



## 4.0 Life-Cycle Planning Module

### 4.1 Policy and Topical Guidance

#### 4.1.1 What's New This Year?

The Office of Environmental Management (EM) will be using the Integrated Planning, Accountability, and Budgeting System—Information System (IPABS-IS) to conduct the annual update of life-cycle planning data. Since the last update, there have been a few changes. The changes are as follows:

- Requests to exceed annual BA targets, propose a life-cycle cost increase, and/or shift funds between Project Baseline Summaries (PBSs) are to be prepared at the PBS level versus the Site level. See Attachment F or Section 4.1.4 for further information.
- There have been changes to the valid list of Offices and the valid project baseline summaries associated with each office. See Attachment A or Section 4.1.3 for further information.
- IPABS-IS will be collecting separate PBS cost and BA profiles for all years. Budget Authority will be collected for the Budget Year (FY 2006) through project end in the Budget Module. Life-cycle cost will be collected for FY 2004 through project end in the Planning Module. See Section 4.1.4 for further information.
- Offices will update the life-cycle project descriptions via the IPABS-IS Budget Module. See Section 4.1.6 or Chapter 6, Section 6.1.6 for further information.
- Offices need to provide a brief discussion of the rationale for any substantive changes in the life-cycle costs or schedule relative to the FY 2003 submission. See Section 4.1.6 for further information.
- Identification of life-cycle costs associated with proposed FY 2005 transfers out of EM using the non-EM cost designation. See Section 4.1.4 for further information.
- PBS uncertainty scores will be collected using IPABS-IS. See Section 4.1.5 for further information.
- Offices need to provide monthly breakouts for FY 2006 and quarterly breakouts for FY 2009 for the Gold Chart Measures. (Quarterly targets for FY 2007 and FY 2008 are locked.) See Section 4.1.7 for further information.
- Gold Chart metrics will be used by EM management to measure performance and accountability. In supporting the FY 2006 budget formulation process, however, an additional profile, the “Budget Performance Measure Profile,” will be collected. The Budget Performance Measure profile should reflect **both** negative (decelerations) and positive (accelerations) variances from the Gold Chart. Based on these



accelerations/decelerations, sites will provide performance measure quantities for FY 2005 through the life-cycle, including both the annual total and the monthly/quarterly breakout (monthly for FY05-06; quarterly for FY07-09; annually thereafter) for the required years. Life-cycle totals cannot be changed. To change a life-cycle total, a Baseline Change Proposal (BCP) must be submitted and approved by the Configuration Control Board (CCB). See Chapter 6, Section 6.1.7 for further information.

- Based on a CCB action, the PBS for CH-BRNL-0040, Nuclear Facility D&D-Brookhaven Graphite Research Reactor, has been moved from the Non-Defense Site Acceleration Completion 2006 Accelerated Completions account to the 2012 Accelerated Completions.
- Offices will tag budget milestones required for the FY 2006 formulation process via the IPABS-IS Budget Module. Milestones are added through the IPABS-IS Planning Module. See Section 4.1.8 for further information.
- The Baseline Change Tool has been deployed in IPABS-IS and should be used to submit BCPs. See Chapter 10 for further information.

## 4.1.2 Overview and Schedule

The Office of Environmental Management (EM) is using IPABS-IS to conduct the annual update of life-cycle planning data changes. While the changes to IPABS-IS are not as extensive as last year, some modifications have been made. Major changes include collection of PBS Uncertainty Scores using IPABS-IS, collection of separate PBS cost and funding profiles for all years, identification of life-cycle costs associated with proposed FY 2005 transfers out of EM using the non-EM cost designation, and changes to collection of performance measures. ***Therefore, please read this guidance package thoroughly.***

### Schedule

Key dates and deliverables are listed in the following schedule for CY 2004 Planning and FY 2006 Budget Formulation Schedule.

Date	Activity/Deliverable
March 12, 2004	Spring Update Guidance issued. IPABS-IS Planning module open in CY 2004 configuration; Budget Module open in FY 2006 configuration.
April 9, 2004	Field Office notifications to HQ of a request to increase life-cycle costs or exceed BA funding targets due offline (see Section 4.1.4 and Attachment D for more information)
8:00pm EDT April 21, 2004	CY 2004 Planning and FY 2006 Budget Formulation data due via IPABS-IS (except PBS uncertainty scores). See Chapter 6 for more information on the FY 2006 Budget Formulation process.  Field Justifications to exceed annual funding targets and/or life-cycle costs due.
Week of May 3, 2004	Field briefings to EM-1 on requests to exceed life-cycle cost totals, exceed BA targets or other issues.



Date	Activity/Deliverable
May 7, 2004	PBS Uncertainty Scores due.
May 21-June 4, 2004	HQ develops FY 2006 Corporate Review Budget (CRB) for submission to the Office of Management, Budget and Evaluation (OMBE). Stakeholder involvement in financial aspects of FY 2006 is suspended.
June 4, 2004	EM Submits FY 2006 CRB Request to OMBE.
June 14, 2004	Life-cycle costs and uncertainty scores frozen for use in environmental liability estimate.
June 16, 2004	PBS Summary Sheets (GEN-2) generated.
July 16, 2004	Signed PBS Summary Sheets (GEN-2) due from Field.
July 2004	OMBE/Secretarial budget hearings on FY 2006.
Late July 2004	Preliminary Program Budget Decisions Issued
Early August 2004	Secretary of Energy's Final Program Budget Decisions Issued  EM begins developing the Office of Management and Budget (OMB) submission.
Late August 2004	EM transmits draft FY 2006 OMB budget submission to the CFO for review and comment.
Late August-Early September, 2004	OMBE review and comment period. EM finalization and incorporation of OMBE comments.
September 6, 2004	DOE submits final FY 2006 request to OMB.
September 6 thru mid-November 2004	EM responds to OMB information requests and participates in any OMB requested briefings on the FY 2006 Request.
Late November 2004	OMB issues budget passback on the FY 2006 Request.  CFO issues FY 2006 Congressional Budget Call.
Mid-Late December 2004	EM receives final funding decisions on the FY 2006 Request.
Mid December 2004 to Early January 2005	HQ and Field complete preparation of the FY 2006 Request. Develop fact sheets, budget highlights, and other summary information for FY 2006 budget rollout.

