

The Transfer of Excess Facilities, Materials, and Wastes into DOE's Environmental Management (EM) Program: Successes Resulting from EM's Transfer Review Process- 11246

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ABSTRACT

The Office of Environmental Management (EM) developed a comprehensive review process to determine if excess facilities, wastes, and materials, nominated by other Departmental Program Offices and the National Nuclear Security Administration (NNSA), satisfy its transfer criteria. In 2008 and 2009, EM conducted in-person facility walkdowns and materials inspections of more than 350 excess liabilities, in order to determine if they met EM's acceptance criteria. During this review process, if it is determined that the excess liabilities meet transfer standards, EM "agrees to accept" them. If they fail to satisfy transfer criteria, they are rejected. When EM does agree to accept excess liabilities, they officially enter the program, but only when funding becomes available to disposition them. Until the time funding becomes available, the current owners retain responsibility for the liabilities, including any associated surveillance and maintenance (S&M) costs. Most recently, funding under the American Recovery and Reinvestment Act of 2009 (ARRA) has allowed EM to accelerate the cleanup of numerous excess facilities, wastes, and materials years earlier than planned, thereby saving millions of dollars by reducing the long-term surveillance and maintenance costs associated with these excess liabilities.

INTRODUCTION

As the Department of Energy (DOE) strives to promote scientific and technological innovation across the United States, there is a need for space to house these achievements. The current DOE complex consists of hundreds of aging facilities, wastes, and materials that are no longer needed for current Departmental missions. A number of these excess facilities, wastes, and materials require EM expertise to deactivate and decommission (D&D) the facilities and dispose of the wastes and materials. With the necessary governmental funding support, EM has the ability to D&D these excess facilities and disposition the wastes and materials that meet EM's acceptance criteria.

HISTORY

From its inception in 1989 until 2001, the EM program was responsible for the final disposition of radiological and nuclear waste, as well as the D&D of excess contaminated facilities across the DOE complex. In 2001, the Assistant Secretary for Environmental Management (EM-1) directed that EM would no longer be responsible for excess liabilities from other DOE programs, i.e. those programs would be responsible for dispositioning their own unfunded excess liabilities. This 2001 policy remained in effect until 2006. In August 2006, the policy was changed when the DOE Deputy Secretary mandated that EM should again hold eventual responsibility for the Department's excess environmental liabilities. As a result, in December 2007, EM-1 invited DOE Program Offices and the NNSA to nominate excess facilities, wastes, and materials for possible transfer to EM. In early 2008, EM began implementing its transfer review process by evaluating the nominated excess liabilities. Following an extensive and rigorous evaluation process, EM-1 signed memorandums to the NNSA, the Office of Nuclear Energy (NE), and the Office of Science (SC) in February 2009, which identified the excess facilities, wastes, and materials EM agreed to accept in the future. Additionally, the memorandum stated that EM was "agreeing to accept" the surplus liabilities, but only when funding became available to address them.

Important dates and milestones in the history of excess facilities transfers are captured in chronological order in Table I. Many of the activities listed in this table will be described in greater detail in later sections of this paper.

Table I: Excess Facilities, Wastes, and Materials Transfers Timeline

Date	Milestone
2001	Assistant Secretary of Environmental Management, EM-1 (J. Robison) declares that each DOE Program Office and NNSA is responsible for disposition of their excess facilities, wastes, and materials.
August 2006	Deputy Secretary of Energy, S-2 (C. Sell) issues memo on Corporate Program Review directing that EM ultimately be responsible for addressing “unfunded environmental liabilities and incorporating them into its baselines, commensurate with the risk such activities pose.”
December 2007	Assistant Secretary of Environmental Management, EM-1 (J. Rispoli) issues invitation to DOE Program Offices and NNSA to propose facilities, wastes, and materials for transfer to EM for final disposition.
January to February 2008	NNSA, NE, and SC submit transfer candidates.
May to July 2008	EM’s Office of D&D & Facility Engineering led walkdown reviews to evaluate acceptability and priority ranking of proposed transfers; generate list of facilities recommended for acceptance; and report to EM management.
November 2008	CD-1 approval for the Integrated Facilities Disposition Program (IFDP) at Oak Ridge Reservation.
December 2008 to January 2009	Negotiations between EM and NNSA/NE/SC on the evaluated excess liabilities.
February 2009	Assistant Secretary of Environmental Management, EM-1 (I. Triay) issues memorandums formally documenting facilities, materials and wastes that EM will agree to accept from NNSA, NE, and SC when funding becomes available.
February 2009	Congress approves the American Recovery and Reinvestment Act of 2009 (ARRA). EM receives \$6 Billion in funding. Some ARRA funding allows EM to cleanup a number of excess liabilities identified in the February 2009 memorandums.
April 2009	Site’s Project Operating Plans for ARRA projects approved to start work.
June 2009	EM’s Offices of D&D & Facility Engineering and Strategic Planning & Analysis conduct walkdown reviews of excess facilities at Lawrence Berkeley National Laboratory and Lawrence Livermore National Laboratory. For EM-1, the Review Team generates a list of facilities for possible acceptance by EM. No further action has been taken with regard to these facilities.
September 30, 2011	Anticipated date when the majority of EM ARRA D&D projects will be completed.
FY 2017	Anticipated start for transferring remaining excess facilities from NE, NNSA, and SC to EM for final disposition. However, this date will be driven by actual EM funding in the out years.

