

Transition and Closeout of the Former DOE Mound Plant Site: Lessons Learned

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ABSTRACT

The U.S. Department of Energy's (DOE's) Office of Environmental Management (EM) manages the Miamisburg Closure Project (MCP) by cleaning up the Mound site, located in Miamisburg, Ohio, to specific environmental standards, conveying all excess land parcels to the Miamisburg Mound Community Improvement Corporation, and transferring all continuing DOE post-closure responsibilities to the Office of Legacy Management (LM). Presently, the EM cleanup contract of the Mound site with CH2M Hill Mound Inc. is scheduled for completion on March 31, 2006. LM manages the Mound transition efforts and also post-closure responsibilities at other DOE sites via a contract with the S.M. Stoller Corporation. The programmatic transfer from EM to LM is scheduled to take place on October 1, 2006. The transition of the Mound site has required substantial integration and coordination between the EM and LM. Several project management principles have been implemented to help facilitate the transfer of programmatic responsibility. As a result, several lessons learned have been identified to help streamline and improve integration and coordination of the transfer process. Lessons learned from the Mound site transition project are considered a work in progress and have been summarized according to a work breakdown structure for specific functional areas in the transition schedule. The functional areas include program management, environmental, records management, information technology, property management, stakeholder and regulatory relations, procurement, worker pension and benefits, and project closeout. Specific improvements or best practices have been recognized and documented by the Mound transition team.

The Mound site is one of three major cleanup sites within the EM organization scheduled for completion in 2006. EM, EM cleanup contractor, LM, and LM post-closure contractor have identified lessons learned during the transition and closure of the Mound site. The transition effort from environmental cleanup to post-closure operations is complex and requires creative and innovative solutions. Future environmental cleanups can benefit from the lessons learned gained by DOE and contractor organizations.

BACKGROUND

The U.S. Department of Energy (DOE) Office of Environmental Management (EM) has the programmatic responsibility to complete the environmental remediation of the former DOE Mound Plant site located in Miamisburg, Ohio, and to subsequently transition that site to the DOE Office of Legacy Management (LM). Operations began at the Mound site in 1948 in support of the early atomic weapons programs. The DOE mission at the Mound site grew into an integrated research, development, and production facility performing work in support of DOE weapons and energy programs, with special emphases on explosives and nuclear technology. Figure 1 is an aerial photo of the Mound Plant taken in 1988, when weapons production work was still in progress.



Fig. 1. Mound Site 1988.

With the end of the Cold War, national concerns about the environment and the conservation of government resources mounted. In November 1989, the U.S. Environmental Protection Agency (U.S. EPA) placed the Mound site on the National Priority List because of volatile organic compound contamination present in the site groundwater and the proximity of the site to the Buried Valley aquifer, a designated sole-source aquifer. A procedural framework was established by DOE-EM, in consultation with the U.S. EPA and the Ohio EPA, for the assessment and remediation of the site under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This procedural framework provided members of the public with the opportunity to participate in DOE's formulation of cleanup plans for contaminated areas of the Mound site and continues to govern the environmental remediation activities at the Mound site

today. The framework also ensures that DOE meets all CERCLA requirements for transfer of property (i.e., via real estate deed) to another party.

In 1998, DOE entered into a “site sales contract” with the Miamisburg Mound Community Improvement Corporation (MMCIC), a local nonprofit community reuse organization. The sales contract requires DOE to convey the Mound Plant site by discrete parcels once that property has been declared excess to DOE’s needs and the property has received regulatory approval for transfer under CERCLA. The primary objective of MMCIC is to redevelop the former DOE Mound Plant site into a privately owned industrial park. In December 2003, DOE established LM to manage the Department’s post-closure responsibilities at sites where the EM mission was complete and to ensure continued protection of human health and the environment. DOE-LM’s mission at the former Mound Plant site is to monitor and maintain the various CERCLA remedies, which include both engineered and institutional controls.

Figure 2 is an aerial photo of the Mound Plant taken in 2005, when environmental remediation work was nearing completion.



Fig. 2. Mound Site 2005.