## Contacts

If you have questions about the life-cycle planning update, please use the table below to identify the appropriate individual(s) to contact.

Area	Individual	E-Mail	Phone Number
Life-cycle Cost & PBS Uncertainty Scores	Matt Zenkovich	<a href="mailto:mathew.zenkovich@em.doe.gov">mathew.zenkovich@em.doe.gov</a>	202-586-4612
Performance Measures (Gold Chart)	Dennis Hosaflook	<a href="mailto:dennis.hosaflook@em.doe.gov">dennis.hosaflook@em.doe.gov</a>	202-586-7685
Milestones	Kristin Sipes	<a href="mailto:kristin.sipes@em.doe.gov">kristin.sipes@em.doe.gov</a>	202-586-1405
Change Control Process	Marc Jones	<a href="mailto:Marc.Jones@em.doe.gov">Marc.Jones@em.doe.gov</a>	301-903-3072
Valid PBS List	Janice Stull	<a href="mailto:janice.stull@em.doe.gov">janice.stull@em.doe.gov</a>	301-903-8130



Area	Individual	E-Mail	Phone Number
IPABS-IS System/User's Manual	IPABS-IS Help Desk	<a href="mailto:ipabssupport@ppc.com">ipabssupport@ppc.com</a>	703-748-8617

## Guidance Organization

This guidance package is organized as follows:

- Section 4.1 Policy and Topical Guidance
- Section 4.1.1 What's New This Year?
- Section 4.1.2 Overview and Schedule
- Section 4.1.3 Valid Offices and Project Baseline Summary (PBS) Structure
- Section 4.1.4 Life-Cycle Costs
- Section 4.1.5 Uncertainty Scores
- Section 4.1.6 Narratives
- Section 4.1.7 Performance Measures
- Section 4.1.8 Milestones
- Section 4.2 User's Manual
- Attachment A Valid List of Offices and PBSs (Planning and Budget)
- Attachment B EM FY 2006-FY 2035 Target Estimates
- Attachment C Site Closure Dates
- Attachment D Proposed FY 2006 Transfers
- Attachment E Comparable Life-Cycle Costs Used for IPABS-IS Validation
- Attachment F Justification to 1) Exceed Annual BA Targets, 2) Propose Life-Cycle Cost Increase, and/or 3) Shift Funds Between PBSs
- Attachment G Corporate Performance Measures Definitions
- Attachment H Safeguards and Security Appendices (Overview and Excel Spreadsheet Template) (See Chapter 6)
- Attachment I Capital Construction Line Item Projects to be Reported in CPDS; External Project Reporting Requirements; Non-Line Item Controlled Projects To Be Reported CPDS (See Chapter 6)
- Attachment J High Level Waste WIR Activities and Impacts Table (See Chapter 6)
- Attachment K Excerpt from Budget Formulation Handbook, Chapter II, Program Direction Guidelines (See Chapter 6)
- Attachment L FY 2006 Full-Time Equivalent Targets (See Chapter 6)



### 4.1.3 Valid Offices and PBS Structure

As noted previously, there have been changes to the structure of Offices in IPABS-IS. Specifically, the following Offices are affected:

- Chicago: Includes Argonne National Laboratory-East, Argonne National Laboratory-West, Brookhaven National Laboratory, Chicago Operations Office, Princeton Plasma Physics Lab, Lawrence Berkeley National Laboratory, and Stanford Linear Accelerator Center. At Brookhaven, based on a CCB action, the PBS for CH-BRNL-0040, Nuclear Facility D&D-Brookhaven Graphite Research Reactor, has been moved from the Non-Defense Site Acceleration Completion 2006 Accelerated Completions account to the 2012 Accelerated Completions.
- Idaho: Includes Idaho National Laboratory only.
- Portsmouth/Paducah Project Office: Includes Paducah Gaseous Diffusion Plant, Portsmouth Gaseous Diffusion Plant, and DUF6 Project.
- Headquarters: Includes both Headquarters Operations and Uranium/Thorium Reimbursements.
- Albuquerque: No longer exists.
- Oakland: No longer exists.
- Kansas City Site Office: Includes Kansas City Plant
- Los Alamos Site Office: Includes Los Alamos National Laboratory
- Pantex Site Office: Includes Pantex Plant
- Livermore Site Office: Includes Lawrence Livermore National Laboratory
- NNSA Service Center: Includes Inhalation Toxicology Laboratory, South Valley, Former Albuquerque Operations, Energy Technology Engineering Center, General Atomics, General Electric, Laboratory for Energy-Related Health Research, Separations Process Research Unit, and Former Oakland Operations.
- Sandia Site Office: Includes Sandia National Laboratories
- Nevada Site Office: Includes Nevada Site Office, Nevada Test Site, and Nevada Offsites.

Please contact the IPABS-IS Help Desk for system access issues with regard to these Office changes. Attachment A provides both the valid list of Offices and the valid list of PBSs that will be available in the IPABS-IS Budget Module for the Spring Update. Although Attachment A reflects a consolidated valid list of PBSs for both Planning and Budget, all PBSs may not be in both the Budget Module and the Planning Module (e.g., long-term stewardship dummy PBSs).



The Targets included in Attachment B of this guidance are reflective of the changes discussed above.

### ***Headquarters- Managed PBSs***

Headquarters-managed PBSs for storage of EM high-level waste, the storage of EM non-legacy spent nuclear fuel, construction or upgrades to facilities to store high-level waste, construction or upgrades to facilities to store spent nuclear fuel, and managing other programs' newly-generated wastes, will be displayed separately under Idaho, Livermore, Oak Ridge, River Protection, Richland, and Savannah River for purposes of the Spring Update data collection effort. Life-cycle costs associated with these activities have been included in the appropriate Office's life-cycle cost totals under configuration control (i.e., the costs were not maintained at Headquarters).

### ***Rocky Flats Wildlife Refuge/Moab***

Responsibility for the Rocky Flats Wildlife Refuge and Museum was transferred to the Grand Junction Office in FY 2004. FY 2004 funding for the Wildlife Refuge Museum, as well as for the Moab Site, was requested under Idaho. In FY 2005, these activities were transferred to Headquarters consistent with the current allotment of funds. Therefore, the BA target for these activities is included in the Headquarters Office Target in Attachment B. It is the responsibility of the Grand Junction Office to submit all of the data required by this guidance for these PBSs. PBS-specific accesses can be granted to the appropriate individuals for data input purposes. For assistance with IPABS-IS login access rights, please contact the IPABS-IS Helpdesk at 703-748-8617.

