



Environmental Management Advisory Board (EMAB)

Department of Energy
Washington, DC 20505

September 29, 2017

Mr. Jim Owendoff
Acting Assistant Secretary, Environmental Management
U.S. Department of Energy
Office of Environmental Management (EM-1)
1000 Independence Avenue, SW
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Dear Jim:

EMAB Report on Excess Facilities Assessment

The Environmental Management Advisory Board (EMAB) was initially asked to consider the topics of excess facilities and critical infrastructure at the April 2016 Board Meeting in Aiken, SC. Following the September 2016 Board Meeting, an Excess Facilities and Infrastructure Subcommittee (Subcommittee) of the EMAB was formed. Terms of Reference for the Subcommittee were developed in May 2017 to formally undertake a benchmark assessment of the excess facilities and critical infrastructure programs in the Office of Environmental Management (EM) against other programs of comparable size in government and industry.

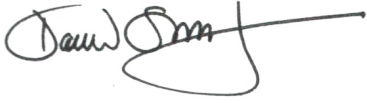
The goal of the assessment was to identify and evaluate features or management tools and techniques from other programs that could be useful in support of the EM excess facilities and infrastructure mission. New EM leadership, subsequent to approval of the Terms of Reference, directed the Subcommittee de-scope their effort to substantially complete work by the September 2017 Board Meeting.

The attached Excess Facilities Report (Interim) from the EMAB fulfills the Terms of Reference as amended by EM guidance. It provides a listing and summary of benchmark documents from other Federal agencies and universities relevant to both excess facilities and critical infrastructure. It further provides a summary of suggested approaches for further consideration in EM's management of excess facilities. The Board and Subcommittee is prepared to provide further analysis or support on the excess facilities or critical infrastructure topics at such time when EM leadership requests such support.

Thank you for the opportunity to provide this report in support of the EM mission. The Board and in particular our Chair for the Excess Facilities Subcommittee - Frazer Lockhart - and I are available for further discussion of the observations and summary points of this interim report with you or members of the EM staff per your direction.

Should questions exist, please contact me at davidswindlejr@comcast.net or phone at 240-447-5782. Alternatively, contact

Sincerely,

A handwritten signature in black ink, appearing to read "David W. Swindle, Jr.", with a long horizontal stroke extending to the right.

David W. Swindle, Jr., P.E.

Chairman – Environmental Management Advisory Board

Cc: Jennifer McCloskey, Designated Federal Official, EMAB (EM-4.x)
EMAB Board Members



ENVIRONMENTAL MANAGEMENT ADVISORY BOARD

Excess Facilities Interim Report

Excess Facilities and Infrastructure Subcommittee
9-19-2017

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Subcommittee Members

- Frazer Lockhart, Stoller Newport News Nuclear, (Subcommittee Chair)
- Jane Hedges, Consultant, former Washington State Department of Ecology
- Beverly Ramsey, PhD, Desert Research Institute
- Shelly Wilson, South Carolina Department of Health & Environmental Control

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I. Introduction

The Environmental Management Advisory Board (EMAB) initially addressed the topic of excess facilities and critical infrastructure at the April 2016 Board Meeting in Aiken, SC. Some additional research was requested and at the September 2016 Board Meeting in Alexandria, VA a brief literature review of critical infrastructure was presented. Based on that meeting an Excess Facilities and Infrastructure Subcommittee (Subcommittee) of the EMAB was formed to develop some ideas and recommendations for the April 2017 Board Meeting in Oak Ridge, TN. Following that meeting Subcommittee Terms of Reference were developed to formally undertake a benchmark assessment of the excess facilities and infrastructure programs against other programs of comparable size in government and industry. The goal of the assessment was to identify and evaluate features or management tools and techniques from other programs that could be useful in support of the Office of Environmental Management (EM) excess facilities and infrastructure mission. EM leadership changes subsequent to approval of the Terms of Reference directed the Subcommittee to focus on excess facilities and substantially complete work by the September 2017 Board Meeting.

II. Current Situation

A. Statutory / Regulatory / Executive Order Basis

Excess facilities, also called under-utilized or unneeded facilities, are a continuing focus for the Executive agencies. Executive Order 13327 “Federal Real Property Asset Management,” originally issued in 2004, is still in force and directs agencies to implement systems for efficient management and replacement of real property resources. Office of Management and Budget (OMB) memo 12-12, “Promoting Efficient Spending to Support Agencies Operations” issued in 2012, established a ‘Freeze the Footprint’ policy to control utilization and spending associated with real property. Agencies have responded to this guidance in varying degrees appropriate to their mission. DOE Order 430.1C, “Real Property Asset Management” issued August 2016, is the controlling guidance for DOE that utilizes a data-driven, risk-informed, performance-based approach to life-cycle management of real property assets.

B. EM Basis

1. Excess Facilities description

The Department of Energy’s (DOE’s) Environmental Management (EM) Program established in 1990, included decontamination and decommissioning (D&D) of facilities with varying degrees of known and unknown site conditions and support. EM inherited its mission “as is” by receiving many operational and nonoperational defense nuclear facilities determined excess to needs (i.e., excess facilities). Over the last twenty-five years, EM has made substantial progress in the disposition of contaminated excess facilities. Over 3000 facilities have been dispositioned, and EM has continually refined the tools and techniques for D&D and remediation to achieve greater efficiency.