CRITICAL DOCUMENTS FOR SITE TRANSITION PLANNING

The critical documents that govern the Department’s approach to site transition planning are defined in the *Development of Site Transition Plan, Use of the Site Transition Framework, and Terms and Conditions for Site Transition* memorandum.[1] That memorandum underscores the importance of two documents, the *Site Transition Plan* and the *Critical Decision 4 (CD-4) Package*. The *Site Transition Plan* must be jointly prepared by EM and LM staff; must describe the key transition activities, including schedule, milestones, and required resources; and must also ensure that plans are established to implement the Department’s *Terms and Conditions for*

Site Transition. In addition to requirements of the *Terms and Conditions for Site Transition*, the *Site Transition Framework for Long-Term Surveillance and Maintenance (Site Transition Framework)* should also be used during the development of the *Site Transition Plan*. The *Site Transition Framework* establishes the requirements (or conditions) that must be addressed before a site can be transferred from EM to LM. The *Site Transition Framework*, *Terms and Conditions for Site Transition*, and *Site Transition Plan* serve as the primary documents to evaluate whether all relevant transition activities and end-point criteria have been identified; thus, the full scope of these documents must be addressed in the *CD-4 Package* that EM prepares. The Director of LM and the Assistant Secretary for EM approved mound's Site Transition Plan in March 2005.

Major Milestones in Mound's Site Transition Plan

EM manages the Miamisburg Closure Project by cleaning up the Mound site to specific environmental standards, conveying all excess land parcels to the MMCIC, and transferring all continuing DOE post-closure responsibilities to LM. The EM contract for environmental remediation of the Mound site was awarded to CH2M Hill Mound, Inc. (CHM) in fiscal year (FY) 2003; the current date for CHM's Declaration of Physical Completion is March 31, 2006. This date is a major milestone in Mound's *Site Transition Plan*. As such, it is under configuration control by the Director of LM and the Assistant Secretary for EM. DOE-EM is currently reviewing a modification to the CHM contract which will most likely delay the targeted Declaration of Physical Completion. The results of the modification could impact some components of site transition.

The programmatic transfer from EM to LM is scheduled to take place on October 1, 2006, which is also a major milestone in the *Site Transition Plan*. Planning for the eventual programmatic transfer of the Mound site has required substantial integration and coordination between EM and its contractor (CHM) and LM and its contractor (S.M. Stoller Corporation). LM manages the Mound transition efforts, as well as post-closure responsibilities at other DOE sites, via a task order contract with the S.M. Stoller Corporation. According to the *Site Transition Plan* and other planning documents, the S.M. Stoller Corporation will perform certain EM transition-related work scope in FY 2006. This approach is designed to ensure that existing institutional knowledge is seamlessly transferred from one DOE organization to another. Managing a seamless transition from EM to LM for such work scope has proven to be a challenge to both DOE and DOE contractor organizations that are participating in site transition planning and implementation at the Mound site.

Turnover Packages for Continuing Federal Functions Post-Closure

Throughout the Department's implementation of the *Site Transition Plan* for the Miamisburg Closure Project, the scope, schedule, and cost of the transition project in FY 2006 are being managed at the activity level using the following nine work breakdown structure (WBS) elements: program management, environmental management, records management, information technology, property management, stakeholder and regulatory relations, procurement management, worker pension and benefits, and project closeout. To fully implement the site transition planning scope, schedule, and cost components, the site transition team agreed to follow a turnover package model previously used by EM for transition from one environmental

remediation contractor to another. These turnover packages provided an opportunity for all affected parties (i.e., the local EM office, EM's outgoing contractor, and EM's incoming contractor) to define and agree upon all actions that each party must take before functional responsibility can be fully transferred from one organization to another. The Mound site transition team developed turnover packages for each of the nine aforementioned WBS elements. Elements in these turnover packages include roles and responsibilities of DOE; interface with regulatory agencies and stakeholders; scope of post-closure functions, operational assumptions, and constraints; activity definitions and durations; objective evidence for completion of the *Site Transition Framework*, *Terms and Conditions for Site Transition*, and *Site Transition Plan* [1] requirements; cost estimates to transfer functions from EM to LM; personnel requirements; personal property requirements; and a list of critical issues that, if left unresolved, have the potential to impact successful site transition on October 1, 2006.

LESSONS LEARNED

Several DOE project management principles have been implemented to help facilitate the transfer of programmatic responsibility at the Mound site, and many lessons learned have emerged during the course of applying these principles to the development and implementation of various site transition planning documents at the Mound site. These lessons learned have helped streamline and improve integration and coordination of the transfer process. Lessons learned from the Mound site transition project are considered a work in progress. The lessons learned presented focus on the specific improvements or best practices that have been recognized and documented by EM, EM cleanup contractor, LM, and LM post-closure contractor during the transition and closure of the Mound site. The transition effort from environmental cleanup to post-closure operations is complex and inevitably requires the application of creative and innovative solutions. Future environmental cleanups can benefit from the lessons learned gained by the site transition team at the Mound site.