### ***Stewardship PBSs***

In FY 2004, responsibility for sites that have been remediated and are in long-term stewardship was transferred to the Office of Legacy Management (LM). However, for the environmental liability estimate there is still the need to collect cost estimates for "future" long-term stewardship (LTS) activities after remediation has been completed. In addition, data is needed to support the transfer of LTS activities to LM for sites that will be closing in 2006. As was the case last year, long-term stewardship costs for sites still undergoing remediation will be collected using "dummy" stewardship PBSs. Please note that while EM is collecting estimates of future long-term stewardship costs for the environmental liability estimate and information on proposed transfers, long-term stewardship costs and activities are not considered to be part of the EM program. Data entry for these "dummy" PBSs is limited to three tabs. The tabs include the general information tab, a tab to collect long-term stewardship costs for FY 2004 through FY 2070, and uncertainty scores for the long-term stewardship PBSs. See Attachment A for specific information regarding the "dummy" stewardship PBSs.

Please be aware that as part of the environmental liability audit, cost estimates for long-term stewardship activities may receive increased scrutiny this year. Therefore, please ensure that sufficient analysis and documentation exists to support your long-term stewardship cost estimates. See Section 4.1.4 Stewardship Costs for further explanation.



## PBS Changes

Sites desiring to add a new PBS, delete an existing PBS, or modify an existing PBS should first contact Barbara Heffernan, Acting Deputy Assistant Secretary for Business Operations or Bill Levitan in the Office of Project Planning and Controls. If verbal approval is received, sites will be required to submit a formal BCP to the EM Configuration Control Board Secretary via the Baseline Change Tool in IPABS-IS. See Section 6.1.10 and Chapter 10 for further information.

Sites, especially sites with completion dates past FY 2012, should delineate in their PBS and budget structure when major activities or portions of activities will be completed. For example, high-level waste activities will not be completed until FY 2035, but some portion of those activities will be completed in FY 2012. There should be a PBS with the FY 2012 scope and a PBS with the FY 2035 scope.

### PBSs with Post-Closure Scope

Some PBSs have post-closure activities that will continue past FY 2035. PBSs with post-closure scope have been tagged in IPABS-IS, and the tag will display on the General Information tab. If a PBS is tagged as a post-closure PBS, life-cycle costs and milestones can continue until FY 2070. Attachment A indicates the PBSs that have been tagged as containing post-closure scope. A list of site closure dates can be found in Attachment C.

## 4.1.4 Life-Cycle Costs

As in previous years, EM will collect updated estimates of life-cycle costs at the PBS level. Life-cycle cost estimates of the EM program are one of the key program elements used by EM management to measure the performance, cost effectiveness, and progress of the EM program. In addition, these life-cycle cost estimates are used to support the development of the EM environmental liability estimate, which is a key component of the Department's Financial Performance and Accountability Report and audited Financial Statement. As part of this year's update of life-cycle costs, the PBS cost profiles should be updated to reflect the Performance Management Plans (PMPs), baselines, or other accelerated cleanup plans.

***Please note that while it was previously assumed that costs equal BA, EM has now separated costs from BA and maintains two separate profiles.***

### Proposed Transfers in FY 2006

The February 20, 2004, FY 2006-2010 Department Planning Guidance contains a number of proposed program transfers out of the EM program in FY 2006. However, EM will collect budget and planning data for these programs and activities as part of this update. EM is collecting this data to support the transfer process and to ensure that the Department has adequate data to support the FY 2006 budget formulation, the FY 2004 environmental liability estimate and other Departmental needs. Funding and programmatic issues regarding these proposed transfers will be resolved during the Corporate Review Budget process this summer.

The proposed FY 2006 transfers are listed in Attachment D.



## *Life-Cycle Cost Update Process*

As was the case last year, the update of planning cost and BA estimates are being constrained in two ways:

- In the IPABS-IS Budget Module for FY 2006 through site completion, the sum of the PBS funding estimates for each year must be equal to or less than the target for the Office for that year in current year dollars. Office allocations of EM's target funding are provided in Attachment B.
- The life-cycle EM cost total at the site level (the sum of the EM cost of each PBSs associated with each site) must be equal to or less than the life-cycle total under change control in constant 2004 dollars. The life-cycle total has been adjusted to reflect the transfer of programs out of EM proposed in the FY 2005 Congressional Budget Request. The life-cycle EM cost total under change control has also been escalated to constant 2004 dollars. Attachment E indicates the life-cycle cost total that is under configuration control for each site.

**Although target constraints are at the site level for annual BA and at the site level for total life-cycle costs, see the next section for specific guidance regarding reporting requirements at the PBS level.**

As the part of the FY 2006 budget formulation process, EM will continue to work with field offices to achieve the following:

- § Implementing innovative and aggressive acquisition strategies,
- § Structuring contract performance incentives to facilitate achievement of health and environmental benefits,
- § Reducing or eliminating unnecessary overhead costs by focusing resources on accelerating cleanup,
- § If necessary, re-sequencing work to facilitate the most efficient cleanup approach, and
- § Discussing with regulators ways to further accelerate risk reduction.

If a Site proposes to 1) exceed the annual funding targets; 2) exceed the life-cycle total cost under configuration control; and/or 3) shift funds between PBSs (BA), the Field Managers must submit a request for consideration using Attachment F.

## *Request to 1) Exceed Annual BA Targets, 2) Propose Life-Cycle Cost Increase, and/or 3) Shift Funds Between PBSs*

The request (Attachment F) should be provided using the following guidelines:

- Whereas the requests to exceed target/life-cycle costs were at the site level last year, this year, these requests are to be prepared **at the PBS level**.
- **Rationale:** Such a request must include a well-considered and detailed justification for why the funding estimates for the EM program at a site cannot adhere to the annual funding targets; why the cost estimate must exceed the life-cycle costs under configuration control; and/or why funds need to be shifted between PBSs.