2. Infrastructure description

Along with excess facilities discussed above, EM also inherited site infrastructure, or utilized site infrastructure as a tenant, that was usually aging and often past its design life. EM is now the site landlord with responsibility for site infrastructure at most of its largest sites. EM has assembled initial baseline information identifying the condition

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and useful life of infrastructure systems and special facilities that are critical to support the EM mission. The replacement or repair costs for infrastructure that is substandard or inadequate has a ROM cost over \$65 billion.

C. EM Current Status

1. Excess Facilities

a) NNSA, Science facility transfers

As facilities across the DOE have continued to age and become nonoperational due to mission changes and replacement, EM has received increasing pressure to accept additional facilities for disposition from the National Nuclear Security Agency (NNSA), Office of Science (SC), and Office of Nuclear Energy (NE). In 2016, the DOE provided a Report to Congress that summarized the excess facility challenge and costs throughout the DOE. The current inventory of 2,349 excess facilities, with a rough order of magnitude (ROM) cost to disposition of \$32 billion, will grow by 1,000 facilities in the next ten years.

b) Congressional priority and budget

The proposed Presidential budget for fiscal year (FY) 2018 showed an addition of \$500 million for excess facilities disposition, including disposition of facilities transferred from NNSA. However, budget markups by both the House and Senate appropriating committees eliminated most or all of this addition. Thus for the foreseeable future budget pressures will continue to constrain funding for transfer of additional excess facilities to EM.

2. Infrastructure

The majority of the references reviewed for this report address management of infrastructure, and address it in more significant detail than excess facilities disposition. Many of these references are judged as having useful policies, procedures, approaches, tools, and templates in support of improved infrastructure management. Due to time and resource constraints no further detailed analysis of the infrastructure topic is included in this report.

III. Challenges

The Environmental Management program within the DOE has faced many challenges with excess facilities since its inception in 1990. Hard won lessons have led to improvements in technical execution, waste management, contracting, and program administration. Discussed below are the major elements that continue to create challenges for excess facilities disposition.

A. Decisions / Prioritization

1. For existing EM Program facilities

DOE EM budget are always constrained by multiple factors and always less than requirements. Excess facilities disposition has a particularly hard time competing for funding priority unless directly implicated in a regulatory or new construction effort. Typically the risks to the public and environment are lower for excess facilities than for

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environmental media. Water and soil that are more mobile and thus more readily able to impact the public, thus scoring higher in risk-based prioritization approaches.

2. For transfer into EM

Dispositioning excess facilities is a core mission for EM, while for other DOE Offices and the NNSA it is an ancillary mission. Thus DOE policy and guidance has recognized the benefit of utilizing EM's focus and expertise as the lead organization to address excess facilities. Protocols for transfer of excess facilities into the EM Program were developed in 2009 and have been refined several times, but the transfer process is still difficult and time-consuming to navigate.

B. Cost Control / Funding

1. "Headroom" in annual EM budget

The EM budget has experienced regulatory and other drivers for annual funding in excess of administration budgets and Congressional appropriations since inception. Therefore excess funding or 'headroom' in the EM budget is not available for additional excess facility missions, unless new or transferred funding accompanies the transferred excess facilities.

2. Congressional "earmarks"

Specific Congressional priorities or 'earmarks' have occasionally directed EM funding toward specific projects or tasks that then reduces the available funding for other programmatically planned and budgeted projects. The dynamic nature of the EM budgeting process continues to make long-term programmatic initiatives more difficult to sustain.

3. Alternative funding approaches

As a Federal agency the DOE EM program is constrained by law from exercising certain alternative funding mechanisms that may be used in private industry. Alternative funding approaches may require specific legislation or coordination with OMB and Congressional committees during the budgeting process to be successful, thus making their use more complex.

C. Management / Approaches

1. Availability of facilities to execute disposition

Facilities evaluated as excess to needs often have encumbrances that make them unavailable for disposition. These encumbrances may come from security restrictions due to geographic location, physical or utility attachments to other facilities with ongoing missions, or active use for secondary or tertiary activities such as excess equipment storage.

2. Contracting approaches

Similar to the restrictions on alternative funding, the contracting approaches available for excess facility disposition are constrained by Federal law and regulations.

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Contracting approaches to facilitate excess facility disposition must be planned and executed well in advance of expected needs.

3. Regulatory status

Excess facilities rarely have the same degree of regulatory deadlines and drivers as for contaminated land, water, and waste materials. This is because excess facilities are usually still under EM Program control and only secondarily implicated by environmental laws, such as for contaminant releases that are underneath the facility.

IV. Considerations

A. EM History Summary

The EM Program has addressed excess facilities as a core mission since its creation. As annual budgets became more constrained and other program elements, such as high level waste, increased in relative priority, a number of innovative approaches were used to leverage the limited funds for greater scope completion. Both positive and negative lessons have come from these efforts, and some of the most significant are noted below.

1. Positive lessons

a) Accelerated Closure Site Demolition

The accelerated completion of the “Closure Sites” (e.g. Fernald, Mound, and Rocky Flats) provided a breakthrough in whole site cleanup decades sooner and for billions of dollars less than baseline estimates. Multiple contracting, political, technical, and administration efforts had to come together to be successful. Lessons from these efforts are the subject of a separate EMAB review.

b) American Recovery and Reinvestment Act (ARRA)

The infusion of new funding, adding nearly 50% to the EM budget in 2009 and 2010, allowed tremendous progress in demolition of excess facilities. This supported clearing of large areas, thus allowing EM to “Shrink the Footprint” of its land and facility holdings. For cleanup and demolition projects using known and established techniques, performance was typically ahead of schedule and under budget.

c) East Tennessee Technology Park (ETTP)

The ETTP is a top example of re-industrialization of excess facilities for non-DOE agencies. ETTP has served as a testing ground for multiple approaches, including shared use, shared cleanup, leasing strategies and facility transfers. An active and engaged Community Reuse Organization with strong regional political support has been instrumental in the ETTP success as a facility reuse model.

d) Wildlife Preserves and Refuges

Designation of former DOE sites for dedicated open space use, specifically for wildlife and habitat preservation, has been successful with larger tracts of land.