Lessons Learned No. 1

EM and LM should work together, using basic project management principles and off-the-shelf software to ensure an integrated approach to site transition planning and execution.

The *Site Transition Framework* provides a framework for all DOE facilities where long-term surveillance and maintenance (LTS&M) is part of the continuing federal function once the EM mission is complete. This document is a tool to help facilitate a smooth transition from the EM mission (environmental remediation) to the LM mission (LTS&M), providing a systematic process for affected parties to use in analyzing the baseline for LTS&M and to understand and manage actions from completion of the EM mission through site transition and into the LTS&M phase. The *Site Transition Framework* is not intended to provide an exhaustive list of specific requirements, and sites are encouraged to augment the requirements as necessary. Nor does the *Site Transition Framework*, in and of itself, provide a convenient checklist for site transition planning purposes. For example, the document is organized into 10 sections, some of which correspond to a single functional area (e.g., records and information management) that can typically be defined via scope, cost, and schedule elements of a baseline. However, other sections correspond to general statements of expected end-state conditions (e.g., authorities and

accountabilities). Because the Mound site transition planning team elected to manage the scope, schedule, and cost components at the activity level using the aforementioned nine WBS elements, it was relatively easy to crosswalk the 9 WBS elements to the 10 *Site Transition Framework* sections. Figure 3, the crosswalk, was included as an appendix to the *Site Transition Plan*. This crosswalk ensured that if all the activities in the turnover packages were completed, the *Site Transition Framework* requirements would also be met.

The Mound site transition planning team used an Integrated Safety Management System implementation model to flow down the policy and guidance requirements for a successful transition. Figure 4, an exhibit from the *Site Transition Plan*, illustrates the hierarchy of documents that govern site transition planning and execution at the Mound site. The site transition team also used Microsoft Project software to fully integrate the various site transition planning documents. For example, the transition schedule (including major milestones, activities, activity owners, logic ties, etc.) was consistent with the *Site Transition Plan* (approved by the Director of LM and the Assistant Secretary for EM in March 2005). The turnover packages (approved by the EM/Ohio Field Office Deputy Manager and LM Site Transition Coordinator in August 2005) associated with each of the nine WBS elements were also consistent with the transition schedule.

A *Critical Decision 4 (CD-4) Acceptance Plan* was developed to define all the flow down requirements including *Site Transition Framework*, *Terms and Conditions for Site Transition*, and *Site Transition Plan* [1] requirements (essentially, completion of all activities in the *CD-4 Acceptance Plan* will demonstrate objective evidence of completion that all elements of the *Site Transition Framework* have been satisfied). The *CD-4 Acceptance Plan* has proven to be an effective tool for monitoring progress to date against the transition project baseline.

Without the use of basic project management principles and off-the-shelf project management software (such as Microsoft Project), the Mound site transition planning team would have been severely hampered in its efforts to demonstrate that planned activities would result in full compliance with the *Site Transition Framework*. Completion of the *Site Transition Framework* requirements is also a critical component of the CD-4 Package, where EM will need to demonstrate that it has achieved (1) regulatory completion, (2) contractual completion, (3) financial completion, and (4) physical completion. Once the CD-4 Package has been approved by DOE Headquarters, the EM mission is deemed complete, and LM will assume programmatic responsibility for the Mound site.

