

ACHIEVING EFFICIENCIES THROUGH PROGRAM INTEGRATION

The DOE Environmental Management Integration Program

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ABSTRACT

The Department of Energy's (DOE) Environmental Management (EM) program has instituted a complex-wide integration effort to identify, evaluate, and implement program efficiencies. The Acting Assistant Secretary for Environmental Management and five DOE Field Office Managers have formed an Integration Executive Committee to direct this effort. Twelve Program Area Integration Teams have been chartered to systematically identify, plan and evaluate integration opportunities that could result in program efficiencies in waste and materials management and other functional areas of EM. This paper provides an overview of the program integration effort, the program structure and process, and key activities underway.

OVERVIEW OF EM PROGRAM INTEGRATION

DOE's EM program is applying program integration complex-wide to support the EM vision to clean up its sites as much as possible within a decade, as set forth in DOE's *"Accelerating Cleanup: Paths to Closure."* Integration is a corporate approach to enable DOE to make the best possible decisions. A formalized integration effort within DOE will lead to a more focused EM program that seeks to:

- Eliminate unnecessarily redundant facilities and use available capacity;
- Cross program boundaries and/or remove "stovepipes" in the cleanup process;
- Take advantage of the collective learning curve;
- Apply site successes and lessons learned nationwide;
- Develop and share the use of innovative technologies; and,
- Use national procurements to meet unique needs.

The current federal effort was built upon a systems engineering effort conducted by an independent, contractor-led "EM Integration Team" (EMI Team), which was chartered by EM Assistant Secretary Al Alm in 1996 and was comprised of DOE contractors from major DOE sites. Based on systems engineering principles and "out-of-the-box" thinking, this team provided in 1997 recommendations for complex-wide program efficiencies in the areas of waste management and environmental restoration that could, if implemented, provide substantial cost savings. DOE began evaluating these recommendations, some of which are already being addressed in current National Environmental Policy Act (NEPA) activities. In mid-1998, a series of "round robin" site visits by key DOE Field Managers and EM managers led to the identification of further integration opportunities that could lead to complex-wide program efficiencies.

After these visits, the key managers recognized the need to formalize integration within DOE, expand the program areas to be addressed (beyond waste management and environmental restoration), and provide field-ownership by having integration efforts led by the field. This resulted in establishment of 12 Program Area Integration Teams, each led by a field representative and comprised of multiple field representatives, whose efforts are directed by an Integration Executive Committee, comprised of five Field Managers and the Acting Assistant Secretary for EM. These teams are now serving as catalysts within DOE/EM to identify further integration opportunities, evaluate those opportunities accepted by the Integration Executive Committee, and ensure effective implementation of approved integration opportunities. A further discussion of the integration structure, the process, and examples of opportunities currently being addressed is provided in the sections below.

EM PROGRAM INTEGRATION STRUCTURE

The EM Program Integration structure (Figure 1) was formalized with the signing of a *Working Charter* by the members of the Integration Executive Committee in September 1998.

An *Integration Executive Committee* (IEC) was established to plan, direct, facilitate, evaluate and oversee program integration efforts across the complex and to serve as the ultimate decision authority within EM on the implementation of integration opportunities. The Integration Executive Committee is chaired by the Assistant Secretary for Environmental Management and members include the Field Managers from Idaho, Savannah River, Oak Ridge, Richland, and Rocky Flats.

Program Area Integration Teams, established by the Integration Executive Committee, use an “integrated product management” approach to identify, evaluate, and (where appropriate) implement integration recommendations. The twelve Program Area Integration Teams are organized by waste and material type and functional area as follows:

- High-level Waste
- Transuranic Transportation and Disposal
- Transuranic Storage and Treatment
- Mixed Low-level and low-level Waste
- Environmental Restoration
- Deactivation
- Decontamination and Decommissioning
- Reindustrialization
- Spent Nuclear Fuel
- Plutonium and Other Nuclear Materials
- Transportation
- Science and Technology