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The Fernald Preserve has become a valuable resource for habitat preservation and community education, while the Rocky Flats National Wildlife Refuge has protected xeric grass prairie ecosystems and the Denver Front Range backdrop from commercial development.

2. Negative lessons

a) *Idaho Pit 9 Retrieval Facility Privatization Demonstration*

This demonstration effort was the first major EM attempt to contract for privately-financed capital construction. The contractor's investment would then be repaid through a higher unit cost of waste treatment once the facility became operational. Technical design, construction, and regulatory issues confounded the project, which was never completed nor operated. Idaho's Pit 9 showed that sufficient technical and regulatory maturity must be established for privately financed capital project funding alternatives.

b) *Advanced Mixed Waste Treatment Facility Privatization*

This privatization effort improved on the Idaho Pit 9 experience by selecting a facility design and the company to build it (British Nuclear Fuels Limited or BNFL) that had built and operated a very similar facility at Sellafield in the United Kingdom. The construction and startup went reasonably well, but when DOE sought further incentives in the operating portion of the contract, BNFL balked. The operating portion of the contract was where BNFL was to recover the cost of the construction through a per drum fee for processing waste. BNFL was unwilling to modify the contract terms and instead negotiated to sell the facility to the DOE. So the facility was successful, but did not really operate per the alternate financing model as intended.

c) *American Recovery and Reinvestment Act (ARRA)*

Although ARRA funding was very successful for well understood, so called 'shovel-ready' projects, it did not work nearly as well for projects with more complex technical or regulatory conditions. The extended time and effort to resolve technical and regulatory challenges was inconsistent with the ARRA program criteria, and thus these more complex projects were generally less successful. These less successful ARRA projects showed the importance of selecting projects which align with the criteria for a specific funding source.

B. Other Agency Benchmarks

Multiple benchmarks were searched and reviewed, mostly from internet-based sources, for agencies with large real property and facility inventories similar to DOE. The general character of these benchmarks based on a cursory review is provided below, and also serves as a general guide to the Reference Review Summary in Attachment A.

1. Department of Defense (DoD) / Services

The DoD and associated Services (e.g. Army, Navy, Air Force) have extensive real property holdings throughout the world. Their systems and techniques are very mature and individual service guidance has been assembled into a Unified Facilities Criteria

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Program. The guidance has a much stronger focus on infrastructure and maintenance management. Agencies still maintain proven templates and tools for specific mission-tailored use.

2. Department of Interior (DOI) / Bureaus

The DOI and associated Bureaus (e.g. Forest Service, National Park Service) have extensive land holdings with unique historical facilities. The DOI mission is typically focused to public use, and includes preservation of historical and cultural assets. Similar to the DoD the DOI guidance focuses more on infrastructure and maintenance with budgets that must address a broad scope of missions.

3. Federal Aviation Administration (FAA)

The FAA has responsibility for airport facilities scattered across the country. Many small private and municipal airports are unstaffed with minimal facilities which stresses limited budgets.

4. Other Department of Energy (DOE)

a) National Nuclear Security Agency (NNSA)

The NNSA has many facilities similar to EM holdings, since most of the current EM were once operating NNSA facilities. NNSA has developed some real property tools, such as the Builder software, which may be useful for EM.

b) Office of Energy Efficiency and Renewable Energy (EERE)

The EERE has a strong technology transfer and entrepreneurial focus. There are some examples of alternate financing in support of their mission.

5. Government Accountability Office (GAO)

The GAO provides for Congressional oversight of federal agencies. They provide independent assessment of agency policies and systems for real property, including alternate financing.

6. Other Governmental Organizations

a) General Services Administration (GSA)

The GSA has the largest number of real property holdings, acting as a service agency and landlord for other federal agencies. Their real property systems are mature and formal.

b) United States Department of Agriculture (USDA)

The USDA has a few real property concerns with hazardous materials, mostly from agricultural wastes and farm waste units.

c) National Institute of Health (NIH) / Food and Drug Administration (FDA)

The NIH/FDA provide a few techniques and tools for disposition of laboratories with hazardous constituents.

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d) Environmental Protection Agency (EPA)

The EPA provides overall guidance for cleanup criteria, but in recent years has shifted emphasis toward re-use of lands. A Brownfields reuse initiative is currently in process of development.

e) Office of Management and Budget (OMB)

The OMB prepares overall federal policy and guidance for management of real property assets.

7. Non-Governmental Organizations

Most non-governmental organizations have excess facilities to disposition, sometimes with drivers and risks as pressing as for governmental agencies. Commercial nuclear reactors and university research facilities are excellent examples. However, the tax status, capitalization, financing, and public accountability is far different for non-governmental agencies. Thus, although there are some excellent examples of excess facility disposition in the private sector, it is generally very difficult to apply these for use by government agencies. Recognizing this global challenge only a limited number of non-governmental examples are addressed in this report.

C. Potential Approaches

The potential approaches for further EM consideration discussed below were developed from the varied experience of the Subcommittee members. This experience includes multiple federal agencies, state regulators, DOE contractors, and academia. Most of these potential approaches could fit in more than one grouping, but they are discussed here in the most applicable group. The Excess Facilities Approaches Table in Attachment B shows the multiple group applicability.

