

## PROJECT EXECUTION PLAN (PEP) TEMPLATE

### Notes for use of this PEP template:

Each PEP component is required, regardless of project size, but some subcomponents may not be applicable for all projects. Proposers are required to indicate ***Not applicable*** for any subcomponents that do not apply and provide a rationale for that determination.

For more information on each PEP component and subcomponent refer to the draft revision document for RIG Section 3.5 located at [https://www.nsf.gov/bfa/lfo/lfo\\_documents.jsp](https://www.nsf.gov/bfa/lfo/lfo_documents.jsp)

# **Project Execution Plan**

*<<Project Title>>*

*<<Acronym for Mid-scale RI Project>>*

Version *<<Day Month Year>>*  
Revision #

## PEP Change Log

<<The details in this section are provided only as examples and should be replaced with actual revision descriptions for the PEP.>>

Revision History		
Rev.	Date	Reason
0	Day Month Year	Initial NSF approval for award
1	15 May 2024	Updated org chart and WBS based on personnel and scope changes.
2	23 July 2024	
3		

## Table of Contents

*<<The components in this template align with the PEP requirements for Mid-scale RI and Major Facilities awards, as listed in the draft revision document for RIG Section 3.5 located at [https://www.nsf.gov/bfa/lfo/lfo\\_documents.jsp](https://www.nsf.gov/bfa/lfo/lfo_documents.jsp). The contents of the PEP should include Sub-components and be tailored in detail and scaled in scope to the funding announcement>>*

1   Project Overview .....	7
1.1   Overview of PEP and Executive Summary of Project.....	7
1.2   Project Mission and Broader Impacts.....	7
1.3   Key Performance Parameters and Scientific Requirements .....	8
1.4   Research Infrastructure Description.....	8
2   Project Organization.....	9
2.1   Overview of Project Organization.....	9
2.2   External Project Stakeholders.....	9
2.3   Internal Project Organization.....	9
2.4   Partnerships and Subawards.....	9
3   Performance Measurement Baseline .....	10
3.1   Overview of the Project PMB and Project Definition.....	10
3.2   Scope.....	10
3.3   Quality Acceptance Requirements .....	11
3.4   Integrated Project Schedule .....	12
3.5   Time-Phased Budget .....	12
4   Risk and Contingency Management.....	13
4.1   Risk Management Approach .....	13
4.2   Risk Management Plan.....	13
4.3   Contingency Management Plan.....	14
5   Acquisition Plans.....	14
5.1   Overview of Acquisition Plans.....	14
5.2   Scope Acquisition Plans .....	14
5.3   Quality Management Plans .....	15
5.4   Resource Management Plans.....	15
6   Environmental, Safety, and Health Management .....	15

6.1   Overview of Environmental, Safety, and Health Management .....	15
6.2   Environmental Protection Management Plans.....	16
6.3   Safety Management Plans .....	16
6.4   Health Management Plans .....	16
7   Project Controls Plans .....	16
7.1   Overview of Project Controls.....	16
7.2 Performance Measurement and Management Plans .....	17
7.3   Change Control Plans .....	17
7.4   Reporting and Reviews Plans .....	18
7.5   Business and Financial Controls Plans.....	18
8   Cyberinfrastructure and Information Management.....	18
8.1   Overview of Cyberinfrastructure and Information Management.....	19
8.2   Cyberinfrastructure .....	19
8.3   Information Assurance Management .....	19
8.4   Data Management .....	19
8.5   Documentation Management.....	19
8.6   Communications Management .....	20
9   Project Closeout Plans.....	20
9.1   Overview of Closeout Plans .....	20
9.2   Technical Closeout Plans .....	20
9.3   Administrative Closeout Plans .....	21
9.4   Programmatic/Award Closeout Plans .....	21
10   Post Project Plans .....	21
10.1   Overview of Post Project Plans .....	21
10.2   Concept of Operations Plans .....	21
10.3   Concept of Disposition Plans .....	21

## List of Acronyms

<<This list should be tailored to the Project's PEP, capture project specific terminology and aligned with terminology in the NSF Research Infrastructure Guide and/or the [NSF PAPPG](#).>>

AY	Annual Year
BCP	Baseline Change Proposal
CDR	Conceptual Design Review
CPI	Cost Performance Index
CY	Calendar Year
EAC	Estimate at Completion
ES&H	Environment, Safety and Health
EVM	Earned Value Management
FTE	Full Time Equivalent Employee
FY	Fiscal Year
L2	Level 2
LFO	Large Facilities Office
NSF	National Science Foundation
PI	Principal Investigator
PEP	Project Execution Plan
PM	Project Manager
PO	Program Officer
QA	Quality Assurance
QC	Quality Control
R&D	Research and Development
SPI	Schedule Performance Index
TPC	Total Project Cost
WBS	Work Breakdown Structure

## 1 | PROJECT OVERVIEW

This component provides a succinct, clear, and unambiguous overview of the project. It includes an Executive Summary of the project, including whom the project is intended to serve, the science objectives and purpose of the project (i.e., the driving *why* behind the project), and a summary description of the proposed solution to that purpose. A mission statement for the project is included, along with a brief recap of any scientific and/or broader impacts that will result from the project. Also included is a high-level summary of the deliverables, along with the Key Performance Parameters (KPP) and high-level constraints and assumptions that will be the boundary conditions for the project.

