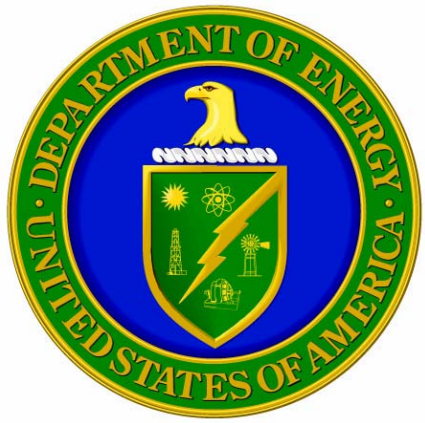


**U.S. Department of Energy**

**Guide to IT Capital Planning and  
Investment Control (CPIC)**



**September 2007**

***Office of the Chief Information Officer***

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## **1.0 PREFACE**

This document has been prepared by the U.S. Department of Energy (DOE) Office of the Chief Information Officer (OCIO) to document the Department's Capital Planning and Investment Control (CPIC) process for information technology (IT) and provide Department-wide guidance. Consistent with the Office of Management and Budget's (OMB) Circular A-130, the Department's IT CPIC process is an iterative process with inputs coming from across the Department and the outputs feeding into the budget and investment control processes.

### **Purpose**

The IT CPIC Guide's purpose is to:

- Establish the policies and responsibilities for performing IT CPIC processes throughout the Department of Energy;
- Serve as the IT management guide for the execution of IT CPIC;
- Demonstrate how the integrated and iterative departmental CPIC process aligns and operates with other departmental processes;
- Clarify IT management nuances within the Department's other capital asset management processes; and
- Document the Department's IT CPIC process.

This Guide will be updated annually to include any new internal and/or external process changes and to reflect CPIC maturity.

### **Scope**

The IT CPIC Guide's scope addresses all major and non-major IT investments.

## 2.0 INTRODUCTION

### 2.1 Capital Planning and Investment Control Overview

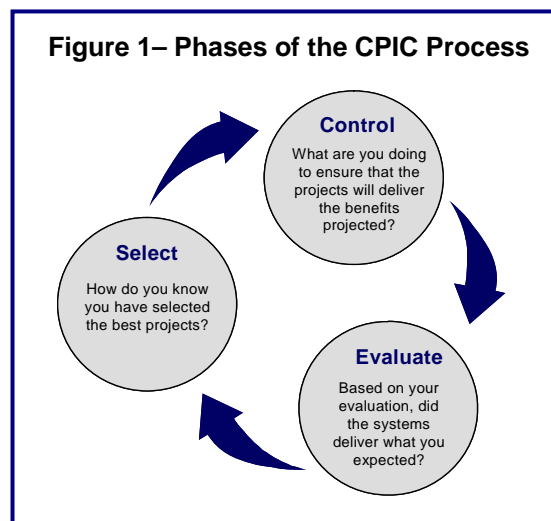
As defined by OMB Circular A-11, signed July 2, 2007, “Capital planning and investment control means the same as capital programming and is a decision-making process for ensuring IT investments integrate strategic planning, budgeting, procurement, and the management of IT in support of agency missions and business needs. The term comes from the Clinger-Cohen Act of 1996 and generally is used in relationship to IT management issues.

CPIC consists of the following three phases:

**Select** The process the Department uses to determine priorities and make decisions about which initiatives (new and ongoing) they will fund and include in the IT portfolio.

**Control** An ongoing management process designed to monitor the progress of initiatives against projected cost, schedule, performance, and expected mission benefits. The Control Phase helps to ensure each investment is properly managed.

**Evaluate** Once initiatives are fully implemented, actual versus expected results are evaluated to (1) assess the initiative's impact on strategic performance, (2) identify any changes or modifications to the initiative that may be needed, and (3) revise the investment management processes based on lessons learned, self-assessments and benchmarking.



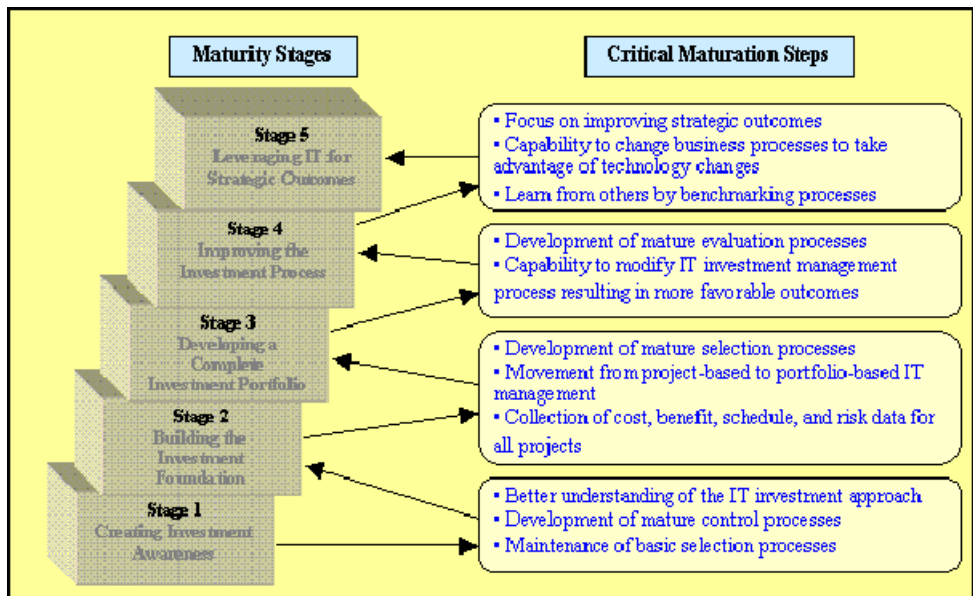
Beyond the obvious business value of an effective CPIC process, there are various legislative and regulatory drivers for implementing CPIC. Many legislative reforms emphasize the need for federal agencies to significantly improve how they plan, select, fund, control, and evaluate IT initiatives. The Clinger-Cohen Act requires federal agencies to focus on the results achieved through IT initiatives while concurrently streamlining their IT acquisition process. It also mandates that agency heads implement a process for maximizing the value of IT initiatives, assess and manage the risks of IT acquisitions, and quantitatively benchmark the performance of IT activities against comparable processes and organizations in the public or private sector.

To provide agencies with specific guidance on implementing the Clinger-Cohen Act, OMB regularly revises Circular A-130, *Management of Federal Information Resources*. The revisions apply to the sections of A-130 concerning information systems and IT management. It requires agencies to follow the provisions of the Clinger-Cohen Act and OMB Circular A-11, which involve the acquisition, use, and disposal of IT as a capital asset.

The General Accountability Office (GAO), also in response to the Clinger-Cohen Act, developed the Information Technology Investment Management Process Maturity Framework (ITIM/PMF).

The purpose of the framework is to identify critical processes for successful IT investment and management and organize these processes into a framework of increasingly mature levels. GAO's ITIM/PMF provides a comprehensive model for evaluating and assessing an organization's CPIC process and helps identify specific areas for improvement. An overview of the framework is provided in Figure 2 below.

**Figure 2– GAO ITIM Stages of Maturity**



A mature CPIC process yields numerous benefits to investment managers, key stakeholders, and program and departmental executives. Benefits include:

- Increased capability to achieve mission and business objectives
- Clear alignment of proposed initiatives with IT strategic goals and objectives, as specified in an Information Resources Management (IRM) Strategic Plan
- Support and integration with Enterprise Architecture (EA) efforts
- Forum for measuring performance and net benefits for dollars invested
- Framework to balance potential benefits against costs and risk
- Protocol for setting IT priorities and making appropriate IT resource shifts based on priorities

**2.2 Department of Energy CPIC Process Overview**

The DOE CPIC is a structured process, which encompasses the submission of all IT investment information to the OCIO for evaluation and resultant recommendation to the Corporate Program Review (CPR) Board for inclusion, or continued inclusion, in the Department’s IT investment portfolio and budget submissions.

The Department is required to submit Capital Asset Plans (Exhibit 300s) for all major IT investments. OMB and the Department have defined major IT investments, including large infrastructure investments, as those that meet any of the following criteria:<sup>1</sup>

- Total Project Cost (TPC) of \$5 million or more [i.e., cumulative D/M/E funding across all fiscal years (all past, current, and all future) of the project];
- Any investment with cumulative steady state or mixed lifecycle funding of \$5 million or more across the Prior Year (PY), the Current Year (CY), and the Budget Year (BY);
- A financial system with an estimated investment cost of \$500 thousand or more in one year;
- An interagency E-Government initiative or line of business where DOE is the lead agency;
- OMB directed portfolio IT investments (e.g., Infrastructure and Grants Management);
- Requires special management attention because of its importance to the agency mission;
- Has high development, operating, or maintenance costs, high risk or high return;
- Plays a significant role in the administration of agency programs, finances, property, or other resources.

The four categories of E-Government initiatives are:

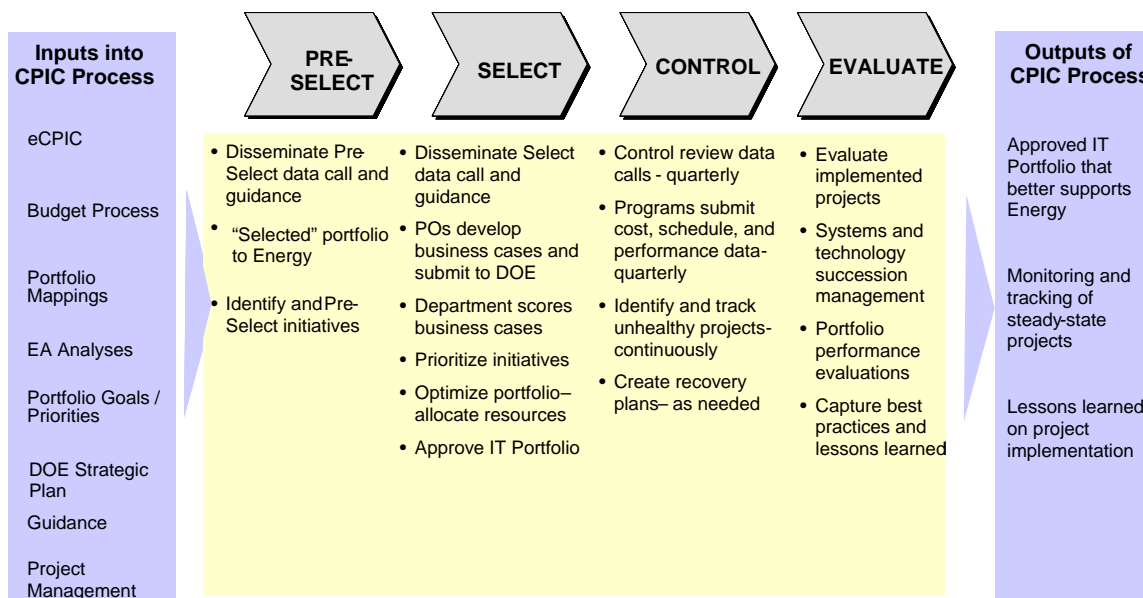
- Government-to-Citizens (G2C): Initiatives to build easy to find, easy to use, one-stop points-of-service that make it easy for citizens to access high-quality government services.
- Government-to-Business (G2B): Initiatives that reduce government's burden on businesses by eliminating redundant collection of data and better leveraging E-business technologies for communication.
- Government-to-Government (G2G): Initiatives that make it easier for states and localities to meet reporting requirements and participate as full partners with the federal government in citizen services, while enabling better performance measurement, especially for grants.
- Internal Efficiency and Effectiveness (IEE): Initiatives that make better use of modern technology to reduce costs and improve quality of federal government agency administration, by using industry best practices in areas such as supply-chain management, financial management and knowledge management.

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<sup>1</sup>Department of Energy, *Information Technology (IT) Reporting Format and Requirements for FY 2009 Budget Submission, July 2007*, (Based on OMB Circular A-11, Sections 53 and 300, "Information Technology and E-Government")

The evolving CPIC process at the Department of Energy involves Pre-select activities and the standard Select, Control, and Evaluate phases, as shown in Figure 3.

Figure 3– DOE CPIC Process



### Pre-Select Phase

The Pre-Select Phase provides a process to assess proposed IT solutions for unmet business requirements. It also allows for a governance process methodology to ensure that proposed IT investments support the agency strategic plan and mission needs as well as provide initial information to further support investments. It is during this phase that the business/mission need is identified and relationships to the Department and/or agency strategic planning efforts are established. There are significant information requirements and a potential expenditure of funds in the preliminary planning phase to prepare for review and selection of IT investments. The Pre-Select Phase provides an opportunity to focus efforts and further the development of the initiative's concept. It also allows project teams to begin the process of defining business requirements and associated system performance metrics, performance measures, benefits, and costs, as well as subsequent completion of a business case and initial project planning efforts in preparation for inclusion in the Department's investment portfolio. The steady state operational analysis serves as the method for examining the current performance of an investment and measuring that performance against an established set of cost, schedule and performance parameters. The Operational Analysis Guidance and Data Calls are outlined in Appendix F.

Currently, pre-select activities occur in the program and staff offices where the offices determine which initiatives will be considered for inclusion in the Department's portfolio before submission to the OCIO. The DOE Select Phase is closely integrated with the budget process and is detailed in section 2.4 of this document. Control Phase processes have been implemented within the Department and occur on a quarterly basis. The Evaluate Phase is beginning to mature at the program office and department levels. The Department finalized FY 2007 guidance for conducting Post Implementation Reviews as part of the Evaluate Phase in June 2007.

Numerous inputs feed into the DOE CPIC process, including legislative guidance, Enterprise Architecture analyses, the Department's investment management methodology, as well as portfolio goals. IT initiative information is maintained in the Department's Electronic Capital Planning and Investment Control portfolio management tool, e-CPIC.

The outputs of the DOE CPIC process are an approved IT portfolio that best supports the Department, ongoing monitoring and evaluation of initiatives, and lessons learned that can be fed back into the management of investments and the CPIC process.

DOE's Select, Control, and Evaluate Phases are detailed in sections 3.0 – 5.0 of this document. A summary of the phases is provided below.

### **Select Phase**

The purpose of the Select Phase is to assess the costs/benefits of all proposed investments and to select the optimal portfolio of IT investments. The Select Phase is focused on the development and selection of an IT portfolio that supports the DOE Enterprise Architecture and meets the mission goals of the Department. Investments are reviewed to ensure no duplication of an E-Government initiative or existing DOE system application. Individual investments are evaluated in terms of technical alignment with other IT systems and projected performance as measured by Cost, Schedule, Benefit, and Risk. In this phase, the Department prioritizes the IT initiatives, makes decisions about which projects will be funded, and establishes project Control Review schedules.

Key factors in selecting an IT initiative for inclusion in the IT portfolio include:

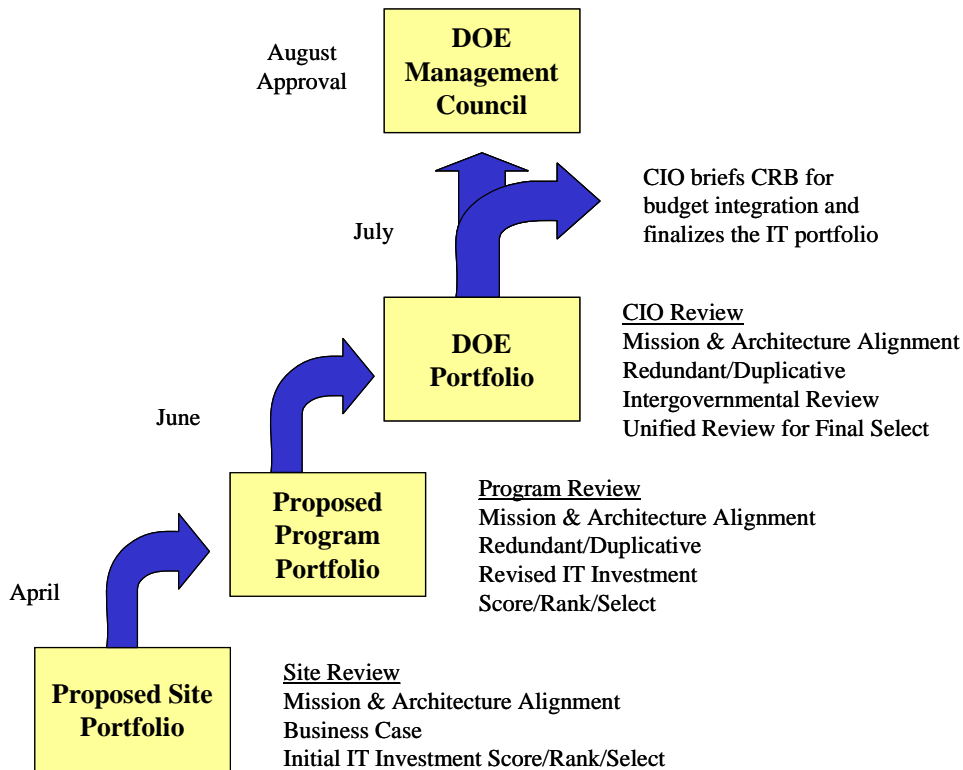
- Does the initiative and portfolio reflect the Department's strategic goals, objectives, and priorities?
- Have potential funding constraints been identified and considered?
- What is the expected return on investment (ROI) for the initiative?
- Have the ramifications of declining to fund certain initiatives been given careful consideration?
- Have all opportunities to invest in crosscutting initiatives been appropriately evaluated?
- Does the project conflict, overlap with, or is it redundant with other projects?
- Are the project owners capable of successfully executing the chosen IT portfolio (i.e., are the appropriate resources available to complete the included initiatives)?
- Have work processes been simplified or redesigned to reduce costs and improve effectiveness?
- Does the initiative make maximum use of commercial-off-the-shelf (COTS) software?
- Has the investment been decomposed into well-defined useful segments or modules?