	Work Breakdown Structure (WBS) Elements								
	1	2	3	4	5	6	7	8	9
	Program Management	Environmental	Records Management	Information Management	Property Management	Stakeholder and Regulator Relations	Worker Pension and Benefits	Procurement	Project Close-Out
Site Transition Framework Requirements (September 2004)									
I Authorities and Accountabilities									
A - Roles and responsibilities documents approved and signed.	•	•	•	•	•	•	•		
B - Entities responsible for long-term surveillance and maintenance (LTS&M) identified; funding sources identified.	•	•				•			
C - Requirements and procedures incorporate into LTS&M Plan and agreements.	•	•				•			
D - Legal authority for LTS&M identified.		•				•			
II Site Conditions									
A - The site at closure (remedies and hazards) has been described.		•			•	•			
B - Conceptual site model for LTS&M has been completed.		•				•			
C - All remedial action and documentation has been completed.		•				•			
D - Natural Resource Damage Assessment (NRDA) claims and documents have been identified.		•							
III Engineered Controls, Operations and Maintenance Requirements, and Emergency/Contingency Planning									
A - Engineered controls have been identified and documented.		•				•			
B - Life-cycle estimate prepared.	•	•	•	•	•	•	•	•	•
C - Master schedule of ongoing activities prepared.	•	•	•	•	•	•	•	•	•
D - Risk-based end state identified.		•				•			
E - Operation and maintenance (O&M) activities identified, funded, and performing party selected.	•	•				•		•	
F - Emergency/contingency planning and authority identified.		•				•			
IV Institutional Controls, Real and Personal Property, and Enforcement Authorities									
A - Land use/institutional controls identified, approved and implemented.		•			•	•		•	
B - Property records are complete.		•	•	•	•				
C - Personal property transfers are completed.		•	•	•	•	•			
V Regulatory Requirements and Authorities									
A - Regulatory decision documents are identified and complete.		•				•			
B - Implemented remedy and LTS&M activities are in compliance.		•				•			
C - CERCLA 5-year review or other review results are available.		•				•			
D - NPL status, RCRA permit status, or state requirements are known.		•				•			
E - NRC license status is established.	Not Applicable								
F - Document location has been identified and documents are accessible.		•	•	•		•			
VI Long-Term Surveillance and Maintenance Budget, Funding, and Personnel									
A - Technical baseline for LTS&M has been developed.	•	•	•	•	•	•	•	•	•
B - Available funding is consistent with baseline and estimates.	•								•
C - Personnel requirements are identified.	•	•	•	•	•	•	•	•	•
D - A business closeout process has been developed.	•	•	•	•	•	•	•	•	•
VII Information and Records Management									
A - Transfer of information and records.		•	•	•	•				
B - Information and records planning is acceptable to stakeholders.		•	•	•	•	•	•		
VIII Public Education, Outreach, Information, and Notice									
A - List of stakeholders has been developed and is being updated.						•			
B - Updated administrative record is available to interested parties.		•	•			•			
C - Public involvement costs are estimated and funded.	•	•				•		•	
IX Natural, Cultural, and Historical Resource Management Requirements									
A - System is in place to protect information that is sensitive.			•			•			
B - Biological resources, T&E species, archeological resources identified.		•				•			
C - Location and characterization of resources needing LTS&M identified.		•				•			
X Business Closure Functions, Pension & Benefits, Contract Closeout or Transfer, and Other Administrative Requirements									
A - Responsibilities for administration and funding of claims and benefits identified and planned.							•		•
B - Current contractor pensions and benefits are identified and planned.							•		
C - Status of pending litigation and liabilities identified.							•		
D - Contract termination action identified (usually completed by site owner).	•	•				•	•	•	•
E - Requirements of DOE orders satisfied.					•		•		•

•	Represents primary responsibility for CD-4 Documentation
•	Represents supporting responsibility for CD-4 Documentation

Fig. 3. Appendix B from the Mound Site Transition Plan entitled “Crosswalk of the 10 Site Transition Framework (STF) Requirements to the 9 Mound Site Transition Plan Implementation Work Breakdown Structure (WBS) Elements.”