### 1.1 | OVERVIEW OF PEP AND EXECUTIVE SUMMARY OF PROJECT

**PEP Overview.** This should provide a short, high-level overview and understanding of the purpose of the PEP as the project management document, how it is structured and used, and how it will be updated during the course of the project.

**Executive Project Summary.** The summary includes high-level statements of why the project exists, who it will serve, what the primary science objectives are or how the project supports multiple science objectives, and what will be created and delivered to meet those objectives (i.e., the RI). The summary should list the Total Project Cost (TPC) and Total Project Duration (TPD) as well as the major deliverables. A brief description of the key institutions and partnerships should be included. The summary should be contained in a page or less. More specific details on these items are then described in their respective components and subcomponents that follow.

### 1.2 | PROJECT MISSION AND BROADER IMPACTS

This subcomponent describes the overall high-level purposes, scientific objectives, and broader societal impacts of the project. Specifically, the following elements should be described in this subcomponent.

**Project Mission.** This subcomponent includes a more detailed and complete description of the scientific objectives motivating the RI project than the overview section (i.e., the driving *why* behind the project) and a description of who the project is intended to serve (e.g., the specific scientific community, end users, and benefactors of the RI in operations.)

**Broader Impacts.** This subcomponent provides a description of any meaningful Broader Impacts that advance scientific knowledge and that contribute to the achievement of societally relevant impacts on research communities, the scientific and technical workforce,

and the public and society at large. See the 2011 National Science Board report on [Merit Review Criteria](#) for guidance and examples on Broader Impacts.<sup>1</sup>

### 1.3 | KEY PERFORMANCE PARAMETERS AND SCIENTIFIC REQUIREMENTS

This subcomponent provides the quantitative descriptions of requirements which provide the basis for determining the attainment of the scientific objectives and, therefore, project completion.

**Key Performance Parameters.** The Key Performance Parameters (KPP) are derived from the project mission and science objectives and should include a descriptive list of the high-level KPP and functional requirements of the RI. Any specific high-level Environmental, Safety, and Health (ES&H) requirements, cybersecurity requirements, and any other high-level specifications, constraints, and/or assumptions that serve to define the RI at a high executive level should be included in the KPP. See the draft revision document for RIG Section 3.5 for further details.

**Science Requirements.** This should include a high-level listing of the primary science requirements to be fulfilled by the RI, derived from the KPP described above. Note that these requirements should in turn serve as a basis for the definition of project scope (deliverables). For an example table of KPPs, see the draft revision document for RIG Section 3.5.

### 1.4 | RESEARCH INFRASTRUCTURE DESCRIPTION

This subcomponent describes the infrastructure necessary to obtain the research and Broader Impact objectives. Specifically, the following elements should be described in this subcomponent.

**RI Description.** This subcomponent should include a high-level overview of the NSF-supported RI, i.e., the project deliverables. The descriptions should correlate directly with the Level 2 product scope (deliverables) of the Work Breakdown Structure (WBS), as described in PEP Component 3 Performance Measurement Baseline below.

**Related Infrastructure.** If the project deliverables are to be incorporated into or with other infrastructure or deliverables not covered under the funding instrument, the goals of the larger infrastructure should be articulated, along with the relationship of the project deliverables with the wider goals.

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<sup>1</sup> <https://www.nsf.gov/nsb/publications/2011/meritreviewcriteria.pdf>



## **2 | PROJECT ORGANIZATION**

This component describes the internal and external organizational structure necessary for successful project implementation. It includes a description of the Project Organization and defines key roles, responsibilities, and communication lines for both external stakeholders and internal project staff.

### **2.1 | OVERVIEW OF PROJECT ORGANIZATION**

This subcomponent provides a summary of the Project Organization, including the general Project Organizational structure, key participants, external stakeholders, project partners, and any other important organizational information necessary to explain and execute the project successfully.

### **2.2 | EXTERNAL PROJECT STAKEHOLDERS**

In this subcomponent, key external project stakeholders are identified and described, along with their connection to the project, their expected roles, and their lines of communication and authority. For more details, examples of an external organization chart and a roles and responsibilities table, see the draft revision document for RIG Section 3.5.