- **BA Funding Profile:**
  - For Sites that will submit a target case only, but need to shift funding between PBSs: The funding profile should include a comparison of the requested BA funding profile by PBS versus the seeded data by PBS for FY 2006 through project end. Funding shifts between PBSs **must net to zero**.
  - For Sites that need to exceed the annual funding targets, with no shifts in funds between PBSs: The funding profile should include a comparison of the requested annual funding amount (including above target increment) at the PBS Level versus the funding amount seeded at the PBS level for FY 2006 through project end.
    - For sites that need to both exceed the annual funding targets as well as shift funds between PBSs, an additional chart must be prepared to include the following: The funding profile should include a comparison of 1) the re-mixed annual funding profiles (including above target increment) at the PBS Level; 2) the funding profile seeded at the PBS level for FY 2006 through project end.
- **Life-Cycle Cost Profile:**
  - For exceeding the total life-cycle costs, the cost profile should include a comparison at the PBS level of the requested cost profile versus the profile seeded into IPABS-IS (total life-cycle under configuration control) for FY 2004 through project end.
- **Baseline Status:** Provide a status of the site baseline and how the request to exceed annual funding targets, move funds between PBSs, or increase life-cycle cost relates to the baseline.
- **Management of Funds and Life-Cycle Cost:** The justification should also explain all the measures and steps the Field/Site Office has taken to effectively manage their projects' funding profiles and life-cycle costs.
- **Prior Year Reductions:** If applicable, the request should also include the activities and associated funding impacted by FY 2003 and FY 2004 funding reductions due to congressional and other adjustments.

For scheduling purposes, if a Field Office believes they will be making such a request, an email notification should be provided no later than April 9, 2004, to Bill Levitan (William.Levitan@em.doe.gov) and Matt Zenkowich (Mathew.Zenkowich@em.doe.gov) both in the Office of Project Planning and Controls.

The request and accompanying justification (see Attachment F) must be received by April 21, 2004. The request, signed by the Field Office Manager, should be sent to the Assistant Secretary for Environmental Management with a copy faxed to Barbara Heffernan, Acting Deputy Assistant Secretary for Business Operations on 202-586-0463. In addition, an electronic copy of the request and justification should be sent via email to Matt Zenkowich.

Please note that requests to increase life-cycle costs under configuration control do not require formal BCPs at this time (the information provided in Attachment F will be sufficient). Formal configuration control changes to EM's life-cycle costs will be made on a global basis after the environmental liability audit has been completed.

During the week of May 3, 2004, the Assistant Secretary, members of the Configuration Control Board, and other senior EM managers will convene to consider any Field Office requests and supporting justifications. As part of this process, Field Office Managers will likely be asked to



make a presentation. The presentation should be based on the items listed in Attachment F. Additional information regarding these meetings will be provided after April 21, 2004.

Shortly following these briefings, EM management decisions on the field requests will be transmitted to the applicable Field Manager. If EM management approval is forthcoming, Field Offices will submit a revised BA funding and cost profiles in IPABS-IS that is consistent with EM management direction.

**Note:** IPABS-IS will contain validation routines that require that funding profiles be consistent with BA targets and cost estimates to be consistent with total life-cycle cost under configuration control. If EM management approval is granted for a site to submit a revised funding or cost profile, the criteria for these validation routines will be adjusted to be consistent with EM management decisions.

All issues with life-cycle cost estimates will be resolved by June 14, 2003. At that time life-cycle costs will be frozen for use in the environmental liability estimate.

### ***Life-Cycle Cost Profile/Seeded Data***

The life-cycle cost profile is made up of two different components.

- Costs for FY 1997 through FY 2003 represent actual costs reported in the MARS system.
- For FY 2004 and beyond, costs should be updated based on the PMPs and consistent with the annual funding targets. The life-cycle cost data have been seeded with data sites provided for the FY 2003 Environmental Liability Estimate. The life-cycle total has been adjusted to reflect the transfer of programs out of the EM program proposed in the FY 2005 Congressional Budget Request, and has also been escalated to constant 2004 dollars.

### ***Cost and Funding Profiles***

To provide clarity and improve data quality, IPABS-IS has been modified to accept separate cost and BA profiles at the PBS level for all years. Life-cycle costs are collected in the Planning Module while a budget authority profile is being collected in the Budget Module (see Chapter 6). While there may be differences between funding and costs for some years, the sum (life-cycle totals) of the annual BA and annual cost amounts should be the same (in current year dollars).

### ***Program Transfers in FY 2005***

As part of the FY 2005 Congressional Budget Request, a number of programs and activities were transferred to other organizations. These include:

- The Off-Site Sealed Source Recovery Program to NNSA.



- Environmental Management staff at the Pacific Northwest National Laboratory to the Office of Science.
- Support for desktop, email, and related network Extended Common Integrated Environment services to the Office of the Chief Information Officer.
- Program responsibility for maintenance and operations of the Idaho National Laboratory Chemical Processing Plant 666 Facility and the non-legacy interim stored spent nuclear fuel to the Office of Civilian Radioactive Waste Management.
- Program responsibility for management of the NRC-licensed Fort St Vrain Independent Spent Fuel Storage Installation and Three Mile Island Independent Spent Fuel Storage Installation at INL to the Office of Civilian Radioactive Waste Management.
- Program responsibility for the Foreign Research Reactor Spent Nuclear Fuel Program and the National Spent Nuclear Fuel Program to the Office of Civilian Radioactive Waste Management.
- Responsibility for record management support of Formerly Utilized Sites Remedial Action Program Considered Sites to the Office of Legacy Management.
- Responsibility for cost liability and recovery review claims brought by private parties under CERCLA where DOE is identified as a potentially responsible party to the Office of Legacy Management.
- Environmental Justice activities and the Massie Chairs of Excellence Program were transferred to the Office of Legacy Management.

Life-cycle costs seeded in IPABS-IS have been adjusted to reflect these transfers out of the EM program. This includes the removal of historical costs. The site life-cycle costs in Attachment E have also been adjusted to reflect these transfers. However, for the environmental liability estimate, life-cycle cost estimates for these program transfers need to be developed and collected. Sites should designate the costs associated with these transfers as “non-EM” costs using the appropriate pick list selection in IPABS-IS. (Note: Non-EM costs are not included in the life-cycle costs under configuration control contained in Attachment E.) In addition, a description of the non-EM costs should be included in the Purpose, Scope and Technical Approach Narrative.