- Decisions / Prioritization

1. Organization of excess facilities into portfolios with similar criteria would be a useful management tool to support budget prioritization and justification. This approach is already in place to some extent at most sites, but could be expanded with portfolio criteria that goes beyond geographical location or contamination levels. Proximity to another large facility, reuse potential, waste disposition path status, facility condition, and accessibility for D&D are some additional portfolio criteria to consider. Portfolio approaches have been used successfully by DOI to advance specific funding and program initiatives.

2. Legislative action may be appropriate for specific, high-priority disposition targets. Specific language supported both of the large EM Closure Sites to establish the wildlife refuge or preserve end uses. Legislative language which specifically bundled smaller excess facility projects with larger projects, or linked excess facility disposition to a new construction effort, could be helpful. Broader strategic or public interest priorities such as climate change (flooding) or seismic concerns, could also link to excess facility disposition.

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3. Excess facilities often have constraints, such as security access or active support uses, than increase the cost of disposition. Use of a scoring index, such as the Technical Maturity Index for new facilities, could be used to score excess facilities according to their readiness for disposition, thus supporting prioritization decisions for funding.

a) *Generation of wastes with no clear disposition pathway (i.e. 'orphan wastes') has occurred during excess facility D&D. Any criteria should include a full understanding of wastes generated from the excess facility disposition and their path for disposal.*

b) *Alignment with a strategic or programmatic mission driver could be a positive criteria element when evaluating the readiness of excess facilities for disposition.*

c) *Risk of degradation and its potential to impact the public is another criteria that should be mandated. The DOI has developed multiple approaches for evaluation and prioritization based on this kind of criteria.*

4. A DOE-wide Real Property Office at the Deputy Secretary level would provide the means for consistent analysis and facilitate potential intra-agency reuse or shared use collaboration. Both the DoD and DOI make use of real property boards and steering committees using very senior executives.

- Cost Control / Funding Alternatives

5. Request specific legislative authority from Congress in the form of a line item or budget category for addressing excess facilities. Even a small amount would provide a recognition of need from Congress ensure continuity of funding for excess facilities obligations. Such an approach would likely require a "champion" to work with OMB and Congress and to educate appropriators on the current costs, escalating future costs and risks from excess facilities.

6. Legislative action could be used to limit the impact of requirements that increase the cost of addressing excess facilities. One specific example is the McKinney-Vento Homeless Assistance Act of 1987 which requires an analysis of all excess federal facilities for possible use as a homeless shelter before they can be demolished. Legislative recognition that former nuclear weapons production facilities are not suitable would eliminate dozens of hours of analysis and documentation.

7. End use/reuse knowledge is vital to prudent spending for excess facilities. Barring eminent threat, D&D and cleanup spending for an excess facility is only needed to a level that supports the anticipated end use/reuse. Disposition with this kind of end use focus provides efficiencies which may free up funds for disposition of additional excess facilities to their desired reuse state.

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8. Identify opportunities for shared compatible use of excess facilities/land with other DOE programs, contractors, other federal government agencies, state agencies, universities, local governments, communities and businesses. In return for use, the other entity would fund some or all of hotel costs, associated cleanup costs to desired end use state and a portion of associated infrastructure maintenance/upgrade costs.

a) Each site would explore whether there are regional, mission or activity similarities between potential partners that enable compatible use sharing. Assess interest of other entities to acquire or lease excess facilities/land areas for re-use. Other entities may have an interest in land, highly secure areas, proximity to intellectual expertise, use of one-of-a-kind facilities, reduced purchase/lease cost or access to infrastructure.

b) There are many examples where federal government has transferred contaminated land and facilities to other entities through a Finding of Suitability for Early Transfer under the Comprehensive Environmental Response, Compensation and Liability Act.

c) Organization of excess facility inventory by asset/geography/infrastructure availability portfolios (discussed in C.1) with marketing by a Real Property Office (discussed in C.4) would help clarify outside interest. DOE may also assess interest through communication with state commerce departments or community reuse organizations.

9. The timing may be favorable for EPA facilitation of DOE excess facility reuse by other entities. EPA currently has a renewed interest in facilitating contaminated site repurposing as evidenced by EPA's July 2017 Superfund Task Force Recommendations. As part of the related News Release, EPA Administrator Scott Pruitt stated "There is nothing more core to the Agency's mission than revitalizing contaminated land." GSA has planned a new initiative for FY 2018 and beyond addressing "brownfields" repurposing of specific properties meeting specific criteria. The discussions are underway within the GSA Excess Facilities Program but are not available for review/discussion as of September 2017.

10. Excess facilities with constraints, such as security access, that increase the cost of disposition should be deferred until the constraint is removed, In this manner the limited funding for excess facilities would be used the most efficiently. For those cases where mission need required disposition even with cost-driving constraints, the entity with the mission need should bear the excess cost of the excess facility disposition.

- Management / Approaches

11. Distinct from legislative budget authority, EM could provide a fixed amount or percentage of the budget annually for use in addressing excess

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facilities. This funding would be held at EM Headquarters (HQ) for authorization to individual sites based on priority, safety or other criteria..

- a) *This would establish the programmatic commitment reflecting an understanding of the need for regular and consistent funding for addressing the large volume of excess facilities across the complex.*
- b) *Allows HQ the option of determining the most effective application of the funds either by individual sites receiving the bulk of the funds or smaller portions provided to multiple sites to fit with cleanup legal obligations.*

12. Authorize the sites to budget a fixed amount or percentage of their annual budgets under the auspices of minimum safety or operations to have an annual allotment that will be used to address excess facilities.

