

U.S. NUCLEAR REGULATORY COMMISSION

DIRECTIVE TRANSMITTAL

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To: NRC Management Directives Custodians

Subject: Transmittal of Directive 2.2, "Capital Planning and Investment Control"

Purpose: Directive and Handbook 2.2 are being revised to reflect lessons learned from four years of application and in response to new guidance from the President's Office of Budget and Analysis.

MD 2.2 contains no change bars because of the extent of the revision.

Office and Division of Origin: Office of the Chief Information Officer

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Directive: 2.2, "Capital Planning and Investment Control"

Availability: Rules and Directives Branch
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Capital Planning and Investment Control

Directive
2.2

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U. S. Nuclear Regulatory Commission

Volume: 2 Information Technology

OCIO

Capital Planning and Investment Control Directive 2.2

Policy (2.2-01)

It is the policy of the U.S. Nuclear Regulatory Commission to ensure that information technology (IT) investments are planned, selected, managed, and evaluated to maximize the value and minimize the risks of those investments in accordance with Federal statutes and regulations.

Objectives (2.2-02)

- To ensure that NRC's information technology (IT) investments are aligned with mission and strategic goals and that they make measurable improvements to the performance of NRC's mission and supporting administrative functions. (021)
- To ensure that NRC's IT Capital Planning and Investment Control (CPIC) process maximizes the value and assesses and manages the risk of IT investments. (022)
- To ensure that NRC's IT CPIC process complies with Office of Management and Budget (OMB) policies and results in products that satisfy OMB reporting requirements. (023)

Organizational Responsibilities and
Delegations of Authority
(2.2-03)

Chairman
(031)

Approves the initiation of IT investments as directed in Management Directive 11.1, "NRC Acquisition of Supplies and Services," and this directive and handbook.

Executive Director for Operations (EDO)
(032)

- Acting as the Agency Head for IT, establishes a capital planning and management oversight process for IT investments. (a)
- Ensures that NRC's planning and budgeting process for IT is consistent and is integrated with the NRC's overall planning, budgeting, and performance management process. (b)
- Ensures that program and IT officials participate in the planning and budgeting process for IT. (c)
- Ensures that statutory responsibilities are appropriately assigned to the Chief Information Officer (CIO). (d)
- Operates in concert with the CIO and the IT Senior Advisory Council to provide an Executive/Investment Review Committee as required by OMB. (e)

Chief Financial Officer (CFO)
(033)

- Ensures that financial officials participate in the planning and budgeting process for IT. (a)

Organizational Responsibilities and
Delegations of Authority
(2.2-03) (continued)

Chief Financial Officer (CFO)
(033) (continued)

- Coordinates financial systems plans with the CIO to ensure consistency with overall agency IT plans and architectures. (b)
- Participates in IT investment planning and oversight through review or advisory bodies. (c)

Chief Information Officer (CIO)
(034)

- As delegated by the Chairman or the EDO acting as the Agency Head for IT, develops and implements agencywide IT planning, budgeting, and investment control policies, processes, and procedures that support NRC's mission and meet the requirements of Federal statutes and regulations and are consistent with NRC's overall planning, budgeting, and performance management process. (a)
- Develops and recommends means to improve agency effectiveness and efficiency through the use of IT. (b)
- Prepares integrated agencywide IT plans and related OMB and congressional submittals, ensuring that such plans support the NRC Strategic Plan. (c)
- Approves OMB and congressional submittals related to IT. (d)
- Operates in concert with the EDO and the IT Senior Advisory Council to provide an Executive/Investment Review Committee. (e)
- Establishes and chairs the IT Senior Advisory Council. (f)

Organizational Responsibilities and
Delegations of Authority
(2.2-03) (continued)

Chief Information Officer (CIO)
(034) (continued)

- Establishes the IT Business Council. (g)
- Establishes the IT Focus Group and appoints the chair. (h)

IT Senior Advisory Council
(035)

- Provides strategic direction on major IT initiatives and prioritizes agency IT investments. (a)
- Operates in concert with the EDO and the CIO to provide an Executive/Investment Review Committee. (b)

IT Business Council (ITBC)
(036)

Reviews and makes recommendations to the CIO on actions to be taken on business cases and selected screening forms.

Office Directors and
Regional Administrators
(037)

- Submit information on office or regional IT investments, needs, and plans to the CIO in accordance with Handbook 2.2, or as requested to support agencywide IT planning, budgeting, or investment control. (a)
- Participate in IT investment planning and oversight through representation on senior agency review or advisory bodies. (b)

Applicability (2.2-04)

The policy and guidance in this directive and handbook apply to all NRC employees.

Handbook (2.2-05)

Handbook 2.2 describes the process and procedures for planning and controlling IT investments, further describes organizational responsibilities, and provides other sources of information.

References (2.2-06)

Federal Legislation (061)

Clinger-Cohen Act of 1996, which requires agencies to use a disciplined CPIC process to acquire, use, maintain, and dispose of IT.

Federal Acquisition Streamlining Act (FASA) of 1994, Title V, which requires agencies to establish cost, schedule, and measurable performance goals for all major acquisition programs and achieve on average 90 percent of those goals. OMB policy for performance-based management is also provided in this act.

Federal Information Security Management Act of 2002 (FISMA), which strengthens Federal Government information security by reauthorizing and expanding the information security, evaluation, and reporting requirements enacted into law as the **Government Information Security Reform Act of 2000 (GISRA)**.

Federal Managers' Financial Integrity Act of 1982, the Chief Financial Officers Act of 1990, and the Federal Financial Management Improvement Act of 1996, which require

References

(2.2-06) (continued)

Federal Legislation

(061) (continued)

accountability of financial and program managers for financial results of actions taken, control over the Federal Government's financial resources, and protection of Federal assets.

Government Paperwork Elimination Act (GPEA) of 1998, which requires Federal agencies to allow the option of submitting information or transacting business with an agency electronically. The GPEA is intended to help citizens gain one-stop access to existing Government information and services, provide better, more efficient service, and increase Government accountability to citizens.