EM’S EXCESS FACILITY TRANSFER PROCESS FOR NON-IFDP EXCESS FACILITIES

Overview

EM has developed a comprehensive review process to determine if excess facilities, wastes, and materials nominated by other Departmental Program Offices and NNSA satisfy its transfer criteria. When nominations are received by EM, an evaluation of the proposed facilities, wastes, and/or materials is conducted to determine if the candidate liability meets EM’s “transfer acceptability” criteria. If it is determined that the proposed facilities, wastes, and materials satisfy transfer standards, EM will “agree to accept” the liability, and then formally notify the proposing office of its decision. However, satisfying EM’s transfer criteria does not mean EM has “accepted” the liability, it simply signifies that EM “agrees

to accept” it at some future time. Excess liabilities meeting the transfer criteria officially enter the EM program only when funding becomes available to disposition them. Until that time, the current program(s) retain ownership, and are still responsible for any upkeep and/or associated surveillance and maintenance (S&M) costs.

In implementing its initial evaluation and transfer process in 2008, more than 340 facilities, wastes, and materials were reviewed by EM (reviews were also conducted in 2009 on additional facilities, thus later increasing the total estimated number of nominated facilities to more than 350; refer to section *Non-IFDP Facility Walkdowns and Result*,). In performing the reviews, the EM Team separated the 340 excess liabilities into two distinct categories, namely the Non-IFDP and IFDP liabilities. This was done to clearly distinguish the excess liabilities that are part of the established IFDP at the Oak Ridge Reservation (ORR) from the excess liabilities nominated at nine other DOE sites.

A total of 123 non-IFDP facilities, wastes, and materials were proposed for transfer in response to EM-1’s invitation in December 2007. (See Table II.) These facilities, wastes, and materials were evaluated against EM’s transfer criteria, which is described below.

Table II. Proposed Transfers of Non-IFDP Excess Facilities, Wastes, and Materials

Site	Proposed from SC	Proposed from NE	Proposed from NNSA	Total Proposed
Argonne National Lab	16	-	-	16
Brookhaven National Lab	15	-	-	15
Fermi National Accelerator Lab	1	-	-	1
Idaho National Lab	-	50	-	50
Los Alamos National Lab	-	-	11	11
Lawrence Livermore National Lab	-	-	4	4
Nevada Test Site	-	-	6	6
SLAC National Accelerator Lab	18	-	-	18
Savannah River Site	-	-	2	2
TOTAL	50	50	23	123

DOE Orders and Guides Which Drive EM’s Transfer Process

DOE Order 430.1B, *Real Property Asset Management*, is the primary directive that establishes the general framework for transferring excess facilities from one DOE Program office to another. DOE Order 430.1B contains the specific requirements for the transfer of excess contaminated facilities, and was tiered off its predecessor document, DOE Order 430.1A, *Life Cycle Asset Management (LCAM)*. In addition, EM employs DOE Guide 430.1-5, *Transition Implementation Guide*, which contains guidance on the technical approach used to transition excess facilities from one DOE Program Office to another. Moreover, EM has developed *Standard Operating Policies and Procedures (SOPP) #34, Excess Facility Transfer to the Office of Environmental Management*, which provides the procedures and criteria EM utilizes to determine if an excess facility, waste, or material is eligible for transfer into the EM Program.