The current process for the development and selection of the annual IT portfolio is illustrated in Figure 4. Program and staff offices are responsible for evaluating target performance outcomes and reviewing all proposed investments to ensure that the IT portfolio is consistent with the program budget submission. IT investments are selected for the portfolio based on defined selection criteria consistent with the requirements of OMB Circulars A-11 and A-130, and DOE



Order 413.3. Proposed IT portfolios are then forwarded to Headquarters with budget request data and incorporated into the Department-wide IT portfolio. Pursuant to an internal review and scoring for each IT investment business case by the OCIO, a portfolio analysis is performed as part of the Corporate Review Budget process. The CPR Board makes budget decisions, the Information Technology Council (ITC) reviews/recommends and the final IT portfolio is presented to the DOE Management Council for final approval of the Department's IT portfolio.

**Figure 4 - Annual IT Portfolio Selection Process**



**Control Phase**

The purpose of the Control Phase is to ensure, through timely oversight, quality control, and executive review that IT initiatives are conducted in a disciplined, well-managed, and consistent manner within the Department of Energy. This process enables the effective management of the Department of Energy's IT investments. The Control Review sets in place a structured process to provide senior management with accurate information that will allow them to make timely decisions. All major IT investments are subject to OCIO Quarterly Control Reviews. Quarterly control reviews include a review of EVMS data where applicable and investment status data for investments not subject to EVMS requirements. IT investments not performing according to expectations (i.e., investments with cost and schedule overruns greater than ten percent and/or performance shortfalls exceeding ten percent of goals) are subject to additional detailed reviews, managerial corrective actions, and/or termination. In addition, all investments must report on project management qualification requirements, as required by the Federal OCIO Council guidance, and the certification and accreditation status of the investment. This review assesses the performance of major IT investments ensuring compliance with both external and internal regulations and guidance.

**Evaluate Phase**

The purpose of the Evaluate Phase is to examine whether an IT investment has met its intended objectives and yielded expected benefits projected in the business case. A Post Implementation Review (PIR) is performed on IT systems six to eighteen months after they are fully deployed. This review is important not only to determine the future viability of the IT investment, but also to assist IT managers in improving IT proposal business case requirements to better inform future IT selection decision-making.

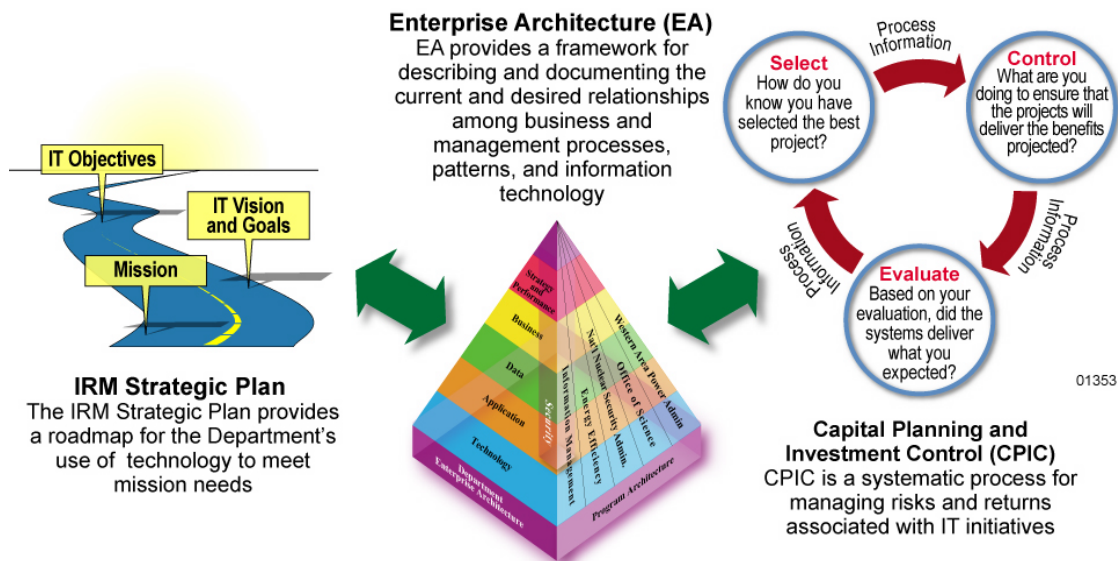
Another component of DOE’s Evaluate Phase is an operational analysis. DOE policy requires program offices to conduct an operational analysis of steady state investments at least annually. The results of the operational analysis are reported via the Exhibit 300 submission and/or control reviews and validated by the OCIO during the Quarterly Control Reviews and annual Exhibit 300 reviews. As noted in GAO’s Assessing Risks and Returns: A Guide for Evaluating Federal Agencies’ IT Investment Decision-Making, “the Evaluate Phase ‘closes the loop’ of the IT investment management process by comparing actual against estimates in order to assess the performance and identify areas where decision-making can be improved.”

The Evaluate Phase also assesses the Capital Planning process to ensure that the desired outcomes for IT investment management are achieved. This process includes a formal benchmarking mechanism whereby the DOE CPIC Process is assessed against the GAO ITIM framework and improvement recommendations are developed. In addition, ad hoc benchmarking against governmental and private sector organizations are performed as necessary.

**2.3 DOE CPIC Integration with Other IT Investment Management Processes**

In addition to CPIC, IRM strategic planning efforts and DOE’s EA form an integrated Strategic Business Management (SBM) framework aimed at effectively managing the Department’s portfolio. The Figure below describes how the three processes integrate at a high level.

**Figure 5 – Strategic Business Management Framework**



The IRM Strategic Plan provides DOE a description of how IRM activities help accomplish agency missions, and ensure that IRM decisions are integrated with organizational planning, budget, and program decisions. This enables the OCIO to articulate a shared vision and corporate perspective among the Department's information activities further allowing the OCIO to champion departmental initiatives that effectively manage information and provide for value added corporate systems.

As a companion to IRM strategic planning, DOE developed an EA framework that leverages both strategic and operational IRM planning activities to identify target opportunities. Through utilizing its EA, DOE can identify and analyze "points of entry" (e.g., number of investments supporting a LOB/Sub function) that can result in recommendations for long-term savings and increased efficiency. The EA is also aligned with the annual budget cycle and provides updates that further define the Baseline and Target architectures based on decisions made in the IT Capital Planning and Investment Control process.

### **EA Integration with CPIC Processes**

DOE is working to ensure strategic integration of EA with CPIC, standardization of investment assessment/prioritization and more centralized portfolio management analyses and support. As part of the Select process, DOE is working to expand the current evaluation criteria to more fully incorporate EA as a significant, decision-making component of this process. The Select Phase enables the Department of Energy to integrate IT management decisions with organizational, planning, budget, financial management, human resources management, and program decisions. It also integrates initiatives with the Department of Energy's EA, and ensures that security management processes are consistent with strategic and operational planning processes. In doing so, it ensures that the Department funds IT initiatives that best support mission needs, minimize risk to the Department, and provide the greatest return on investment to the user community. The Select Phase occurs annually as part of the budget formulation process.

During the Control Phase, the investment is monitored throughout its system development lifecycle, starting from the detailed requirements and functional design stage through the system implementation and customer acceptance stages. Schedules, costs, and changes in system requirements are monitored and managed. This phase also focuses on how well the technology (design) of the investment aligns with the enterprise technology architecture (infrastructure). These assessments compare the final design specifications of the investment to the higher level and common design components of the Agency's EA (i.e., the data, applications, and technology architecture subcomponents of the EA). The phase begins as soon as the proper information from an investment or system is available. Since most design documentation does not begin until funding is approved, and since most final design documentation is not completed until the first step in the Control Phase of the CPIC process, the technical alignment and assessment of an investment against the Agency's EA is most often conducted during the Control Phase of the CPIC process. The TRM security facets and standards identified earlier are important components in this assessment.

The Evaluate Phase examines whether an IT investment is continuing to meet its intended objectives and yielding expected benefits. The Evaluate Phase helps identify lessons learned that are applied annually for CPIC process and as dictated by lifecycle for individual investments. The Evaluate Phase fosters integration of data from its EA and CPIC processes.

The DOE Operational Analysis process, part of the Evaluate phase, involves the use of data from the following EA and CPIC domains: 1) end user and investment beneficiary Post

implementation Review (PIR) information ; 2) actual cost data maintained in the department's/agency's financial management system(s); 3) baseline requirements, cost, schedule, and risk records archived by the investment's (government and contractor) project, business, and contract managers; 4) benefit accumulation and program/system end-of-life projections from the programs' analysis of alternatives; 5) physical performance, maintenance and help desk records maintained by system/mechanical engineers and technical support staff; and 6) feedback and recommendations from the Enterprise Architecture Working Group (EAWG) and the Architecture Review Board (ARB). Each Agency must identify certain points in the CPIC Evaluate Phase where reviews can be conducted. In other words, at certain points in the system lifecycle, it is common for new information regarding a substantive change to potentially impact an investment's EA alignment and assessment rating or its compliance with the architecture. These points vary with the particular system lifecycle methodology used, so each Agency should determine potential points of vulnerability in the process. Formal reviews must be instituted to review documentation and system development in progress at these points. The architecture assessment is completed during the Evaluate Phase, and integrated EA reassessment into the Operational Analysis.

The Evaluate Phase comes after the system is accepted by the customer and is placed into production for an initial period of time. The intent is to identify and document lessons learned not only about the system/investment in question, but about the entire CPIC process. The PIR compares performance promised in the initial proposal, business case, and requirements to actual performance of the system in production. The PIR Evaluation Criteria is outlined in Appendix E. The second action is an evaluation of the ROI to validate estimated costs and benefits. Results of this evaluation determine the recommendation for continuation, modification, or, in rare cases, cancellation of the system. Finally, process improvements or architectural changes required are captured and documented. The following sample questions, while not exhaustive, are typical of those commonly answered during these actions.

- Did the technology used follow the prescribed standards?
- Was the technology sufficiently interoperable with the infrastructure?
- Were improvements in process time, cycle time, or other expected process/time-saving enhancements as expected?
- Has the availability of data for new purposes been explored?

In the past, the DOE investment evaluation has primarily focused on the business value assessment. Additionally, the degree to which an investment supports the Department's goals and objectives has also been assessed. The development and implementation of a more integrated approach is the focus of the SBM framework. This involves the expansion of the strategic component to ensure a straight "line of sight" for investment contribution to the Department's overall goals and objectives, as well as, a more robust EA component through the implementation of the vulnerabilities assessment.

The integration of EA with CPIC processes through the implementation of the SBM framework will yield:

- Rapid identification of appropriate IT investment goals
- Access to integrated strategic, budget and IT information that will provide a better "line of sight" and approach for decisions that affect the direction of the Department
- Development of a more standardized system of prioritization to support the decision-making process
- Appropriate allocation of resources to the best portfolio of investments ensuring the achievement of those goals

- Enabling project initiators to search for duplicative technology, which will eliminate duplicative investments in resources and funding

### **Program and Project Management for the Acquisition of Capital Assets Integration**

The Department is currently aligning the IT CPIC process and DOE Order 413.3<sup>2</sup> requirements, which govern acquisition and project management direction for all capital assets. This alignment will combine budget (CPIC), acquisition and asset development (Order 413), and life cycle management of IT capital assets (CPIC); thereby creating a process to manage assets that deliver results on schedule and within budget.

The integration between the two capital asset processes will reduce reporting burdens, streamline requirements, and provide clear roles and responsibilities. The first two integration gains provide project managers reduced work processes that can achieve modest economies of scale through reduced reporting time. For instance, the integration will reduce reporting burdens through having IT projects report EVMS and project status information into one tool, the Project Assessment and Reporting System (PARS), once a month versus two separate EVMS reporting tools and requirements. The integration further streamlines capital asset requirements for topic areas such as risk, alternatives analysis, baseline validations, EVMS, mission need statements, and more. Lastly, the integration clarifies and reduces redundant roles and responsibilities for project managers, the OCIO, Office of Engineering and Construction Management (OECM), senior management, integrated project teams and others.

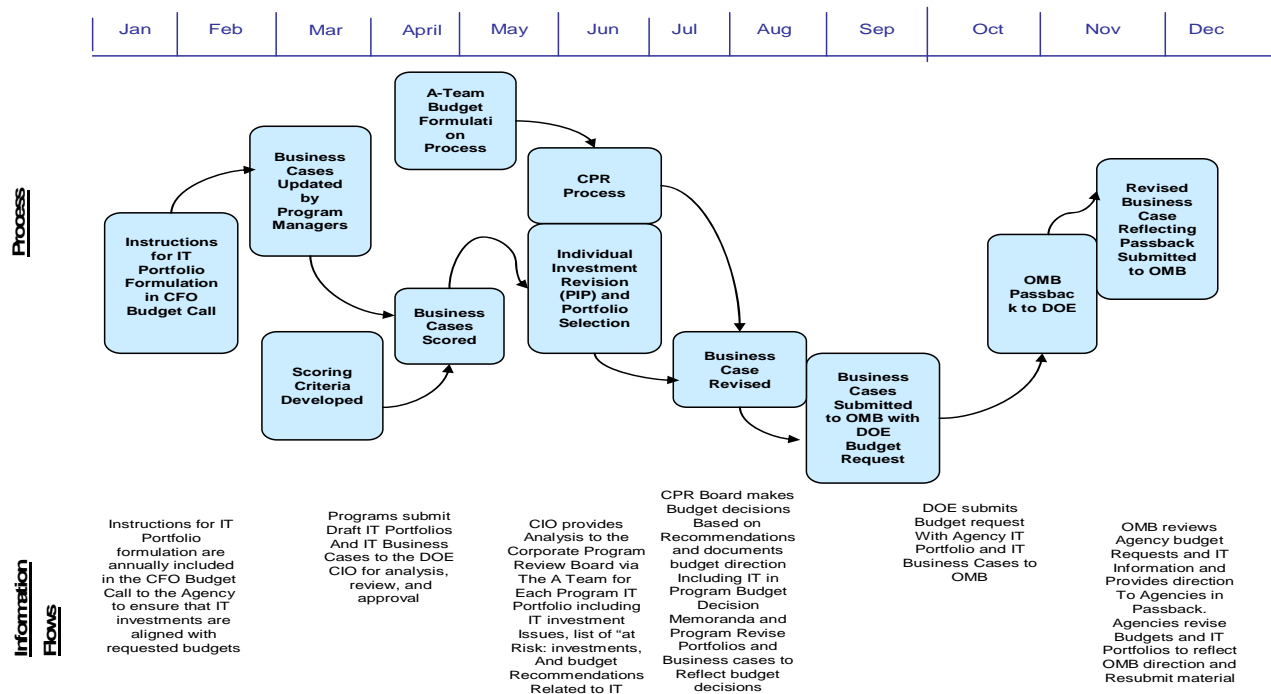
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<sup>2</sup> DOE Order 413.3, Program and Project Management for the Acquisition of Capital Assets. dated 07/28/2006  
<http://www.directives.doe.gov/cgi-bin/explhcgi?qry2057987218;doe-125>

## 2.4 Integration of CPIC and Budget Processes

CPIC’s iterative processes are integrated with the Department’s annual budget process. The two processes and how they operate together are illustrated in Figure 6 below.

Figure 6 – CPIC and Budget Process Integration



The process flow also demonstrates how the OCIO remains an active participant throughout the annual budget process in establishing investment priorities for agency information resources. Beginning in January, through the DOE Budget Call, the OCIO provides instructions for IT portfolio formulation to the program and staff offices. Based on this instruction, the program and staff elements submit their business cases to the OCIO for compliance analysis review and approval. The analysis, budget recommendations, and an investment “at-risk” list are then provided to the Department’s CPR via the A Team for inclusion in the Department’s budget. The CPR makes budget decisions as documented in Program Budget Decision Memoranda (PBD). It is also through the CPR where the OCIO directly advises the Deputy Secretary on budgetary implications of information resource decisions. Based on those decisions the program and staff offices revise their portfolios and respective business cases. The final budget requests are submitted to OMB for consideration. Toward calendar year end, OMB reviews the budget requests and provides direction in the passback. The OCIO participates in passback through helping program and staff elements revise their business cases based on OMB direction. Budgets and portfolios are then updated to reflect this direction.

## 2.5 CPIC Roles and Responsibilities

Listed below are the IT investment roles and responsibilities of those currently involved in the Department of Energy's CPIC process: IT Project/Program Managers; IT Capital Planning and Architecture Division; A Team; CPR; and the Management Council. Detailed responsibilities are provided in the following sections of this guide.

**IT Project/Program Managers-** IT Project/Program Managers are responsible for the oversight and execution of IT investments. They will be the initiators of the investments and responsible for overseeing the activities of the development and support staff (internal or external service providers).

<b>IT Project/Program Managers</b>
<ul style="list-style-type: none"><li>• Ensure that IT initiatives align with the Department's Enterprise Architecture</li><li>• Initiate Pre-Select and Select Documentation</li><li>• Manage the initiative throughout its life cycle</li><li>• Participate in quarterly control reviews as required</li><li>• Oversee the initiative's progress, including cost, schedule, and performance</li><li>• Ensure the use of the System Development Life Cycle (SDLC) project management methodology</li><li>• Develop required SDLC documentation and submit accordingly</li><li>• Report on the initiative's progress at each life cycle milestone</li><li>• Prepare progress/status reports as requested</li><li>• Document lessons learned once projects are implemented</li><li>• Participate in PIRs</li><li>• Perform ongoing operational analysis consistent with the life cycle</li></ul>

**OCIO IT Capital Planning and Architecture Division** - The OCIO IT Capital Planning and Architecture Division of the Office of IT Planning, Architecture, and E-Government consists of an interdisciplinary team (e.g., Financial Analysts, Technical Analysts, and Business Functional Analysts) formed to support day-to-day IT planning and management operations under the purview of the Chief Information Officer. The IT Capital Planning and Architecture Division provides CPIC related guidance and support to program and staff offices and the Department's CPR Board.