Government Performance and Results Act of 1993, which establishes the foundation for budget decisionmaking to achieve strategic goals in order to meet agency mission objectives.

Paperwork Reduction Act of 1995, which requires that agencies perform their information resources management activities in an efficient, effective, and economical manner.

Privacy Act of 1974, as amended (5 U.S.C. 552a), which affords individuals the right to privacy in records that are maintained and used by Federal agencies.

Rehabilitation Act of 1973 (Section 508), which requires Federal agencies to develop, procure, maintain, or use electronic and information technology (EIT) that is accessible to Federal employees and members of the public with disabilities.

References

(2.2-06) (continued)

Other References

(062)

Best Practices: Privacy, Internal Revenue Service Model Information Technology, *Privacy Impact Assessment*, adopted February 25, 2000, recommended by the CIO Council Subcommittee on Privacy.

National Institute of Standards and Technology Special Publication (SP) 800-18, "Guide for Developing Security Plans for Information Technology Systems," December 1998.

NRC Management Directives—

2.1, "Enterprise Architecture."

2.5, "System Development Life Cycle Management Methodology (SDLCMM)."

3.2, "Privacy Act."

3.14, "U.S. Nuclear Regulatory Commission External Web Site."

12.5, "NRC Automated Information Security Program."

Office of Management and Budget—

Office of Management and Budget (OMB) Circular A-11, "Preparation, Submission, and Execution of the Budget."

OMB Circular A-130, "Management of Federal Information Resources."

Capital Planning and Investment Control

Handbook

2.2

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Introduction (I)

The Clinger/Cohen Act of 1996 requires each Agency Head to design and implement a Capital Planning and Investment Control (CPIC) process. The NRC has built on the standard process and expanded it by adding an initial phase before the three phases outlined in Office of Management and Budget (OMB) guidance.

Applicability (II)

The agency's CPIC process covers the four phases in the life cycle of an information technology (IT) investment: (A)

- Research Phase (NRC Specific)
- Selection Phase (OMB Standard)
- Control Phase (OMB Standard)
- Operations/Evaluation Phase (OMB Standard)

Management Directive (MD) 2.2 identifies the organizational responsibilities and delegations of authority associated with the selection phase. The organizational responsibilities and delegations of authority for the other phases are detailed in the following management directives: (B)

- Research Phase: MD 2.1, "Enterprise Architecture"
- Control Phase and Operations/Evaluation Phase: MD 2.5, "System Development Life Cycle Management Methodology (SDLCMM)"

Most proposed IT investments are subject to the CPIC process. Investments covered include new application systems, major modifications or enhancements to existing systems, modifications to local and agencywide IT infrastructure, new IT infrastructure support contracts, and purchases of new computer and network equipment. IT expenditures not covered include single user/personal productivity applications, scientific codes that do not affect the IT infrastructure, and ongoing maintenance and operations.

Three general categories of IT investments at the agency are accorded very different levels of management control and oversight. Organizational responsibilities and delegations of authority are structured to be dependent on the following tier categorizations:

Applicability (II) (continued)

- Tier 1: Major IT investments that meet or exceed a control phase cost threshold of \$1,500,000 (or \$500,000 for financial management systems) or have other characteristics that are of particular interest to NRC management or to the OMB. Tier 1 investments require the greatest level of management control and oversight. These IT investments require accomplishment of all steps in the CPIC process, including the preparation of a full CPIC business case during the selection phase.
- Tier 2: IT investments that meet or exceed a control phase cost threshold of \$500,000 (but below the Tier 1 \$1,500,000 threshold) or require some level of management control and oversight to effectively deal with special security, architecture, coordination, staffing, or other concerns presented by these investments. These IT investments will follow a risk-informed CPIC process tailored to the level of control necessary to manage the particular risks involved and require the preparation of an abbreviated CPIC business case during the selection phase.
- Tier 3: IT investments that do not exceed a control phase cost threshold of \$500,000 and have no other special characteristics that would classify them as Tier 1 or Tier 2. These IT investments require minimal management control and oversight and require no selection phase actions before entering the control phase. Screening forms for Tier 3 investments that exceed \$150,000 will be required to be submitted to OCIO only to satisfy CPIC documentation requirements. Control phase activities need not be deferred pending submission of this documentation.

More detailed definitions of these three tiers are given in Exhibit 1, "Investment Tiers," of this handbook.

Objectives (III)

The CPIC process involves the following objectives:

- To ensure that NRC's planning and budgeting process for IT is integrated with NRC's overall planning, budgeting, and performance management process. (A)
- To ensure that efforts to achieve compliance with Federal information systems security requirements are fully integrated into IT investments. (B)

Objectives (III) (continued)

- To ensure that efforts to achieve compliance with the Federal Enterprise Architecture (FEA) are fully integrated into IT investments. (C)
- To ensure that NRC work processes are evaluated against best practices and are simplified, improved, or redesigned, when appropriate, before making significant investments in applications or systems to automate those processes. (D)
- To ensure accountability of program officials for the IT investments that support their programs. (E)

Roles and Responsibilities (IV)

The CPIC process involves the following roles and responsibilities:

Executive Director for Operations (EDO) (A)

- Acting as the Agency Head for IT, establishes a capital planning and management oversight process for IT investments that— (1)
 - Provides for the selection of IT investments, the management of these investments, and evaluation of the results of these investments (a)
 - Is integrated with the NRC's planning, budgeting, and performance management process (b)
 - Maximizes return on investment and minimizes financial and operational risk for investments in IT (c)
- Reviews and approves the business case prepared during the selection phase for Tier 1 IT investments. (2)
- Reviews during the operations/evaluations phase the Tier 1 projects that are at risk for significant variation from their approved cost, schedule, or performance goals. Decides whether to continue, modify, or terminate such projects. (3)

Roles and Responsibilities (IV) (continued)

Chief Information Officer (CIO) (B)

