MEMORANDUM FOR DISTRIBUTION

FROM: DAE Y. CHUNG
PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR ENVIRONMENTAL MANAGEMENT

SUBJECT: Implementation of the Office of Environmental Management Corporate Work Breakdown Structure

The Office of Environmental Management (EM) is implementing a Corporate Work Breakdown Structure (CWBS). The CWBS standardizes the structure used to categorize like scopes of work, facilitate Analytical Building Blocks (ABBs) and comparative analyses and simplify budget preparation. The CWBS follows the American National Standards Institute Standard 748-A, Section 3, for organization and definition of work. It will also allow EM to interface with site-specific work breakdown structures at Level 4, maintain historical costs by Program Baseline Summary (PBS), and analyze the program using multiple attributes. The CWBS includes the current project realignments required as the EM Recovery Act Protocol is applied to the EM Base Operations Program and the most recent approved capital and operations project splits.

The CWBS contains four levels described below:

**Level 1**

Level 1 is comprised of a single element. This element is the EM Program Level and represents the entirety of EM work across the Department of Energy (DOE) complex.

**Level 2**

Level 2 represents the site level. There is one element at this level for each operations office, field office, and/or project office. All EM scope at each of the geographically separate offices is accumulated in each of the respective elements at this level. Although Richland and River Protection are geographically on the same site, they will be two separate elements at Level 2.

**Level 3**

Level 3 represents the program level. The elements at this level align to program area such as high level waste, spent nuclear fuel, decontamination and decommissioning, etc. Level 3 will be the reporting level to Headquarters for Operations Programs. The Environmental Management Acquisition Advisory Board process will be used to establish and define Level 3 activities. Operations Programs will be managed according to the Office of Environmental Management’s Operations Programs Protocol.
Level 4

This level contains each site’s ABBs. Each ABB must be identified as either a capital asset project or a subdivision of operations programs. The ABBs also represent the elements of the Integrated Priority List which are used to formulate annual budget submissions to Congress. Each element at this level will be a strategic planning element for EM. This level also represents the interface of project management and budget development. Each element at this level must have a scope description, life-cycle cost profile, a defined end state, a beginning and end date, costs identified by “maintenance” and “progress”, described by only one of the twelve mission categories, and receive funding from only one PBS. Level 4 (ABBs) will be maintained under configuration control, which includes the addition, deletion, or modification of ABB definitions. ABB change control will follow the process established in the Office of Environmental Management’s Operations Programs Protocol, dated April 21, 2010.

Line item construction projects will represent one ABB for construction and one ABB for operation. Each cleanup Capital Asset Project will be assigned to a single ABB. Level 4 will be the reporting level for all Capital Asset Projects managed in accordance with DOE Order 413.3A. Operations activities will be divided according to the ABB structure at Level 4 for budgeting (Integrated Priority List) and analysis purposes. A new ABB or CWBS element will be created as new capital asset projects are identified and move from the larger operations activities at Critical Decision 2.

Concurrently with the implementation of the CWBS, the Office of Strategic Planning and Analysis (EM-62) will be developing a CWBS dictionary based on Level 4 scope descriptions provided by each site. Level 4 functions as the interface between the site-specific and contractor work breakdown structures and the CWBS. The initial submission of site-specific information is due to EM-62 on September 30, 2010.

Draft site specific CWBS dictionary sheets were provided to the sites by EM-62 in June 2010. The sheets are to be used to populate the CWBS dictionary for the Level 4 elements. Any changes to the CWBS dictionary sheets must be coordinated with the appropriate EM-62 point-of-contact for each site. These points-of-contact will be provided with the dictionary sheets.

Attached for your use is a copy of the CWBS, example dictionary sheets, and the current EM Program Mission Categories. Should you or your staff have questions or comments, please contact Mr. Jay Rhoderick, Director, Office of Strategic Planning and Analysis, at (301) 903-7211.

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EM Corporate WBS

EM Program Work Breakdown Structure

Level 1 - EM Program

Level 2 - Site (X)
- Argonne National Laboratory
- Brookhaven National Laboratory
- Carlsbad Site Support
- Carlsbad - WIPP
- Savannah River Site
- Consolidated Business Center
- IID
- Site ??

Level 3 - Program (Y)
- Project 1
- Project 2
- Project 3
- Project 4
- Project 5
- Project 6
- Project 7
- Project ??

Level 4 - ABB (Z)
- ABB 1
- ABB 2
- ABB 3
- ABB 4
- ABB 5
- ABB 6
- ABB 7
- ABB ??