- a) *This would allow the sites to do comprehensive planning based on a predictable funding amount (even if very minimal) to address excess facilities in an organized manner.*
- b) *Reduces the ‘start and stop’ method of addressing excess facilities which currently exists. Advances the concept of excess facilities disposition as a programmatic element of the site cleanup mission.*

13. Link excess facilities disposition within new contracts or other related missions. For example, if you are contracting for cleanup of a large waste site require some/any adjacent excess facilities to be dispositioned at the same time.

- a) *Contractors could be motivated by receiving additional fees at the end of a contract period (e.g. Hanford River Corridor Closure Contract) if they successfully removed additional excess facilities over the original contract scope within the contract budget.*
- b) *Maintain a “shovel ready” list of excess facilities with an approved disposition pathway to allow rapid mobilization if funding or opportunities of coordination become available.*
- c) *For new construction or expanded missions, include disposition (reuse, recycle, demolition) to make way for other activities proposed.*

14. There is precedent in the federal agencies for establishing a “standardized” or “pre-negotiated” set of contractors available to conduct excess facilities disposition. GSA has established such mechanisms and has successfully used these processes for cost and time efficient sole source or limited competition to decontaminate and disposition excess federal facilities. While the dominance of these projects have addresses minimally hazardous buildings/facilities, many have required asbestos abatement, mold abatement, or removal of PCB transformers/wastes. DOE implementing a similar procurement process or assigning non-radiological excess facilities to GSA for disposition might reduce the procurement load and reduce overall costs for appropriate facility disposition.

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V. Summary

Disposition of excess facilities will continue to grow in difficulty and urgency due to facility degradation, pressure to transfer facilities into EM, and continued budget constraints. Other governmental agencies also struggle with excess facilities challenges that have some aspects similar to those in EM. These agencies have developed policies, procedures, approaches, techniques, and tools which may be useful for EM to consider as a means to advance the excess facilities mission more effectively. Potential approaches presented briefly in this report, and the list of references reviewed as potential benchmarks, should be considered as a starting point for further analysis and improvement of the EM excess facilities program.

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 - EPA, Office of Solid Waste and Emergency Response, *RE-Powering America’s Land initiative: Financing Renewable Energy Projects on Contaminated Lands*, May 2013
 - OMB, Supplement to OMB Circular A-11, Part 7: Planning, Budgeting, and Acquisition of Capital Assets, *Capital Programming Guide, V 2.0*, June 2006
 - International Society for Pharmaceutical Engineering, *ISPE Good Practices Guide: Decommissioning of Pharmaceutical Equipment and Facilities*, June 2017
 - Maryland Department of Health and Mental Hygiene, Workgroup for Biocontainment Laboratories Oversight, *Report on the Health and Safety Issues Associated with High Containment Laboratories in the State of Maryland*, October 2013
 - Emory University, Environmental Health and Safety Office, *Lab Decommissioning Guidelines*, 11 Jan 16
 - Carleton University, Environmental Health and Safety Office, *Decommissioning of Laboratories and Laboratory Equipment*, undated – circa 2016
 - Boston University, Environmental Health & Safety Office, *Laboratory Decontamination and Decommissioning: In Depth*, undated – circa 2016
 - University of Arkansas – Little Rock, Safe Operating Procedure, *Laboratory Decommissioning*, undated – circa 2016
 - University of Saskatchewan, Safety Resources, *Facility Decommissioning Standard*, 2012

VII. Attachments

- A. Reference Review Summary Table
- B. Excess Facilities Approaches Table

Environmental Management Advisory Board (EMAB): *Interim Excess Facilities Report*

Attachment A – Reference Review Summary Table

| AGENCY | REFERENCE | MONTH YEAR | PAGES | FOCUS | ALT. FINANCE | EXCESS FAC. BENCHMARK | INFRASTR. BENCHMARK | COMMENTS |
|--------|-----------------------------------|------------|-------|---|--|--|--|---|
| DOD | Army BASEOPS08-16 | Aug-16 | 1 | Description of services provided by Base Operations Program - Army Corps of Engineers. Services this group provides for preventative maintenance and correction maintenance of facilities | No. Possible multi-year contracting | No, facility assessment services are indicated for analysis of facilities as one of the services provided. | No (see previous comment on assessment services) | "one stop shopping" for maintenance activities |
| DOD | Army Facilities Reduction Program | Oct-16 | 2 | Description of Facilities Reduction Program for eliminating excess facilities and structures by Army Corps of Engineers. | Possible use of reuse and recycle for offsetting costs | No, appears the service provided includes project development and scheduling, but no specific benchmarking criteria was referenced | See previous comment | Provides methodology for allocation of O&M costs to different cost categories |

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|--------|--|------------|-------|--|--------------|--------------------------------|--|---|
| DOD | Policy on Deferred Maintenance, Current Replacement Value and Facility Condition Index in Life-Cycle Cost Management | May-08 | 2 | Standardize approach for measuring and reporting asset condition | No | Very limited - decision matrix | Guidance, detailed approaches, techniques, and tools | Provides pre and post project management for removal |
| DOD | Army Facilities Repair and Renewal Program | Oct-16 | 1 | Provides design and execution for repair and renovation of facilities focused on a design build approach | No | No | No | Resource for contracting services |
| DOD | Memorandum - DOD Unified Criteria | May-02 | 1 | Memo replacing guidance for planning, design, construction, sustainment, restoration and modernization of DOD facilities | No | No | No | New guidance is MIL-STD-3007 which is included in reference list for review |