- Reviews and approves the business case prepared for all IT investments during the selection phase, referring Tier 1 IT investments to the EDO for review and approval. (1)
- Reviews during the operations/evaluations phase the Tier 2 projects that are at risk for significant variation from their approved cost, schedule, or performance goals. Decides whether to continue, modify, or terminate such projects. (2)
- Establishes review or advisory bodies, as necessary, to involve program officials in IT investment planning and to ensure agencywide coordination of IT programs. (3)
- Ensures that NRC mission-related and administrative processes are revised, where appropriate, before making investments in IT that support those processes. (4)
- Ensures that proposed new IT investments are not duplicative of other planned or ongoing projects or applications systems, unless they are intended to replace these projects or systems. (5)
- Ensures that proposed IT investments and any data they contain are integrated with related activities to meet shared business needs in the most cost-effective manner. (6)
- Ensures that proposed IT investments adhere to Federal and NRC enterprise architecture guidelines and standards. (7)
- Ensures that all proposed investments have analyzed the potential for use of e-business technologies. (8)
- Ensures that proposed IT investments identify and disclose the costs associated with compliance with Federal information systems security requirements, including security documentation, certification testing, and accreditation. (9)
- Ensures that IT investments are in compliance with the Privacy Act. (10)

Roles and Responsibilities (IV) (continued)

Chief Information Officer (CIO) (B) (continued)

- Determines which IT investments should be recommended to the EDO as major investments reportable to OMB. (11)
- Establishes progress reporting requirements for IT investments and provides the means for senior managers to obtain timely information regarding the status of major IT investments. Periodically briefs the Chairman and the EDO on the status of investments that are reportable to OMB. (12)
- Provides advice and consultation on proposed IT investments subject to this management directive. (13)
- Assists sponsoring offices in all phases of the planning and selection of IT investments. (14)

Information Technology Business Council (ITBC) (C)

Reviews and makes recommendations to the CIO on actions to be taken on business cases for all Tier 1 investments and any other business cases or any screening forms referred to the council by the CIO.

Office Directors and Regional Administrators (D)

- Perform all sponsor activities for IT investments proposed to meet the mission needs of the office or region. These activities include the following:
 - Preparing and submitting screening forms and business cases that comply with all provisions of this directive and handbook. (1)
 - Evaluating NRC mission-related processes and administrative processes against best practices, and revising them, where appropriate, before proposing investments in IT that support those processes. (2)
 - Analyzing alternatives for proposed new IT investments, including a thorough review of the potential for using e-business technologies and recommending only those approaches that provide an acceptable return on investment and an acceptable level of risk. (3)

Roles and Responsibilities (IV) (continued)

Office Directors and Regional Administrators (D) (continued)

- Coordinating proposed investments with OCIO to ensure that such investments conform to Federal laws, agency IT directives, architectures and standards; are compatible with the IT infrastructure; are integrated with related investments; and do not duplicate existing data and applications. (4)
- Coordinating with OCIO to ensure that IT investments account for the costs associated with compliance with Federal information systems security requirements, including security documentation, certification testing, and accreditations. (5)
- Submitting information on the progress and results of IT investments sponsored by their office or region to the CIO. (6)

Process (V)

This handbook details the methodology associated with the selection phase, which is the second phase in the agency's overall CPIC process. When necessary, specific parts of the methodology are supplemented by a standard operating procedure (SOP), which is updated as necessary to reflect the most current NRC and OMB guidance. The latest version of these procedures can be found at www.internal.nrc.gov/OCIO/cpic/.

As summarized below, the methodology for the other phases is detailed in the following management directives (MDs):

- Research Phase: MD 2.1, "Enterprise Architecture"
- Control Phase and Operations/Evaluation Phase: MD 2.5, "System Development Life Cycle Management Methodology (SDLCMM)"

Research Phase (A)

The methodology for conducting the research phase is detailed in MD 2.1. During the research phase, offices identify a business need that could require an IT investment, conduct market and NRC research, and consult with OCIO.

Process (V) (continued)

Research Phase (A) (continued)

The sponsor of a proposed IT investment should contact OCIO at the initiation of the research phase. Considerations related to enterprise architecture, IT security (as detailed in MD 12.5, "NRC Automated Information Security Program"), reductions in Government paperwork, e-Government impacts, public access to information, and technical options will be investigated during this phase. (These considerations will continue to be important throughout the life cycle of an IT investment.) OCIO will advise the sponsor regarding the technical feasibility of the proposed investment and help the sponsor to complete a screening form. Submission of a screening form initiates the next CPIC component, the selection phase. Failure to consult with the OCIO may lead to preventable lengthy reviews during the selection phase.

Selection Phase (B)

The selection phase process, which is summarized in Exhibit 2 ("Screening Form Process Flow"), Exhibit 3 ("Full Business Case Process Flow"), and Exhibit 4 ("Abbreviated Business Case Process Flow") of this handbook, depends on the characteristics of the IT investment. The first step in the process is to identify the tier associated with the IT investment. The screening form contained in CPIC SOP-1 (www.internal.nrc.gov/OCIO/cpic/sop-1.html) provides the checklists needed to classify the IT investment into one of the three following tiers.

- Tier 1: These IT investments require accomplishment of all steps in the CPIC process, including the preparation of a full CPIC business case.
- Tier 2: These IT investments will follow a risk-informed CPIC process tailored to the level of control necessary to manage the particular risks involved and require the preparation of an abbreviated CPIC business case during the selection phase.
- Tier 3: These IT investments require no selection phase actions before entering the control phase. However, Part I of the screening forms for Tier 3 IT investments whose estimated control phase cost (project development phase cost) exceeds \$150,000 will be forwarded to OCIO to satisfy CPIC documentation requirements. Control phase activities need not be deferred pending submission of this documentation.

Process (V) (continued)

Selection Phase (B) (continued)

Screening Form (1)

Sponsors will use the checklists contained in the screening form to identify the tier associated with the IT investment and will complete the screening form to initiate the CPIC process for Tier 1 and Tier 2 IT investments.