The ABBs will be defined by the site/FPD to align with the way the projects are being managed. The ABBs will be classified as Operating, Capital Asset, or Line Item.

Attributes that will be tracked as activity coding:
- Project Type (Operating, Capital Asset, or Line Item)
- Program Mission Category (PMC)
- Project Baseline Summary (PBS)
- Environmental Cost Element Structure (ECES)
- Congressional Budget Request
- Budget and Reporting (B&R) Codes
- EM Min-Safe category
- Slate
- Compliance Related
Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:

WBS No.: 1
Parent WBS: 0
WBS Level: 1
Reference Number: EM

WBS Title: U.S. Department of Energy - Office of Environmental Management (DOE-EM)
Parent Title: Not Applicable
WBS Level Title: Office Level
Reference Description: DOE Office Designation

WBS Element Scope Description:

The Office of Environmental Management (EM) is responsible for the risk reduction and cleanup of the environmental legacy of the Nation's nuclear weapons program, one of the largest, most diverse, and technically complex environmental programs in the world. EM will successfully achieve this strategic goal by ensuring the safety of DOE employees and U.S. citizens, acquiring the best resources to complete the complex tasks, and by managing projects throughout the United States in the most efficient and effective manner. EM has made significant progress in the last four years in shifting away from risk management to embracing a mission completion philosophy based on cleanup and reducing risk. EM continues to demonstrate the importance of remaining steadfast to operating principles while staying focused on the mission. EM has made progress in recent years in cleanup and/or closure of sites. In addition to its emphasis on site cleanup and closures, EM is also focusing on longer-term activities required for the completion of the cleanup program. These include:

- Constructing and operating facilities to treat radioactive liquid tank waste into a safe, stable form to enable ultimate disposition.
- Securing and storing nuclear material in a stable, safe configuration in secure locations to protect national security.
- Transporting and disposing of transuranic and low-level wastes in a safe and cost-effective manner to reduce risk.

Sub WBS Elements:

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<td>1.CL</td>
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<td>1.CS</td>
<td>California Site Support</td>
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<td>1.ET</td>
<td>Energy Technology Engineering Center</td>
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<td>Inhalation Toxicology Laboratory</td>
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<td>Nevada Offsites</td>
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<td>Oak Ridge Reservation</td>
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<td>1.PA</td>
<td>Paducah Gaseous Diffusion Plant</td>
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<td>1.RF</td>
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<td>1.RP</td>
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<td>1.SL</td>
<td>Stanford Linear Accelerators Center</td>
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<td>1.WP</td>
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<td>1.WV</td>
<td>West Valley Demonstration Project</td>
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Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:

WBS No.: 1.OR
Parent WBS: 1

WBS Level: 2
Reference Number: 21

WBS Title: Oak Ridge Reservation
Parent Title: U.S. Department of Energy - Office of Environmental Management (DOE-EM)

WBS Level Title: Complex Level
Reference Description: Oak Ridge Reservation

WBS Element Scope Description:

The Oak Ridge Reservation is located in east Tennessee and is comprised of three major facilities: the East Tennessee Technology Park (ETTP); the Oak Ridge National Laboratory (ORNL); and the Y-12 National Security Complex. There are also some private properties that are not located on the Oak Ridge Reservation (the Atomic City Auto Parts Site and the David Witherspoon Sites) that are being cleaned up under the auspices of the Oak Ridge program.

The cleanup program mission in Oak Ridge will be complete when risks to the public, workers, and the environment at these sites have been safely reduced. These risks include potential exposure to chemical and radiological contamination and industrial hazards resulting from decades of uranium enrichment, research, and nuclear weapons-related operations.

The Oak Ridge cleanup strategy is risk-based and is organized around watersheds that feed the Clinch River. Key Records of Decision under CERCLA been signed for these watersheds. Final Records of Decision will be necessary for all watersheds to deal with the remaining ecological and groundwater concerns.

Cleanup of the Oak Ridge Reservation is primarily governed by three regulatory agreements/compliance orders; the Federal Facility Agreement for the Oak Ridge Reservation, the Oak Ridge Reservation Site Treatment Plan, and the Oak Ridge Reservation Polychlorinated Biphenyl Federal Facilities Compliance Agreement.