### **Stewardship Costs**

Responsibility for long-term stewardship and related activities at sites where the EM cleanup has been completed was transferred to the Office of Legacy Management (LM). These activities include:

- Pinellas post-contract liability costs;
- Non-defense post-contract liability costs at Portsmouth (entire amount) and Paducah (a portion);
- Costs associated with the Maxey Flats, Monticello, Pinellas and UMTRA GW PBSs, Safeguards and Security at Grand Junction, other activities at Grand Junction;



- Oak Ridge USEC pension liability costs; and
- Long-term stewardship for all completed EM sites (e.g., Weldon Spring, Grand Junction).

However, for the environmental liability estimate there is still the need to collect cost estimates for future long-term stewardship activities for sites still being remediated. Therefore, similar to last year, long-term stewardship costs for sites still undergoing remediation will be collected using “dummy” stewardship PBSs. These should include costs for long-term stewardship activities that will be implemented under programs other than EM (e.g., Office of Science, National Nuclear Security Administration, etc.) to the extent that those costs are not accounted for by other programs. In the narrative portion of the PBS, a description of the anticipated future long-term stewardship activities should be included. Examples of LTS activities that should be included in these PBSs include post-closure functions such as long-term pump and treat operations, records management, site surveillance, etc.

Data entry for these “dummy” PBSs is limited to three tabs. The tabs include the general information tab, a tab to collect long-term stewardship costs for FY 2004 through FY 2070, and a tab to collect uncertainty scores for the long-term stewardship PBSs. Attachment A indicates the “dummy” stewardship PBSs.

Please note that while EM is collecting estimates of future LTS costs for the environmental liability estimate, LTS costs and activities are not considered to be part of the EM program. For sites closing in FY 2006 responsibility for LTS and other post-closure activities will be transferred to LM. Therefore, the LTS PBSs for these sites should contain sufficient content and detail including a breakout of cost by major activity to support these transfers and provide LM with a clear understanding of the post-2006 activities and costs. Proper estimating documentation of the LTS and post-closure activities will provide LM with a clear understanding of all estimated costs and activities prior to a site transferring from EM to LM.

Please also be aware that as part of the environmental liability audit, cost estimates for long-term stewardship activities may receive increased scrutiny this year. Therefore, please ensure that sufficient analysis and documentation exists to support your long-term stewardship cost estimates. The documentation should be provided to the IG auditors, if requested. LTS cost estimates and associated documentation should also be provided to LM staff upon request.

### **Cost Reporting and Escalation**

Costs can be reported in either current or constant dollars based on an established agreement with Headquarters. Each Field Office identified their preference for entering data in current or constant dollars. This choice cannot be changed once a decision is made. *(Please note that the Field Office's choice of dollars applies to all sites and PBSs managed by that Field Office.)* IPABS-IS automatically calculates PBS baseline costs in either constant or current dollars based on the escalation rate and the type of dollars entered into the system.

Sites can adjust the escalation rates in the system for each PBS for each year. (These escalation rates must be consistent with guidance issued by the Chief Financial Officer.) If sites build up escalation factors from more detailed levels in their work breakdown structure (WBS), they should use a composite escalation rate in IPABS-IS such that the PBS-level cost estimates in site documentation and IPABS-IS agree.



## **Non-EM Costs**

Field Offices should explicitly identify in each PBS any estimated costs in their planning estimates that will be borne by programs or entities other than EM (e.g., Office of Science, Office of Legacy Management, National Nuclear Security Administration, etc.). As indicated in the Program Transfer section above, costs associated with transfers that have been proposed in the FY 2005 Congressional budget should be designated as non-EM costs. LTS costs should also be designated as non-EM costs. The costs for Proposed FY 2006 Transfers (Attachment D) should NOT be separated out as non-EM costs until the Department has approved an official transfer of these activities.

## **PBS Summary Report (GEN-2)**

PBS Summary Reports (“GEN-2” reports) form the basis of EM’s documentation of its life-cycle cost estimates and are key documents in the environmental liability audit. GEN-2s will be generated using the life-cycle costs in IPABS-IS frozen on June 14, 2004. Signed GEN-2 reports are due to EM by July 16, 2004.

## **PBS Uncertainty Scores**

EM will continue to collect PBS uncertainty scores and use those scores to perform a Monte Carlo simulation. The uncertainty scores are being collected this year in IPABS-IS. More guidance can be found in Section 4.15.

# **4.1.5 Uncertainty Scores**

## **Background**

For the past several years, EM has presented its environmental liability estimate as a range of costs based on a cost uncertainty analysis. The results of this uncertainty analysis are incorporated into the Department’s financial statement. EM plans to use a similar approach to develop this year’s environmental liability estimate. The uncertainty analysis is based in large part on uncertainty scores for each Project Baseline Summary (PBS) for three criteria - current state of project definition, innovation, and project complexity. The PBS uncertainty scores will be collected in IPABS-IS.

EM will review the uncertainty scores and discuss any proposed changes with the applicable site to ensure consistency across the complex. Each site needs to document the rationale for uncertainty scores assigned and be prepared to discuss the rationale with Office of Inspector General (IG) auditors during the field audit period, if requested.

The Assistant Secretary of Environmental Management will approve each site’s environmental liability estimate and supporting documentation prior to that estimate being recorded and those estimates will serve to support certification of the total EM environmental liability estimate. Supporting documentation includes the completed internal control guidelines, PBS summary sheets, and PBS uncertainty scores.



## Model Overview

As has been the case for the past three years, EM plans to calculate its life-cycle cost estimate for the EM program using a Monte Carlo statistical uncertainty model. The model is based on a review and analysis of cost uncertainties for environmental restoration projects. The review found that there are three main factors that affect cost uncertainty:

- Current state of project definition - 50%
- Project Innovation - 28%
- Project Complexity - 22%

In addition, the analysis found that cost uncertainty in these types of projects ranged from -50% to +175%.

The methodology developed by EM allows each PBS (or PBS sub-activity) to be scored from 1 to 5 for each contributing factor - project definition, innovation and complexity, where a 1 equates to low uncertainty and 5 equates to maximum uncertainty. The specific uncertainty range for each score is as follows:

Score	Uncertainty Range	Percent of Max Range
5	-50% to +175%	100
4	-37.5% to +131%	75
3	-25 % to +87.5%	50
2	-12.5% to +44%	25
1	-5% to +17.5%	10

Using the PBS lifecycle cost estimates and uncertainty scores, the cost uncertainty model will use a Monte Carlo simulation to generate an EM life-cycle cost uncertainty range.