**OCIO IT Capital Planning and Architecture Division**

- Ensure evaluation of completed investments against original requirements, compliance with EA, and security policies and regulations.
- Receive and review investment business case summaries against pre-determined criteria to determine whether they meet minimum viability and investment characteristic requirements. *(The division reviews investment business case summaries, assesses architectural compliance, redundancies, and opportunities for collaboration. It works with project managers when additional information and clarification is needed).*
- Ensure that IT initiatives address accessibility requirements stipulated by Federal Acquisition Regulations and Section 508.
- Analyze DOE's IT portfolio semi-annually and report results to CIO.
- Obtain and review status reports from project managers on performance measures, cost, and schedule goals.
- Meet with project managers to review status and recommend corrective action as warranted.
- Actively seek to identify "at risk" investments, act to mitigate risks or correct problem areas, and present significant issues to the CPR for consideration.
- Monitor major IT investments for progress against projected cost, schedule, and performance goals.
- Prepare recommendations for the continuation, modification, or cancellation of funding for investments
- Report investments with cost and/or schedule overruns greater than ten percent and/or performance shortfalls exceeding ten percent of goals to the IT Council.
- Provide guidance and participate in the Post Implementation Reviews of initiatives.
- Create user guides prior to Control Reviews and Post Implementation Reviews.
- Review evaluations of implemented investments to identify lessons learned.
- Vet lessons learned to the CPIC user community to ensure that all lessons learned have been captured and addressed.
- Oversee the preparation of documents identified in the Department's CPIC Process Guide.
- Perform annual process and benchmark against ITIM.
- Provide recommendations and support materials on IT investments to A Team.
- Perform Strategic Portfolio Review (SPR) analysis.

**A Team** – The A Team reviews and makes recommendations concerning budget decisions to the CPR. An IT representative serves on the A Team to ensure that IT issues are adequately addressed.

**A Team**

- Provide analysis and recommendations to the Corporate Program Review Board on IT investments, as well as other budgetary items.



**Corporate Program Review Board** - The Corporate Program Review Board is responsible for determining the Department's budget submission. They review all capital assets for inclusion in the budget, including IT investments. The CIO and CFO serve on the board, along with the Secretary, Deputy Secretary, Under Secretaries, and Assistant Secretaries from each of the major organizational elements.

<b>Corporate Program Review Board</b>
<ul style="list-style-type: none"><li>• Review program submissions and analysis from functional areas.</li><li>• Make budget decisions.</li><li>• Document budget direction in Program Budget Decision memoranda.</li><li>• Seek input on IT investments from A Team, CIO and the CFO.</li></ul>

**DOE Management Council** - The DOE Management Council, a board of senior DOE executives, reviews and approves the proposed Department IT portfolio presented by the CIO.

<b>Management Council</b>
<ul style="list-style-type: none"><li>• Reviews and approves departmental IT portfolio.</li></ul>

## **3.0 SELECT PHASE**

### **3.1 Overview of Select Phase**

The Select Phase of the IT investment management process determines priorities and makes decisions about which projects will be funded during the year. The goal of the Select Phase is to ensure that the Department's IT investment portfolio is comprised of the appropriate range of investments that will best support its mission and strategic goals.

The Department has an IT portfolio whose composition changes as investments are modified, added to, or deleted from the portfolio. An analysis of the existing portfolio of IT investments helps to ensure that senior managers are informed of current costs, benefits, and risks associated with the existing portfolio.

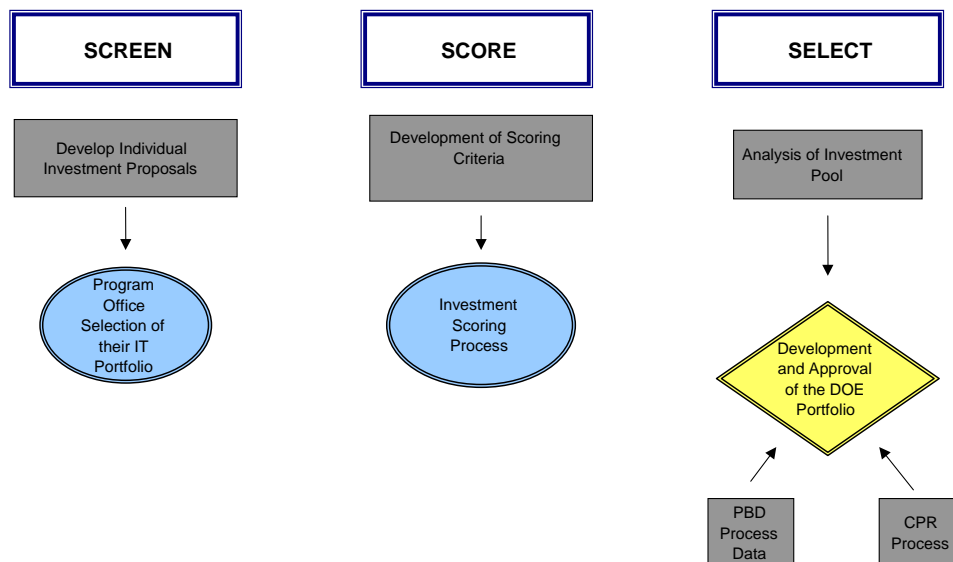
In the information that program offices submit to the OCIO, each IT initiative must document the business need for the investment. For each investment, the project manager must provide:

- How the initiative and portfolio reflect the Department's strategic goals, objectives, and priorities;
- A description of the initiative, the benefits to DOE if funding is provided, and the funding requested for development, equipment and maintenance for the entire life cycle of the investment;
- How the investment supports the President's Management Agenda, Secretarial priorities, Congressional mandates, and the Department's strategic goals and objectives;
- How the investment resolves GAO/Inspector General (IG) findings and material weaknesses;
- An alternatives analysis, including a cost-benefit analysis with risk-adjusted ROI and net present value NPV results;
- Initial project plan with estimated costs listed for each work package within the work breakdown structure (WBS);
- Performance measures that are tied to OMB's Performance Reference Model (PRM);
- How risks will be managed and security and privacy controls implemented; and
- How the investment conforms to the EA and other related information.

The Select process is supported and implemented through the Department's IT governance program and requires the participation and collaboration of all IT project/program managers with the program and staff offices, the Office of the Chief Information Officer, the Office of the Chief Financial Officer, and executive-level decision making bodies. Within the DOE the Select Process is closely tied to the budget process, and therefore the OCIO and CFO are an integral part of the Select Phase.

There are three parts to the Select Phase: screen, score, and select (See figure 8). These are described in the paragraphs below.

Figure 8 - DOE Select Process



### 3.2 IT Investment Screening

A starting point for the Select Phase is the screening process, in which projects being submitted for funding are compared against a uniform set of screening criteria and thresholds in order to determine whether the projects meet minimal requirements and to identify at what organizational level the projects should be reviewed. The costs, benefits, and risks of all IT projects whether proposed, under development, or operational are then assessed and the projects are compared against each other and ranked or prioritized.

The proposed program-wide IT portfolio is reviewed and approved by a board of senior program managers and submitted to the departmental OCIO for review and integration into the DOE IT portfolio. Site IT program managers review individual IT investment business cases and select investments for a proposed site portfolio to ensure that missions and goals are effectively and efficiently supported by the proposed portfolio and that the proposal is consistent with the site IT architecture. Individual IT investment business cases are reviewed to ensure that they are compliant with the requirements of OMB Circulars A-11 and A-130 and adequately justify the investment. The proposed site portfolio is sent to the appropriate Headquarters' program office for review and inclusion in a program-wide portfolio. The program office IT portfolios are merged with staff office IT portfolios to create the Department's proposed IT portfolio.

Program office IT project/program managers screen major IT initiatives before submitting business cases (or updated business cases for ongoing initiatives) to the OCIO for scoring and selection into the Department's IT investment portfolio. Major IT investments are required to submit complete Exhibit 300s. The documentation will be reviewed and scored for all major IT investments as part of the Department's Select process.

### 3.3 IT Investment Scoring

Following proposed investment submission by program offices, the OCIO reviews Exhibit 300 submissions consistent with criteria established and promulgated by OMB. It is reviewed for

quality and content in accordance with OMB A-11 criteria applicable to support of the President's Management Agenda, acquisition strategy, project management, Enterprise Architecture, alternatives analysis, risk management, performance goals, security, use of a performance based management system, and privacy. The criteria used in this scoring process are outlined in Appendix B of this document.

The OCIO reviews, scores, and develops Performance Improvement Plans (PIPs) for each major IT investment business case. The PIPs contain detailed comments for improving each section of the Exhibit 300. The OCIO uses an integrated project team of representatives from the IT Capital Planning and Architecture Division and the offices responsible for Enterprise Architecture, E-Government, cyber security, records management, and privacy to perform the internal review.

### **3.4 IT Investment Selection**

The final selection of major IT initiatives to be included in the Department's IT investment portfolio is based on information gathered and analyzed during the screening and scoring stages of the IT CPIC Select process. The OCIO analyzes and compares initiatives within and across the available IT investment opportunities. Business cases that receive an overall internal passing score based on the A-11 criteria will be tentatively included in the DOE IT portfolio pending further analysis and approval. Business cases that fail the structured review are returned with specific, detailed comments to the program office for correction. All business cases in the portfolio are then subject to further high-level analysis and review in several areas of special interest to the Department. This review and revision process is repeated until a final business case is accepted by the OCIO as a valid, viable business case.

The analyses take into account the relative operational, technical, financial, and institutional strengths and weaknesses of each initiative. The Department's goal is to maintain an IT investment portfolio with the following factors balanced to ensure that, for any given funding investment, the best return to Department mission and functions is obtained.

As part of the Corporate Program Review process, a portfolio analysis is performed. The OCIO submits this analysis with budget recommendations and a list of "at-risk" investments (including major IT investments scored as unsuccessful by OMB and major and other IT investments identified internally by DOE as concerns) to the CPR Board. Program offices are required to submit proposed budgets including a variety of documents (e.g. Exhibits 300 and 53, budget justification documents, strategic plan/program plan) to the CPR. The CPR reviews program submissions and analysis from functional areas, including OCIO IT analysis, to make budget decisions.

Investments identified as "at-risk" during the CPR process are subject to budgetary action up to and including termination. The budget decisions resulting from the CPR process are documented in Program Budget Decision Memoranda which are provided to program offices. PBD Memoranda provide specific direction to program offices on revisions to proposed budgets including IT investments. Based on that direction, the program and staff offices revise their respective budgets, business cases, and IT portfolios. At the conclusion of the CPR process, once the program offices have made all required revisions to the IT business cases and portfolios and the OCIO has reviewed the final submission, the draft consolidated DOE IT portfolio is presented by the CIO to the DOE Management Council for final approval. The final DOE IT portfolio is submitted to OMB as attachments to the *DOE IT Capital Plan* for budget review in September of each fiscal year in accordance with OMB Circular A-11 guidance.

### **3.5 Select and eCPIC**

All Major Exhibit 300s and non-major Exhibit 53s are maintained, updated, and submitted using the Electronic Capital Planning and Investment Control (eCPIC) system. This allows the Department to maintain a repository of investment information. OMB only requires major IT investments to submit an Exhibit 300.

## 4.0 CONTROL PHASE

### 4.1 Overview of Control Phase

The Control Phase of CPIC begins once investments have been selected, budgeted, and have received funding. The Control Phase of the Department's IT CPIC process requires monitoring of on-going IT initiatives during the planning, acquisition, deployment and maintenance/operational phases of the IT investment life cycle. The primary objective of the Control Phase is to assess the performance and enable the effective management of all major IT investments within the Department of Energy. The Control Review sets in place a structured process to provide senior management with decision making information and to meet the goals and objectives that were established in the business cases submitted to OMB as part of the budget submission process.

The ability to adequately monitor IT initiatives relies heavily on outputs from effective investment execution and management activities. A qualified project manager is responsible for each major IT investment project. The OCIO provides eCPIC to automate the Control Review process allowing the program offices to manage, maintain, and provide shared access to initiative baselines, monitor changing business requirements, and track resource allocations.

The Department has made significant strides in controlling its IT investments. The OCIO has issued a departmental mandate requiring that all major DOE IT investments be reviewed on a quarterly basis. Moreover, the Department has provided training to IT project managers on Earned Value Management through the Office of Engineering and Construction Management. All DOE major IT investment project managers have a minimum of level one project management qualification.

The DOE CPIC Control Phase consists of four major steps as detailed below.

#### **Step 1: Define evaluation criteria and develop scoring criteria and supporting forms/templates for Investment Control Reviews**

The OCIO IT Capital Planning and Architecture Division has established control review scoring criteria to assess the performance and health of IT investments. All major IT investments will be reviewed in the areas of project management qualification, cost variance, schedule variance, performance goals, and security. "Passing" scores have been defined for each performance area. In addition to evaluation and scoring criteria, the IT Capital Planning and Architecture Division has created IT investment review summary report templates to be completed by program offices for individual investments.

#### **Step 2: Establish and Maintain Initiative Cost, Schedule, and Technical Baselines**

The project manager has the responsibility for establishing project management and execution plans, procedures, and practices to support initiative monitoring activities. A mandate has been issued that all major DOE IT investments must be monitored. The project manager is also required to report to the OCIO and the IT Council on the status of the initiative's cost, schedule, and technical baselines each quarter. Baselines provide both the framework and sufficient detail to assess the status of the initiative's major milestones, decisions, activities, and work products and deliverables. The project manager ensures that the project has been planned realistically.

The OMB requirements for appropriate project control include the implementation of an EVMS that meets ANSI/EIA Standard 748. Earned value management provides an indication of how well an investment is meeting the cost and schedule goals defined prior to the outset of the investment. The determination of earned value begins with an estimate of the costs and schedule dates associated with completing investment work packages. Earned value is an assessment of the dollar value of the work actually accomplished based on the original cost estimates to complete the work. The earned value is compared to (1) the planned value, which is comprised of the original cost and schedule estimates, and (2) actual costs and completion dates to determine schedule and cost variances, respectively. The three major objectives of employing earned value are to provide:

- An effective internal cost and schedule management tool for use by project managers
- Review bodies with a mechanism for evaluating initiative progress
- A means to identify potential problems throughout the lifecycle in time to implement changes or corrective actions to ensure project objectives are met

All IT initiatives must be planned, budgeted, and scheduled in measurable and phased "value-added" increments. Major IT investments with Total Project Costs (TPC) over \$20 million are required to use an ANSI Standard 748-compliant EVMS and to report EVMS data through the Project Assessment and Reporting System (PARS) on a monthly basis.

Major IT investments with total investment costs between \$5 and \$20 million in the development phase have the option of using EVMS or another performance management system for management of the investment, but must also report project phase status information through PARS monthly. All major investments with total investment costs between \$5 and \$20 million are subject to OCIO quarterly control reviews. Non-major IT investments with total investment costs below \$5 million are reviewed and managed within the program offices, but are subject to Department-level review and reporting at the discretion of the OCIO.

**Figure 9 – DOE Exhibit 300 and EVM Reporting Requirements**

Major IT Investment		
	Development, Modification or Enhancement (DME) Projects	Mixed (DME + SS) or 100% SS
<b>Total Estimated Costs</b> <i>(Life-cycle)</i>	Any investment with cumulative DME measured across the lifecycle which is greater than \$5M and has DME funding greater than \$5M in the either the Current Year (CY) or Budget Year (BY through BY+n).	Any investment with a total cost (DME + SS) cumulative expenditure greater than \$5M measured across 3 fiscal years; the Prior Year (PY) + Current Year (CY) + Budget Year (BY).
<b>Business Case</b> <b>(OMB Exhibit 300)</b>	✓	✓
<b>ANSI-748 Certified Earned Value Management System</b>	<i>Required for the DME portion where the lifecycle DME is greater than \$20M and DME funding is greater than \$5M in the either the Current Year (CY) or Budget Year (BY through BY+n)</i>	N/A
<b>Performance Management System</b>	<i>All other Major IT Investments not covered by ANSI STD 748 EVM shall have a Performance Management System which assesses cost and schedule performance</i>	

Steady state investments will only be required to provide an operational analysis. For investments in the operations/steady state phase, an annual operational analysis as defined in the *OMB Capital Programming Guide and DOE OCIO Operational Analysis Guidance* must be performed to demonstrate how close the investment is to achieving the expected cost, schedule and performance goals for this phase.

Operational analysis is the comparison of the performance of an IT asset or system to an established baseline. It primarily consists of tracking and identifying the operational cost and performance of assets in the steady state phase of their life cycle. At a minimum, performance measures should include 1) how well the asset supports its customers and stakeholders and 2) how well the asset is managed by the agency. The results of this analysis are recommendations to agency managers as to the asset's continued use, modification, or termination.

OMB requires that all operations and maintenance or steady state projects must be reviewed at least annually to document the continued effectiveness in supporting mission requirements and minimize the cost of asset ownership. The cost of asset ownership is defined as the total of all costs incurred by the owners and users to obtain the benefits of a given project or investment. The intent, in part, is to reduce the number of stove piped legacy systems that are expensive to maintain. Operational analysis results are reported to OMB each year in the Exhibit 300. A project manager may choose to perform an operational analysis more frequently. The annual operational analysis is a key practice within the GAO ITIM maturity model. Using verifiable data, the investment board must regularly review the performance of IT projects and systems against stated expectations. Investment boards use steady state projects' operational analyses to support the CPIC processes.

Maintenance and steady state investments must be monitored through the operational analysis process to track:

- How close actual annual operating and maintenance costs are to the original life-cycle estimates;
- Whether the level or quality of performance /capability meets performance goals; and
- Whether the system continues to meet mission and user needs.

### **Step 3: Review of Ongoing IT Investments**

During the implementation/execution of the investment, the project managers conduct frequent reviews of their initiatives to assess progress against planned cost, schedule, and technical baselines. The primary purpose of these assessments is to ensure that the initiative is on track, and to identify issues or deficiencies that require corrective action. As part of this process, the project manager is responsible for reporting cost and schedule performance for the investment to the Office of the CIO and the IT Council on a quarterly basis.