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|--------|---|------------|-------|--|--------------|--|--|---|
| DOD | Technical Memorandum 698_2 C41SR Reliability Centered Maintenance | Oct-06 | 96 | Technical manual for facility managers to develop and update preventative maintenance programs. Focused on electrical and mechanical systems | No | Process for analysis and development of maintenance planning might provide some assistance | Focus on electrical and mechanical systems is closer to infrastructure which may be helpful for failure analysis | Reliability centered maintenance which is a recognized process in industry and private sector energy groups as well as DOD. Evaluation of a comprehensive maintenance program |

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|--------|--|------------|-------|--|--------------|---|--|---|
| DOD | Technical Memorandum 698_1 C41SR Reliability /Availability | Oct-07 | 78 | Technical manual for facility managers to baseline reliability and availability of these facilities and identify "weak links" and provide cost effective strategies for improving reliability and availability | No | Matrix examples to judge reliability of systems could offer some baselining ideas for Excess Facilities | Provides some failure analysis processes for electrical and mechanical systems | Due to the complexity of the systems described in the document they use complex computer modeling for reliability analysis. |
| DOD | Technical Memorandum 698_3Reliability Primer | Oct-05 | 58 | | No | | | Appears to be the precursor to 698_1 . See comments above |

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|--------|--|------------|-------|--|--------------|---|---|--|
| DOD | Technical Memorandum 698_4 Failure Mode Analysis | Sep-06 | 75 | Technical manual for facility managers on Failure analysis for electrical and mechanical systems | No | Possible use of some of the comparable definitions for failure analysis | Ranking process for failure of systems based on safety risk and mission jeopardy might be useful for some IS analysis | Focused on design stage for new facilities and infrastructure. Could provide some general process recommendations for severity of risk ranking |

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|--------|--|------------|-------|--|--------------|---|---|--|
| DOD | Technical Manual 5-698-5 Reliability Survey Data | Jul-06 | 38 | Technical manual of reliability data for facility engineers on power generation, power distribution and HVAC systems affecting critical systems such as communications, computer and intelligence systems. | No | May be useful comparison to facilities that provide power and HVAC. | May be good resource for design and maintenance strategies for power generation, power distribution and HVAC systems as well as process for determining reliability data. | The manual notes that reliability is greatly affected by frequency of maintenance. |

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|--------|--|------------|-------|---|--------------|--|--|---|
| DOD | Technical Manual 5-698-6 Reliability Data Collection | Oct-06 | 118 | Technical manual for facility engineers to collect data on power generation, power distribution and HVAC systems to evaluate reliability and operational readiness. | No | May be useful readiness assessment for facilities that provide power and HVAC. | May be good resource for readiness assessment for power generation, power distribution and HVAC systems. | |
| DOD | Manual 4151.22-M Reliability Centered Maintenance | Jun-11 | 25 | Manual outlines components of a Reliability Centered Maintenance to ensure that systems perform to desired level of safety, reliability and operational readiness. | No | No | Yes, if Reliability Centered Maintenance is desired benchmark. | Reliability Centered Maintenance is a systems-based approach to cost effective maintenance to achieve desired standards for safety, reliability, environmental soundness and operational readiness. |

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|--------|---|------------|-------|---|--------------|---|---------------------|---|
| DOD | Unified Facilities Criteria 1-201-02 Assessment of Existing Facilities for Use in Military Operations | Jun-14 | 73 | The criteria serves to assess whether existing facilities can sufficiently support military operations and options for risk mitigation. | No | The criteria may be useful for facility occupancy and use evaluation. | No | The DOD mission may lead to occupancy of unfamiliar buildings more so than the DOE mission. |
| DOD | Memorandum - DOD Unified Facilities Criteria | May-02 | 1 | Directs use of Unified Facilities Criteria for design, construction and restoration of facilities. | No | The criteria may be useful for facility design and construction. | No | |

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|--------|--|------------|-------|---|---|--|---------------------|---|
| DOD | Facility Criteria UFC 2-000-05N | Sep-14 | 17 | Provides space planning criteria and techniques for developing space demand for facilities. | No. Shared use of facilities with other federal facilities or the community may result in cost share savings. | The criteria may be useful for space need assessment, although DOE does not usually need to plan for space in housing, recreational facilities, etc. | No | This document reflects a shift in planning focus to a regional rather than individual site level, seeking to avoid duplicative space in facilities that are near each other, either on-base or available in the community. The direction to "share use" also shares cost. |
| DOD | Standard Practice for Unified Facilities Criteria MIL_STD3007F | Dec-06 | 33 | Establishes procedures for development and maintenance of Unified Facilities Criteria | No | The procedures may be useful if standardized facility criteria are desired. | No | |

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|--------|---|------------|-------|--|--------------|-----------------------|---------------------|--|
| DOD | Unified Facilities Criteria FY2016 Program Review | Jun-16 | 17 | Reports on the status of the Unified Facilities Criteria program, including percentage of criteria that are unified (amongst military branches) and current. | No | No | No | |
| DOI | Sustainment Cost Template | Aug-05 | 4 | Deferred Maintenance and Capital Improvement planning | No | No | Template | Provide picture of whether a particular asset should be repaired, renewed or disposed of |
| DOI | Methodology for Calculating Annual O&M Costs | Jul-05 | 2 | Active facility budgeting and reporting | No | No | Technique | Provides methodology for allocation of O&M costs to different cost categories |