EM PROGRAM INTEGRATION PROCESS

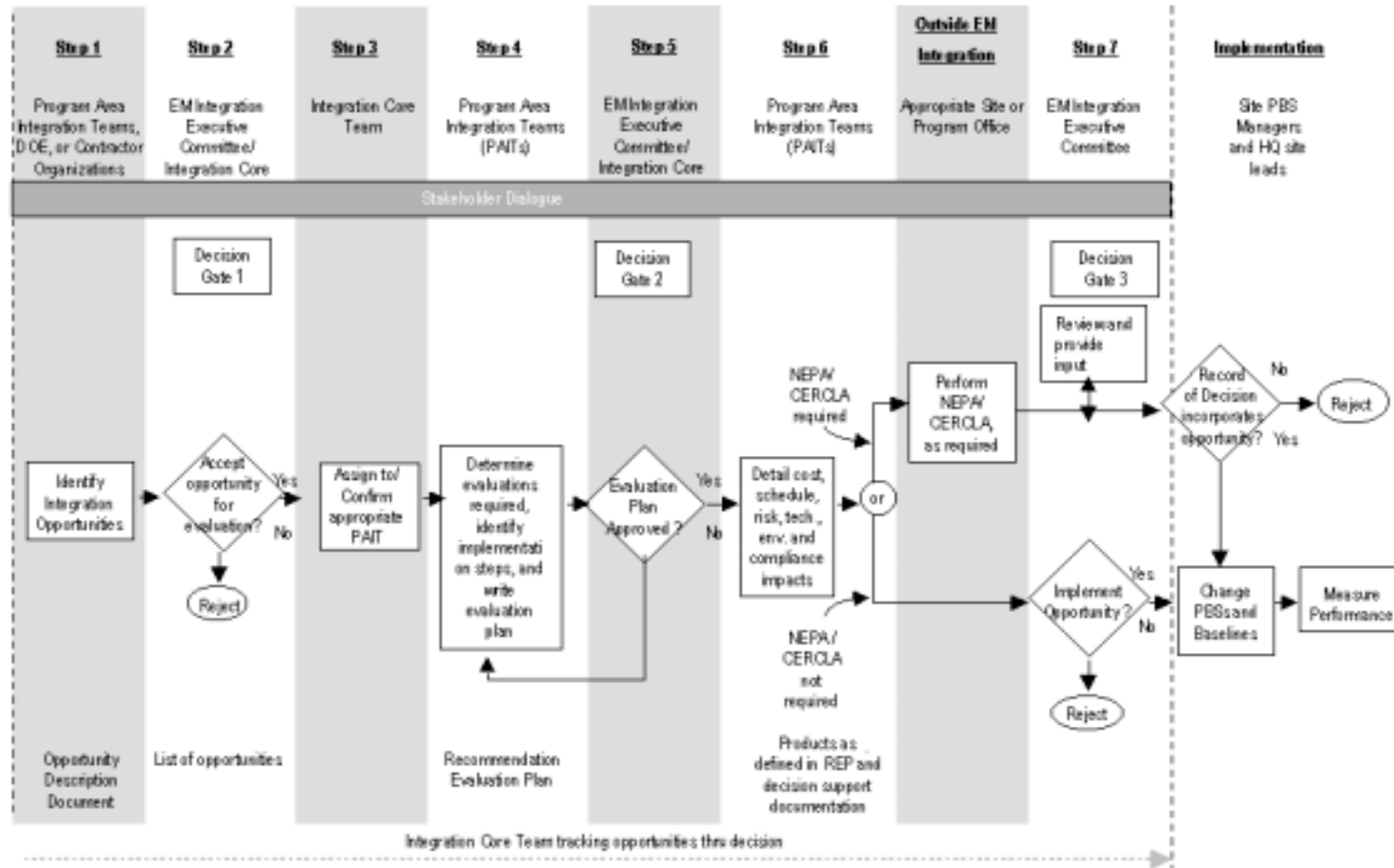
Integration opportunities are derived as alternatives to baseline plans or activities which fill gaps or fix disconnects in projects or lead to efficiencies, such as accelerating cleanup schedules. EM program integration provides a systems engineering process and tools to analyze and determine improvements to current plans (*Accelerating Cleanup: Paths to Closure*) and project baselines.

This is accomplished by looking at interests broader than a single program or site and by focusing on those needs which achieve the cleanup vision in an optimized, equitable fashion.

Any organization may identify integration opportunities, and Program Area Integration Teams are specifically tasked with identifying and evaluating additional opportunities for consideration.

However, the decision to implement an opportunity is based on a thorough evaluation, which encompasses, where appropriate,

EM Integration Opportunities Process



DOE's established formal decision making processes implemented under the National Environmental Policy Act; Comprehensive Environmental Response, Compensation, and Liability Act; and Resource Conservation and Recovery Act.

Figure 1 illustrates the process being used once an integration opportunity has been identified and recommended by the applicable Program Area Integration Team for further consideration. In essence, once an opportunity is identified and accepted for further consideration, the relevant Program Area Integration Team determines the level of evaluation required; prepares the Recommendation Evaluation Plan; and establishes "integrated product teams" to complete the evaluation. The Program Area Integration Team is also responsible for identifying specific implementation steps and ensuring early and continuing stakeholder input.

For an evaluation to be initiated, the Team must first convince the Integration Executive Committee of its potential merit. Once the evaluation is completed, results are presented to the Committee for their consideration in approving or disapproving the opportunity. Evaluation factors to be considered include, but are not limited to, net cost and schedule savings, risk, technological maturity, impacts to the transportation system, and equity.

Stakeholder coordination is essential to the EM Integration process. Early, continued, and meaningful engagement is critical for success. Dialogue with stakeholders on EM integration opportunities will occur on both the national and site levels. At the national level, DOE will continue dialogue with States, Tribal and local governments, and stakeholders through existing forums such as the National Governors' Association, Federal Facilities Compliance Act Task Force, the Energy Communities Alliance, the State and Tribal Government Working Group, the Environmental Management Advisory Board, the EM Site-Specific Advisory Board Chairs, and the Transportation External Coordination Working Group. DOE encourages frequent discussion of EM Integration opportunities at the site level to identify new opportunities or provide input on other existing opportunities. Discussion of integration activities will be conducted at the sites regularly scheduled meetings with local Site-Specific Advisory Boards and stakeholders.