To help DOE's IT project managers meet this reporting requirement, a Control Review Template has been developed. Appendix C contains the Control Review Template, Certification Form for steady state Investments and Control Review Scoring Criteria. This template provides project managers with a standardized format for reporting planned milestones as well as actual performance towards those milestones. The template then calculates the cost and schedule variances for the investments. Additionally, the template goes beyond the tracking and reporting of variance, it also requires project managers to report on the status of the following



areas: project manager qualification, performance goals, security, and earned value management.

The Office of the CIO receives the completed templates and conducts a preliminary analysis on the data. The templates and the analysis are then provided to the IT Council for their review. The principal objectives of the IT Council's review are to:

- Determine whether investments under review continue to support mission and business functions.
- Assess the extent to which investments continue to meet planned cost, schedule, and technical baselines.
- Identify deficiencies and track the completion of corrective actions.
- Reach and document the decision for each investment to "continue-as-is" or be "modified" in order to improve its overall performance.
- Score investments based on their status for the following six criteria: project manager qualification, cost variance, schedule variance, performance goals, security, and earned value management.

IT initiatives that are performing within 10% of the planned cost and schedule baseline, which comply with project management and security guidance/policies, and are continuing to achieve their planned performance goals, are not likely to be subject to a high level of scrutiny. Greater scrutiny will be given to initiatives that lag behind, exceed the budget, do not meet security and project management guidance/policies, or fail to achieve their performance goals. The IT Council reviews the status of each IT initiative, and hears from the program office representative who has the opportunity to present a briefing on the current status of the initiative.

Currently, the IT Council has the authority to recommend that investments either "continue-as-is" or the baseline milestones be "modified". The recommendation to "continue-as-is" will be issued whenever an investment is within the 10% tolerance range for cost and schedule variance percentage and satisfying existing guidance and policies. The recommendation to "modify" denotes two types of actions, the re-scoping of cost and schedule or the implementation of corrective actions to address poor performing aspects of the investment.

In the event an investment continues to perform poorly over multiple review cycles, the IT Council may recommend to the OCIO that the investment be referred to the DOE Management Council for further review. The DOE Management Council is then responsible for taking the necessary action on the investment. These actions may include:

- **Accelerate:** External factors require the initiative to be completed sooner than expected or initiative resources are available that can enable an acceleration of initiative schedule.
- **Decelerate:** The initiative timetable or funding needs to be reduced in order to allow the initiative an opportunity to regain acceptable cost, schedule, and/or performance levels. Or, external factors, such as dependence on another initiative, require extending the investment life cycle.
- **Suspend:** It is not cost-effective to proceed with further development or ongoing activity until problems stemming from resource shortfalls, initiative performance, system dependencies, or other external issues are resolved. In addition, a realignment of Department priorities among existing IT initiatives may result in the suspension of an initiative.

- **Cancel:** The initiative is no longer required or there is a low probability that it will ever meet acceptable cost, schedule or performance levels.

#### Step 4: Identify and Prioritize Deficiencies for Corrective Action

The project manager will develop a strategy to address problems or issues related to their investments. For example, the project risk may have increased substantially due to delays in technology that were needed to complete the investment. Thus, investment funding also may need to be increased, which might impact multiple areas, such as staffing, investment management, and other IT investments. The resolution of all issues will be documented and corrective actions tracked. Given approval of the plan, the initiative's project manager will coordinate the implementation and execution of the corrective actions. Typical corrective actions for major deficiencies are described below.

- **Eliminate or avoid** the specific deficiency, usually by selecting a corrective action that eliminates the cause. Corrective action to resolve deficiencies depends on the extent of change that would be required to the initiative's overall project plan, considering the cost (in terms of dollars and/or time) to make the change, and the calculated severity of the deficiency. As a general rule, elimination should be pursued when the deficiency cannot be managed, or the deficiency is costly to the initiative.
- **Reduce** the expected cost associated with the deficiency through corrective action. The option is employed when the elimination or avoidance of the deficiency is not likely. Instead, attention is focused on minimizing the consequences of the problem.
- **Accept** that a deficiency will occur and develop contingency plans to be executed should the deficiency occur. Contingency plans are pre-defined action steps to be taken prior to and if an identified deficiency should occur.

#### 4.2 Control Reviews and eCPIC

The eCPIC application is used to facilitate the quarterly Control Review process between the OCIO and the Program Offices. The Control Review Template, outlined in Appendix C, is provided in the form of a Microsoft Excel file and is accessible for Program Office users to download and complete for their major IT investments. Once complete with quarterly information, the Template is then re-submitted into the eCPIC application.

As part of the Quarterly Control Review, and to comply with guidance from released Office of Management and Budget (OMB) Memorandum (M-05-23), the Department of Energy's Office of the CIO has established a quarterly high risk investment review and reporting process. The High Risk Investment Review and Reporting Process Template and Criteria is outlined in Appendix D. This process will assess the performance of the major IT investments that are designated as high risk by the Agency and OMB. It is designed to ensure that high risk investments are enabled to correct deficiencies and improve project performance. The quarterly high risk investment review and reporting process will also promote more effective oversight to facilitate better project planning. The guidance sets in place a structured process that is designed to provide senior management with accurate performance information that will allow them to make timely decisions regarding high risk investments.

## **5.0 EVALUATE PHASE**

### **5.1 Overview of Evaluate Phase**

The Evaluate Phase includes two components, a Post Implementation Review on implemented or cancelled investments and an annual analysis of the performance of the Department's CPIC process. These activities are essential to the contributions that IT investments make toward the accomplishment of the Department's strategic goals and objectives, as well as the ongoing improvement and increased maturity of the CPIC process. Once investments are fully implemented or cancelled, actual versus expected results are evaluated to (1) assess the investment's impact on strategic performance, (2) identify modifications that may be needed, and (3) revise the investment management process based on lessons learned.

### **5.2 Role of the Post Implementation Review**

The purpose of a PIR is to track and measure the impact and outcomes of implemented or cancelled IT investments to ensure they meet the program mission. The need to evaluate a system's ability to effectively meet the organization's mission needs, both functionally and economically, does not end at system deployment. Rather, it is a continuous process to ensure that the system still supports both the end users and the mission needs of the organization. A PIR is typically conducted on implemented investments to evaluate the actual results compared to estimates in terms of cost, schedule, performance, and mission outcomes; to determine the causes of major differences between planned and end results; and to help improve project management practices. Stage evaluations are conducted on the degree of investment success to ensure a positive return on investment, and decide whether continuation, modification, or termination of the investment is necessary to meet mission requirements. PIRs will be conducted on all major DOE IT investments and the type of review to be conducted will be based on the stage of investment development (overviews of the types of reviews are covered in section 5.3).

The goals of a PIR could be summarized as follows:

- To keep the Department and key stakeholders apprised of the investment's performance and contribution in support of strategic goals and objectives;
- To ascertain the degree of investment success, in particular, the extent to which it met its objectives, delivered planned levels of benefit, and addressed the specific requirements as originally defined;
- To ensure that the investment is meeting the mission support objectives;
- To examine the efficacy of all elements of the working business solution to see if further improvements can be made to optimize the benefit delivered;
- To learn lessons from this investment which can be used by the team members and by the organization to improve future investment work and solutions;
- To utilize PIR lessons learned to improve decision-making processes and to assess and improve the overall performance of the IT portfolio;
- To provide insight into the strengths and weaknesses of the processes and procedures performed in the Select and Control phases of the CPIC process;
- To re-assess an investments business case, technical compliance, and compliance against the EA; and
- To update the EA and CPIC processes, as needed.

## 5.3 Post Implementation Review Process

### 5.3.1 Selection of Investment Review Candidates

The OCIO will identify the major IT investments that are at the appropriate stage of the life cycle for Post Implementation Review.

In an effort to ensure the proper and appropriate oversight of various types of investments including legacy investments, DOE will require the following types of investment reviews:

- **PIRs for Newly Implemented Investments:** All major investments that have been implemented within the last 6-18 months will be required to conduct a PIR. For investments that have multiple phases of development, this timeframe applies to each module as it is implemented.
- **Mixed Life Cycle Investments transitioning to Steady State Investment Reviews:** The reporting requirements associated with many of the Department's management and oversight processes vary depending upon the life cycle stage of an investment. There is generally less stringent oversight, with regard to reporting requirements, when reporting on steady state investments. In an effort to standardize this transition process throughout the Department, any investment that becomes steady state will be required to conduct a review prior to being permitted to report as a steady state investment. This requirement will allow for more visibility as where investments are within their life cycle across the Department.

### 5.3.2 Evaluation Factors

To complete a PIR, comprehensive investment information must be gathered, analyzed and documented in a PIR Summary and Recommendations Report. Although the same factors will be used to assess all investments, the specific information that the investment is required to report will vary based on the type of review being conducted. Detailed requirements and the criteria by which the investment will be assessed for each type of review will be determined.

The following general investment elements should be reviewed:

**1) Cost and Schedule** - A system's performance can be viewed from two distinct yet related perspectives: the management of the investment's development and implementation, and the benefit that the system provides. Earned value analysis calculates investment cost and schedule variances. A detailed explanation should be provided for cost overruns of greater than 10%. Return on investment should be evaluated in terms of quality and benefits received from the investment. Where available, methods and data concerning estimation of cost and schedule should be gathered and analyzed.

Per DOE reporting requirements, investments with funding of \$5M - \$20M are given the option of using an ANSI standard compliant Earned Value Management (EVM) system; however, they must use an investment performance management system to report projected value and earned value to demonstrate cost, schedule and performance status. Investments with TPC funding of \$20M and greater, as well as investments with D/M/E funding of \$5 or more in CY and BY, are required to use a full ANSI standard compliant EVM system. If an investment requires a full ANSI standard compliant EVMS, but has not yet met ANSI compliance requirements, it is still required to report actual cost and schedule performance against the baseline.

**2) Technical and Operational Performance** - A technical evaluation of an investment results in an analysis of the system's operational readiness: projected vs. actual capabilities, statistical

data, and the technical effectiveness of the new or ongoing system. Technical performance indicators deal with system (hardware or software) performance. Common measurements such as processing cycles, response times, storage capabilities, etc., are intended to assess the processing capability and reliability of the IT system. While these measures are useful for system evaluation, one should also measure the impact of system performance to user and mission capability and predetermined program objectives.

Functional requirements are also an important assessment area because they define the system data and processing requirements of customers and users. These requirements represent the baseline specifications and determine the basis for development activities. The baseline requirements should be compared against the functionality of the implemented system to determine if the system was developed as originally defined. If not, then any changes need to be documented and explanations provided.

If a Requirements Traceability Matrix (RTM) or other applicable Software Development Life Cycle documentation has not been adequately updated or maintained for each of the phases, the evaluation team might attempt to trace the partial requirement mapping against system functionality. The evaluation team may be asked to perform an independent requirements traceability review to determine not only if requirements were adequately documented and tested, but that the stated requirements also were successfully implemented. The evaluation team should identify any requirements not traceable through the implementation phase in the PIR Report, because this may indicate that the development process did not achieve the originally desired system functionality.

Effective project management and assessment relies in part on developing a balanced set of performance measures that are informative and complete. These performance measures can include metric generation and analysis, proper estimation and planning as evidenced by estimates versus actuals, stakeholder confirmation of adherence to requirements, and other technical performance indicators.

**3) Enterprise Architecture Compliance** - System architecture needs to be carefully planned and designed to ensure that it will support the application and ensure that all interfaces, processes and system components are compliant with currently prescribed industry standards and the Department's EA. This includes compliance with the business, process, data, and strategic components of the EA. This process ensures that the technical architecture has a sound foundation that fully supports the Department's business functions. The original architecture plan should be compared against the implemented system in order to determine if there were deviations from the original requirements. A PIR assessment should also determine if all system components integrate with the current infrastructure.

**4) Security** - To conduct a security assessment, a document review and security analysis is performed to ensure that a complete security plan was developed, implemented and enforced. This review will ascertain if adequate security measures were devised and thoroughly tested to protect system data. In addition, documentation should be analyzed to determine whether the implemented system complies with the Department's security standards and procedures. Furthermore, if security problems are identified during the assessment, corresponding corrective actions should be documented and immediately enacted.

A thorough security analysis should compare the system security measures against security testing results documentation. These security measures need to be reviewed against the Department's certification and accreditation (C&A) guidelines. The Department requires that all systems processing, transmitting or storing DOE information regardless of classification or sensitivity must be certified and accredited. Based on that requirement each system should

have supporting C&A documentation such as but not limited to the following: initial risk assessment, system security plan, configuration management plan, contingency plan, results of previous assessments of existing operational systems (e.g., security testing and evaluation – also known as the security controls assessment, independent verification and validation, independent audits, etc.). The evaluation team should review any deviations from these security standards, as well as any documentation that provides an explanation for the change. Finally, the evaluation team should collect the results of system penetration testing which will identify potential system weaknesses that may exist.

**5) Project Risk Management** - Project risk is a set of factors, both internal and external, that can affect the successful planning, design, and implementation of an IT investment. Consideration of how the project team anticipated and identified risks, developed risk management strategies, and employed those strategies to address risk, can provide valuable insight to the PIR. Risk management analysis should be reviewed to determine if risks were encountered, and if so, whether they were managed effectively. The analysis should include the impact that the risks and their management had on the success of the investment.

**6) Records Management** - The Records Management Program provides the systematic control of the records capture, storage, maintenance, retrieval and use, and the disposition of records. From the Federal perspective, it is the planning, controlling, directing, organizing, training, promoting, and other managerial activities involved in records creation, maintenance and use, and disposition in order to achieve adequate and proper documentation of the policies and transactions of the Federal Government and effective and economical management of agency operations.

Records Management, as related to electronic information systems (EIS), is as complex as the information maintained in the EIS is fluid. During the development of the EIS, decisions concerning the records management aspects of the EIS must be made to facilitate the retention of the “records information” and any processes that store, retrieve and replace this information during its use. Additionally the necessary disposition approvals from the DOE Records Officer and the National Archives and Records Administration need to be requested and obtained prior to implementation. These features should be evaluated during the PIR and subsequent annual reviews.

Records management addresses the life cycle of records, i.e., the period of time that records are in the custody of Federal agencies. The life cycle usually consists of three stages:

- Creation or receipt;
- Maintenance and use; and
- Disposition.

It is important to ensure that all programs are complying with and meet all the requirements associated with the Department’s Records Management policies and procedures.

**7) Impact on Goals and Strategic Objectives** - Analysis is conducted to determine whether the investment met the stated outcomes and benefits and whether these outcomes continue to be in alignment with the Department’s goals and objectives. Strategic performance analysis should be documented and include how well the investment is meeting departmental goals, and the reasons why there may be departures from the overall strategy.

**8) Impact on Stakeholders** - Stakeholder perception and satisfaction must be assessed to determine the extent to which the investment is meeting stakeholder needs. Stakeholders

include users, customers, and business process owners. The impact will be typically measured through user satisfaction surveys and interviews. The surveys should ask questions that will reveal the investment's ability to meet business process support demands.

**9) Best Practices and Lessons Learned** - Successful procedures or practices as well as highlighted issues or problems that are uncovered during the PIR should be recorded and captured as best practices and lessons learned, and applied to make improvements to the CPIC process and future IT investments. Lessons learned is knowledge derived from experience to promote the recurrence of desirable outcomes or preclude the recurrence of undesirable outcomes. Use of lessons learned is a principle component of all levels of organizational culture committed to continuous process improvement. Lessons learned enable the knowledge gained from past experience to be applied to current and future investments to avoid the repetition of past failures and mishaps. Lessons learned documentation can represent both positive and negative experiences. The ability of the project manager to more effectively manage an investment is greatly increased through this resource. Further, a review of lessons learned from prior investments will help identify problems that may materialize during the investment. Analysis of these problems should lead to ways to avoid or mitigate them. Reviewing lessons learned helps in setting a realistic schedule, estimating accurate costs, identifying possible risks/mitigation strategies, and feeds the continuous improvement process.

### **5.3.3 Evaluation Process**

As part of the PIR process, the appropriate template and scoring criteria will be provided to the programs so that they can implement the Department's approved process when conducting their PIRs. The programs will be required to complete the provided template along with the program's proposed assessment of the investment's performance. All programs will apply the same evaluation criteria when evaluating their investments to ensure consistent scoring across the Department.

The programs will be required to report the results of their PIR, including the completed template, to the IT Council by a specified deadline. The IT Council will review the reported results. Additionally information may be required from the Programs with regard to the results of the PIR. The IT Council will provide any final recommendations to the OCIO and the OCIO will authorize any corrective actions. The Program may be required to report back on the status of their corrective actions at a follow-up meeting, as necessary.

In an effort to reduce the burden placed on project managers due to overlapping data calls, whenever possible the data calls associated with the Evaluate Phase will be consolidated with other existing data calls. For example, all major investments are required to report on a quarterly basis as part of the Department's Control process. If possible, the data calls associated with the PIRs will be conducted in conjunction with the quarterly Control Reviews. Selected PIR candidates will be notified in advance that they are required to participate in a PIR. The evaluation process associated with a PIR is a generally more in-depth analysis of an individual investment, however the investment is evaluated on some of the same evaluation factors, as the Control Review requires. Therefore, any investment that is required to participate in a PIR would only be required to submit the PIR documentation as part of the Control Review process. The necessary data submitted as part of the PIR will be extracted to allow for a Control Review score to be ascertained. For example, there may be overlap between some the security and cost and schedule data that is required for both the Control Review and the PIR. The investment assessment will be presented during the Control Review meeting, so as to decrease the number of times the IT Council is required to meet. The IT Council will have the opportunity to make recommendations regarding the investment as well as recommendations for how to improve the overall evaluation process.