Specific Transfer Criteria

Facilities

Criteria implemented by EM to determine transfer eligibility of an excess facility include:

- The facility must be certified as excess (surplus) to Departmental mission needs, not just the mission needs of the current owner (Program Office or NNSA);
- The facility is “mission contaminated,” defined as chemical and/or radioactive contamination resulting from mission operations, and not from construction activities and associated materials, such as asbestos, lead-based paint, and PCBs in light ballasts;
- The facility must be an individual, self-contained facility, and not a room, wing or annex of a larger operating complex;
- If a portion of a facility (e.g. a wing) is proposed for transfer, a physical separation of common systems (e.g. ventilation) and utilities, and infrastructure shall be accomplished and/or funded by the current owner requesting the transfer; and
- The facility shall already be or shall be placed in a stable and known condition/configuration prior to transfer (refer to DOE Guide 430.1-5, *Transition Implementation Guide*).

Materials and Wastes

There are no DOE Orders, directives or guidance documents analogous to DOE Order 430.1B, *Real Property Asset Management* that establishes transfer criteria for accepting excess wastes and/or materials. Moreover, unlike certain commonalities often present in the D&D of excess facilities, the level of difficulty in managing and dispositioning radioactive wastes or materials varies greatly, due to their specific chemical and/or radiological properties, pre-treatment and stabilization requirements, regulatory schemes, risks to worker and public safety, and current paths to ultimate disposition.

Criteria used to evaluate wastes and materials for possible transfer to EM include:

- Specific waste or material must be excess, and not a strategic asset that must be retained;
- Be defined as Transuranic (TRU), requiring disposal at the Waste Isolation Pilot Plant (WIPP); or
- Require specialized treatment and/or processing with no existing disposition path, thereby requiring EM expertise. Transfer of special nuclear materials (SNM) and spent nuclear fuel (SNF) are determined and/or negotiated on a case-by-case basis.

In addition, hazardous, low-level, and mixed low-level wastes that have a current disposition path are to be managed and paid for by the program that generates them. These plans are to be integrated with other DOE-wide efforts for the same waste types. All excess lead should be offered for recycle within the nuclear industry because there is an existing demand for lead to use in fabricating new waste containers and shielding. There is a controlled reuse path that should be followed, with disposal of lead being the last option. Nominations of contaminated environmental media, such as soils and groundwater, are evaluated on an individual basis, considering the need for EM’s expertise and capability in acquiring and managing critical remediation activities.

Non-IFDP Facility Walkdowns and Results

All facilities, wastes, and materials nominated for transfer to EM were reviewed and evaluated to ensure they satisfied EM’s acceptance criteria. During the initial walk down process in 2008, EM convened an integrated team comprised of representatives from various EM program offices and contractors. The EM Review Team, led by the Office of D&D and Facility Engineering, conducted walkdowns at nine sites, on buildings encompassing more than 1.5 million gross square feet, as well as reviewing materials and wastes with an estimated volume of more than 5,000 cubic meters. The sites included Argonne National Laboratory, Brookhaven National Laboratory, Fermi National Accelerator Laboratory, Idaho National Laboratory, Lawrence Livermore National Laboratory, Los Alamos National Laboratory,

Nevada Test Site, Savannah River Site and the Stanford Linear Accelerator Center. These walkdowns were conducted from May through July 2008.

The primary objective of the walkdowns was to evaluate whether the excess facilities, wastes, and materials met EM’s transfer criteria. A structured checklist was used to record field observations, as well as collect information on overall facility conditions and to identify any risks and liabilities associated with D&D activities. In addition, any pre-transfer stabilization actions required of the requesting program office were noted during the walkdowns. Evaluation of the walkdown results led to EM determining if the excess liability was acceptable for transfer to EM, and then a formal recommendation was made on the liability. Lastly, using data obtained during the walkdowns, conceptual cost estimates were prepared for facility D&D and material and waste disposition on those items recommended for acceptance. The cost estimates generated are equivalent to the Association for the Advancement of Cost Engineering (AACE) Class 5 rough-order-of-magnitude (ROM) estimates.