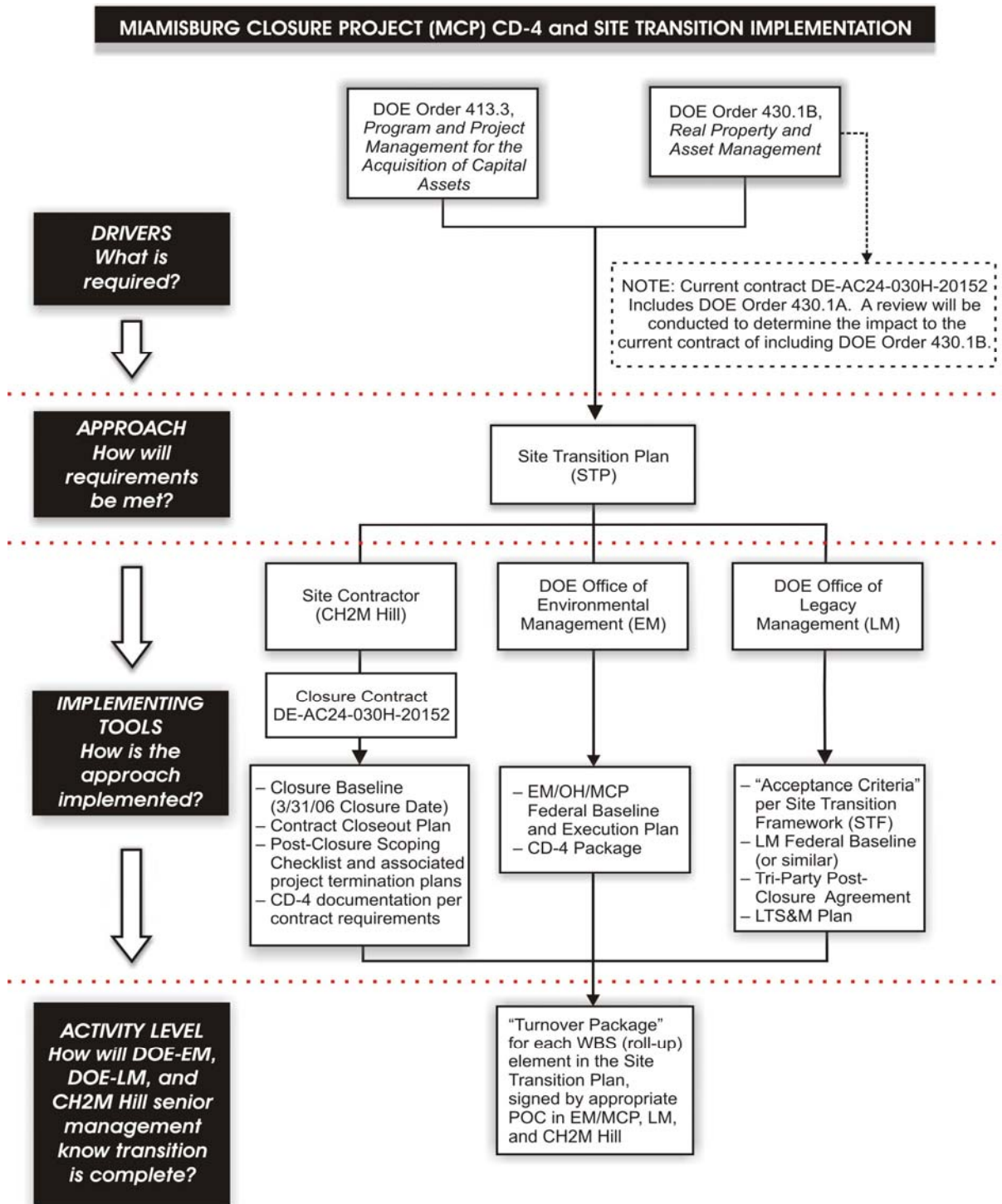


Fig. 4. Exhibit 1-1 from the Mound *Site Transition Plan* entitled "Miamisburg Closure Project CD-4 and Site Transition Implementation Approach."

Lessons Learned No. 2

Independent development (followed by consensus development) by EM and LM federal staff of a validated 5-year baseline for post-closure activities results in a superior product.

The *Terms and Conditions for Site Transition* includes a requirement for EM to "...develop and provide a validated baseline and supporting basis of cost estimates for the first 5 years of post-closure management, 2 years prior to the planned date of transfer. The baseline will be the basis for the five-year funds transfer in the Program Budget Direction (PBD)." Programmatic transfer for the Miamisburg Closure Project from EM to LM is scheduled to occur on October 1, 2006 (i.e., beginning of FY 2007); therefore, the life-cycle budget developed by EM in mid-FY 2005 (covering FY 2007 through FY 2070) constituted the basis for the "five years post-closure" budget. As stated in an earlier section of this lessons learned paper, the EM/LM site transition planning team agreed, up front, to implement the scope, schedule, and cost elements of the site transition project at the activity level, using the nine WBS elements: program management, environmental management, records management, information technology, property management, stakeholder and regulatory relations, procurement management, worker pension and benefits, and project closeout. EM and LM also agreed that the Departmental budget request for FY 2007-2011 should be organized according to these same nine WBS elements. This approach to project integration provided a convenient way to gather cost information at the lowest level, and then summarize that information at the highest level (i.e., the work scope described in the *Site Transition Plan*).

EM Miamisburg Closure Project personnel followed the same process used for all previous life-cycle updates and developed the FY 2007-2070 budget based on an independent analysis of work scope and costs associated with the EM closure contract. Some work scope that was not in the EM closure contract had been performed directly by EM Miamisburg Closure Project federal staff for several years (e.g., annual review and reporting on effectiveness of site-wide institutional controls remedy). The scope and cost of such work was also included in EM's life-cycle budget update. After compiling the "bottoms-up" life-cycle budget for FY 2007-2070, EM Miamisburg Closure Project provided that budget to LM for review. LM had also independently developed a post-closure budget after reviewing the LTS&M work scope in place at Mound and applying lessons learned from LTS&M contracts already in place at other closure sites for which LM is responsible. LM and EM subsequently met and jointly reviewed the two independent budgets. The work scopes defined in the two independent budgets were remarkably similar, but there were some differences that required discussion before the final Departmental budget request could be issued. Examples include

- Work scope that was not an EM requirement but was a "new" Departmental requirement assigned to LM (e.g., Local Stakeholder Organization initiative).
- Work scope that was not an EM requirement but was an elective action that LM took to better manage post-closure activities (e.g., maintain a fully functional office and staff in an on-site DOE-owned building).
- Differences in proposed skill mix for personnel assigned to a particular work scope.