### **5.3.4 PIR Scoring Process**

Investment scores will be determined based on assessment against investment-specific questions. Each question will be scored on a four-point scale:

- 4 Points – Excellent
- 3 Points - Good
- 2 Points – Satisfactory, but could use improvement
- 1 Point – Needs Significant Improvement
- 0 Point – No information provided

The total points earned and a percentage will be calculated. Appendix E contains the listing of questions, sub-categories and scoring ranges that will be used by the PIR team in the review process. Scoring criteria have been developed for a score of 0, 2 and 4. A score of 1 and 3 has been left to the discretion of the reviewers. The investment will be scored and an overall investment score will be developed. The total points earned out of possible total points will be calculated. Based on the overall score, the following actions will apply:

- Any investment that receives a score of 80-100% will not require additional action.
- Any investment that receives a score of less than 80% will be required to submit a recovery plan to the IT Council that incorporates all required corrective action.
- Any investment that receives a score less than 60% will require follow-up meetings to monitor the recovery process.

Additional steps may be taken until the IT Council and OCIO are satisfied that the investment is taking the necessary steps to improve its performance. Following the PIR meeting, documentation of the meeting and a summary lessons learned package will be developed by the PIR Team. In addition, if specific actions for getting investments back on track are identified by the OCIO, guidance for taking these actions will also be prepared and provided to the programs. Best practices and lessons learned will be reported Department-wide to ensure that other investments may learn from the evaluated investment.

### **5.4 Identifying Lessons Learned**

Using the collective results of Annual CPIC Evaluation Assessments and PIRs, DOE is able to modify the organization's existing investment selection and control processes based on lessons learned. The information from PIRs helps management develop better decision-making criteria during the CPIC Selection Phase and improve the management of ongoing projects during the CPIC Control/Evaluate Phase.

Notions of “continuous improvement” and implementing “best practices” are not achievable unless effective feedback mechanisms are developed. The objective of any feedback system should be to link the findings back to the right people, at the right time and in the right format, for easy application to each new project. The implementation of the Evaluate Phase closes the loop with regard to the CPIC process by facilitating feedback on the Department's overall CPIC processes and their refinement.

Given its flexibility and ability to identify areas of greatest potential gain, the PIR is arguably the single most cost effective tool available for improving project management. Whatever those improvements may be, one of the key benefits of conducting a PIR is to apply the lessons



learned from existing IT projects to develop better processes for IT capital planning. The value of a PIR is diminished without systematic approach and techniques for correcting the process in response to lessons learned.

Continued improvements to the process are obtained through various sources, including benchmarking against the GAO ITIM framework.

In addition to communicating the closure of a project in writing, it is also advisable to have a mechanism for group review. The GAO recommends, "There should be some mechanism or process to ensure that information is being aggregated and fed back in to improve the investment management process."<sup>3</sup> A "lessons learned" session is a valuable closure mechanism for project team members, regardless of the project's success. Some typical questions to answer in such a session include:

- Did the delivered product meet the specified requirements and goals of the project?
- Was the user/client satisfied with the end product?
- Were cost budgets met?
- Was the schedule met?
- Were risks identified and mitigated?
- What could be done to improve the process?

The PIR may yield lessons learned about the following:

- Project management process;
- Systems development process;
- Contracting methodology used;
- Deficiencies/gaps in the current policy;
- Training received and/or provided;
- Conversion tasks from legacy systems to current architecture;
- Software used; and
- Improvements in the competency and composition of the project team.

For example, the cost, risk, and benefit criteria for the Select Phase may be refined to ensure greater success of future IT implementations. In the Control Phase, there may be more appropriate performance measures that could be established to improve the monitoring of the IT investments. In addition, future IT investments should be required to comply with the standards developed by the lessons learned. As such, this section will examine the operational aspects of applying the lessons learned and establishing a repository for access.

## **5.5 Evaluate and eCPIC**

All templates associated with this phase will be developed and maintained within eCPIC. Since the evaluation factors associated with the Evaluate Phase will overlap with other phases of the CPIC process, namely the Control Phase, the maintenance templates within eCPIC will allow

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<sup>3</sup> General Accounting Office, "Assessing Risks and Returns: A Guide for Evaluating Federal Agencies' IT Investment Decision-making," GAO/AIMD-10.1.13, v. 1.0, February 1997.

multiple templates to be linked ensuring that information is only required to be updated in one place.

## **Appendix A. FEDERAL LEGISLATION, REQUIREMENTS, & GUIDANCE FOR IT INVESTMENT MANAGEMENT**

The Department of Energy's CPIC process and IT Governance Program will comply with several pieces of IT management legislation and regulatory guidance, including:

**Clinger-Cohen Act (CCA) of 1996:** The CCA was formerly known as the Information Technology Management Reform Act or ITMRA. It requires each agency to undertake capital planning and investment control by establishing a process for maximizing the value and assessing and managing risks of IT acquisitions of the executive agency.

**E-Government Act of 2002:** The "E-Government Act of 2002" builds upon the Administration's expanding E-Government initiative by ensuring strong leadership of the information technology activities of Federal agencies, a comprehensive framework for information security standards and programs, and uniform safeguards to protect the confidentiality of information provided by the public for statistical purposes. The Act also assist in expanding the use of the Internet and computer resources in order to deliver Government services, consistent with the reform principles, outlined on July 10, 2002, for a citizen-centered, results-oriented, and market-based Government.

**Federal Acquisition Streamlining Act (FASA) of 1994:** FASA requires agencies to define the cost, schedule and performance goals for major acquisition programs and to monitor and report annually on the degree to which those goals are being met. Agencies must assess whether acquisition programs are achieving 90% of their cost, schedule and performance goals.

**Federal Acquisition Reform Act (FARA of 1996):** Requires the head of each executive agency, after consultation with the administrator for Federal Procurement Policy, to establish policies and procedures for the effective management (including accession, education, training, career development, and performance incentives) of the acquisition workforce of the agency.

**Government Performance and Results Act (GPRA) of 1993:** GPRA requires agencies to prepare updateable strategic plans and to prepare annual performance plans covering each program activity displayed in the budget. The performance plans are to establish performance goals in objective, quantifiable and measurable form and performance indicators to be used in measuring relevant outputs, service levels and outcomes.

**Paperwork Reduction Act (PRA) of 1995:** PRA intends to: minimize the paperwork burden resulting from collection of information by or for the Federal Government; coordinate, integrate and make uniform Federal information resources management policies and practices; improve the quality and use of Federal information to minimize the cost to the government of the creation, collection, maintenance, use, dissemination, and disposition of information; and ensure that information technology is acquired, used, and managed to improve efficiency and effectiveness of agency missions.

**Chief Financial Officers' Act (CFOA) of 1990:** CFOA establishes the foundation for effective financial management, including requiring agencies to develop and effectively operate and maintain financial management systems. The CFO Act focuses on the need to significantly improve the financial management and reporting practices of the federal government. Having accurate financial data is critical to understanding the costs and assessing the returns on IT investments. Under the CFO Act, CFO's are responsible for developing and maintaining integrated accounting and financial management systems that include systematic measurement information on agency performance.

**Capital Programming Guide (updated annually):** The purpose of the Capital Programming Guide is to provide professionals in the Federal Government guidance for a disciplined capital programming process, as well as techniques for planning and budgeting, acquisition, and management and disposition of capital assets. At the same time, agencies are provided flexibility in how they implement the key principles and concepts discussed. We expect the Guide to be revised as agencies continue to gain experience and develop improved best practices. The guidance integrates the various Administration and statutory asset management initiatives (including Government Performance and Results Act (Pub. L. No. 103–62), the Clinger-Cohen Act (Divisions D and E of Pub. L. No. 104–106, the Federal Acquisition Reform Act and the Information Technology Management Reform Act of 1996, as amended; popularly known as the Clinger-Cohen Act), Federal Acquisition Streamlining Act of 1994 (Pub. L. No. 103–355), and others) into a single, integrated capital programming process to ensure that capital assets successfully contribute to the achievement of agency strategic goals and objectives.

**OMB Circular A-11, Part 2: Preparation and Submission of Strategic Plans. A-11, Part 2,** provides guidance for preparing and submitting overall agency strategic and performance plans required by GPRA. The Circular has three parts: Part 1, which covers preparation of the budget request and related materials; Part 2, which covers strategic plans, annual performance plans, and performance reports; and Part 3, which covers the acquisition of capital assets.

**OMB Circular A-11, Part 3: Planning, Budgeting, and Acquisition of Fixed Assets. A-11, Part 3** provides guidance on the planning, budgeting and acquisition of fixed assets, which include IT capital assets, and requires agencies to provide information on these assets in budget submissions, and provides guidance for planning. It also provides guidance for coordinating collection of agency information for OMB reports to Congress for FASA and the CCA. Under FASA, OMB is required to report on the cost, schedule and performance goals for asset acquisitions and how well agencies are meeting their goals. CCA requires that OMB report on program performance in information systems and how benefits relate to accomplishing the goals of the agency.

**OMB Circular A-130: Management of Federal Information Resources.** A-130 provides information resource management policies on Federal Information Management / Information Technology (IM/IT) resources required by the PRA of 1980 as amended.

**OMB Memorandum M-97-02: Funding Information System Investments.** This memorandum contains eight decision criteria commonly referred to as Raines Rules, which OMB will use to evaluate major information system investments.

**Executive Order 13011, Federal Information Technology:** The executive order highlights the need for agencies to significantly improve the management of their information systems, including the acquisition of information technology, by implementing the relevant provisions of PRA, the Clinger-Cohen Act and GPRA. Agencies are to refocus their information technology management to directly support their strategic missions, implement an investment review process that drives budget formulation and execution for information systems, and rethink and restructure the way they perform their functions before investing in information technology to support that work. Agency heads are to strengthen the quality and decisions of employing information resources to meet mission needs through integrated analysis, planning, budgeting, and evaluation processes.

**Section 508 of the Americans with Disability Act (Section 508):** In 1998, Congress amended the Rehabilitation Act to require Federal agencies to make their electronic and information technology accessible to people with disabilities. Inaccessible technology interferes

with an individual's ability to obtain and use information quickly and easily. Section 508 was enacted to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. The law applies to all Federal agencies when they develop, procure, maintain, or use electronic and information technology. Under Section 508 (29 U.S.C. ' 794d), agencies must give disabled employees and members of the public access to information that is comparable to the access available to others.

## **Appendix B. DOE SELECT CRITERIA**

### ***Exhibit 300 Pre-Screening Criteria***

Below are the criteria to use when reviewing business cases during the BY 2009 Budget Year IT Reporting cycle:

#### **I.A. Overview and Justification/Description**

The Exhibit 300 for each investment should be consistent across all sections (i.e., all sections support the same approach and acquisition strategy, financial figures appear to be consistent across the different sections, no sections are left blank). All questions in this section need to be addressed for the investment.

#### **1.B. Summary of Spending Table**

Financial figures are provided for the project's anticipated life cycle, e.g., FY 2004 – FY 2014 (a normal project life cycle is considered 10 years per OMB).

If the Exhibit 300 indicates that this investment is in steady state operations in the Overview and Justification/Description section, no DME funding should be listed for current or budget year in the Summary of Spending table. OMB has changed their guidance on classifying investments as steady state. In the past, an investment that had no DME dollars for the budget year was considered steady state. OMB has changed this guidance to require an Agency to report based on the investment's status in BY-1; therefore, if a project is mixed lifecycle in FY 2008 but will be steady state in FY 2009, it cannot be reported as steady state for the FY 2009 budget submission.

#### **I.C. Acquisition/Contract Strategy**

Contract information should be provided for all current and future contracts, so the total dollar amounts for contracts should be consistent with the amounts in the Summary of Spending and Cost and Schedule Performance sections. If a contract covers multiple investments, the total amount should only reflect the task orders associated with the relevant investment. Also, all questions must be answered. Any information that is not known for future contracts should be listed as "TBD."

#### **I.D. Performance**

All investments must use the Performance Reference Model (PRM) when reporting performance measures.

#### **I.E. Security and Privacy**

All questions, including the "Percentage IT Security" for the budget year needs to be provided.

The C&A status of future systems need to be listed in the Systems in Planning table.

All questions must be completed for current operational systems in the Operational Systems table. All dates provided in this table, should concur with any dates reported in the Agency's FISMA report.

How contractor security procedures are monitored and validated must be explained and should include how procedures are verified, how often, and by whom?

The systems listed in the Planning and Operational Security tables need to be listed in the Privacy table, and all questions need to be answered.

### **I.F. Enterprise Architecture**

All questions in this section need to be addressed for the investment.

The SRM table needs to be completed for each investment using the FEA Consolidated Reference Model which provides the full list of Service Components from which to choose.

The TRM table needs to be completed for each investment.

If the investment states that it will/does leverage components across the government, these components should be listed in the SRM table as external reuse.

### **II.A. or IV.A. Alternatives Analysis**

The information in this section should only be completed if a formal alternative analysis has been completed. This analysis should have compared three alternatives *not* including the Status Quo. The description of each alternative should provide information from the cost benefit analysis, such as ROI and payback period.

Estimated Life cycle costs and benefits need to be provided for all alternatives in the appropriate table.

The alternative that was selected needs to be identified if the planning phase has been completed for this investment. Additionally, all other sections in the business case (e.g., Investment Justification/Description) need to support the chosen alternative.

Information on qualitative benefits should also be provided.

### **II.B., III.A., or IV.B. Risk Management**

The Project Manager must tell whether a risk management plan exists, if so what is the date of the plan, and if not, when will a plan be completed. The date provided for the plan should reflect the last time the plan was updated. If the Project Manager manages the project risk in a separate document, e.g., risk assessment or risk register then provide the date that this document was last updated. If OMB requests the risk documentation, be certain to send both the risk management plan and the supporting risk assessment/register.

For DME investments, the Project Manager must describe how lifecycle costs and schedule goals have been risk adjusted. It is recommended to provide project specific information, e.g., the project budget has been increased by \$500k in FY 2009 because anticipated regulatory changes may impact current requirements.

### **II.C., III.B., or IV.C. Cost and Schedule Performance**

For investments using Part II or IV (with DME dollars in CY or BY) must state whether the EVMS meets the criteria listed in ANSI/EIA Standard -748, as well as answer all EVM questions.

All investments must complete the Comparison of the Initial Baseline to the Current Approved Baseline table.

Actual performance results need to be provided for all cost and schedule goals listed for FY 2005 or earlier, at a minimum.

**IV.A. E-Government and Line of Business Oversight**

All applicable tables must be completed.

***FY2009 Exhibit 300/Select Scoring Criteria***

Business Case (BC) (composite of all categories) Total Score for Business Case

Projects scoring 5 and meeting program requirements are automatically recommended for funding. Projects scoring a 4 and meeting program requirements, and meeting most of the business case requirements are recommended for funding and the agency is instructed to continue improvements in the areas identified as needing work. Projects scoring 3 or below have the opportunity to improve to a 4 or degrade to a 2 rather easily. Projects scoring a 2 or below are not recommended for funding.

**Therefore, a business case must score a 31 overall AND a 4 in Security to “pass”.**

Score		Definition
5	41–50	Strong documented business case (including all sections as appropriate).
4	31–40	Very few weak points within the BC but still needs strengthening.
3	21–30	Much work remains to solidify and quantify BC. BC has the opportunity to either improve or degrade very quickly.
2	11–20	Significant gaps in the required categories of the BC.
1	1–10	Inadequate in every category of the required BC.

***Scoring Elements:***

**Supports the President's Management Agenda Items (PMA) (Multiple Sections)**

- 5 This is a collaborative investment that includes industry, multiple agencies, state, local, or tribal governments, uses e-business technologies, and is governed by citizen needs. If the investment is a steady state investment, then an E-Government strategy review is underway and includes all of the necessary elements. If appropriate, this investment is fully aligned with one or more of the President's E-Government initiatives.
- 4 This is a collaborative investment that includes industry, multiple agencies, state, local, or tribal governments, uses e-business technologies though work remains to solidify these relationships. If investment is in steady state, then an E-Government strategy review is underway but needs work in order to strengthen the analysis. If appropriate, investment supports one or more of the President's E-Government initiatives, but is not yet fully aligned.
- 3 This is not a collaborative investment though it could be and much work remains to strengthen the ties to the President's Management Agenda. If this is a steady state investment and no E-Government strategy is evident, this investment will have a difficult time securing continued or new funding from OMB. If appropriate, this investment supports one or more of the President's E-Government initiatives but alignment is not demonstrated.
- 2 This is not a collaborative investment and it is difficult to ascertain support for the AI. If this is a steady state investment, then no E-Government strategy was performed or is planned.
- 1 There seems to be no link to the AI and E-Government strategy.



### **DOE Scoring Guidance:**

For new investments, the scoring decision is based on inclusion of language related to collaboration (can the system be used by multiple agencies), use of e-business technology (web services, XML, J2EE, NET technologies, etc.), and answers to Part I Question 13 and 13.a about directly supporting one of the President's Management Agenda initiatives and Section I.F.5. whether the investment will leverage existing components.

For ongoing (legacy) investments, the scoring decision is based on the completion of an E-Government strategy review (3-no review, 4 review underway, 5 review underway AND includes all necessary elements).

The necessary elements for an E-Government strategy review are:

- Justification language that discusses the use of e-business tools (or why they cannot be used for this investment)
- Discussion of the "current way" of doing business and why that is most advantageous and cost-effective (the OMB assumption is that the use of e-business tools is the most cost effective solution unless the report specifically refutes that)
- Performance Goals as the project stands today (out of date PG data is not acceptable)
- A future focused Alternatives Analysis
- Actual performance results on how the project is meeting organizational goals not just cost, schedule and performance goals for the project

### **Acquisition Strategy (AS) (Part I, Section I.C)**

- 5 Strong Acquisition Strategy that mitigates risk to the Federal government, accommodates Section 508 as needed, and uses contracts and statements of work (SOWs) that are performance based. Implementation of the Acquisition Strategy is clearly defined.
- 4 Strong Acquisition Strategy that mitigates risk to the Federal government accommodates Section 508 as needed, uses contracts and SOWs that are performance based. Acquisition strategy has very few weak points which agency is working to strengthen, and the implementation of AS is clearly defined.
- 3 Acquisition strategy does not appear to successfully mitigate risk to the Federal government, accommodates Section 508 as needed, much work remains to solidify and quantify the AS, and contracts and SOWs do not appear to be performance based.
- 2 Acquisition strategy does not appear to successfully mitigate risk to the Federal government, does not accommodate Section 508, does not appear to use performance based contracts and SOWs, and there is no clear implementation of the acquisition strategy
- 1 There is no evidence of an acquisition strategy.