Contents of the Screening Form (a)

The screening form provides checklists to assist the sponsor in determining the tier associated with the IT investment. These checklists provide a series of “Yes/No” questions along with space for discussion of “Yes” answers. On the basis of the answers to the questions, the sponsor will classify the IT investment into one of the three defined tiers on the basis of the guidelines presented in the screening form.

If the IT investment is classified as a Tier 1 or a Tier 2 IT investment, the sponsor will complete the checklists to reflect the rationale for the classification and then complete a brief summary of the IT investment in the form of a charter as outlined in the SDLCMM (see MD 2.5).

If the IT investment is classified as Tier 3, the sponsor can proceed directly to the control phase.

Submission of the Screening Form (b)

The office director or the regional administrator will send a transmittal memorandum, together with the completed screening form, to the CIO. An electronic copy of this submission will be sent to the CPIC mailbox at the e-mail address specified in CPIC SOP-1.

Review of the Screening Form (c)

The review process includes the following actions:

Process (V) (continued)

Selection Phase (B) (continued)

- Within 2 days of receipt of the sponsor's memorandum, OCIO notifies the sponsor contact listed on the screening form that the form has been received and requests additional information and/or meetings if necessary (e.g., the IT investment has characteristics that require further OCIO review), and circulates the form to appropriate OCIO divisions for comment.
- If revisions to the form are necessary, OCIO notifies the sponsor's contact within 1 week of receipt of the sponsor's memorandum.
- Assuming ITBC review is not required, within 2 weeks of receipt of the sponsor's memorandum (or within 1 week of receipt of a revised form), OCIO completes and sends a decision memorandum from the CIO to the sponsor. ITBC review (to be conducted by e-mail) will add 1 week to this step in the process.

Focus/Purpose of Review of the Screening Form (d)

The focus of the OCIO review process will be to validate the sponsor's categorization of the IT investment, to determine that adequate research and OCIO consultation was accomplished during the research phase, and to identify areas that require special management attention, including the need for non-sponsor active participation in business case preparation due to potential impacts on resources, training, or changes to existing processes in non-sponsor offices.

Approval To Begin Business Case Preparation (e)

Approval to begin the business case preparation will be transmitted via memorandum from the CIO to the sponsor. If the proposed investment is judged to have value and to support the agency's mission, the sponsor is given approval and will coordinate with the Office of the Chief Financial Officer, as necessary, to allocate money from his or her budget to scope the proposed project and prepare the business case for initiating the project. The memorandum approving initiation of the business case will alert the sponsor if the proposed project will be a major project reportable to OMB.

- If the screening form is disapproved, the CIO will include the associated rationale for this decision in the memorandum.

Process (V) (continued)

Selection Phase (B) (continued)

- If the screening form for a Tier 1 IT investment is approved, OCIO will schedule a business case kickoff meeting. A full business case will be required.
- If the screening form for a Tier 2 IT investment is approved, OCIO will schedule any preliminary meetings required on the basis of the characteristics of the project and will subsequently schedule a business case kickoff meeting. An abbreviated business case will be required.
- Sponsors may request acquisition (control phase) funding for proposed IT investments provided that the EDO (Tier 1 investments) or the CIO (Tier 2 investments) has approved the associated screening form in accordance with the CPIC process. Funds will not be released for acquisition (control phase) until a business case has been approved via the CPIC process.

Business Case (2)

The business case provides the justification for initiating the IT investment and, if accepted, becomes the agreed-upon road map for the sponsoring office to implement the investment. At the completion of the business case preparation, the IT investment scope, cost, schedule, and required activities to address identified risks should be defined in sufficient detail to allow the sponsor to manage the IT investment within 10 percent of the projected cost, schedule, and performance goals. Any Tier 1 investment exceeding the 10 percent threshold is considered to have a significant variation, which will be reported to OMB in the investment's annual report. After a Tier 1 investment enters the control phase, the sponsor cannot commit additional funds in excess of 10 percent of the estimate without approval from the EDO. After a Tier 2 IT investment enters the control phase, the sponsor cannot commit additional funds in excess of 10 percent of the estimate without approval from the CIO. Therefore, the business case for Tier 1 and Tier 2 investments will include a work breakdown structure (WBS, see CPIC SOP- 6) sufficiently robust that it can be used to estimate costs and prepare a schedule in order to minimize the probability of exceeding the 10 percent threshold.

Process (V) (continued)

Selection Phase (B) (continued)

Contents of the Business Case (a)

The contents of the business case will depend on the classification of the IT investment.

Tier 1 Business Case (b)

A full business case (checklist provided in CPIC SOP-2) will be prepared for a Tier 1 IT investment. A full business case includes the following four documents:

- Full Business Case Needs Analysis (CPIC SOP-3, including a System Requirements Specification SDLCMM S-3051)
- Full Business Case—Alternatives Analysis (SDLCMM S-3054) (see www.internal.nrc.gov/OCIO/sdlcm for SDLCMM procedures)
- Full Business Case—Project Management Plan (SDLCMM S-1052)
- Full Business Case—System Operations Concept (SDLCMM S-3053)

To expedite the formal approval process for the entire business case, the sponsor and OCIO will conduct a review meeting after a draft version of the needs analysis and alternatives analysis documents is prepared and will conduct another review meeting after the draft project management plan and system operations concept are prepared.

Tier 2 Business Case (c)

An abbreviated business case (checklist provided in CPIC SOP-4) will be prepared for a Tier 2 IT investment. An abbreviated business case includes the following three documents, which will be tailored on the basis of specific characteristics of the IT investment:

- Abbreviated Business Case—System Requirements Specification (SDLCMM S-3051)

Process (V) (continued)

Selection Phase (B) (continued)

- Abbreviated Business Case—Project Management Plan (SDLCMM S-1052) that includes a work breakdown structure
- Abbreviated Business Case—System Operations Concept (SDLCMM S-3053)

To expedite the formal approval process for the completed business case, the sponsor and OCIO will conduct a review meeting after a draft version of the systems requirement specification is prepared and will conduct another review meeting after the draft project management plan and system operations concept are prepared.