Note – PBS scores should be developed and assigned that reflects the total scope of the PBS – both the EM and non-EM portion.

## Sub-Activity Detail

In previous years, uncertainty scores were assigned at the PBS level. Due to EM's new PBS structure, there are fewer PBSs and in general, each PBS includes a broader range of activities. To accommodate this change, IPABS-IS has been modified to allow, when appropriate, the assigning of uncertainty scores to sub-activities within a PBS. This modification will enable sites to assign uncertainty scores that better reflect the sometimes diverse nature of activities within a PBS.

Sub-activities within a PBS are differentiated as a percentage of the total PBS life-cycle cost. Sites can define sub-activities within a PBS and provide a different set of uncertainty scores for each sub-activity. The system then calculates dollar-weighted uncertainty scores for the entire PBS using the sub-activity scores and life-cycle cost percentages.

Defining sub-activities within a PBS and assigning uncertainty scores to those sub-activities is optional and is intended as an aid to field sites. The purpose of the sub-activity option is to



enable a more refined uncertainty scoring for the PBS, when appropriate. If the activities for the entire project contain the same level of uncertainty, there is no need to provide data at the sub-activity level. In addition, there is flexibility on how to define sub-activities within a PBS for the purposes of assigning uncertainty scores. The major requirement for defining sub-activities and assigning uncertainty scores within a PBS is that a site document the rationale used and be able to discuss the rationale and provide documentation to the auditors, if requested. In addition, the sum of the sub-activity dollars must equal the dollar total for the PBS.

### ***Long Term Stewardship Costs***

Because LTS costs must still be included in the environmental liability estimate, sites should assign uncertainty scores to the LTS PBSs. (Note: While LTS costs will be included in the environmental liability estimate, they will no longer be considered EM program costs.)

### ***Project Characteristics Associated with Each Uncertainty Score***

Below are characteristics association with each factor and each score. The characteristics provide examples and general guidance to assist sites in providing scores. Use your professional and programmatic judgment in scoring projects (or project sub-activities) for each of the three factors (project definition, innovation, and complexity), rather than following the guidance narrowly or strictly. Please note that the characteristics have been updated since last year.



Project Definition	
Score	Project Characteristics
1	<ul style="list-style-type: none"> <li>The project is approaching its end state and preparing for completion. Total costs, schedule, and scope to complete the project are well defined.</li> <li>A mature baseline is in place with effective change control systems used <u>and</u> the project has not been re-baselined in the past two years.</li> <li>All regulatory approval is in place for site completion.</li> <li>The work scope of the PBS is independent of work scheduled at other PBSs. If there is a dependent scope, the integration activities have been completed.</li> <li>An outside party has reviewed the earned value management system and the project has had no significant positive or negative variance trends in the past two years.</li> <li>A risk management plan and/or system is in place and is reviewed and updated quarterly to develop and implement risk mitigation actions.</li> </ul>
2	<ul style="list-style-type: none"> <li>The project has detailed plans and specifications, progress is being made towards site closure, and annual costs are in line with life-cycle estimates.</li> <li>A baseline has been established with necessary change control systems in place <u>and</u> the project has not been re-baselined in the past year.</li> <li>Regulatory approval is in place and/or not a significant risk for achieving closure.</li> <li>Work scope of the project is mostly independent but reliant on some activities scheduled at other PBSs. If the work scope is dependent on other PBSs, the appropriate interfaces and issues have been resolved.</li> <li>An outside party has reviewed the earned value management system and the project trends indicate significant positive progress over the past year.</li> <li>A risk management plan and/or system is in place and is updated every six months to develop and implement risk mitigation actions.</li> </ul>
3	<ul style="list-style-type: none"> <li>The project is at the conceptual design and engineering plan stage with critical path activities well understood; a detailed work schedule is in place to complete project on time.</li> <li>A baseline has been established but change control systems are not in place <u>or</u> re-baselining has occurred in the past year.</li> <li>No regulatory hurdles are known but necessary approvals have not been received.</li> <li>Work scope is dependent on work scheduled at other PBSs but no additional risk is perceived.</li> <li>An outside party has reviewed the earned value management system and the project is beginning to assess the status without significant variance.</li> <li>A risk management plan and/or system is in place but has not been updated in the past year or more.</li> </ul>
4	<ul style="list-style-type: none"> <li>Engineering alternatives evaluation has begun on the project <u>and/or</u> uncertainty exists regarding critical path activities.</li> <li>A baseline is being established and change control systems are being developed for future use <u>or</u> frequent re-baselining is occurring.</li> <li>Regulatory approval is not in place and work schedule is jeopardized by regulatory uncertainty.</li> <li>Work scope is highly dependent on activities at other PBSs but will not likely impact critical path activities.</li> <li>Earned value measures have been established but are not regularly met <u>or</u> the project is significantly behind schedule</li> <li>A risk management plan and/or system is not in place but is being established.</li> </ul>



Project Definition	
Score	Project Characteristics
5	<ul style="list-style-type: none"><li>• Project is at the assessment phase and uncertainty exists regarding cost estimate and critical path activities.</li><li>• A baseline has not been established and the necessary change control systems are not in place.</li><li>• Significant regulatory hurdles exist that may impact either cost or critical path activities.</li><li>• Work scope is highly dependent on activities at other PBSs and may impact schedule and/or baseline estimate for critical path activities.</li><li>• Earned value measures are not used to measure project status <u>and</u> the project is significantly behind schedule.</li><li>• A risk management plan and/or system is not in place</li></ul>

Innovation <sup>1</sup>	
Score	Project Characteristics
1	<ul style="list-style-type: none"><li>• Project is completely reliant on proven technologies.</li></ul>
2	<ul style="list-style-type: none"><li>• Project is largely reliant on proven technologies.</li></ul>
3	<ul style="list-style-type: none"><li>• Project is somewhat reliant on innovative technologies (technologies may be proven but have not been previously integrated in the same application).</li></ul>
4	<ul style="list-style-type: none"><li>• Project is largely reliant on innovative technologies.</li></ul>
5	<ul style="list-style-type: none"><li>• Project is completely or largely reliant on innovative technologies (new technologies are being developed and have not been previously demonstrated on a large scale).</li></ul>