### **2.3 | INTERNAL PROJECT ORGANIZATION**

This subcomponent describes the internal organizational structure of the project. The organizational structure will dictate roles and lines of responsibility and authority. For further details, along with examples of an organization chart, roles and responsibilities tables, see the draft revision document for RIG Section 3.5.

### **2.4 | PARTNERSHIPS AND SUBAWARDS**

This subcomponent identifies all partners and Subawardees who are essential contributors to the success of the project, describes their contributions, and identifies the responsible partner contact/lead. Information on funding sources for each partner, the terms and conditions of the partner agreement (Memorandum of Understanding [MOU], subaward, commitment letter, etc.), and details of schedules and interfaces should be provided. For subawards, describe how oversight is to be managed by and through the primary recipient. This includes specific roles of key partner personnel, frequency of oversight meetings, how performance measurement and management will be executed, how financial oversight will be managed, how risk and contingency are managed, and other relevant information necessary to ensure project success. For an example of a partnership summary table with relevant partnership information, see the draft revision document for RIG Section 3.5.

### 3 | PERFORMANCE MEASUREMENT BASELINE

This component describes the Performance Measurement Baseline (PMB) that defines and documents the four objective measures of project success: scope, quality, schedule, and budget. These four elements are captured in a suite of documents, including a Work Breakdown Structure (WBS), WBS Dictionary, Quality Acceptance Requirements, Integrated Project Schedule (IPS), and a time-phased budget. Additionally, this component provides a summary view of the total project definition, which includes the contingency associated with each of the four PMB elements and a yearly funding profile.

#### 3.1 | OVERVIEW OF THE PROJECT PMB AND PROJECT DEFINITION

This subcomponent serves as an executive summary and overview of the project baseline and project definition, providing all the essential high-level features of the project in one place. For further details, see the draft revision document for RIG Section 3.5.

*Example of a Project Summary Table: Level 2 WBS with Costs, Schedule, TPC, TPD, and Assigned Responsibilities*

WBS #	WBS Element Name	WBS Lead	Lead Institution	Budget	Schedule Dates and/or (Duration)
1	Project Name	PM	INST 1	-	Start / End (Months)
1.1	L2 Element	CAM	INST 2	\$\$	Start / End (Months)
1.2	L2 Element	CAM	INST 3	\$\$	Start / End (Months)
1.3	L2 Element	CAM	INST 1	\$\$	Start / End (Months)
	Baseline Subtotal			\$\$\$\$\$	Years/months
	Contingency (% of Baseline)			\$\$ (%)	Years/months (%)
	Fee (if applicable)			\$	
	Total Project Amount			\$\$\$\$\$\$\$	Years/months

*Example of a Commitment and Funding Profile by Fiscal Year Table*

Item	Year 1	Year 2	Year 3	Totals
Base Budget	\$15,350,650	\$8,500,375	\$34,560,180	\$58,411,205
Contingency	\$2,302,598	\$1,700,075	\$5,184,027	\$9,186,700
Total Project Cost (TPC)	\$17,653,248	\$10,200,450	\$39,744,207	\$67,597,905

#### 3.2 | SCOPE

This subcomponent identifies and describes the baseline scope of the project via two key documents: a WBS and a WBS dictionary. The WBS integrates and relates all project work (scope, schedule, and cost) and is used throughout the project management to identify and

monitor project progress. Summaries of these two documents are included in this PEP subcomponent. For further details on these documents see the draft revision document for RIG Section 3.5.

*Illustration of High Level WBS Dictionary*

WBS #	WBS Element Name	Element Description (Simplified WBS Dictionary Entry)
1	Project Name	
1.1	L2 Element Name	High-level deliverable description, including key subcomponents, significant exclusions, and other relevant high-level information necessary to describe the element clearly and unambiguously.
1.1.1	L3 Element Name	High-level deliverable description, including key subcomponents, significant exclusions, and other relevant high-level information necessary to describe the element clearly and unambiguously.
1.2	L2 Element Name	High-level deliverable description, including key subcomponents, significant exclusions, and other relevant high-level information necessary to describe the element clearly and unambiguously.
1.2.1	L3 Element Name	High-level deliverable description, including key subcomponents, significant exclusions, and other relevant high-level information necessary to describe the element clearly and unambiguously.

**Scope Management Plan.** A Scope Management Plan (SMP) should be developed as part of this subcomponent. The SMP should clearly and concisely describe the overall strategy and approach to managing scope. It should describe how scope is identified, defined, described, and documented in the WBS. The SMP should describe specific roles and responsibilities for managing project scope. Further, since scope change opportunities may not be available throughout the life of the project, the SMP should define how scope is to be controlled over the course of the project, including the management of scope creep pressures. Finally, the SMP should describe how and how often both de-scope and up-scope options will be identified, documented, and tracked, as well as how they will be considered, reviewed, and approved or rejected via Change Control and/or configuration management. Relevant information such as WBS area estimated cost and schedule impacts, time frames in which the de- and up-scopes are viable, priorities of these options, and how decision dates will be incorporated in planning (e.g., inclusion in the IPS) should be included.