Sub WBS Elements:

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<td>Oak Ridge National Laboratory</td>
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<td>1.OR.RO</td>
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<td>1.OR.Y-12</td>
<td>Y-12 Plant</td>
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Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:
- WBS No.: 1.OR.ETTP
- Parent WBS: 1.OR
- WBS Level: 3
- Reference Number: 01
  
WBS Title: Projects
- Parent Title: Oak Ridge Reservation
- WBS Level Title: Project Level
- Reference Description: PBS, Line Item Projects, etc. Number

WBS Element Scope Description:

The East Tennessee Technology Park site occupies approximately 5,000 administrative acres adjacent to the Clinch River and located approximately 13 miles west of Oak Ridge, Tennessee. Approximately 2,200 of these acres are to be addressed under the Comprehensive Environmental Response, Compensation and Liability Act. It was originally built as a uranium enrichment facility for defense programs. The majority of the 125 major buildings on the site have been inactive since uranium enrichment production ceased in 1985.

Sub WBS Elements:

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<td>Remedial Actions</td>
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<td>ETTP Main Plant Area D&amp;D</td>
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<td>K25 Building D&amp;D</td>
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<td>K27 Building D&amp;D</td>
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Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:

WBS No.: 1.OR.ETTP.0267
Parent WBS: 1.OR.ETTP
WBS Level: 4
Reference Number: 0267
Program Mission: Safeguards and Security

WBS Title: Safeguards and Security
Parent Title: East Tennessee Technology Park
WBS Level Title: Subproject Level
Reference Description: 0267
PBS: OR-0020 - Safeguards and Security

WBS Element Scope Description:

TBD
**Corporate Work Breakdown Structure (WBS) Dictionary**

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<td>Waste Treatment Facility Reconfiguration and Adaptive Reuse</td>
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**WBS Element Scope Description:**

Activities carried out at the 3,300-acre Oak Ridge National Laboratory historically have supported both the defense production operations and civilian energy research effort. Cleanup addresses contamination from a variety of research and development activities, which were supported by multiple DOE programs over a long period of time. Significant waste management activities took place within the Melton Valley area of the Laboratory. The Oak Ridge National Laboratory currently conducts applied and basic research in energy technologies and the physical and life sciences. Cleanup includes environmental remediation, decontamination, decommissioning and demolition of hazardous and radioactively contaminated facilities, and disposition of legacy low, mixed low-level, and transuranic waste.
WBS Information:

- **WBS No.:** 1.OR.0RNL.0259
- **Parent WBS:** 1.OR.0RNL
- **WBS Level:** 4
- **Reference Number:** 0259
- **Program Mission:** Excess Nuclear Material Management & Disposition

**WBS Element Scope Description:**

TBD

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**Corporate Work Breakdown Structure (WBS) Dictionary**

- **WBS Title:** U233 Construction
- **Parent Title:** Oak Ridge National Laboratory
- **WBS Level Title:** Subproject Level
- **Reference Description:** 0259
- **PBS:** OR-0011Z - Downblend of U-233 in Building 3019
Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:

WBS No.: 1.OR.ORRO
Parent WBS: 1. OR
WBS Level: 3
Reference Number: 03

WBS Title: Oak Ridge Reservation - Other
Parent Title: Oak Ridge Reservation
WBS Level Title: Project Level
Reference Description: PBS, Line Item Projects, etc. Number

WBS Element Scope Description:

Activities are associated with the collection, storage, treatment, and disposal of low-level, mixed low-level, and hazardous waste from the East Tennessee Technology Park and PCB FFCA mixed waste from Y-12 and Legacy Industrial Waste. It also includes the operation of the Toxic Substance Control Act Incinerator and the Central Neutralization Facility. Management of the Reservation's inventory of transuranic waste, acceptance, verification, collection, and transport of newly generated transuranic waste, transfer of transuranic wastes to the Waste Processing Facility, and the operation and decontamination & decommissioning of the Waste Processing Facility are also part of the scope. It partially includes East Tennessee Technology Park infrastructure services.

This project also reduces risk and accelerates cleanup of three privately owned properties that were contaminated due to the sale of contaminated materials from DOE to private companies. DOE is responsible for the cleanup of these sites under the TN Superfund law. The three sites are the Atomic City Auto Parts Site in Oak Ridge and the David Witherspoon, Inc. 901 and 1630 sites in Knoxville. The properties, which cover 64 acres combined, are in residential and commercial areas and are accessible to the public. Primary contaminants include uranium, PCBs, and heavy metals. The cleanup actions at these sites will consist of removing, treating, and disposing of contaminated materials, equipment, soil, and sediment; demolishing facilities; and groundwater actions. The scope also includes Offsite Program Site Evaluations, which are dependent on the results of a study schedule for release in FY 2004 by the Agency for Toxic Substances and Disease Registry (ASTDR). Actions taken to date include removal of highly contaminated items from the sites and preparation of remedial investigations and feasibility studies. Cleanup of the Atomic City Auto Parts Site has been completed. Work at the Witherspoon Sites will be completed by 2009. Upon completion, all three sites are expected to be suitable for future industrial use.