**DOE Scoring Guidance:**

In order to receive a score of 4 or 5, the contracts (or statements of work) must be performance based.

The difference between a score of 2 and 3 seems to be successful accommodation of section 508 (accessibility of information and technology). There is not a single agency-wide method of accommodation for 508, so the answer needs to show how the specified investment ensures compliance with Section 508.

A score of 1 is given only if no AS data is provided.

**Project (Investment) Management (PM) (overall business case, risk management, and cost and schedule goals)**

- 5 Project is very strong and has resources in place to manage it.
- 4 Project has few weak points in the area of PM and agency is working to strengthen PM.
- 3 Much work remains in order for PM to manage the risks of this project.
- 2 There is some understanding of PM for this project but understanding is rudimentary.
- 1 There is no evidence of PM.

**DOE Scoring Guidance:**

If an investment does not provide good cost, acquisition strategy, EVMS, and risk management information, it should be down graded for project management too (the logic being that a well managed project would have all that information and would be able to report it in the Exhibit 300.)

All investment should indicate the level of project management support that is required for the investment. Also, the investment should indicate whether the current project manager has been qualified at the appropriate level, given the project management requirement. (A reference spreadsheet was distributed with the training material that identifies the project management level for all major investments and whether the assigned PM has been qualified at the appropriate level. The spreadsheet can be used to verify the information reported in the Exhibit 300.)

The distinction between a 3 and a 2 is hard to delineate, the only rule of thumb is a 3 should be an “average” score (think a C in school).

**Enterprise Architecture (EA) (Part I, Section F) for IT Only**

- 5 This investment is included in the Agency EA and CPIC process. Project is mapped to and supports the Federal Enterprise Architecture and is clearly linked to the FEA Reference Models (BRM, PRM, SRM, and TRM). BC demonstrates the relationship of the investment to the business, data, application, and technology layers of the EA.
- 4 This investment is included in the agency's EA and CPIC process. Investment is mapped to and supports the Federal Enterprise Architecture. Investment is clearly linked to the BRM but work is continuing to map the investment to the PRM, SRM, and TRM. BC is weak in demonstrating the relationship of the investment to the business, data, and application, and technology layers of the EA.
- 3 This investment is not included in the agency's EA and CPIC process, was not approved by the agency EA committee, or does not link to the FEA. BC demonstrates a lack of understanding on the layers of the EA (business, data, application, and technology).
- 2 While the agency has an EA framework, it is not implemented in the agency and does not include this investment.
- 1 There is no evidence of a comprehensive EA in the agency.

**DOE Scoring Guidance:**

A score of 1 or 2 is primarily given to agencies that do not have a comprehensive EA (for the agency) and OMB has already accepted DOE's EA.

A 3 should be given to responses with poor EA answers, a 4 would be for responses that are obviously working on their EA linkages, and a 5 would be for responses with strong EA answers.

**Alternatives Analysis (AA) (Part II, Section A or Part IV, Section A)**

- 5 AA includes three viable alternatives; alternatives were compared consistently; and reasons and benefits were provided for the alternative chosen.
- 4 AA includes three viable alternatives, however work needs to continue to show alternatives comparison, and support must be provided for the chosen alternative.
- 3 AA includes fewer than three alternatives and overall analysis needs strengthening.
- 2 AA includes weak AA information and significant weaknesses exist.
- 1 There is no evidence that an AA was performed.

**DOE Scoring Guidance:**

The language in the criteria for a 3 would lead you to believe that any investment that lists three viable alternatives regardless of the quality of their supporting material should score a 4 or

higher. However, if an investment's alternative analysis was generally poor, but they had 3 alternatives listed, it should not automatically be scored as a 3.

Ensure that non-viable alternatives are not "counted" as part of the 3 viable alternatives needed for a 4 or 5 score. OMB has indicated that the Status Quo is not a viable alternative. Therefore, in addition to Status Quo, there needs to be three other viable alternatives.

Estimated lifecycle costs and benefits need to be provided for each alternative in order for the investment to receive higher than a 3 for this section. All questions must be supported by quantifiable data in order for an investment to receive a 5.

### **Risk Management (RM) (Part II, Section B; Part III, Section A; or Part IV, Section B)**

- 5 Risk assessment was performed for all mandatory elements and risk is managed throughout the investment.
- 4 Risk assessment addresses some of the risk, but not all that should be addressed for this investment.
- 3 Risk management is very weak and does not seem to address or manage most of the risk associated with the investment.
- 2 Risk assessment was performed at the outset of the investment but does not seem to be part of the program management.
- 1 There is no evidence of a risk assessment plan or strategy.

#### **DOE Scoring Guidance:**

In order to receive a high score in this section, a risk management plan must exist and the date for the project risk management plan needs to be provided. This date should reflect the last date the risks were assessed.

A score of 1 should be given for investments that do not have a risk management plan and do not plan on completing a plan, and a score of 2 should be given for investments that do not have a plan and will not be completing a plan in the near future.

All DME investments must explain how lifecycle cost and schedules have adjusted to account for identified risks. If possible, provide specific examples of adjustments and the associated risks.

### **Performance Goals (PG) (Part I, Section D)**

- 5 Performance goals are provided for the agency and are linked to the annual performance plan. The investment discusses the agency's mission and strategic goals, and performance measures are provided.
- 4 Performance goals are provided for the agency and are linked to the annual performance plan. The investment discusses the agency's mission and strategic goals, and performance measures are provided. Some work remains to strengthen the performance goals

- 3 Performance goals exist but the linkage to the agency's mission and strategic goals is weak.
- 2 Performance goals are in their initial stages and are not appropriate for the type of investment. Much work remains to strengthen the performance goals.
- 1 There is no evidence of performance goals for this investment.

**DOE Scoring Guidance:**

To achieve a score of 4 or above, the strategic goal cited must come from the DOE Strategic Plan or the Annual Performance Plan available on the DOE CFO website.

A score of 1 is given to reports that leave the PG section blank and a score of 2 should be given when the information provided in the section is incomplete.

OMB is looking for investments to demonstrate that they are closing performance gaps within a Program Office or across the Department. In order to score a 5 in this section, the table should be completed, all goals should be quantifiable, and actual performance results provided.

**Security and Privacy (SE) (Part I, Section E)**

- 5 Security and privacy issues for the investment are addressed, all questions are answered, and a privacy impact assessment is provided in appropriate circumstances. Security/privacy detail is provided about the individual investment throughout the lifecycle to include budgeting for SE.
- 4 Security and privacy information for the investment is provided but there are weaknesses in the information that need to be addressed.
- 3 Security and privacy information for the investment is provided but fails to address the minimum requirements.
- 2 Security and privacy information points to an overall Agency Security Process with little or no detail at the investment level.
- 1 There is no security or privacy information provided for the investment.

**DOE Scoring Guidance:**

In order to receive a 5, reasonable answers must be provided to all SE questions.

Reviewers must be careful to read the SE answers in context of the entire Exhibit 300. For example, if the investment states that a system is not yet operational, it should be listed in the Systems in Planning table. Be sure that answers are investment specific. It is not sufficient to state Department-wide security policies especially for the question that asks about how contractor procedures are monitored and verified. This answer must clearly state how procedures are validated, how often, and by whom for the specific investment.

Business cases that receive scores of less than 4 in security automatically fail regardless of the overall points accumulated. The business case must provide the date when the C&A was completed, or will be completed, for the investment in order to receive a 4 or better. This date

must align with the dates reported on the Agency FISMA report. If the date of the C&A is older than 3 years, the business case should not receive a score higher than 3.

Additionally, the business case must also provide the date when the security controls were last tested and this should reflect annual testing in order to receive a 4 or better in this section. If the date of the testing is older than a years, the business case will likely not receive a score higher than 3.

**Performance Based Management System (PB) (Part II, Section C; Part III, Section B; or Part IV Section C)**

- 5 Agency will use, or uses Earned Value Management System (EVMS) that meets ANSI/EIA Standard 748 and investment is earning the value as planned for costs, schedule, and performance goals.
- 4 Agency uses the required EVMS and is within the variance levels for two of the three criteria. Work is needed on the third issue.
- 3 Agency uses the required EVMS but the process within the agency is either very new, not fully implemented, or there are weaknesses in this investment's EVMS information.
- 2 Agency seems to re-baseline rather than report variances.
- 1 There is no evidence of PB.

**DOE Scoring Guidance:**

In order to receive a 5 in this section, discrete cost and schedule goals that clearly articulate how the investment plans to use the requested FY 2008 funding must be provided. Cost and schedule goals should span no more than 1 year. Steady state investments may provide one annual milestone showing the yearly maintenance funding required for the investment. However, investments requesting DME should provide clear milestones showing the planned milestones associated with that DME funding, in addition to any appropriate maintenance milestones. Actual data should be provided against any milestones that have been previously reported to OMB and are completed to date.

The annual total of proposed milestones should match the total amount of funding requested for the year in the Summary of Spending table. For example, if the milestones for FY 2007 total \$10 million, then the annual request for funding for FY 2007 in the Summary of Spending table should also total \$10 million.

If an investment experiences a greater than -10% cost or schedule variance, then the Exhibit 300 should explain why this occurred and what corrective actions will be taken to return the investment to within acceptable cost and schedule variance thresholds.

Steady state investments should report whether operational analysis is being used, the date of the last analysis, and results of this analysis. The results should describe whether the investment is meeting cost/schedule/performance goals and if it is meeting mission and customer expectations.

**Privacy (PR) (Part I, Section E)**

- 5 Privacy issues for the investment are addressed, all questions are answered, and a privacy impact assessment is provided in appropriate circumstances. Privacy detail is provided about the individual investment throughout the life cycle to include budgeting.
- 4 Privacy information for the investment is provided but there are weaknesses in the information that need to be addressed.
- 3 Privacy information for the investment is provided but fails to address the minimum requirements.
- 2 Privacy information points to an overall Agency Process with little or no detail at the investment level.
- 1 There is no privacy information provided for the investment.

**Appendix C. DOE CONTROL REVIEW TEMPLATE AND SCORING CRITERIA**

<b>DOE Quarterly Control Review Template</b>				
<b>Investment Information</b>				
1. Date	2. Investment Name	3. Investment Management Qualification Level		
4. UPI Number/eCPIC Exhibit 300	5. Program Office			
6. Project Sponsor			7. Sponsor Phone Number	
8. Project Start Date	9. As of Date	10. Project Duration to Date		
11. Type of Project:				
<b>Project Management Certification</b>				
12. Project Manager's Name	13. At what level is the Project Manager qualified for this investment?			
	14. Date Project Manager was certified			
	a. If not certified, provide the planned date by which your project manager will be certified at the level of the investment.			
<b>Cost, Schedule, and Performance</b>				
15. If applicable, state any actions taken to address issues that were identified in the previous quarterly Control Review cycle.				
<b>Current Baseline Table</b>				
16. Restate the investment's current budgetary baseline, which should match the baseline approved by OMB in the current business case, in the following table:	(\$ millions)	PY	CY	BY BY+1
	DME			
	Planning			
	Acquisition			
	Steady State (Ops & Maint)			
	FTE			
Total				
17. Has this investment been re-baselined?				
a. If so, when did the DOE CFO approve the new baseline?				
18. If the investment uses firm-fixed price contracts and is not subject to EVMS requirements, briefly describe the compensating controls that are used to mitigate project risk.				
19. In accordance with Order 413, which Critical Decisions (CDs) have been accomplished for this investment (i.e., CD-0, 1, 2, 3, or 4)?				
	Approval Date	Approver	Remarks	
CD-0				
CD-1				
CD-2				
CD-3				
CD-4				



**D/M/E Component - Earned Value Management Data**

20. For all D/M/E activities related to the investment, enter current rolled-up EVM data into the table below. All amounts should include government FTE/in-house development costs.

						Budget at Completion (BAC) \$M:	
	Month/Year						
	ACWP(month)						
	BCWS(month)						
	BCWP(month)						
	ACWP(cum)						
	BCWS(cum)						
	BCWP(cum)						
	Month/Year						
BCWP(cum) - ACWP(cum)	CV						
CV/BCWP(cum)	CV%						
BCWP(cum)/ACWP(cum)	CPI						
BCWP(cum) - BCWS(cum)	SV						
SV/BCWS(cum)	SV%						
BCWP(cum)/BCWS(cum)	SPI						
BAC/CPI	EAC						
21. If applicable, when was, or will, the project's EVM be certified as ANSI STD 748 compliant by OECM? (Note that a site or contractor EVM certification does not necessarily indicate that certified process is being applied to the project.)							
a. If the EVMS will not be certified as ANSI/EIA-748 Standard compliant, please explain why not.							
22. For investments exceeding 10% cost or schedule variance (CV% SV%) indicating an over-run, provide a brief description as to how and by when you plan to remediate this variance.							

**Steady State Component**

**Operational Cost and Schedule Data**

23. For all steady state activities related to the investment, enter the up-to-date cost and schedule information into the table below. Include FTE/in-house costs and schedule data.

								<b>Operational Cost Under runs/Overruns</b>	
								<b>Cost Under runs/Overruns %</b>	
								<b>Operational Schedule Under runs/Overruns</b>	
								<b>Schedule Under runs/Overruns %</b>	
	<b>Planned</b>			<b>Actual</b>					
<b>Milestone Description</b>	<b>Start Date</b>	<b>End Date</b>	<b>Total Cost (\$ millions)</b>	<b>Start Date</b>	<b>End Date</b>	<b>Percent Complete as of</b>	<b>Total Cost (in millions) as of</b>		
			\$				\$	-	
			\$				\$	-	
			\$				\$	-	
			\$				\$	-	
		<b>Total</b>	\$			<b>Total</b>	\$	-	

24. For investments exceed a 10% operational cost or schedule over-run, provide a brief description as to how and by when you plan to remediate this variance.

**Performance Table**

25. Complete the table below by listing the planned performance goals for your investment and the achievements to date. Identify the Operational Indicators used for this project (e.g. effectiveness, efficiency, productivity, availability, reliability, maintainability and security) and the measurable goal to be achieved.

DOE Strategic Goal(s) Supported					
Program Goal(s) Supported	Performance Measure	Existing Baseline	Planned Performance Metric	Actual Performance Metric Results	Comments

26. If the investment is not achieving 90% or more of its performance goals, provide a brief description as to how you plan to remediate this issue.

**Security**

27. Does this investment contain any IT systems? Yes  No

28. Provide the date when the investment transitioned from the planning phase to the operational phase. If the investment is still in the planning phase, provide the date when this transition is expected to occur.

29. What, if any, technical changes occurred to the operational component of the investment since the last quarterly Control Review Template submission?

30. Do all systems within this investment have certification and accreditation? If so, specify the date(s) of the last certification and accreditation. If no, provide the planned date by which your systems will be certified and accredited. Yes  No

31. Does this investment have an up-to-date security plan? If no, please provide the date when the security plan will be updated. Yes  No

**Project Management Score**

32. Project Manager's Score Red  Yellow  Green

33. Additional Comments

34 .Project Manager Approval Date

35. Program/Staff Office Approval Date

**DOE Control Review  
Certification Form for Steady State Investments**

**Revision History**

Revision Date	Comments
May 11, 2005	This version supersedes all previous versions

**Overview**

This form serves as a reporting tool that is to be used in the Department of Energy’s OCIO IT investment control review process for steady state investments. It provides Program and Staff Offices with a means to certify an investment’s performance without having to complete the Control Review Template. It also enables them to certify that certification and accreditation (C&A) has been received, and the project manager has received Project Management Certification for their investment. However, this certification can only be provided for investments that meet the following criteria:

- 100% of the investment’s funding is allocated to steady state operations
- Investment is operating within – 10% of its cost and schedule goals
- Investment is achieving at least 90% of its performance goals

Investments that meet these criteria should complete and submit this form to the OCIO each quarter as part of the control review process. Additionally, for investments where this form is completed, Program and Staff offices must have the data that supports this certification on record (i.e. – cost, schedule and performance data). In the event of an audit or OMB request for more information, the Program or Staff Office will need to furnish this data.

Investments that do not meet these criteria must report investment performance by completing the DOE Control Review Template.

**Investment Information:**

Date:  
 Investment Name:  
 UPI Number:  
 Program Office:  
 Project Manager & Phone Number:

**Project Management Certification:**

Enter the completion or planned completion date when the Project Manager was or will be certified at the level of the investment.

Date: \_\_\_\_\_

What is the project manager certification level required for this investment? Was the assessment of required level based on OCIO guidance provided to the ITC and via the OCIO website?

**Security:**

Enter the completion or planned completion date when the investment was or will be certified and accredited (C&A). If certification and accreditation is not required for this investment because it does not contain any IT systems, enter "N/A".

Date: \_\_\_\_\_

Enter the completion or planned completion date when the security plan was or will be completed for this investment.

Date: \_\_\_\_\_

**Operational Analysis:**

State where are the baseline and the quarterly results of the operational analysis being tracked and documented stored:

Describe the elements of the investment that are reviewed as part of the operational analysis (e.g., cost and schedule, number of milestones tracked, evaluation of performance goals, etc.):

Indicate how often an operational analysis is conducted for this investment:

Provide the date when the operational analysis data was collected for the current quarterly review:

Please insert the correct information for your Program/Staff Office and your investment where applicable:

The (enter the name of the Program or Staff Office responsible for providing funding for this investment) hereby certifies that the (enter the investment name) investment is funded 100% for steady state operation, and it is achieving at least 90% of its cost, schedule, and performance baseline goals as documented in the Exhibit 300.

Name:

Date:

## DOE Control Review Scoring Criteria

### Revision History:

Revision Date	Comments
May 9, 2005	This version supersedes all previous versions

### Purpose:

This document defines the proposed scoring criteria to be used by the Information Technology Council (ITC) when conducting the quarterly Control Reviews for all Major IT investments.