INTEGRATION OPPORTUNITIES UNDER EVALUATION

The 12 Program Area Integration Teams are now in the process of evaluating over twenty integration opportunities that have been approved for evaluation by the Integration Executive Committee, including some of those recommended in 1997 by the independent EMI Team, some recommended through the "round robin" site visits by five Field Managers, and others more recently identified through workshops of the Program Area Integration Teams. Table 1 identifies integration opportunities that have been accepted for detailed evaluation and are in the evaluation process.

USE OF INTER-SITE SABBATICALS AND OTHER INTEGRATION TOOLS

The identification of integration opportunities is largely dependent on knowing what others sites have in terms of capabilities, resources, successes, and lessons learned. The integration effort is encouraging that sites work together through inter-site information exchanges, or what we refer to as inter-site "sabbaticals." For example, key staff at one site spend several days or more at another site with similar problems to share common problems and determine whether they can share approaches. Such sabbaticals have taken place already between Oak Ridge and Savannah

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River and between Oak Ridge and the Idaho National Engineering and Environmental Laboratory (with Savannah River participation). These exchanges involved not only those individuals directly involved in the integration effort, but staff-level and mid-management level individuals from the various programs (e.g., environmental restoration, waste management). These exchanges were found to be fruitful and have resulted in the further exploration of common opportunities. For example, an approach used by the Savannah River Site in dealing with EPA Region 4 on compliance with EPA's land use control assurance policy was found to be applicable to Oak Ridge and Paducah in dealing with EPA Region 4 on the same issue. By using the same approach and type of documentation used by the Savannah River Site, both Oak Ridge and Paducah will save resources that would have been spent working the issue.

Table 1 - Opportunities Accepted for Evaluation

<i>Contractor Integration Opportunities</i>	<i>New Opportunities</i>
Consolidate TRU Waste Storage	Sites use the M-100 Standardized Disposal Containers (LLW)
Expansion of the TRUPACT-II Shipping Capacity	Institute a Policy on National Resources
Disposition of TRU Waste not currently acceptable at WIPP	Implement Four Nuclear Materials Management Centers
Maximize Use of Existing DOE Facilities for MLLW Treatment	Consolidate Non-HEU Uranium
Expand Use of National Procurements for MLLW treatment	Consolidate Plutonium-239
Use Combination of DOE & Commercial MLLW Disposal Capacity	Consolidate Cesium and Strontium
Consolidate Analytical Service Procurement and Audits for MLLW	Consolidate Am/Cm at Oak Ridge.
Establish Case Specific Limits & RCC for Haz. Waste	Eliminate excessive transportation requirements
Standardize MLLW Characterization	Establish a single DOE-wide policy for transportation
Consolidate LLW Disposal Operations	Standardized LLW shipping containers
Direct-Funding for Consolidated LLW Disposal Operations	Inventory Type B transportation packages
Minimize Storage and Treatment of LLW	Optimize shipping schedules
Disposition of Material and Waste with No Path to Disposal	Evaluate waste drum integrity (TRU waste)
Share ER Expertise and Resources	Develop portable/modular technology for sorting, segregation, and size reduction (TRU waste)
Implement Accelerated Remedial Process for ER	Develop technology to enable sampling TRU container headspace
Ship WVDP HLW Canisters to SRS	Reduce drum-age container criteria for TRU waste packages
Store INEEL HLW at Hanford	Develop robotics-based glovebox size reduction
Use Hanford Vitrification Capabilities for INEEL HLW	
Reduce Hanford HLW Volume	
Accelerate Calcine Separation of INEEL HLW	
Use Existing INEEL Cesium/Strontium Storage Capacity	
Standardized Waste Matrix for LAW	
Establish Perf-Based SNF Storage & Disposal Rqmts	

EM's homepage at www.em.doe.gov has a link to "EM Integration," which provides up-to-date information on EM program integration and connects to various tools that are available for identifying and evaluating integration opportunities. For example, individuals can review "Baseline Disposition Maps" to determine each site's waste/material life cycle disposition plans and strategies, as well as "In/Out Diagrams" to determine currently planned waste/material transfers between sites. These maps (and supporting information) were developed during preparation of DOE's *Accelerating Cleanup: Paths to Closure* plans. INEEL's systems engineering team also offers a variety of systems engineering software and resources for use in conducting evaluating opportunities. Integration workshops (sponsored by a particular Program Area Integration Team) are a useful mechanism for applying these tools and working through the

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evaluation of opportunities (e.g., cost/time analyses, risk analyses, and barrier identification and visualization).

CLOSING

The EM Integration effort has resulted in teams of professionals working together with a common vision: accelerated cleanup of our sites within an ever-diminishing budget. Real opportunities have been identified to improve the program, and efforts are well underway to evaluate and implement these program efficiencies. The program doesn't stop there though -- we will continue to look for more ways to achieve program efficiencies, reduce risks, and maximize existing capabilities.