Sub WBS Elements:

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Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:
WBS No.: 1.OR.ORRO.0261
Parent WBS: 1.OR.ORRO
WBS Level: 4
Reference Number: 0261
Program Mission: Transuranic (TRU) Waste Management & Disposition

WBS Element Scope Description:
TBD

WBS Title: RH TRU Debris
Parent Title: Oak Ridge Reservation - Other
WBS Level Title: Subproject Level
Reference Description: 0261
PBS: OR-0013B - Solid Waste Stabilization and Disposition
Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:

WBS No.: 1.0R.Y-12
Parent WBS: 1. OR
WBS Level: 3
Reference Number: 04

WBS Title: Y-12 Plant
Parent Title: Oak Ridge Reservation
WBS Level Title: Project Level
Reference Description: PBS, Line Item Projects, etc. Number

WBS Element Scope Description:

The Y-12 site is approximately 811 acres and is located about two miles southwest of Oak Ridge, Tennessee. The Y-12 site originally was a uranium processing facility and now dismantles nuclear weapons components and serves as one of the nation's storehouses for special nuclear materials. The types of contamination include radioactive, hazardous, and mixed wastes. The sanitary landfills for all of the Oak Ridge Reservation are located at Y-12. The Environmental Management Waste Management Facility (a Comprehensive Environmental Response, Compensation and Liability Act disposal facility supporting the cleanup) is also located at Y-12.

Sub WBS Elements:

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<td>Chestnut Ridge and Off Site Remedial Actions</td>
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Corporate Work Breakdown Structure (WBS) Dictionary

WBS Information:

WBS No.: 1.OR.Y-12.0276

Parent WBS: 1.OR.Y-12
WBS Level: 4
Reference Number: 0276
Program Mission: Site Infrastructure/Program Support/Program Manage

WBS Element Scope Description:
TBD

WBS Title: Landfill Closure - Waste Treatment Facility and Utility Reconfiguration
Parent Title: Y-12 Plant
WBS Level Title: Subproject Level
Reference Description: 0276
PBS: OR-0041 - Nuclear Facility D&D-Y-12
EM Corporate Work Breakdown Structure

Office of Strategic Planning and Analysis
Where We Came From

- The current PBS structure was implemented in FY2003
- Intended to define projects by program area (i.e. SNF, Tank Waste, D&D, etc) by site.
- EM Management was interested in analyzing costs by program area across the complex in order to take advantage of economies of scale and to unify program management.
- Initial direction was not widely followed by sites, PBSs contain scope from multiple program areas, negating the ability to perform complex wide analyses at the PBS level.
EM Corporate Work Breakdown Structure

- Organizes work uniformly across the complex
- EM dictates first four levels, allows sites to complete lower levels according to their needs
- Integrates project management and budget planning
- Basis of EM Enterprise Architecture which will be used for project performance tracking and budgeting
- Follows ANSI standard 748-A, Section 3 for organization and definition of work
WBS Level 4 is an ABB

- ABB’s were created to allow EM to perform complex wide program analyses that were not possible with PBSs.
- ABB’s are the budget Integrated Priority List elements creating the link between project management and budget.
- ABB’s are discrete site-specific components of EM scope that can be managed, assessed, budgeted, executed, reprioritized and communicated as a whole.
- ABB’s have all the components of a WBS element.
Characteristics of an ABB

• Must reflect how work is accomplished, consistent with the site baseline
• Have a life cycle cost profile
• Have a beginning and an end date
• Dollars identified by “maintenance” and/or “progress”
• Report through only one PBS, thus maintaining historical costs back to FY 1997
• Represent work in one of twelve mission areas, allowing cost and performance analysis by more program areas than original PBSs
Level 3 are Reportable Projects

• PBSs become budgeting mechanisms and not projects
• Projects are defined by the sites
• Projects are an accumulation of logically related ABBs
• All component ABBs must be either operating or capital and roll up to an operating project or capital project
• Better represent the way sites are organizing and performing their work (in many cases, by geographic area and not by program area)
• Allows EM to better comply with recent agreements with OECM on project definition and PARS reporting
EM Corporate Work Breakdown Structure

EM Program Work Breakdown Structure

Level 1 – EM Program

Level 2 – Site (X)

Level 3 – Project (Y)

Level 4 – ABB (Z)

The ABBs will be defined by the site/FPD to align with the way the projects are being managed.