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|--------|--|------------|-------|--|---|--|--|--|
| DOI | Policy on Deferred Maintenance, Current Replacement Value and Facility Condition Index in Life-Cycle Cost Management | May-08 | 54 | Standardize approach for measuring and reporting asset condition | No | Very limited - decision matrix | Guidance, detailed approaches, techniques, and tools | *Includes Heritage properties that require preservation *Uses Facility Condition Index (FCI) - an industry standard *Anticipates use of RS Means or equivalent for cost estimates *Comprehensive document with definitions, glossary, references, FAQs, formulas and examples |
| DOI | Memo - Freeze the Footprint Program | Feb-13 | 10 | Control utilization and spending on real property | Very limited - GSA "buildings for services" concept | Interim guidance and procedures for screening excess real property | Minimal - focus is office and warehouse space | *Baselines and freezes office and warehouse space at 2012 levels *Emphasizes conversion of leases to under-utilized, owned space *Directs 'Real Property Strategic Plans' updated annually *Requires extensive reporting internally and externally to GSA and OMB |
| DOI | Utilization Guide for Calculating DOI Constructed Assets | Oct-05 | 6 | Guidance to support 2006 reporting requirement | No | Formulas, definitions and examples to assess utilization | Minimal - focus is four classes of facilities | *Covers Office, Warehouse, Laboratory and Housing *Codes as Over Utilized, Utilized, Under Utilized and Not Utilized *Simple and practical approach |

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|--------|---|------------|-------|--|---|--|---|--|
| DOI | Common Definitions for Maintenance and Construction Terms | Jul-05 | 13 | Standardize definitions and terms | No | Definitions and examples | Definitions and examples | *Includes facility and equipment system types and sub-types *Reference links to complete DOI real property definitions and other links |
| DOI | Construction Capital Planning and Investment Control Guide, Version 2.0 | Jun-07 | 184 | Capital construction projects - DOI equivalent of DOE O 413.3B | Very limited-cost share or specific legislation | Limited - replacement aspect of new capital projects | No | *Useful concept of Senior Asset Management Officers (SAMO) meeting periodically on Assest Management Teams (AMT) *Useful ranking criteria for objective evaluation *Comprehensive list of definitions and references |
| DOI | Asset Priority Index Guidance | Sep-05 | 8 | Standardize use of Asset Priority Index (API) | Very limited - substitutability concept | Limited - process for comparative scoring | Limited - process for comparative scoring | *API is industry standard used by NASA, Navy and Air Force *Supports portfolio management and budgeting decisions, including replace or retain *Introduces the concept of "substitutability" for an asset |

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|--------|---|------------|-------|---|---|--|--|---|
| DOI | Asset Management Plan, Version 3.0 | Jun-08 | 113 | Comprehensive strategic vision and POAM with implementing concepts and procedures to comply with EO 13327 | Strategy, guidance, detailed approaches , techniques, and tools | Strategy, guidance, detailed approaches, techniques, and tools | Strategy, guidance, detailed approaches, techniques, and tools | *Portfolio-centric asset management *Strong use of performance metrics to support decisions *Extremely broad and diverse asset portfolio; execution varies across the nine bureaus *Leverages team and partnership approach for unified program with decentralized structure *Integrated financial and asset management systems *'Heritage Assets' with unique techniques for valuation *Component Renewal Index tool - reliable for current use *Statutory examples to allow property sale funds to be kept *Asset management and disposition is a core part of the agency mission |
| FAA | Safety, Risk Management Guidance for System Acquisition | Apr-17 | 121 | Analysis and equivalent processes for systems acquisition | No | Somewhat | Somewhat | Fairly comprehensive analysis requirements relating to all aspects of acquisition |

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|--------|---|------------|-------|--|--------------|-----------------------|-----------------------------------|--|
| FAA | Surplus Property & Military Base Conversions for Airport Purposes | Jun-16 | 2 | Summary Level Processes | No | Minimal | No | FAA webpage Identifies where to obtain detailed processes |
| FAA | National Plan of Integrated Airport Systems (NPIAS) | Sep-16 | 80 | Planning Basis for facilities | No | No | Yes | Good set of references and requirements |
| FAA | NPIAS Appendix A: All Existing NPIAS Airports | Sep-16 | 96 | Disposition as well as upgrade | No | No | Specific detail on airports | Detailed processes identified |
| FAA | NPIAS Appendix C: Airport Criteria Definitions | Sep-16 | 2 | Criteria | No | No | Specific definitions and terms | Detailed criteria specific to airports |
| FAA | Airport Improvements Program Handbook | Sep-14 | 544 | Detailed Processes for upgrades, change-outs | No | No | Approaches, techniques and tools. | Detailed criteria |
| FAA | Airport Design | Feb-14 | 322 | Detailed Processes for upgrades, change-outs | No | No | Approaches, techniques and tools. | Comprehensive design info including improvements and disposition |
| FAA | General Maintenance Handbook Order 6000.15c | Jun-15 | 93 | Maintenance Process ID including disposition | No | No | Approaches, techniques and tools. | Detailed on equipment and facility features |