### Overview of Control Review Scoring Process:

The Department of Energy Control Review process is designed to collect and evaluate performance for all major IT investments on a quarterly basis. Control Reviews assess an investment's ability to meet the cost, schedule, and performance baseline goals defined in its business case. Investments are also evaluated on the existence of an up-to-date Security plan and their security certification and accreditation status, as well as the certification of the project manager at the level of the investment. The ITC will assess and score investments based on how well they achieved their goals and satisfied both security and project management certification requirements using a set of standardized scoring criteria.

Prior to the ITC review, each Project Manager should use the same scoring criteria to assess the performance of their own investment. If the self-scoring results in a score of YELLOW or RED, the Project Manager will need to develop corrective actions to improve the performance, security or project management certification status of the investment. These corrective actions should be documented in the appropriate section on the Control Review Template.

### Scoring each section of the Control Review Template:

To score a Control Review Template, a "stoplight" rating scale will be utilized. Specifically, there are six areas in which investments will be evaluated. These Control areas were selected because they are key criteria for the PMA Scorecard, the DOE E-Government Scorecard, and the development of sound IT business cases. These areas include:

1. Project Manager Certification
2. Cost Variance
3. Schedule Variance
4. Performance Variance
5. Security
6. Earned Value Management

The tables on the following pages provide the thresholds for the criteria. Where an investment falls within these thresholds will determine an investment's score of Red, Yellow, or Green for each of the criteria:

1. Project Management Certification			
Description	Red	Yellow	Green
Assessment of the investment's compliance with the DOE Project Manager Certification requirements. Project Managers for major investments are required to be certified at specific levels based on the level of the investment as determined by the OCIO	Project Manager Certification section was not completed  <b>or</b> Project Manager has not been identified for the investment  <b>or</b> Project Manager has been identified, but is not certified at the correct level, and is not currently scheduled to take any certification courses	Project Manager has been identified, and he/she is currently taking the required certification courses.	Project Manager is certified at the level of the investment

2. Cost Variance			
Description	Red	Yellow	Green
Assessment of the investment's cost performance. Cost variance should be less than 10%** for any investment. When an investment's cost variance exceeds this threshold a corrective plan of action should be developed by the project manager, and submitted in the quarterly reviews.	Investment Cost information was not reported for the quarterly review  <b>or</b> Investment's Cost variance is greater than 10%**, and corrective actions are not in place, or the corrective actions are deemed insufficient to correct the variance problems	Investment Cost variance is greater than 10%** , but sufficient corrective actions are in place to correct the variance problems	Investment Cost variance is less than 10%**

3. Schedule Variance			
Description	Red	Yellow	Green
Assessment of the investment's schedule performance. The Schedule variance should be less than 10%** for any investment. When an investment's schedule variance exceeds this threshold a corrective plan of action should be developed by the project manager, and submitted in the quarterly reviews.	Investment Schedule information was not reported for the quarterly review  <b>or</b> Investment's Schedule variance is greater than 10%**, and corrective actions are not in place, or the corrective actions are deemed insufficient to correct the variance problems	Investment Schedule variance is greater than 10%** , but sufficient corrective actions are in place to correct the variance problems	Investment Schedule variance is less than 10%**

\*\* Investment scoring criteria was updated to reflect current PMA guidance regarding Cost/Schedule variances indicating **over runs** of greater than 10% would score Red or Yellow. Cost/Schedule variances indicating **under runs** greater than -10% would score Green.

<b>4. Performance Variance</b>			
<b>Description</b>	<b>Red</b>	<b>Yellow</b>	<b>Green</b>
Assessment of the investment's ability to meet its performance goals. The performance variance should be less than 10% for any investment. When an investment's performance variance exceeds this threshold a corrective plan of action should be developed by the project manager, and submitted in the quarterly reviews.	Investment Performance information was not reported for the quarterly review  <b>or</b> Investment is not meeting 90% of its Performance goals, and corrective actions are not in place, or the corrective actions are deemed insufficient to correct the performance issues	Investment is not meeting 90% of its Performance Goals, but sufficient corrective actions are in place to correct the performance issues	Investment is meeting 90% or more of its Performance Goals

<b>5. Security</b>			
<b>Description</b>	<b>Red</b>	<b>Yellow</b>	<b>Green</b>
Assessment of the security performance for the investment. This assessment is to determine if security is monitored and maintained throughout the life of an investment.	The Security section was not completed for the quarterly review  <b>or</b> Investment has an IT system that has not been certified and accredited, and C&A is not scheduled for completion  <b>or</b> Investment does not have an up-to-date security plan and the security plan is not scheduled to be updated/completed	Investment is not certified an accredited, but C&A is in the process of being completed and a completion date has been set  <b>or</b> Investment's security plan is not up-to-date, but it is in the process of being completed and a completion date has been set	Investment has been certified and accredited  <b>and</b> Investment has an up-to-date security plan  <b>or</b> Investment is not operational so C&A is not required, but investment has an up-to-date security plan

<b>6. Earned Value Management</b>			
<b>Description</b>	<b>Red</b>	<b>Yellow</b>	<b>Green</b>
Assessment of the Earned Value Management (EVM) system and practices for the investment. This assessment is to determine whether EVM has been implemented for investments that require EVM.	Investment has had neither a successful independent nor self-assessment of the investments ANSI STD 748 EVMS  <b>or</b> Program is not reporting EVM data monthly into PARS	Investment's EVMS successfully self-assessed by the Program Office and/or prime contractor to ANSI Standard 748 with a copy of the evaluation report provided to the OCIO  <b>and</b> Investment has OCIO concurrence of the self-assessment evaluation report  <b>and</b> Investment is reporting EVM data monthly into PARS	Investment's EVMS has been successfully independently reviewed, validated or certified to ANSI Standard 748 by OECM, OCIO or an independent entity  <b>and</b> a copy of the evaluation report has been provided to the OCIO and received OCIO concurrence of the evaluation report  <b>and</b> Investment is reporting EVM data monthly into PARS



## **Scoring the Investment:**

Once a score has been assessed for each section of the Control Review Template, an overall score will be generated for the investment. The criteria for generating an overall score are described below:

To receive a **GREEN** score for the overall performance of the investment, the following conditions must apply:

1. All of the following criteria received a green score:
  - Project Management Certification
  - Cost Variance
  - Schedule Variance
  - Performance Variance
  - Security
  - Earned Value Management

To receive a **YELLOW** score for the overall performance of the investment, the following conditions must apply:

1. One or more of the following criteria received a yellow score, and none received a red score:
  - Project Management Certification
  - Cost Variance
  - Schedule Variance
  - Performance Variance
  - Security
  - Earned Value Management

To receive a **RED** Score for the overall performance of the investment, the following conditions must apply:

1. One or more of the following criteria received a red score:
  - Project Management Certification
  - Cost Variance
  - Schedule Variance
  - Performance Variance
  - Security
  - Earned Value Management

## Appendix D. DOE IT HIGH RISK INVESTMENT REVIEW & REPORTING PROCESS

### Revision History:

Revision Date	Comments
July 24, 2007	This revised version supersedes all others

### Purpose of the High Risk IT Investment Review & Reporting Process

In 2005, the Department of Energy's Office of the CIO (OCIO) established a quarterly high risk investment review and reporting process to comply with OMB's guidance to federal agencies on IT project planning and execution.<sup>4</sup> OMB's guidance included the creation of its High Risk List to ensure that agencies and programs were meeting their intended goals and producing results.

DOE's IT High Risk Investment Review and Reporting Process assess the performance of major IT investments that OMB and the Department designate as high risk. Projects on OMB's High Risk List are not necessarily "at risk", but rather require special attention from oversight authorities and the highest level of the Department's management. While these programs may be performing well, they are determined to be high risk due to different factors, such as the high cost of the project or the level of importance the project plays in the overall mission of DOE.

DOE's IT High Risk Investment Review and Reporting Process enables the Department's high risk IT investments to correct deficiencies and improve project performance. The process is also intended to promote more effective oversight for better project planning.

This document establishes a structured process to provide senior management with accurate performance information that will allow them to make timely decisions regarding their high risk investments. Project Managers and other responsible parties should refer to this document in completing the high risk investment template (Appendix A). The template must be completed quarterly as part of the reporting process for each major investment that OMB designates as high risk.

### DOE's High Risk IT Investments

DOE has worked with OMB to identify the Department's high risk IT investments for Q4 FY 2007, which include:

- NNSA Advanced Simulation and Computing (ASC) Roadrunner Platform
- NNSA Strategic Transportation Authority (STA)
- CF Integrated Management Navigation (I-MANAGE) System
- CF Integrated Management Navigation STARS Migration
- CF Integrated Management Navigation (I-MANAGE) Migration
- CF Integrated Management Navigation (CHRIS) Migration
- EE State Grants Administration
- EE Corporate Management Planning Systems
- HSS Integrated Security System (eDISS+)
- Enterprise Human Resources Integration (EHRI) Migration
- EM SR Mission Support
- IM eAuthentic Migration

<sup>4</sup> OMB Memorandum M-05-23, Improving Information Technology (IT) Project Planning and Execution, August 4, 2005.

**OMB’s Criteria**

OMB defines high risk projects as those that meet the following criteria<sup>5</sup>:

- The agency has not consistently demonstrated the ability to manage complex projects;
- The project has exceptionally high development, operating, or maintenance costs, either in absolute terms or as a percentage of the agency’s total IT portfolio;
- The project is being undertaken to correct recognized deficiencies in the adequate performance of an essential mission program or function of the agency, a component of the agency, or another organization; or
- A delay or failure of a particular project would introduce for the first time inadequate performance or failure of an essential mission function of the agency, a component of the agency, or another organization.
- The investment is an E-Gov or a Line of Business (LoB) initiative managed by the agency.<sup>6</sup>
- The investment is an e-Gov or LoB migration project. As these projects almost always consist of activities with more than one agency, migration investments are high risk until migration is completed or OMB has determined it is no longer applicably designated as high risk.<sup>7</sup>

Please note that if a high risk project is represented by an entire IT investment, the IT investment would also be known as a high risk investment.

**DOE’s Criteria**

In consideration of OMB’s criteria, DOE applied a set of criteria against its portfolio of major IT investments to determine which, if any, should be identified as high risk. The criteria or factors considered are detailed below.

OMB’s High Risk Criteria	DOE’s Application of Criteria
<ul style="list-style-type: none"> <li>• Agency has not consistently demonstrated the ability to manage complex projects</li> </ul>	<ul style="list-style-type: none"> <li>• There are no examples where the Department has failed to demonstrate the ability to manage complex investments.</li> </ul>
<ul style="list-style-type: none"> <li>• Exceptionally high development, operating, or maintenance costs, either in absolute terms or as a percentage of the agency’s total IT portfolio</li> </ul>	<ul style="list-style-type: none"> <li>• DOE conducted an analysis of its major IT investments requesting DME funding to determine a threshold for “exceptionally” high development and O&amp;M costs. The DME funding for each major IT investment was divided by the total DME funding portfolio for all major investments. If the ratio exceeded 10%, it was considered to be “exceptionally” high.</li> <li>• The total funding amounts (DME and O&amp;M) were also analyzed for each investment. The three investments requesting the largest amount of total funding for were also included on the list.</li> </ul>
<ul style="list-style-type: none"> <li>• Being undertaken to correct recognized deficiencies in the adequate performance of an essential mission program of</li> </ul>	<ul style="list-style-type: none"> <li>• DOE reviewed internal performance scorecards to determine if performance deficiencies existed within mission critical business functions. DOE did not receive a passing score in the FISMA Scorecard.</li> </ul>

<sup>5</sup> OMB Circular A-11 (2007), Part 2, Section 53: Information Technology and e-Government

<sup>6</sup> Per additional OMB Guidance via email. August 24, 2005.

<sup>7</sup> Per additional OMB Guidance via email. August 24, 2005.

OMB's High Risk Criteria	DOE's Application of Criteria
function of the agency, a component of the agency, or another organization	Recognizing the important function of security within DOE's business operations, DOE has included security-related investments on the high-risk list.
<ul style="list-style-type: none"> <li>• Delay or failure would introduce for the first time unacceptable or inadequate performance or failure of an essential mission function of the agency, a component of the agency, or another organization</li> </ul>	<ul style="list-style-type: none"> <li>• When interpreting this criterion, DOE evaluated its major investments to determine which investments were supporting essential business functions. The project managers for the investments were then contacted to determine whether up-to-date contingency plans were in place.</li> </ul>
<ul style="list-style-type: none"> <li>• The investment is an E-Gov or a LoB initiative managed by the agency.</li> </ul>	<ul style="list-style-type: none"> <li>• DOE reviewed its major investments for E-Gov and LoB initiatives.</li> </ul>
<ul style="list-style-type: none"> <li>• All investments associated with migrations to an E-Gov or LoB initiative are also considered high risk until migration is completed or OMB has determined it is no longer applicably designated as high risk.</li> </ul>	<ul style="list-style-type: none"> <li>• DOE interpreted this criterion to apply to major IT investments targeted for migration to E-Gov and/or LoB initiatives.</li> </ul>

Investment Evaluation:

This process will require Project Manager and other responsible parties to provide documentation on a quarterly basis. Reports must include whether the following four criteria are being met:

1. Baseline with Clear Goals
2. Cost and Schedule Variance within 10%
3. Qualified Project Manager
4. Avoiding Duplication

For each criterion that is not met, the project must document the specific performance shortfall, the cause of the shortfall, proposed corrective action measures with associated target completion dates, and the amount and source of funding (if required).

Period of Assessment:

The High Risk Investment Review and Reporting process assesses the performance of high risk investments on a quarterly basis. Program Offices are required to submit the most current data available for their investments. For Q4 FY07, Program Offices with High Risk Investments must submit the template **by Friday September 7<sup>th</sup>, 2007.**

## High Risk Investment Submission Process

### 1) Initial Data Call:

The quarterly High Risk Investment process is initiated by a data call that is sent out to Program Offices with High Risk Investments by the Office of the CIO. The data call will contain a guidance document, as well as the High Risk Investment Template. These documents will be used by the Program Offices when submitting quarterly data to OMB for their high risk investments, as designated by the OCIO.

### 2) Completing the High Risk Investment Template:

To capture performance information for all high risk investments, a High Risk Investment Template has been developed. This template is designed to capture the most current information for the investment. It is the responsibility of the Program Offices to complete the template for each of their high risk IT investments. Once the template is complete, it will need to be submitted to the OCIO.

Program Offices will be sent the template via email. High Risk Investment templates and guidance will also be posted in eCPIC's Resource Library/High Risk Investment Folder.

***Once the templates have been completed, the Senior Federal IT Lead should send an email with the attached template to TheAnne Gordon (cc: eCPIC) in the Office of IT Planning, Architecture and E-Government.***

### 3) Analyzing the High Risk Investment Templates:

After Program Offices submit the High Risk Investment Template, it is the responsibility of the OCIO to perform an analysis on these investments. The OCIO will review the templates and Program Offices will be contacted if there are any inadequacies in the documentation or if revisions are necessary. The documentation will also be reviewed during the quarterly Control Review meetings.

### 4) Submitting the High Risk Investment Templates:

After Program Offices submit the High Risk Investment Template and/or after revisions are made to the documentation, the OCIO will forward the High Risk Investment Templates to OMB, as required.



**Appendix E: Post Implementation Review Evaluation Criteria**

<b>Question</b>	<b>Evaluation Criteria</b>	<b>Scoring Criteria</b>
1. Was there a documented 'lessons learned' process and has it been incorporated to improve investment performance?	Best practices/lessons learned	0 – A lessons learned process is neither documented nor implemented and there is no clear evidence that actual lessons learned have been incorporated to improve investment performance.
		2 – A lessons learned process has been documented but there is little or no evidence that the process is implemented, or it is clearly evident that lessons learned have been considered and incorporated to improve investment performance but the protocol for incorporating lessons learned has not yet been documented or formalized.
		4 – A lessons learned process is documented the investment clearly demonstrates how lessons learned have been incorporated to improve investment performance.
2. Did the process require that detailed baselines be developed, including descriptions of the milestones, dates, and timeframes?	Best practices/lessons learned; Cost & schedule	0 - The baseline is non-existent/non-attainable or is poorly documented to the extent that it provides little or no value to the management of the investment or tracking investment progress.
		2 - The documented baseline lacks detail but illustrates that some investment planning has occurred. The baseline will provide some limited value in the management of the investment and tracking investment progress.
		4 - The baseline is well developed with clear descriptive milestones and viable planned costs and schedule.
3. Did the investment conduct assessments of customer satisfaction (end-users, business or program unit sponsor, etc.)? What were the results of the Customer Satisfaction assessment?	Best practices/lessons learned; Technical & operational performance	0– Customer satisfaction has not been assessed or customer satisfaction rating is less than 50%.
		2 – Assessments of some customer groups have been done and/or the customer satisfaction rating is less than 90%.
		4 – Assessments include input from all customer groups and the customer satisfaction rating is greater than 80%.
4. Did the investment include an assessment of compliance with DOE's Enterprise Architecture? If yes, did the investment include how it complied with the DOE EA?	Enterprise Architecture compliance	0 -The investment does not align with the DOE Enterprise Architecture and/or alignment is not adequately or clearly documented
		2 The investment remotely aligns to the DOE Enterprise Architecture and/or the documented alignment needs improvement
		4 - The investment clearly aligns with the DOE Enterprise Architecture, which is adequately documented.
5. Did the investment	Best	0 – Investment does not have an IPT.