Typical Division of Responsibility for Business Case Preparation (d)

Business cases typically have the following division of responsibilities:

- Best practice and process change investigation performed by the sponsor
- Requirements identified by the sponsor
- Cost/benefit/risk comparison and analysis of alternatives performed by the sponsor, with technical assistance provided by OCIO as requested
- Proposed solution identified by the sponsor, with technical assistance provided by OCIO as requested
- Project management plan developed by the sponsor in conjunction with OCIO
- A WBS that OCIO will help the sponsor develop to provide a foundation for estimating control phase cost and schedule
- System operations concept identified by the sponsor with technical assistance provided by OCIO as requested

In general, the sponsor is responsible for all aspects of the business case. OCIO will provide support and guidance to the sponsor on the requirements contained in this handbook, infrastructure integration, and considerations regarding the use of

Process (V) (continued)

Selection Phase (B) (continued)

nonstandard technologies. OCIO also will provide support to the sponsor on technical issues when requested.

Business Case Review (e)

The office director or the regional administrator will submit the entire business case package to the CIO via transmittal memorandum. An electronic copy of this submission must be sent to the CPIC mailbox at the e-mail address specified in CPIC SOP-1.

The CIO will review all business case packages. The ITBC also will review all Tier 1 business case packages and any Tier 2 business case packages referred to the council by the CIO.

Business Case Review for Tier 1 IT Investments (f)

The process for all Tier 1 IT investments includes the following actions:

- Within 2 days of receipt of the sponsor's memorandum, OCIO notifies the sponsor contact that the business case has been received and circulates the business case to the appropriate OCIO divisions and the ITBC for review and comment.
- Within 4 days of receipt of the sponsor's memorandum, OCIO requests additional information and/or a meeting with the sponsor's contact if necessary.
- Within 1 week of receipt of the sponsor's memorandum, OCIO schedules an ITBC meeting to be held within 3 weeks (or as soon thereafter as the members' schedules permit).
- At the next scheduled ITBC meeting—
 - The sponsor presents the proposed IT investment.
 - OCIO may comment separately.

Process (V) (continued)

Selection Phase (B) (continued)

- The ITBC may vote to recommend approving the business case, or return it for more work, or it may take an additional week to consider and then vote electronically.
- The ITBC secretary keeps the CIO and the sponsor informed as to the status of the council's recommendation.
- Within 1 week of receipt of the council's recommendation, the CIO will send a decision memorandum to the EDO for his signature.

Business Case Review for Tier 2 IT Investments (g)

The process for Tier 2 IT investments includes the following actions:

- Within 2 days of receipt of the sponsor's memorandum, OCIO notifies the sponsor's contact that the business case has been received and circulates the business case to the appropriate OCIO divisions for review and comment.
- Within 4 days of receipt of the sponsor's memorandum, OCIO requests additional information and/or a meeting with the sponsor's contact if necessary.
- Within 3 weeks of receipt of the sponsor's memorandum, OCIO completes and sends a decision memorandum from the CIO to the sponsor.
- If ITBC review is warranted, the CIO will send a decision memorandum to the sponsor within 1 week of receipt of the council's recommendation.

Focus of OCIO Technical Review of the Business Case Package (h)

OCIO review of the business case package will focus on conformance with the enterprise architecture, standards, security requirements, costing, timing, systems integration, technology selection, redundancy, infrastructure impacts, risk mitigation, consideration of e-business technologies and project management (preparation of a WBS analysis, identification of milestones, and potential use of phased implementation), evidence of best practices/process redesign review (Tier 2 investment

Process (V) (continued)

Selection Phase (B) (continued)

reviews), requirement for a communication plan based on impact on non-sponsor resources, Privacy Act applicability, public access to information, reductions in Government paperwork considerations, records management implications, acquisition strategy, performance measures, and inclusion of agreed-upon service level agreements.

OCIO will utilize the list of criteria that OMB uses to evaluate Exhibit 300 of the Capital Asset Plan and Business Case submissions as a basis for evaluating Tier 1 CPIC products and Tier 2 products as applicable. This current list of criteria is presented in CPIC SOP-5.

Not all of the foregoing considerations (i.e., OCIO focus considerations and OMB criteria) will apply to all proposed IT investments. For example, many of these considerations will not apply to certain IT hardware purchases. In these cases, the OCIO review will be more narrowly focused.

Focus of ITBC Review of the Business Case Package (i)

ITBC review of the business case will primarily focus on the following goals:

- Avoiding risk and maximizing return on investment
- Minimizing duplication and maximizing integration
- Promoting evaluation of processes against best practices and process simplification, improvement, or redesign before automation
- Ensuring an agencywide perspective

Approval for Tier 1 IT Investments (j)

If the ITBC and the CIO support the CPIC analysis, the recommended alternative, and the project management plan and determine that the IT investment has an acceptable risk management plan, the CIO recommends approval by the EDO. The IT investment

Process (V) (continued)

Selection Phase (B) (continued)

then is presented by the sponsor to the EDO. If approved by the EDO, the proposed IT investment enters the control phase.

The ITBC and the CIO may also determine that while the proposed IT investment has merit, there are too many unknowns to effectively plan the entire IT investment. In this case, a limited approval may be granted to proceed with early phases of the IT investment to obtain additional information, test specific concepts, and update the business case as needed. At the end of the early phases, the IT investment will receive further review and if risk management is judged acceptable, approval to proceed with additional phases or the entire IT investment will be granted.

Approval for Tier 2 IT Investments (k)

If the CIO approves the abbreviated business case and determines that it provides justification for the proposed IT investment, the proposed IT investment enters the control phase.

Control Phase (C)

The methodology for conducting the control phase is detailed in MD 2.5, "System Development Life Cycle Management Methodology (SDLCMM)." In this phase, the IT investment project manager executes the project management plan prepared during the selection phase. Design, development, test, and deployment activities are conducted in accordance with the SDLCMM. The IT investment project manager reports cost, schedule, and performance status using the earned value management (EVM) methodology identified in the project management plan. Guidance on establishing and using an EVM methodology is contained in CPIC SOP-6.