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|----------|---|------------|-------|---|--|-----------------------|-------------------------------------|---|
| FAA | Runway Decommissioning Checklist | Mar-17 | 4 | Stepwise checklists | No | Minimal | No | Checklist with references |
| DOE-EERE | Introduction to Renewable Energy Project Finance Structures | Oct-12 | 17 | Slide presentation on energy project financing | Yes, focused to energy projects. | No | No | Introductory level |
| GAO | Alternate Approaches to Budgeting for Federal Real Property | Mar-14 | 52 | Real property funding analysis from budgeting perspective | Somewhat, within Federal budget process | No | No | Some options for long-term funding within the budget process |
| GAO | National Strategy and Better Data Needed to Improve Management of Excess and Underutilized Property | Jun-12 | 90 | Analysis of data needs to support better excess facility management | No | Yes | Somewhat for underutilized property | Focused on top 5 real property holding agencies which includes DOE. |
| GSA | Excess Real Property Available to Federal Agencies | Aug-17 | 1 | Listing for processes to disposition or obtain excess facilities | Somewhat, through alternate disposition. | Yes, per references. | Yes, per references. | Website www.gsa.gov is continually updated |

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|--------|--|------------|-------|---|--------------|-----------------------|---------------------|--|
| GSA | Frequently Asked Questions for Real Property | Aug-17 | 1 | Points to detailed processes | No | Minimal | No | Website www.gsa.gov is continually updated |
| GSA | Finding Federal Property | Aug-17 | 1 | Approach for searches | No | Minimal | No | Website www.gsa.gov is continually updated |
| GSA | Disposal of Records from FAA | Mar-73 | 2 | Disposition record for DOT/FAA Airport D&D Files | No | Minimal | No | Early record showing GSA Disposition of facilities and equipment |
| USDA | Facilities Operation and Maintenance | Aug-17 | 2 | Policy and approach for Cleveland National Forest | No | No | Minimal | Summary level overview |
| USDA | NRCS Waste Facilities Closure | Apr-12 | 4 | Step-by-Step decommissioning approach | No | Somewhat | No | Limited to farm/feedlot waste facilities |
| NIH | Laboratory Decommissioning | Jun-07 | 21 | Lessons Learned presentation for 2002-2007 | No | Yes | No | Provides feedback to improve light laboratory decommissioning techniques |

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|--------------------------|--|------------|-------|---|---------------------------|-----------------------|---------------------|---|
| EPA | Hazardous Materials, Solid Waste, and Pollution Prevention | May-13 | 17 | Desk reference for approaches and procedures | No | Minimal | No | Useful for secondary D&D waste stream considerations |
| EPA | Re-Powering America's Land Initiative | May-13 | 2 | Fact Sheet on financing renewable energy projects | Yes, for renewable energy | No | No | Examples for use of contaminated lands for renewables |
| OMB | Capital Programming Guide, V 2.0 | Jun-06 | 122 | Policy guidance for capital acquisition | No | Somewhat | No | Broad federal-wide policy and procedures |
| ISPE | Decommissioning Pharmaceutical Facilities | Jun-17 | 152 | Good practices guide | No | Yes | No | Detailed material focused to pharmaceutical equipment and facilities |
| Maryland Dept. of Health | Health and Safety of High Containment Laboratories | Oct-13 | 71 | Comprehensive report | No | Minimal | Minimal | Report reflects health and safety issues that can arise with high hazard facilities |
| Emory U. | Lab Decommissioning Guidelines | Jan-16 | 7 | Guidance for laboratory closure | No | Yes | No | Comprehensive overview for university lab closure |
| Carleton Univ. | Decommissioning of Laboratories | circa 2016 | 10 | Guidance for laboratory closure | No | Yes | No | Overview for university lab closure with focus on roles and responsibilities |

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|--------------------|-----------------------------------|------------|-------|---------------------------------|--------------|-----------------------|---------------------|--|
| Boston Univ. | Laboratory Decommissioning | circa 2016 | 4 | Guidance for laboratory closure | No | Yes | No | Summary overview for university lab closure |
| U. of Arkansas | Laboratory Decommissioning | circa 2015 | 3 | Guidance for laboratory closure | No | Yes | No | Summary overview for university lab closure |
| U. of Saskatchewan | Facility Decommissioning Standard | circa 2012 | 16 | Guidance for facility D&D | No | Yes | No | Summary overview for university facility decommissioning |

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Attachment B – Excess Facilities Approaches Table

| # | APPROACH | DECISION | COST/FUND | MANAGE |
|----|---|----------|-----------|--------|
| 1 | Develop portfolios for Excess Facilities | x | | x |
| 2 | Legislative action to group or link to other missions or legislative priorities – i.e. climate change, seismic | x | | x |
| 3 | Disposition readiness to proceed – like Technical Maturity Index | x | | x |
| 3a | Orphan waste generation – require solution before D&D | x | x | |
| 3b | Timing of strategic/mission driver – now or future | x | | x |
| 3c | Risk of degradation – employee or public impact | x | | |
| 4 | Increase visibility with Real Estate office at Under Sec level | x | | x |
| 5 | Legislative appropriation for excess facilities | | x | |
| 6 | Legislative action to remove restrictions (e.g. McKinney Act) | | x | x |
| 7 | End use focus to conduct appropriate excess facility disposition | x | x | x |
| 8 | Recycling/ re-use/ shared use of facilities – community or multi-site/multi-program | | x | x |
| 9 | Leverage EPA “Brownfields” initiative for redevelopment | | x | x |
| 10 | Mandate full availability before proceed and require ‘advocate’ to pay for adders if not fully released for D&D | x | x | x |
| 11 | HQ programs fixed % of EM budget for Excess Facilities | | x | x |
| 12 | Sites programs fixed % of site budget for Excess Facilities | | x | x |
| 13 | Linkages for excess facilities disposition in new contracts | | x | x |
| 14 | Standard schedule of excess facility D&D contractors | | x | x |