Question	Evaluation Criteria	Scoring Criteria
have and actively use an Integrated Project Team?	practices/lessons learned	2 – Investment utilizes an IPT, but not to the extent, it should. Roles and responsibilities are loosely defined or are not documented at all.
		4 – Investment has and fully utilizes its IPT. Roles and responsibilities are clearly defined and each IPT member is aware of and performs his or her duties as expected.
6. Did the investment collect projected versus actual cost, benefit, and risk data?	Technical & operational performance; Cost & schedule; Risk Management	0 - Actual data is not regularly collected and no analyses have been conducted to determine investment progress against the baseline/projected data.
		2 - Some actual data is collected, but collection is inconsistent and/or there are gaps in the actual data.
		4 - Actual cost, benefit, and risk data is documented and tracked against projected data.
7. Has the cost, benefit, and risk information that was used for initial investment justification been preserved? Have updates that have been made to costs, benefits, or risks been noted, preserved, and analyzed?	Technical & operational performance; Cost & schedule; Risk Management	0 - Little or no original investment justification data is available.
		2 - Original investment data are only partially available and/or changes to the data are poorly documented.
		4 - All original investment data used for initial justification has been maintained and was readily available. Any changes to the original data has been noted, preserved, and analyzed.
8. Is Cost and Schedule Variance data available for the investment?	Technical & operational performance; Cost & schedule	0 - No CV and/or SV data available, the investment was implemented with a schedule variance greater than +/- 10%, or the investment was implemented with a cost variance greater than +/- 10%
		2 - Limited CV and/or SV data available, the investment schedule variance at implementation was between +/-10% and +/-10%, or the investment cost variance at implementation was between +/- 10% and +/-10%
		4 - Comprehensive CV and SV data available, the investment was implemented with a schedule variance less than +/-10%, and the investment was implemented with a cost variance less than +/-7%
9. Have investment benefits that were obtained been quantified? If not, were qualitative measures being used to determine impact?	Technical & operational performance	0 - Few or no quantifiable or qualitative measures have been documented.
		2 - Benefits have only been partially quantified and/or qualitative measures need some improvement to adequately determine the impact of the investment.
		4 - Investment benefits have been quantified and/or qualitative measures are being adequately used to determine the impact of the investment.
10. Was an economic analysis conducted? If yes, was the analysis results - NPV,	Cost & schedule	0 - An economic analysis was not conducted, calculations were conducted but are clearly flawed, and/or the investment data that is needed to perform calculations was not readily available



<b>Question</b>	<b>Evaluation Criteria</b>	<b>Scoring Criteria</b>
Payback Period, and ROI provided. If not, was it stated why?		2 - Some calculations were conducted, calculations were conducted but assumptions were not well documented, or adequate investment data was documented and available that allowed reviewers to easily make the necessary calculations
		4 - A thorough economic analysis was conducted and assumptions documented; Net Present Value, investment payback period, and Return on Investment were calculated and readily available
11. Was security funding identified for the investment as well as specific security related activities that the funding will be used for?	Cost & schedule; Security; Risk Management	0 – No discrete tasks that the funding will be used for have not been identified.
		2 – Security funding and activities have been identified, but level of effort does not align with the funding amount and/or the tasks specified are not identifiable in the overall investment plan.
		4 – Both funding and related activities have been identified and there is clear alignment between the two. The security related activities are also integrated and overtly present throughout the overall investment plan/schedule.
12. Did the investment identify security-related risks, and protect privacy data?	Security; Risk Management	0 - Security risks and/or mitigation strategies are poorly or not documented at all and/or privacy data is not adequately protected in accordance with the Privacy Act.
		2 - Security risks and/or mitigation strategies are only partially documented. Privacy data is adequately protected.
		4 - Security related risks are clearly documented in a Risk Assessment. Mitigation strategies are provided in an up-to-date system security plan that was written in accordance with NIST guidelines. Privacy data is protected in accordance with the Privacy Act.
13. Did the investment assess and monitor contractor performance, and maintain oversight data?	Best practices/lessons learned; Technical & operational performance	0 - Contractor performance is not regularly assessed and/or the results of assessments are not documented, maintained, or reviewed as part of subsequent assessments.
		2 – Contractor performance is assessed, but a formal assessment process has not been documented or implemented. Assessment results are documented and maintained, but no actions are taken to improve performance deficiencies.
		4 – A regular assessment process is documented and has been implemented. Results are documented, maintained, and periodically reviewed with the contractor to help ensure that performance deficiencies are corrected in a timely manner.
14. Did the investment support GPEA?	Best practices/lessons learned; Strategic goals	0 – This investment does not support GPEA
		2 – Investment indicates that it supports automating paper-based transactions but is not included in DOE GPEA Compliance Plan

<b>Question</b>	<b>Evaluation Criteria</b>	<b>Scoring Criteria</b>
	and objectives	4 – The investment supports electronic transactions/record-keeping currently identified in DOE's GPEA Compliance Plan AND describes how the investment relates to the plan.
15. Did the investment achieved its performance goals (intended impact), and was this impact still aligned with mission goals?	Technical & operational performance	0 - Few or no performance goals have been met and there is little or no alignment between the performance goals and DOE's mission goals.
		2 - The investment has met some of its performance goals and/or has poor documentation of the goals being met; Performance goals have been met, but do not closely align with DOE mission goals.
		4 - Yes the investment has adequate documentation that illustrates that all of its performance goals have been achieved and that those goals align with DOE's mission goals.
16. Are the business assumptions that justified the investment still valid?	Strategic goals and objectives	0 – Business assumptions have not been documented, are not readily available, or are invalid and/or the investment does not illustrate clear alignment with one or more of DOE's business processes
		2 – Some assumptions are still valid and the investment demonstrates how it fulfills a DOE business need or directly supports a DOE business process
		4 – Investment's original business assumptions are clearly documented and remain valid, and the investment clearly aligns with one or more DOE business process/fulfills a DOE business need
17. Were corrective actions for investments not meeting performance goals, outlined by the investment management team? Were timetables and steps for implementing these corrective actions established as part of the decision?	Best practices/lessons learned; Technical & operational performance; Cost & schedule	0 – Corrective actions were not documented.
		2 – Corrective actions were considered, but the course of action was not documented.
		4 – Corrective actions were considered and documented, including a timetable for completing those actions.
18. Did the investment directly support DOE's mission, and strategic goals and objectives?	Strategic goals and objectives	0– Investment does not state that it supports any of DOE's strategic goals/objectives.
		2 – Investment directly supports at least one of DOE's strategic objectives, but does not describe clearly how results or impacts will contribute to strategic goals or objectives.
		4 – Investment directly supports at least one of DOE's strategic objectives, and clearly describes how results or impact will contribute to DOE's strategic goals or objectives.

<b>Question</b>	<b>Evaluation Criteria</b>	<b>Scoring Criteria</b>
19. Did the investment support one or more of DOE's business processes?	Enterprise Architecture compliance; Impact on stakeholders	0 – Investment does not support any business process.
		2 – Investment members were able to demonstrate alignment during the PIR, but it is not documented.
		4 – Investment is aligned with at least one DOE business process, and has supporting documentation.
20. Did the investment regularly evaluate and document the 'current status of the investment'? (Assess the investment's impact on mission performance, and determine future prospects/changes for the investment.)	Best practices/lessons learned; Technical & operational performance; Cost & schedule; Impact on stakeholders	0 – Investment does not provide any status report data.
		2 – Investment regularly evaluates and monitors investment status but is not documented
		4 – Investment regularly evaluates and monitors investment status, and has supporting documentation.
21. Have Records Disposition Schedules been approved for the information in this investment	Records Management	0- SF-115 not submitted
		2- SF-115 submitted, but not approved
		4 – SF-115 has been approved
22. Are Data backup processes adequate for the significance of the information?	Records Management	0 - Backups are not conducted daily when data entry has occurred. No restoration test
		2- Only daily backups have been conducted,
		4 - Daily and Weekly backups are routinely performed and backup test has been completed within 1 year.
23. Has Data been protected to prevent unauthorized alterations and documents a record of changes to the data? (date, who, what).	Records Management	0 - Data is on LAN without protection
		2 - Data is maintained on a stand-alone server or system that is protected adequately.
		4 - Data is maintained on LAN with password protection.
25. Was this investment replaced by an E-Gov initiative?	Enterprise Architecture Compliance; Impact on Stakeholders	0 – No information is provided or an assessment has not been performed
		2 – This investment will be replaced by an E-Gov initiative, however a transition plan is not in place
		4 – This investment does not duplicate an E-Gov initiative or it will be replaced by an E-Gov initiative and a transition plan is in place.

## **Appendix F: Operational Analysis Guidance**

The Department of Energy's (DOE) implementation of the OMB requirement for Operational Analysis (OA) reflects a comprehensive and coherent method of examining the current and historical performance of all operational (or steady-state) investments and measures that performance against an established set of baseline cost, schedule, technical, and benefits performance parameters.

Operational Analysis in this context is less structured than performance reporting methods applied to developmental projects (such as Earned Value Analysis). It is, however, also broader in nature, and will trigger considerations of how the business objectives could be better met, how costs could be saved, and whether the organization should continue funding the investment as it is presently defined and operated.

DOE's OA framework demonstrates that investment sponsors and stakeholders are engaged in a continuous monitoring process that provides input via thorough examination of the initial and continuing need for the investment, the historical and current performance being achieved, the suitability of continuing the investment, and the investigation of alternative methods of achieving the same investment results.

DOE's approach leverages and fosters integration of data from its Enterprise Architecture (EA) and Capital Planning Investment Control (CPIC) processes.

The DOE OA process involves the use of data from the following EA and CPIC domains: 1) end user and investment beneficiary Post implementation Review (PIR) information ; 2) actual cost data maintained in the department's/agency's financial management system(s); 3) baseline requirements, cost, schedule, and risk records archived by the investment's (government and contractor) project, business, and contract managers; 4) benefit accumulation and program/system end-of-life projections from the programs' analysis of alternatives; 5) physical performance, maintenance and help desk records maintained by system/mechanical engineers and technical support staff; and 6) feedback and recommendations from the EAWG and the ARB.

Operational and steady-state programs funded by Operations and Maintenance (O&M) funds are not required to implement an ANSI/EIA 748 compliant earned value management system. However, major modifications and enhancements to these program's systems are required to schedule and baseline the work to be performed and provide quantitative performance measurement of the budgeted cost of work scheduled (BCWS), the actual cost of the work performed (ACWP), and the budgeted cost of work performed (BCWP) when the nature of the work lends itself to earned value performance measurement. Activities that qualify under this description include planned technical refreshes or major system upgrades on investments in the DOE O&M portfolio during FY 2007. DOE will require all steady state investments to provide their OA to the OCIO in conjunction with the program portfolios. This will ensure: 1) assessments of program management based on performance; 2) ability of the program to produce and show results, and link performance to the desired outcomes; 3) external views on program performance; 4) external views on program performance; 5) external views on program performance; 6) assessments of program management based on performance.

In addition to standard quantitative performance measures such as: (Cost variance (CV), schedule variance (SV), schedule and cost indices (SPI, CPI) and %, estimates at completion (EAC), etc.), an operational analysis must also answer more subjective questions in specific areas such as:

- Customer Results,
- Strategic and Business Results,
- Financial Performance, and
- Innovation.

**Customer results** analysis should focus on whether the investment is fully meeting the customer's performance needs and whether the costs associated with providing the service at that performance level are as low, to the customer, as they could be. The focus here is on whether the investment is delivering the goods or services that it is intended to deliver to the satisfaction of the customer. This data is typically captured as part of the Post Implementation Review (PIR) process.

**Strategic and business results** measure the effect of the investment on the performing organization itself, and should provide a measure of how well the investment is meeting the business needs, in term of its alignment with the enterprise architecture and, whether it is contributing to the achievement of the organization's current strategic goals. In this category of analysis, the OA should provide data that contributes to answering such questions as:

- "How does this investment help us get our job done?"
- "How is the investment aligned with and support the enterprise architecture
- "What strategic goals does this investment address, and how does it help us achieve them?"

**Financial performance** of a steady state investment is typically assessed using quantitative measures and is subjected to a periodic review for reasonableness and cost efficiency. To ensure that the products and services delivered to customers reflect full value for the resources expended, the investment's schedule and risk management plan/records, and the agency's financial records must provide sufficiently detailed data. This includes operating within an acceptable range of the target performance measures and periodic review to determine if the investment's performance as being both effective and cost efficient during the period operation.

Benefit performance measurement and accumulation of quantified benefits is an important element of the Operational Analysis framework. During the select phase of the investment's Capital Planning and Investment Control (CPIC) lifecycle each program provides estimated costs and benefits of various investment solution alternatives and recommends for approval, in most cases, the alternative with the best cost to benefit ratio. It is upon that analysis and recommendation that the DOE approves the initiation of a new investment. In return for the funding provided to develop and implement the program, during the control phase of the CPIC lifecycle, the DOE expects to be able to identify, measure, and track the accumulation (over time) of those benefits. Benefit accumulation schedules may be based on the original quantitative benefit projection in the analysis of alternatives or may be revised in subsequent projections based on the program's actual cost, schedule, and technical performance data.

Addressing **Innovation** in the OA is an opportunity to demonstrate that the investment managers and/or system engineers are monitoring the current state of and availability in the market place of cost saving and performance enhancing technologies and are communicating with investment stakeholders (customers) to address questions such as:

- “How could we better meet the customer needs?”
- “Could we meet these same customer needs at lower cost?”
- “How could this investment be combined with others to better meet our organization’s strategic goals?”
- “Is the current investment implementation going to meet its life expectancy targets?”
- “Are the customer’s most recent performance standards projections capable of being met with the current investment implementation?”

### **Guidelines for Conducting an Operational Analysis**

The following are some guidelines for conducting an operational analysis. They can be considered as a “checklist” of things that should be included.

- OA is integral to the Department's overall IT capital planning and budget development processes, enhancing IT decision making at both the Departmental level and within the various operating units. OA should be performed annually and should be initiated within 9 months of the investment’s PIR. Because the OA review examines actual performance compared to projections, it provides valuable insights relative to the project’s impact on the operating unit and Department’s mission performance.
- Describe the baseline against which you measure the investment’s performance. Is there an approved and up-to-date charter or program plan? The baseline could be defined in documents such as DOE’s Strategic Plan or IT Strategic Plan. The important point is that you discuss the continued need for the investment, along with performance metrics for measuring its performance. The performance metrics should have a clear relationship to both the investment’s business need and DOE’s strategic direction.
- Describe the method you are using to measure and track cost, schedule, and performance metrics. Describe the investment’s cost, schedule, and performance baseline, and describe the management technique you are using to monitor metrics against the baseline (monthly status review meetings, budget reviews, etc). Also describe the quantitative metrics you are using to measure variances from the baseline, and the frequency with which you apply these measurements. It could also be helpful in this section to describe any tools you are using to track performance metrics (Microsoft Project, Excel spreadsheets, etc.).
- Describe the investment’s management control process. What are the operational, mid-management, and senior management policies for review and intervention? If the investment’s variances exceed defined boundaries, what action is taken to rectify the situation? How, and how often, does management ensure the continued strategic fit of the investment with DOE’s strategic direction?
- Discuss the current performance of the investment. Is performance within limits of variance? If not, what corrective actions are you taking to get back on track? Has upper management concurred in the planned corrective actions?

- Discuss any planned alignment or migration to any eGovernment or Lines of Business solution (if applicable) and discuss the transition strategies to accomplish alignment.
- Discuss any effort required to support the Department's target Enterprise Architecture
- Does each major modification and enhancement (i.e. technical refresh activities and major system upgrades) of program's systems have a baseline schedule capable of providing periodic quantitative performance measurement of the budgeted cost of work scheduled (BCWS), the actual cost of the work performed (ACWP), and the budgeted cost of work performed (BCWP)?

**Operational Analysis Template**

**DOE - OPERATIONAL ANALYSIS DATA CALL**

Operational Analysis Review Form						
<b>1. Administrative Information</b>						
Program Name:						
Program Office						
Submission Date:						
Date this system was implemented:						
<b>2. Project Summary (FY 2007)</b>						
	OMB-Approved Baseline			Actual Outcome		
Description of Milestone	Schedule		Planned Cost	Schedule		Actual Cost
	Start Date	End Date		Start Date	End Date	
<b>3. Post Implementation Review</b>						
Provide a date and a brief summary describing the performance outcomes and customer feedback from the program's Post Implementation Review?						
<b>4. Operational Analysis</b>						
<b>a.</b> In this section the program describes the process used for conducting its Operational Analysis activities.						
<b>b.</b> Describe the process the program uses to collect and record actual costs for O&M activities?						



**Operational Analysis Self Assessment**

In the table below the program provides a self assessment rating for its operational analysis for the categories identified in the DOE OA Policy

DOE OA Reporting Categories	Score ( Yellow, Red, Green)
CUSTOMER RESULTS	<input type="radio"/>
STRATEGIC AND BUSINESS RESULTS	<input type="radio"/>
FINANCIAL PERFORMANCE	<input type="radio"/>
INNOVATION	<input type="radio"/>

**5. Program Benefits**

What is the date of the program's most current Analysis of Alternatives document?

*(Note: Please submit a copy of the Analysis of Alternatives document attached to the submitted data call.)*

**5.1 Analysis of Alternatives**

What is the value of the quantifiable benefits reported in the Analysis of Alternatives for the selected alternative? Is that still a valid projection? If not do you have a current projection of the quantifiable life cycle benefits for your program? If yes, please describe.

**5.2 End-of-Life:** In the Analysis of Alternatives document, assumptions were made to estimate the end-of-life date for the program. What was the end-of-life date for the alternative that was selected and is that date still valid? If not, what is the revised end-of-life date?

**5.3 Measuring Benefits:** Please describe how program is measuring and recording the value of the accumulated benefits.

<b>5.4 Benefits Accumulation Estimate</b> - Please detail the estimated benefits accumulation schedule (by FY) for the program.							
PY-1 and Earlier	PY	CY	BY	BY+1	BY+2	BY+3	BY+4 and Beyond
\$	\$	\$	\$	\$	\$	\$	\$
<b>Estimated total Benefit at completion:</b>			\$				
<b>6. Technical Refresh</b>							
What was the program's schedule for performing technical refreshes in FY 2007? What are the associated costs to complete each technical refresh?							
<b>6.1</b> What is the program's schedule for performing technical refresh in FY 2008? What are the estimated costs of each technical refresh?							
<b>7. Major Systems Upgrades</b>							
Is your program planning a major systems upgrade before FY 2011? If yes, during which FY will this occur? Briefly describe why the upgrade is needed and the estimated costs associated with the upgrade.							