Following the “acceptance” evaluations, there was a need to prioritize the timing of accepting facilities, so that the EM program had a solid and credible basis to justify the order for addressing the liabilities through EM budget requests. To support this prioritization, the Team established a traditional weighting and grading method to generate a priority ranking among those facilities *recommended for acceptance*. A similar approach was applied to wastes, materials, and remediation/cleanups that were also *recommended for acceptance*.

Walkdown results, with recommendations for acceptance, cost estimates and priority ranking, were documented in a comprehensive report that was submitted to EM senior management in September 2008 [1]. Based on both the results of the walkdowns and the recommendations presented in this report, EM issued formal acceptance letters to the proposing DOE organizations, documenting which facilities it would accept when future funding became available. The facilities EM agreed to accept are summarized in Table III.

Table III. Non-IFDP Excess Facilities, Wastes, and Materials EM has Agreed to Accept

Site	Agreed to Accept from SC	Agreed to Accept from NE	Agreed to Accept from NNSA	Total EM Agreed to Accept
Argonne National Lab	12	-	-	12
Brookhaven National Lab	10	-	-	10
Idaho National Lab	-	36	-	36
Los Alamos National Lab	-	-	1	1
Lawrence Livermore National Lab	-	-	4	4
Nevada Test Site	-	-	6	6
SLAC National Accelerator Lab	1	-	-	1
Savannah River Site	-	-	2	2
TOTAL	23	36	13	72

The primary reasons for recommending rejection of many candidate facilities was due to either their lack of contamination or they were simply not excess. The basis for recommending rejection of many of the materials and wastes was largely driven by current DOE policy, which mandates that DOE Program

Offices be responsible for the management and disposition of wastes generated by their own mission activities. In most cases, these wastes and materials inventories were accrued subsequent to the Program Offices assuming newly-generated waste responsibilities. Conversely, materials and wastes EM agreed to accept are those directly associated with: 1) D&D activities; 2) TRU waste (for which the EM program has DOE-wide responsibility); and/or 3) wastes with no current disposal path.

The evaluation and review of additional transfer candidate facilities occurred in June 2009. The facilities were located at two sites: the Lawrence Berkeley National Laboratory and the Lawrence Livermore National Laboratory. (See Table IV.) These reviews followed the same general process as the initial effort, although no priority ranking exercise was conducted. Formal reports documenting the process and results, along with recommendations for acceptance, were prepared for EM senior management. However, no further action has been taken on these facilities.

Table IV. Additional Facilities Proposed for Transfer

Site	Proposed from SC	Proposed from NNSA	Total Proposed
Lawrence Livermore National Lab	-	14	14
Lawrence Berkeley National Lab	14	-	14
TOTAL	14	14	28

INTEGRATED FACILITIES DISPOSITION PROGRAM

As part of the Department's effort to complete environmental remediation at the Oak Ridge Reservation (ORR), a large cleanup initiative named the Integrated Facilities Disposition Program (IFDP) was proposed. The IFDP encompasses the D&D of 439 facilities within the Y-12 Complex and the Oak Ridge National Laboratory, as well as the remediation of soil and groundwater areas. Currently these facilities are owned by NNSA, NE, SC, and EM. Of the 439 facilities within IFDP, 229 are owned by NNSA, SC and NE. (See Table V.)

On July 20, 2007, EM-1 approved Critical Decision 0 (CD-0), *Mission Need*, for IFDP. As part of the December 2007 memorandum requesting Program Offices and NNSA to submit excess facilities and environmental remediation activities for possible transfer to EM, the Oak Ridge Office (ORO) submitted candidates owned by NNSA, NE, and SC. Facility walkdowns were conducted across the ORR from July through August 2008, and the Team submitted recommendations on which facilities and remediation activities satisfied EM's transfer criteria. However, IFDP excess liabilities are following a different path to cleanup than the Non-IFDP items identified earlier in this paper. Unlike Non-IFDP facilities, the IFDP is already being managed under DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. On November 17, 2008, EM-1 approved CD-1, *Alternative Selection and Cost Range*, for IFDP. Because the IFDP has obtained CD-1 status, DOE's ORO will manage the D&D and cleanup of the 229 non-EM excess liabilities under the IFDP initiative, using available program funding. At this time, the ORO is moving forward to prepare CD-2, *Performance Baseline*, documentation for the IFDP.