- Differences in EM and LM overhead rates for contractor performance of indirect work (e.g., payroll office, project management).
- Inadvertent omissions by EM of some ancillary costs (e.g., personnel travel and training).

All of these differences were reconciled at the EM/LM senior management level in sufficient time to have an agreed-upon (i.e., validated) baseline for the first 5 years post-closure (i.e., FY 2007-2011). This process for development of the validated 5-year baseline for the Miamisburg Closure Project resulted in a superior product that federal personnel in both EM and LM understand and that describes a reasonable and appropriate work scope (with appropriate contingencies) for post-closure activities that maximizes the return-on-investment for tax payer dollars.

During development of any budget, it is tempting to identify additional contingencies to address “known unknowns” and “unknown unknowns” to provide a subjective comfort level. However, at a closure site where the Department’s mission will be limited to LTS&M activities, it is vitally important to establish a credible risk-based budget that reflects the actual work scope – a work scope that is far less complex (and costly) than during the active environmental remediation phase of the project. The post-closure bottoms-up budget must be developed by federal personnel (EM and LM) and with reliance on work scope definitions and pricing structures that are consistent with the existing EM closure contract (for LTS&M activities) is an appropriate starting point. However, EM personnel at all organizational levels must embrace the fact that current contracting mechanisms and methods of performing the LTS&M work scope will soon be replaced by LM contracts and associated pricing structures. A closure site, by definition, means that the EM mission is complete and that the LTS&M mission is now LM’s responsibility.

Lessons Learned No. 3

The ability to effect early transfer of certain EM programmatic responsibilities to LM is contingent on many factors, some of which are beyond the EM and LM site transition team’s ability to control. Programmatic risks must be identified early in the planning process, and all parties must agree on “triggers” for either continued pursuit or discontinuance of early transfers.

The *Terms and Conditions for Site Transition* [1] includes a requirement to “... when appropriate and beneficial to both organizations, EM and LM will work together to provide EM funds to LM’s contractors in advance of programmatic transfer. This would enable EM to shift some functions from the closure contractor to LM’s surveillance and maintenance contractor prior to programmatic transfer.” However, defining just what constitutes “appropriate and beneficial to both organizations” has proven problematic throughout EM and LM development of various site transition planning documents and agreements at the Mound site. The best example is the site transition team’s identification of a potential gap between what the EM closure contractor is obligated to provide and what DOE-EM actually needs to demonstrate EM completion, as defined in the *Definition of EM Completion*, EM Memorandum.[2] This gap was widened in February 2005 upon issuance of the Director of LM and the Assistant Secretary for EM joint

memorandum dated February 15, 2005, entitled "Development of Site Transition Plan, Use of the Site Transition Framework, and Terms and Conditions for Site Transition." [1]

One of the terms and conditions requirements, for example, requires EM to digitize the CERCLA Administrative Record. This requirement does not stem from either the CERCLA statute or from any previous DOE requirements for record keeping. This is an example of a newly imposed Departmental requirement that the Director of LM and the Assistant Secretary for EM agreed to in 2005, but which (for obvious reasons) was not included in the Mound EM closure contract awarded in FY 2003. EM needed to decide on an appropriate method to complete this terms and conditions requirement, and the three primary options considered included (1) adding scope to the current EM closure contract, (2) obtaining a separate EM contract for the digitizing work scope, or (3) providing EM funding to S.M. Stoller Corporation to perform the digitizing. In Mound's case, all parties agreed that option 3 was the most expedient way to complete this new task, and EM and LM worked together to define the work scope and associated costs in the turnover packages. EM subsequently added that scope to an existing task order contract in place with S.M. Stoller Corporation.

There are several other examples of work scope that the EM closure contractor is not responsible for performing; therefore, the expectation is that EM federal staff will perform that work. The turnover packages define all EM work scope that must be performed in FY 2006 to ensure successful site transition on October 1, 2006. Some of the work scope defined in the turnover packages is in the EM closure contractor's work scope. Many benefits could result from removing all or part of this work scope from the EM closure contract; the most important benefit would be the Department's ability to retain institutional knowledge held by Mound personnel who are currently employed by the EM closure contractor (and who are otherwise leaving through natural attrition, or who will be laid off once the EM closure contract is complete). EM and LM agreed, up front, that retaining such institutional knowledge is critical for DOE to conduct a seamless transition of programmatic responsibility on October 1, 2006.