Operations/Evaluation Phase (D)

The methodology for conducting the operations/evaluation phase is detailed in MD 2.5. In this phase, the IT investment is maintained and operated until it is decommissioned.

Process (V) (continued)

Operations/Evaluation Phase (D) (continued)

During this phase, the sponsor also must prepare a lessons learned paper and submit it to the CIO 6 months after the system becomes operational. The sponsor may request an extension of up to 6 additional months if the sponsor believes that it would contribute to the quality of the analysis. The paper should address the topics identified in CPIC SOP-7.

Glossary

Business case. A document that provides the justification for developing an IT investment and, in the case of major IT investments, for communicating to the Office of Management and Budget how information technology dollars are being invested and what the Federal Government will receive in return for this investment.

Capital Planning and Investment Control (CPIC). A decisionmaking process for ensuring that information technology (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. The process includes two major components: (1) the capital planning (CP) component, which involves the preparation of business cases for proposed projects and the selection of projects to be included in the agency's portfolio on the basis of these business cases and (2) the investment control (IC) component, which involves the monitoring and control of selected projects during the full acquisition phase using management tools, including earned value management.

Earned value management (EVM). A project management tool that effectively integrates the project scope of work with schedule and cost elements for optimum project planning and control. The qualities and operating characteristics of EVM systems are described in American National Standards Institute (ANSI)/Electronic Industries Alliance (EIA) Standard 748-1998, "Earned Value Management Systems," approved May 19, 1998.

Electronic business (e-business). Doing business online. E-business is often used as an umbrella term for having an interactive presence on the Web. A Government e-business initiative or project includes Web services type technologies, component-based architectures, and open systems architectures

Glossary (continued)

designed around the needs of the customer (citizens, business, governments, and internal Federal operations).

Electronic Government (e-Government; e-Gov). The use by the Government of Web-based Internet applications and other information technologies, combined with processes that implement these technologies.

Federal Enterprise Architecture (FEA). A framework for describing the relationship between business functions and the technologies and information that support them. Major IT investments will be aligned against each reference model within the FEA framework.

Full acquisition phase. The phase in which procurement and implementation of a capital project or a useful segment or module of a capital project is accomplished. Full acquisition occurs after all planning activities are complete and the agency's Executive Review Committee or Investment Review Board selects and approves the proposed technical approach and project plan and establishes the baseline cost, schedule, and performance goals for this phase of the investment. This term is synonymous with the terms "project phase" and "control phase."

Information technology (IT). As defined by the Clinger-Cohen Act of 1996, Sections 5002, 5141, and 5142, any equipment or interconnected system or subsystem of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information. For purposes of this definition, equipment is "used" by an agency whether the agency uses the equipment directly or it is used by a contractor under a contract with the agency that (1) requires the use of such equipment or (2) requires the use, to a significant extent, of such equipment in the performance of a service or the furnishing of a product.

Glossary (continued)

Infrastructure. Hardware, software, services, equipment, and components necessary to support local and enterprise-wide information technology requirements. Infrastructure includes desktop systems, customer service, network components and services, telecommunications components and services, operational support, and maintenance.

Life cycle cost. The overall estimated cost for a particular program alternative over the time period corresponding to the life of the program, including direct and indirect initial costs, NRC personnel costs, plus any periodic or continuing costs of operation and maintenance. For purposes of the Capital Planning and Investment Control analysis, life cycle cost is generally the full acquisition cost plus 5 years of operations and maintenance costs. These costs do not include the preproject or planning costs, which are considered “sunk” or spent.

Major acquisition. A capital project that requires special management attention because of its (1) importance to an agency's mission; (2) high development, operating, or maintenance costs; (3) high risk; (4) high return; or (5) significant role in the administration of an agency's programs, finances, property, or other resources.

Major IT investment. A system or project that requires special management attention because of its importance to an agency mission; project is financial management and spends more than \$500,000; project is directly tied to the top two layers of the Federal Enterprise Architecture (services to citizens and mode of delivery); project is an integral part of the agency's modernization blueprint (enterprise architecture); project has significant program or policy implications; project has high executive visibility; or project is defined as major by the agency's Capital Planning and Investment Control process. IT investments that are e-Government in nature or use e-business technologies must be identified as major IT

Glossary (continued)

investments regardless of the costs. This definition is derived from OMB Circular A-11.

Performance measures. Quantifiable goals and results that define the intended actual performance of a project throughout its life cycle.

Planning. Preparing, developing, or acquiring the information that will be used to design the project; assess the benefits, risks, and risk-adjusted life cycle costs of alternative solutions; and establish realistic cost, schedule, and performance goals for the selected alternative.

Privacy data. Information about an individual, including, but not limited to, an individual's name, address, telephone number, social security number (or other unique identifier), education, financial transactions, medical history, employment history, or criminal history.

Privacy impact assessment. A process used to evaluate privacy in information systems. The process is designed to guide system owners and developers in assessing privacy through the early stages of development.

Return on investment (ROI). A comparison of estimated quantifiable and nonquantifiable benefits versus costs that answers the question, "What are we getting for our money or how well are we leveraging resources to achieve benefits?"

Risks. Factors that may jeopardize the success of a project or the achievement of its goals.

Service Level Agreement (SLA). An informal contract between two parties defining agreed-to roles, responsibilities, and expected contributions of each in meeting predefined performance in a mutually supported activity. The agreement

Glossary (continued)

may include monitoring of actual performance and remediation approaches in instances in which one party failed to follow the agreement.

Significant variation. The breaching of a predefined threshold for cost, schedule, or performance goals of an IT investment. Generally refers to the control (acquisition or project development) phase of the life cycle. NRC uses the OMB threshold, which is 10 percent over the most recently approved baseline measure of the goal. Initial baseline measures are identified at the conclusion of the business case preparation. For cost and schedule goals, the goals are tracked via the earned value management system. At NRC, a cost or schedule overrun of 10 percent during any reporting period is defined as a significant variation. If the approving official (EDO for Tier 1 and CIO for Tier 2) approves the continuation of the control phase activities, new baselines are established. Significant variations for performance goals are more difficult to track as such measures are not realized until the operations/evaluations phase. Therefore, significant variations for performance goals will be established on a case-by-case basis before initiation of the control phase.

