticipated. The sites have enough differences that deciding on one set of rules for safety, radiological controls, regulatory compliance, and quality control has been painstakingly slow. The USACE representatives on each site have very different expectations and rewriting plans and procedures to meet both sets of expectations required more time than expected.

Corporate changes within Shaw added to the consistency challenge. Shaw was in the process of combining elements of Stone & Webster and IT policies and practices. Changes were being implemented in nearly every arena of the company itself. The SLAPS project staff had been accustomed to Shaw processes prior to the IT buyout. The SLDS project staff had been accustomed to IT processes prior to the buyout. Subsequent to the buyout, both projects had to continually adjust to corporate changes while also digesting project level changes. This situation, coupled with the changing out of personnel, was extremely frustrating at all levels of the Team.

Working One Site at a Time

The vision of working at one site at a time is slowly becoming an illusion. Project schedules were resourced leveled to allow the scope of both sites to be accomplished without the need to maintain operations at both sites. Unfortunately, the project schedule did not survive long because USACE priorities between the two sites shifted. This resulted in the necessity to staff operations at both sites. Today Shaw management is faced with the reality of covering work at two sites with less staff. The obvious consequence of working both sites will result in additional staffing needs and some erosion of previously identified cost efficiencies.

Many employees are forced to work longer hours and have less time to complete assignments. Project management is faced with the challenges of efficiently applying resources while preventing employee burnout and a loss of quality control.

Managing Change

It is now apparent that the Team was too optimistic when considering contingencies and resource leveling. Project staffing changes were too rapid for the Team to minimize the inefficiencies during change. The changes within the project also had an unintended impact to the USACE management team. Changes in project level roles and responsibilities caused friction within USACE as Shaw points of contact changed. USACE personnel felt that Shaw was difficult to manage and USACE expectations were not being met. Change is always unnerving and people react in different ways. The USACE and Shaw management was sorely tested to keep focus on the consolidation goal while being as human as possible in helping staff cope with change. The importance in open communication with the project staff and USACE was critical. The consolidation would have failed with out honest discussions amongst project staff and USACE management concerning the consolidation goal and the interim milestones. Most importantly project management recognized that there had to be opportunity for personnel to ask questions and vent.

MOVING FORWARD

Looking back at the pace of the consolidation it is not clear if rapid change (more cost savings and an opportunity to get through the pain of change faster) or slow change (less cost savings and a longer period staff uncertainty) would have minimized the above challenges.

The consolidation process has resulted in several unexpected benefits to USACE. Business as usual mentalities have been changed and as a result further opportunities to improve have been discovered. The most significant is a change in the way USACE structures the separation between quality assurance (QA), quality control (QC), and health and safety (H&S) support personnel.

Shaw was burdened with the customary quality and safety oversight requirements during periods of minimal activity at one of the sites. The lack of activity did not seem to warrant a full time presence for USACE and Shaw. For example, the Team recognized that drum storage, material storage, and housekeeping are important QC follow-up inspections to perform, but the

inspections are quickly completed if little has changed from the previous workday. USACE agreed to support Shaw in conducting these tasks. This flexibility is a win-win situation because Shaw is able to keep project resources dedicated to production rather than traveling between sites, and USACE saves money by not requiring Shaw to add staff to support limited and part-time tasks. USACE is now evaluating other support areas to see if further efficiencies can be found. These types of cost saving opportunities would not be possible without solid trust between USACE and Shaw with a commitment to do the right thing.

Other Improvement Opportunities

Shaw has recognized other consolidation opportunities between other Shaw FUSRAP sites (Maywood, Buffalo NY, SLAPS, SLDS). By combining procurements requests for proposals (RFP) and sharing services across similar sites, Shaw suspected that great cost savings could be recognized while a standardized approach to a common client could be realized across the program. The first area Shaw addressed was rail transportation. Bidders to a Shaw FUSRAP wide RFP has resulted in an average 10-15% cost savings over existing rail pricing.

The second area Shaw plans to take an alliance approach is the disposal piece of the work. An RFP will be completed in the spring of '04 and a cost savings in the neighborhood of 10% or better is anticipated.

In the spirit of continuous improvement Shaw continues to look for ways to save money. Other opportunities to share resources (such as radiation technicians) are also being investigated. Shaw also plans to formalize sharing processes such as lessons learned. For the Team, CI never ends and everyone realizes that the bar continues to be raised with each challenge and subsequent success. The Team continues to meet and exceed expectations. In fiscal year 2003 another all time shipping record was set when the St. Louis sites shipped 1453 railcars with over 110,000 cyd of soil.