Table V. Transfer of Excess Facilities under IFDP at Oak Ridge

Site	Transfers from SC	Transfers from NE	Transfers from NNSA	Total IFDP Transfers
Oak Ridge National Lab	131	1	-	132
Y-12	18	2	77	97
TOTAL	149	3	77	229^a

^aThe 229 total does not include the remaining facilities within IFDP that are EM owned.

IMPACT OF THE AMERICAN RECOVERY AND REINVESTMENT ACT OF 2009 ON EM'S EXCESS FACILITIES

The American Recovery and Reinvestment Act of 2009 (ARRA) allowed EM to accelerate the D&D of many excess facilities that EM agreed to accept from NE, NNSA, and SC. ARRA funding permitted EM to address these facilities earlier than expected, and by doing so, EM decreased its long-term environmental liability, as well as that of the Department. Several DOE sites were granted funding under ARRA to D&D facilities EM agreed to accept. The sites are: Argonne National Laboratory, Brookhaven National Laboratory, Idaho National Laboratory, Oak Ridge National Laboratory and Y-12. (See Tables VI and VII.)

Table VI. Non-IFDP Facilities D&D and Cleanouts using ARRA Funding

Site	Facilities D&D from SC	Facilities D&D from NE	Cleanouts/ERs from SC	Total Facilities/Cleanouts Completed under ARRA
Argonne National Lab	2	-	5	7
Brookhaven National Lab	1	-	1	2
Idaho National Lab	-	20 ^b	-	20
TOTAL	3	20	6	29

^bEM initially identified 18 facilities the program would agree to accept for transfer. However, INL actually proposed 20 facilities for transfer, but during the submission process in early 2008, combined a set of three into one. Thus, 20 total facility demolitions have been completed under ARRA. The two additional facilities are Buildings PBF-756 and PBF-761, and were not identified as facilities EM agreed to accept in the February 2009 memorandum to NE.

Table VII. IFDP Facilities D&D and Cleanouts using ARRA Funding

Site	Facilities D&D from SC	Facilities D&D from NNSA	Cleanouts from SC	Cleanouts from NNSA	Total Facilities/Cleanouts Completed under ARRA
Oak Ridge National Lab	32	-	3	-	35
Y-12	3	1	-	3	7
TOTAL	35	1	3	3	42

LOOKING AHEAD

When ARRA work is complete, EM will continue to work with NNSA, NE, and SC to determine how best to address the remaining excess facilities, wastes, and materials EM agreed to accept in February

2009. (See Table VIII.) In addition, EM is working with the other programs to prioritize the remaining scope, based on risk and programmatic need. Given the existing cleanup priorities within EM’s current budget profiles, the earliest EM can address any more of these remaining unfunded liabilities is FY 2017. EM will continue to promote needs in the budget formulation process if certain excess liabilities cannot wait until FY 2017.

Table VIII. Remaining Non-IFDP Excess Facilities, Wastes, and Materials – Post ARRA

Site	Remaining Agreed to Accept from SC	Remaining Agreed to Accept from NE	Remaining Agreed to Accept from NNSA	Total Remaining Agreed to Accept after ARRA
Argonne National Lab	7	-	-	7
Brookhaven National Lab	6	-	-	6
Idaho National Lab	-	18	-	18
Los Alamos National Lab	-	-	1	1
Lawrence Livermore National Lab	-	-	4	4
Nevada Test Site	-	-	8	8
SLAC National Accelerator Lab	1	-	-	1
Savannah River Site	-	-	2	2
TOTAL	14	18	15	47

Table IX. Remaining IFDP Excess Facilities - Post ARRA

Site	Remaining Agreed to Accept from SC	Remaining Agreed to Accept from NE	Remaining Agreed to Accept from NNSA	Total Remaining Agreed to Accept after ARRA
Oak Ridge National Lab	99	1	-	100
Y-12	15	2	76	93
TOTAL	114	3	76	193^c

^c As referenced earlier in this paper, the entire IFDP contains 439 excess liabilities requiring cleanup. Again, please note that the 193 remaining liabilities portrayed in Table IX include only those owned by NNSA, NE, and SC (the non-EM portion of the IFDP).

References

1. U.S. Dept of Energy, Office of Environmental Management, Office of Engineering and Technology, “Assessments of Facilities, Materials, and Wastes Proposed for Transfer to DOE-EM,” September 23, 2008.