Sponsor. The organization that is the owner of the business process supported by a proposed information technology (IT) investment and thereby is responsible for submitting the request that a proposed IT investment be approved.

Work breakdown structure (WBS). WBS is a task-oriented subdivision of the activities necessary to complete the control phase of an IT investment. A WBS requires subdividing complicated tasks into smaller tasks. Each such smaller task is further subdivided until a level is reached where the task cannot be further subdivided. This WBS analysis helps reduce the probability that no required activities will be omitted or unaccounted for. In addition, it is generally easier to estimate resources and time required to perform smaller tasks.

Exhibit 1

Investment Tiers

General Definition: Tiers are categorizations of IT investments based on estimated costs and other criteria.

Importance: The tier associated with an IT investment determines the level of documentation and the management control and oversight accorded to the investment.

Detailed Definitions:

Tier 1

Meets Investment Dollar Threshold: Equal to or greater than \$1,500,000 for a general investment; equal to or greater than \$500,000 for a financial management investment:

Or Meets Office of Management and Budget (OMB) Criteria:

Is the IT investment e-Government in nature, or does it use e-business technologies?

Is the IT investment directly tied to the top two layers of the Federal Enterprise Architecture (services to citizens and mode of delivery)?

Is the IT investment an integral part of the NRC's agency modernization (enterprise architecture) blueprint?

Does the IT investment have significant program or policy implications?

Does the IT investment have high executive visibility?

Documentation Required:

Screening form (includes IT investment schedule/funding estimate and charter)

Exhibit 1 (continued)

Full business case

- Business needs analysis (includes system requirements specification)
- Alternatives analysis
- Project management plan
- System operations concept

OMB Exhibit 300 (based on agency determination)

Business Case Approval Authority: The EDO, on the basis of recommendations from the CIO and the ITBC

Tier 2

Meets Investment Dollar Threshold: Equal to or greater than \$500,000 but less than \$1,500,000

Or Meets NRC Criteria (additional criteria may be added if warranted; see SOP-1):

Will the IT investment involve collaborative efforts with other agencies?

Will the IT investment have any stakeholders external to NRC?

Will the IT investment have any interfaces with other systems?

Will the IT investment require any changes to the current NRC infrastructure, including the need for any additional operational support?

Will the IT investment require a waiver from compliance with any NRC IT standards?

Are there any issues related to IT investment inclusion in, or conformance with, the NRC enterprise architecture?

Will the investment require resources from or have other impacts on NRC organizations outside of the sponsoring office?

Exhibit 1 (continued)

Are there any issues related to the Rehabilitation Act of 1973 (Section 508)?

Are there any issues related to compliance with the Government Paperwork Reduction Act (GPEA)?

Will the IT investment process any classified, sensitive, or privacy information?

Is the IT investment in the Major Application, General Support System, or Listed System security category as defined in MD 12.5, "NRC Automated Information Security Program"? (Contact the NRC IT Security Officer if assistance in determining the appropriate category is needed.)

Is this a new IT investment that was not previously identified and funded through an Attachment 9 form (NRC internal budget form) during the NRC budget formulation process?

Will the IT investment need to use any acquisition vehicles other than those already available at NRC?

Will the IT investment require or include electronic documentation or records management (ERM) functionality?

Documentation Required:

Screening form (includes IT investment schedule/funding estimate and charter)

Tailored business case (which may include some or all of the elements in the following products):

- System requirements specification

- Project management plan (cost/schedule based on work breakdown structure [WBS] analysis)

- System operations concept

Business Case Approval Authority: The CIO

Exhibit 1 (continued)

Tier 3

Meets Investment Dollar Threshold: Less than \$500,000

And Meets No OMB or NRC Specified Criteria

Documentation Required:

Inclusion on OCIO Attachment 9 form

Part I of screening forms for Tier 3 IT investments whose estimated control phase cost (project development phase cost) exceeds \$150,000 will be forwarded to OCIO to satisfy Capital Planning and Investment Control (CPIC) documentation requirements.

Business Case Approval Authority: N/A; no business case required.