Several functional areas are candidates for "early transfer," including records management and information technology functions. These two functions, in particular, rely on Mound personnel who have been performing these roles for several years and who frequently use homegrown information technology applications and/or paperless procedures that are based on an individual's institutional knowledge to accomplish daily tasks. The site transition team established goals for early transfer (meaning prior to October 1, 2006) of certain functions, but the team was careful to identify in the *Site Transition Plan* any and all programmatic risks associated with planning for such early transfers.

EM currently has a contractual relationship with the LM contractor to conduct site transition activities from the scope, schedule and cost requirements as described in the Mound turnover packages. These activities constitute EM work scope that needs to be accomplished before programmatic transfer can occur. EM is in the process of modifying the CHM contract to eliminate duplicative work scopes related to site transition and to ensure effective and efficient handoff of post-closure responsibilities. In the future, the delays in the CHM contract modification may cause a re-evaluation of the Site Transition Plan and turnover package agreements. Such an approach would not be ideal, because it would not result in the early

transfer of functions where retention of institutional knowledge is deemed critical to a seamless site transition. EM continues to discuss this issue with LM, and this lesson learned is not meant to imply that this problem has been “solved” to all parties’ satisfaction. This lessons learned is meant to illustrate that accomplishing the early transfer of certain EM programmatic responsibilities to LM is contingent on many factors, many of which are beyond the control of the EM/LM site transition planning team. Accordingly, caution must be exercised in identifying candidates for early transfer, and also the “triggers” (e.g., major planning assumptions described in Mound’s *Site Transition Plan*) occurring by a particular date) for determining whether an early transfer candidate should continue to be pursued or should be discontinued altogether.

Lessons Learned No. 4

EM and LM must use the same terminology and must also recognize that those terms and definitions will not always be consistent with work scope defined in the EM closure contract. Such disconnects can be addressed via a number of means, and those disconnects must be resolved early on in the site transition planning process.

EM and LM personnel struggled early in the site transition planning process with the appropriate use of terminology and definitions. A set of terminology in the EM contract with the Mound site closure contractor, for example, pre-dated any definitions that were established by either EM or LM Headquarters’ offices for complex-wide use. The term “physical completion” meant one thing to the contractor (and to its EM customer) but meant something else to LM. Such inconsistencies were easily rectified with an agreement by all members of the site transition planning team that the EM closure contract language established the line in the sand for what was and was not in the EM closure contractor’s work scope. Additional terminology challenges arose when it became clear that achieving physical completion at the Mound site was not synonymous with achieving “EM completion,” as defined in the *Definition of EM Completion*, EM Memorandum.[2] For example, the closure contractor could successfully demonstrate physical completion by submitting to DOE a draft Record of Decision that has undergone previous DOE and regulatory review and is deemed ready for final signature. However, it would be unreasonable to require the contractor to provide, as a condition of physical completion, a regulator-approved Record of Decision because the contractor has no control over acquisition of the regulator’s signature.

The definition of EM completion also includes the requirement for EM to administratively transfer responsibility of the closure site to another DOE, federal, state, or private entity. In the case of Mound, where all real property that is excess to the Department’s needs will be transferred to the local, nonprofit MMCIC, a possible scenario includes (1) the EM closure contractor will declare physical completion, including providing EM with a Record of Decision suitable for DOE, U.S. EPA, and Ohio EPA signatures; (2) the regulators will subsequently approve the Record of Decision (ideally, immediately following the EM contractor’s submittal to DOE); (3) EM offers the final land parcel to MMCIC via quitclaim deed; and (4) MMCIC refuses to accept ownership (i.e., sign the quitclaim deed) in a timely manner. Neither the EM contractor nor DOE-EM has control over the fourth and final step in the above-described land transfer process. Thus, if MMCIC ownership of all excess land parcels is deemed a “requirement” for site transition by a specific date, this must be managed by DOE-EM as a site

transition planning project risk; DOE-EM cannot guarantee a particular outcome (in this case, execution of quitclaim deed) to DOE-LM by a specific date. Managing this possible scenario as a site transition project risk is, in fact, what EM and LM agreed to do in the *Site Transition Plan*. This agreement was consistent with another term, “DOE Site Closure,” as defined in the *Definition of EM Completion* EM Memorandum [2], that occurs once ownership of all real property is transferred to a non-DOE entity. DOE site closure is the appropriate end state for the Mound site because all real property that is excess to the Department’s needs will be transferred to MMCIC. However, the term “DOE Site Closure” may not be an appropriate end state for other closure sites, such as those sites where the CERCLA remedy requires that property must remain under the Department’s ownership. Thus, the February 12, 2003, EM memorandum [2] provides the caveat that “DOE Site Closure is not required for EM Completion.”