Complexity <sup>2</sup>	
Score	Project Characteristics
1	<ul style="list-style-type: none"><li>• Relatively few processing or treatment steps.</li><li>• Materials requiring complex processing<sup>3</sup> are not actively managed on site.</li></ul>
2	<ul style="list-style-type: none"><li>• Number of processing or treatment steps between scores 1 and 3.</li><li>• Materials requiring complex processing are actively managed on site infrequently.</li></ul>
3	<ul style="list-style-type: none"><li>• Moderate number of processing or treatment steps.</li><li>• Materials requiring complex processing are actively managed on site with some frequency.</li></ul>
4	<ul style="list-style-type: none"><li>• Large number of processing or treatment steps <u>OR</u>;</li><li>• Materials requiring complex processing are actively managed on site on a regular basis.</li></ul>

<sup>1</sup> Innovative technologies are defined as having never been demonstrated on a production scale either by DOE or by industry in a similar application. They may include new process/treatment steps or technologies that have been proven for different/waste streams or in dissimilar applications.

<sup>2</sup> Processing and treatment steps refer to the number of continuously linked process steps required to perform all necessary chemical and physical unit operations. Steps are counted on a block rather than equipment count basis. Multiple parallel trains are counted only once.

<sup>3</sup> Examples of materials requiring complex processing include nuclear materials, remote-handled transuranic waste (RH-TRU), and high-level waste.



Complexity <sup>2</sup>	
Score	Project Characteristics
5	<ul style="list-style-type: none"> <li>• Large number of processing or treatment steps <u>AND</u>;</li> <li>• Materials requiring complex processing are actively managed on site on a regular basis.</li> </ul>

### **Narrative**

There is a narrative field for each PBS (or each sub-activity) to provide further information, as needed. If the scores for a PBS or a sub-activity changed from last year, the narrative field should be used to explain the reason for the change.

### **Scores of Zero**

A score of zero is allowable and indicates either that the PBS is complete or that the estimate already includes costs to account for all cost uncertainties.

### **Contingency**

Uncertainty scores should be adjusted to reflect any contingencies in the baseline estimate that addresses uncertainties so that uncertainties already in the baseline are not double-counted. In cases where the PBS is completed or the current PBS baseline cost estimate fully accounts for all cost uncertainties, sites should adjust the uncertainty score to zero for all three cost uncertainty factors. In cases where the PBS baseline estimate partially accounts for cost uncertainties, sites should adjust scores downward so that the resulting scores eliminate the double counting that would otherwise occur.

EM will review the uncertainty scores and discuss any proposed changes with the applicable site to ensure consistency across the complex. Each site needs to document the rationale for uncertainty scores assigned and be prepared to discuss the rationale with the IG auditors during the field audit period, if requested.

### **Other Considerations**

When assigning PBS uncertainty scores consideration should be given to the methodology used to develop the life-cycle cost estimate. Cost estimates that are developed in a "top-down" fashion should be assigned higher uncertainty scores than cost estimates that are based on a more traditional "bottoms up" detailed engineering assessment. Uncertainty scores should also reflect broad or general assumptions made in the development of the cost estimate such as generic efficiency reductions in the out-years. In addition, uncertainty scores should reflect assumptions made concerning acquisition strategy efficiencies and "learning curve" efficiencies. Scores should also reflect potential regulatory and inter-site dependency uncertainties as well as intra-site dependencies. For example, if completion of activities with "low to moderate" uncertainties contained in PBS A are dependent on "high" uncertainty activities contained in PBS B, the uncertainty scores for PBS A should be adjusted appropriately to reflect the uncertainty inherent in PBS B.



## Seeded Data

IPABS-IS has been seeded with the uncertainty scores provided last year.

### 4.1.6 Narratives

Narratives provide important information regarding the scope and end state of the PBS. The Planning Module collects three narratives that describe aspects of the PBS's scope and schedule and displays one narrative from the Budget Module.

The narratives are described below:

- **Life-cycle Project Description:** The life-cycle project description narrative was previously collected in the Planning Module but will now be collected in the Budget Module and displayed in the Planning Module. This narrative provides vital context for EM's funding request. See Chapter 6 Section 6.1.6 for more information.
- **Purpose, Scope, and Technical Approach Narrative:** This narrative is a longer description of the PBS. This narrative provides an overall description of the project's scope, the key activities of the project, the technical approach for completing the work scope associated with the project, and any assumptions associated with the project.

The narrative is to include a rationale for any substantive changes in the life-cycle costs or schedule (defined as a 10 % difference) relative to the FY 2003 submission. This narrative is limited to 10,000 characters.

The narrative should also provide a detailed description of the non-EM portion of the PBS scope. This is of particular importance for activities and scope that have been identified for transfer out of EM in the FY 2005 Congressional budget request.

- **End State Narrative:** This narrative describes the end state associated with the PBS at the time of completion with specific emphasis on land, groundwater, facilities, waste, nuclear materials, and/or spent nuclear fuel. If these categories are not applicable, then broadly describe the outcome or resultant benefit of this PBS when it is completed. This narrative is limited to 3,000 characters.
- **GEN-2 Narrative:** The GEN-2 narrative is a brief, high-level description of the PBS's scope. This narrative is used in the PBS Summary Sheets (the GEN-2s). This narrative is limited to 1,400 characters.

### 4.1.7 Performance Measures

Performance measurement is mandated by the Government Performance and Results Act (GPRA) of 1993 and is central to other legislation, Administration initiatives, and OMB criteria. EM collects performance measure data for use to develop an integrated performance-based program that clearly demonstrates the progress and results expected for the resources requested.



## *The Gold Chart and Configuration Control*

EM measures performance and accountability using EM's Corporate Performance Measures (Gold Chart). Gold Chart measures are critical indicators of EM's progress towards meeting the program's goals. Because Gold Chart data are under strict configuration control, the data are locked currently **for all years**, as described below:

- Pre-FY 2003 actual quantities,
- FY 2004 and FY 2005 monthly quantities,
- FY 2006-FY 2008 quarterly values,
- FY 2009-2035 annual values, and
- Life-cycle total.

Any changes to Gold Chart quantities must be requested and approved by the EM Configuration Control Board (CCB). However, as sites' baselines are approved by the Assistant Secretary, there will be an opportunity to update the Gold Chart measures to reflect the approved baselines through the submittal of a BCP to the CCB. The Gold Chart metrics are what performance will be measured against. Sites are accountable for the numbers reported in the Gold Chart and will have to explain variances from the Gold Chart.