Other Attributes that will be tracked as activity coding:
- Program Mission Category (PMC)
- Project Baseline Summary (PBS)
- Environmental Cost Element Structure (ECES)
- Congressional Budget Request
- Budget and Reporting (B&R) Codes
- EM Min-Safe category
- State
- Compliance Related

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Benefits of the Corporate WBS

- Will allow progress tracking by site, program, project, and sublevel components, which allows EM to better identify performance trends with multiple parameters
- Organizes the work uniformly across the complex allowing cost comparisons not currently available to EM
- Controls scope at a level lower than EM was previously able
- Maintains historical costs by PBS
- Mission categories will be attributes in which costs and performance can be isolated and analyzed
12 Program Mission Categories
MEMORANDUM FOR DISTRIBUTION

FROM: DAVID HUIZENGA
ACTING ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

SUBJECT: Modification of the Office of Environmental Management
Corporate Work Breakdown Structure

The purpose of this memorandum is to modify the Office of Environmental Management (EM) Corporate Work Breakdown Structure (CWBS) implemented on August 26, 2010, by memorandum signed by the Principal Deputy Assistant Secretary. The significant modifications included in this memorandum provide for the following: 1) identify Level 3 as the Project Baseline Summary (PBS); 2) identify the Deputy Assistant Secretary for Program Planning and Budget as the change control authority; 3) eliminate references to American Recovery and Reinvestment Act; and 4) create a new module in the Integrated Planning, Accountability, and Budgeting System to house Analytical Building Blocks (ABB). Finally, other minor modifications include updating references, eliminating due dates for past deliverables, and changing points of contact.

When first implemented, the CWBS standardized the structure used to categorize similar scopes of work, facilitated the inclusion of consistent scopes of work within the EM Integrated Priority List (IPL) for budget formulation, and performed comparative analyses of programmed alternatives. The CWBS follows the American National Standards Institute Standard 748-A, section 3, for organization and definition of work. It also allowed EM to interface with site-specific work breakdown structures at Level 4, maintained historical costs by PBS, and analyzed programs using multiple attributes. The CWBS also included current project realignments for approved capital asset projects and operations decomposition. The CWBS contains four levels that are described below:

**Level 1**

Level 1 is comprised of a single element. This element is the EM Program Level and represents the entirety of EM work across the Department of Energy (DOE) complex.

**Level 2**

Level 2 represents the site level. There is one element at this level for each operations office, field office, and/or project office. All EM scope at each of the geographically separate offices is accumulated in each of the respective elements at this level. Although the Richland Operations Office and the Office of River Protection are geographically on the same site, they will be two separate elements at Level 2.
Level 3

Level 3 represents the PBS level. The elements at this level generally align to program areas such as high level waste, spent nuclear fuel, decontamination and decommissioning, etc. Level 3 will be the reporting level to Headquarters for Operations Programs. Operations Programs will be managed according to the EM Operations Programs Modified Protocol.

Level 4

This level contains each site's ABB. Each ABB has been identified as either a capital asset project or a subdivision of operations programs. The ABBs also represent the elements of the IPL that are used to formulate annual budget submissions to Congress. Each element at this level is a strategic planning element for EM. This level also represents the interface of project management and budget development. Each element at this level must have a scope description, life-cycle cost profile, a defined end state, a beginning and end date, costs identified by "maintenance" and "progress," described by only one of the twelve mission categories, and receive funding from only one PBS. Level 4 ABBs will be maintained under configuration control. Control is limited to the addition or deletion of ABBs or modification of ABB scope definitions. A new module has been created in IPABS to house the ABBs. The Deputy Assistant Secretary for Program Planning and Budget will be the change control authority.

Line item construction projects represent one ABB for construction and one ABB for operation. Each expense funded cleanup capital asset project will be assigned to a single ABB. Level 4 will be the reporting level for all capital asset projects managed in accordance with DOE Order 413.3B, Program and Project Management for the Acquisition of Capital Assets. Operations activities will be divided according to the ABB structure at Level 4 for budgeting IPL and analysis purposes. A new ABB or CWBS element will be created as new capital asset projects are identified and move from the larger operations activities at Critical Decision 2.

Concurrently with the implementation of the CWBS, the Office of Strategic Planning and Analysis developed a CWBS dictionary based on Level 4 scope descriptions provided by each site. Level 4 functions as the interface between the site-specific and contractor work breakdown structures and the CWBS. Sites must utilize the lowest level of the CWBS Level 4, as the top level of the site CWBS.

Should you or your staff have questions or comments, please contact me or Mr. Barry Gaffney, Director, Office of Strategic Planning and Analysis, at (202) 287-5973.
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