The EM and LM site transition planning team at Mound found that it was incredibly important to agree on terminology and definitions that would be used throughout the planning and execution process. This agreement was the only way to ensure that all levels of management in the EM and LM organizations understood project status and expectations and what actions were and were not requirements for successful site transition on October 1, 2006. There will be some limited EM work that continues at the Mound site following transfer of responsibility to LM. Examples include closeout of the EM closure contract and settlement of any ongoing litigation.

Lessons Learned No. 5

EM’s relationship with its stakeholders sets the tone for future stakeholder relationships with LM. EM and LM must work together to establish realistic and appropriate stakeholder expectations at the site once the EM mission is complete and LM’s mission is limited to long-term surveillance and maintenance.

DOE-EM established precedence years ago for actively involving local stakeholders in the environmental cleanup decision-making process between DOE and the regulatory community. EM initiatives, such as the Citizens Advisory Board, and other Departmental initiatives, such as monetary grants awarded by the DOE Office of Community and Worker Transition, established a certain level of stakeholder expectations that were correct and appropriate for the environmental remediation life-cycle phase of the various EM closure sites. However, once EM completion, as defined in the *Definition of EM Completion*, EM Memorandum,[2] is achieved at the Mound site, the Departmental (i.e., LM) mission post-closure is lessened by orders of magnitude. The complexity and cost of operating a site that is in the LTS&M phase is far less than the complexity and cost of the previous, and now complete, environmental remediation phase. The Department (i.e., EM and LM working together) is subsequently faced with the prospect of weaning stakeholders from their reliance on DOE, for both monetary support (e.g., community block grants or grants provided to Citizens Advisory Boards) and any requests for a “guaranteed, on-site DOE presence, 24 hours a day.” At the Mound site, LM needed to familiarize itself with previous Departmental agreements with various stakeholder groups, including the eventual site owner (the local nonprofit MMCIC) and elected officials from the City of Miamisburg.

The site sales contract between DOE-EM and MMCIC (executed in 1998) is an example of a legally binding agreement between DOE and a stakeholder (in this case, the local nonprofit MMCIC) that was negotiated during the environmental remediation phase and which remains appropriate and in place as “EM completion” and “DOE site closure”[2] draw near. DOE-EM is still in the process of conveying excess land parcels to MMCIC via quitclaim deeds. DOE-LM had to educate itself on the site sales contract before engaging in dialogue with MMCIC on any number of subjects. The sites sales contract defines what is and what is not the Department’s and MMCIC’s responsibility. In cases where MMCIC requests the Department’s cooperation in performing work that is not part of the site sales contract, EM and LM must jointly exercise tact and diplomacy in establishing realistic expectations for such stakeholder requests.

What were appropriate expectations 2 years ago, for example, will no longer apply once EM completion has been achieved and programmatic responsibility for the site transfers from EM to LM on October 1, 2006. LM’s initiative to establish Local Stakeholder Organizations at some closure sites is a good example of a new Departmental initiative that is not necessarily being embraced by site stakeholders who have grown accustomed to initiatives that EM or the DOE Office of Community and Worker Transition put in place years ago.

CONCLUSIONS

These lessons learned from the Miamisburg Closure Project are a work in progress, and they continue to help streamline and improve integration and coordination of the site transition planning and execution process. Future Departmental environmental cleanups and subsequent site transitions can benefit from the lessons learned gained by the site transition team at the Mound Plant site. The Department’s transition effort from environmental cleanup to post-closure operations is complex and inevitably requires the application of creative and innovative solutions. Site transition lessons learned must focus on specific improvements or best practices that have been jointly recognized by EM, EM closure contractor, LM, and LM post-closure contractor personnel during the site transition planning process.

REFERENCES

1. Owen, Michael W., and Paul M. Golan, 2005. *Development of Site Transition Plan, Use of the Site Transition Framework, and Terms and Conditions for Site Transition*, Memorandum for Field Distribution, February 15.
2. Assistant Secretary for Office of Environmental Management Jessie Hill Roberson, 2003. *Definition of EM Completion*, Office of Environmental Management Memorandum, February 12.