## *Budget Performance Measure Profile*

In developing the FY 2006 Budget, it is essential that EM accurately portrays what the program expects to accomplish with the dollars requested. When there is a variance carried between the budget request measures and the Gold Chart, EM needs to understand when and how the variance will be made up. Therefore, there is a need for an additional profile to portray variances against the Gold Chart. This separate profile, the "**Budget Performance Measure profile**," will be used in developing the FY 2006 Budget. The Budget Performance Measure profile should reflect both negative (decelerations) and positive (accelerations) variances from the Gold Chart. Based on these accelerations/decelerations, sites will be able to provide performance measure quantities for FY 2005 through the life-cycle, including both the annual total and the monthly/quarterly breakout for the required years. These data will be collected through the IPABS-IS Budget Module. The Budget Performance Measure profile will only be used for purposes of developing the FY 2006 Budget and will not be incorporated into the Gold Chart. Similarly, there will be no update/changes accepted to the life-cycle total for each performance measure without a BCP approved by the Configuration Control Board. The Budget Performance Measure profile has been established for the sole purpose of enabling EM to accurately portray program expectations in the FY 2006 budget. There will be no changes to the Gold Chart without an approved BCP. See Chapter 6, Section 6.1.7 for more information.

## *Seeded Data*

The IPABS-IS Planning Module is seeded with performance measure data based on the latest version of the Gold Chart (Rev. 8). Changes reflected in Rev. 8 are based on BCPs approved through the February 5, 2004, meeting of the Configuration Control Board.



## ***Performance Measure Reporting Requirements***

In the Planning Module on the performance measure tab, the EM Corporate Performance Measures are displayed and locked with the exception of the breakout for FY 2006 and FY 2009. Sites need to provide monthly resolution for FY 2006 and quarterly resolution for FY 2009. (Quarterly targets for FY 2007 and FY 2008 are locked and displayed.) After these breakouts are provided, these data will be locked and placed under configuration control. Each year, the years for which sites must provide monthly and quarterly resolution will roll forward one year.

All Gold Chart performance measure data are locked and under configuration control. Changes will only be made when a BCP is approved by the Configuration Control Board.

Performance metrics resolution is described below:

- Pre-2004 (pre-1997 through FY 2003): Quantities are displayed in the Planning Module, consistent with the Gold Chart. Quantities are based on performance measure actuals.
- FY 2004: Monthly targets are displayed in the Planning Module, consistent with the Gold Chart. EM is executing against these targets in the Project Execution Module.
- FY 2005: Monthly targets are displayed in the Planning Module, consistent with the Gold Chart.
- FY 2006: Target quantities should be provided for each month. The sum of the quantities for each month must equal the quarterly target provided in last year's Spring Planning Update. This information will be collected in the Planning Module.
- FY 2007-FY 2008: Quarterly targets are displayed in the Planning Module, consistent with the Gold Chart.
- FY 2009: Target quantities should be provided for each quarter. The sum of the quantities for each quarter must equal the annual target provided in last year's Spring Planning Update. This information will be collected in the Planning Module.
- FY 2010-FY 2035: Annual targets for each year are displayed in the Planning Module, consistent with the Gold Chart.
- Life-Cycle Total: The life-cycle total cannot change for any measure without an approved BCP.



## 4.1.8 Milestones

Milestones describe planned project and program accomplishments that often are not captured or described in EM's corporate performance measures. These milestones should be outcome-oriented and consistent with the site's accelerated cleanup strategy. Each PBS will not necessarily have a milestone associated with it. However, for those PBSs that are associated with conducting "on-the-ground" work toward an end-state, milestones that indicate the project or activity's progress or completion should be reported.

Several examples of outcome-oriented milestones are:

- Processing of waste or stabilization of nuclear materials as an interim milestone to completing a performance measure (or completion of processing). The milestone should not include any performance measure information for a measure that is a corporate performance measure.
- Shipments of waste to a disposal site as an interim milestone to completing a performance measure.
- Complete corrective action or remediation on a release site.
- Safe shutdown and demobilization of a contaminated facility.
- Complete disposal of legacy waste.
- Complete interim safe storage of former production reactors.
- Initiate/complete construction or begin operation of a treatment/storage/disposal facility.

Milestones should not just repeat quantitative data already captured by the performance metrics (e.g., complete five release sites in FY 2004). However, milestones can be used to amplify or provide more description to the quantitative performance measure data (e.g., complete remediation of Waste Pit X in FY 2004, which is on the critical path to site closure).

### ***Data Collection***

All milestones are entered in Planning Module. Budget milestones should be tagged in the Budget Module.

### ***Milestone Examples***

Milestones were also reviewed closely by Headquarters during the FY 2005 Congressional Budget Request and some were updated. Below are some examples of milestones that reflect what Headquarters would like to see.



Examples:

Construct, install, and operate a portable treatment unit on-site at the Helipad Source Area to isolate and remediate the contaminated vadose zone and reduce contaminant concentrations in the source area (September 2004).

Complete construction of the 9201-2 Water Treatment System to remediate mercury contamination in surface water (September 2004).

Completed design of Silo 3 retrieval facility and initiated construction (Sept 2002)

Remove all containerized waste from Plant 1 Pad (critical to decontamination and decommissioning schedule for 2006 closure) (Sept 2004)

Complete soil treatment at the Corrective Action Management Unit (December 2003)

Complete construction of Source Treatment Facility in Building 832 Canyon Operable Unit (February 2003)

Dispose of 500,000 tons of remediation waste at a commercial facility (Sept 2004)

Offices can provide other types of milestones as well. The suite of milestones should include all major enforceable agreement (EA) milestones. A major EA milestone is one where missing the milestone could result in a substantial fine or penalty.

### **Seeded Data**

Project start milestone dates of 10/1/2003 have been seeded into IPABS-IS for each new PBS as well as the project end and mission complete. ***These data are read only and cannot be edited.***

The milestone list was seeded with the milestones included in the FY 2005 Congressional Budget Request for FY 2003, 2004, and 2005. Milestones for FY 2003, FY 2004, and FY 2005 that were included in the FY 2005 Congressional Budget Request ***cannot be edited.***