Exhibit 2

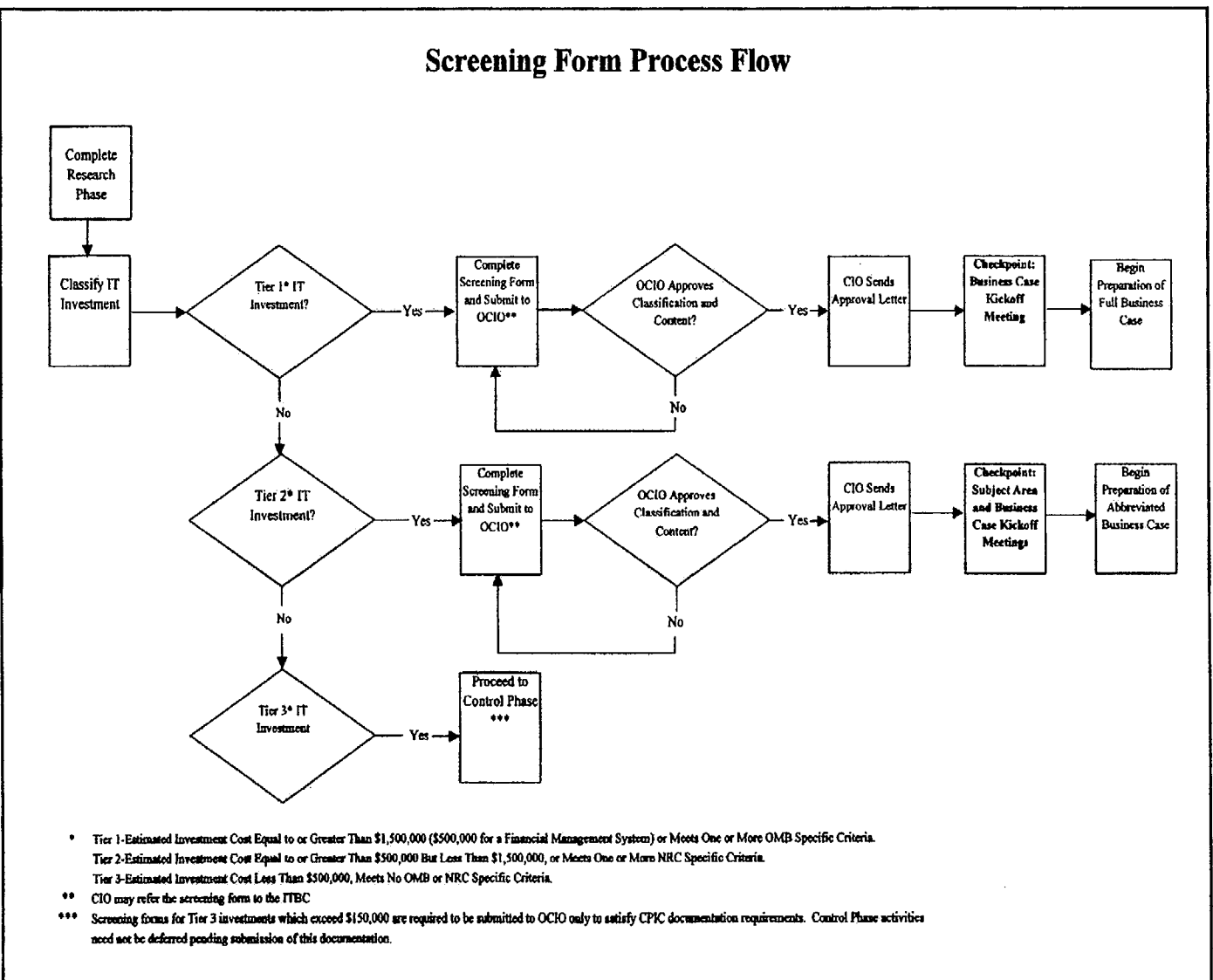


Exhibit 3

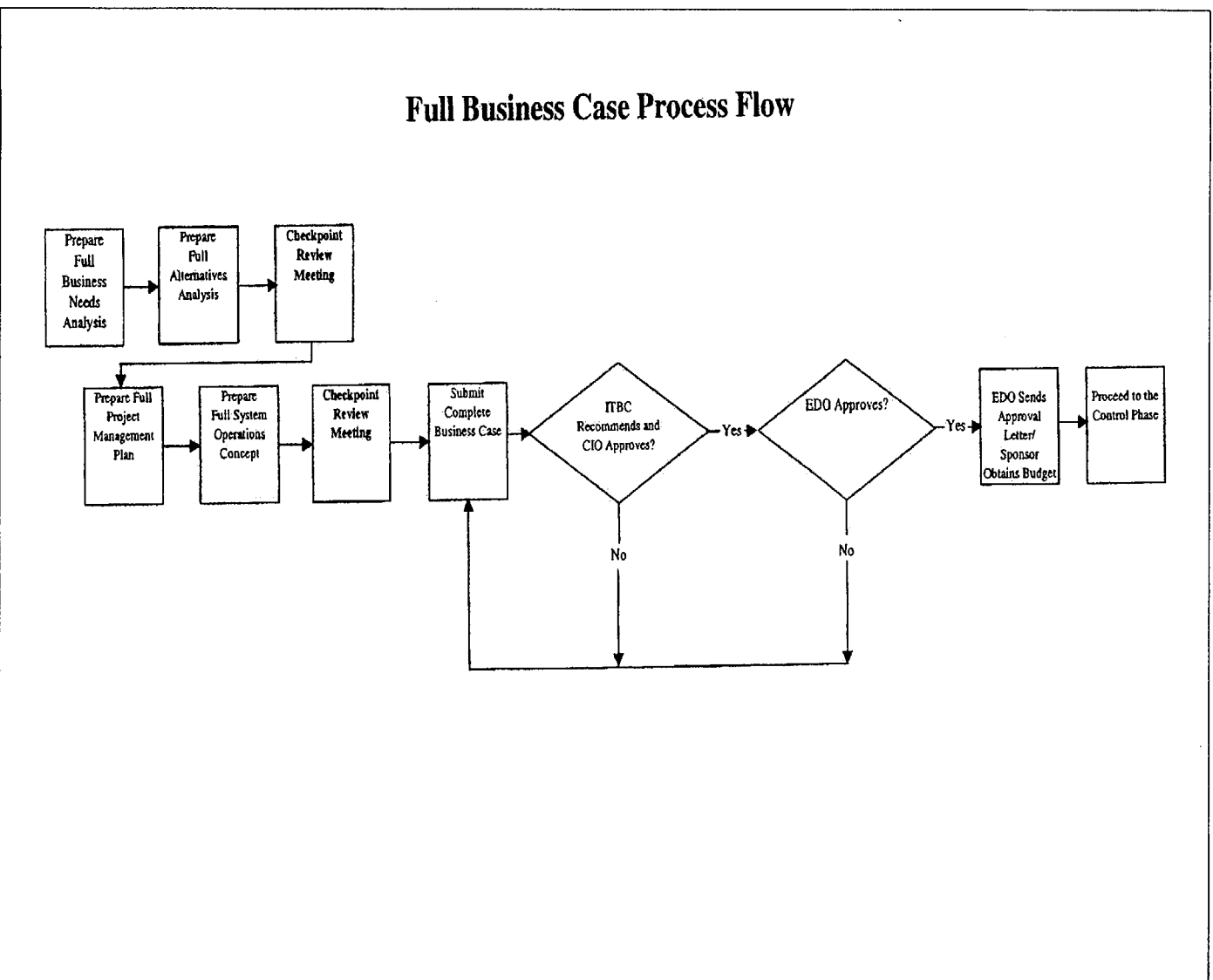


Exhibit 4