### 3.3 | QUALITY ACCEPTANCE REQUIREMENTS

This subcomponent describes the processes for determining and documenting the requirements and quality acceptance criteria and plans for the deliverables identified and included in the WBS. It describes how the key parameters and high-level science requirements summarized in PEP Subcomponent 3.2 Scope flow down to detailed science requirements, engineering requirements, and quality/acceptance requirements and plans. For further details see the draft revision document for RIG Section 3.5.

*Traceable Flow of KPP to Science, Engineering, and Quality Requirements in Complex Projects*

Key Performance Parameters	Science Requirements Documents	Detailed Science and Engineering Requirements Documents	Quality Acceptance Plans
Key Parameter A	<ul style="list-style-type: none"> <li>• High-Level Science Requirement A</li> <li>• High-Level Science Requirement B</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed Science Requirements Document XY</li> </ul>	<ul style="list-style-type: none"> <li>• Quality Control and Acceptance Plan for Component X</li> <li>• Quality Control and Acceptance Plan for Subsystem Y</li> </ul>
Key Parameter B	<ul style="list-style-type: none"> <li>• High-Level Science Requirement C</li> <li>• High-Level Science Requirement D</li> <li>• High-Level Science Requirement E</li> </ul>	<ul style="list-style-type: none"> <li>• Engineering Requirements for Subcomponent Y</li> <li>• Engineering Requirements for Subcomponent Z</li> </ul>	<ul style="list-style-type: none"> <li>• Quality Control Plan for Subcomponent Y</li> <li>• Acceptance Plan for Subsystem Z</li> </ul>
Key Parameter C	<ul style="list-style-type: none"> <li>• High-Level Science Requirement D</li> </ul>	<ul style="list-style-type: none"> <li>• Detailed Science Requirements Document YZ</li> </ul>	<ul style="list-style-type: none"> <li>• Testing Plan for Component Z</li> </ul>

### 3.4 | INTEGRATED PROJECT SCHEDULE

This subcomponent describes the development of the baseline IPS. The IPS addresses both how and when the work is to be performed by identifying the activities needed to accomplish the scope of work and by time-phasing these activities with durations and schedule logic. Logical sequencing involves identifying the key relationships between activities to determine the proper sequence necessary to accomplish the work. The IPS is based on the WBS hierarchy and includes tasks and activities, project start and end dates, review dates, and other critical dates and key milestones. This subcomponent also includes a description of key assumptions, constraints, and other important information used as the basis of the IPS. The following products are outputs of this subcomponent: Schedule Basis and Estimating Plan, Integrated Project Schedule, and List of Reporting Milestones. For further details see the draft revision document for RIG Section 3.5.

### 3.5 | TIME-PHASED BUDGET

The planned, time-phased budget necessary to execute the project is described in this subcomponent. The budget should be developed and aligned with the WBS deliverables described above in PEP Subcomponent 3.2 Scope. The following are the products of this subcomponent: Cost Estimating Plan (CEP), Cost Book and Basis of Estimates, and Time-Phased Budget. For further details on these products and more information for this subcomponent see the draft revision document for RIG Section 3.5.

*Example High Level Time-Phased Budget Report with NSF 1030 Category Mapping Sample Table by Project Year (PY)*

Cost Category	PY 1	PY2	PY3	PY4	Total
Equipment	\$25,310	\$4,295,967	\$4,336,434	\$2,777,675	\$11,435,386
M&S	\$1,238	\$132,467	\$130,223	\$110,552	\$374,480
Travel	\$3,500	\$13,500	\$13,500	\$7,000	\$37,500
Labor	\$1,403,021	\$5,598,433	\$7,610,432	\$5,229,670	\$19,841,556
Indirect Costs	\$257,952	\$2,108,477	\$3,992,264	\$1,462,481	\$7,821,174
<b>Total PMB</b>	<b>\$ 1,691,021</b>	<b>\$12,148,844</b>	<b>\$15,083,853</b>	<b>\$9,587,378</b>	<b>\$38,511,096</b>
Contingency	\$262,108	\$5,138,961	\$6,947,792	\$1,016,262	\$13,365,123
Contingency %	15.50%	42.30%	43.20%	10.60%	33.83%
<b>Total Project Cost</b>	<b>\$1,953,129</b>	<b>\$17,287,805</b>	<b>\$22,031,645</b>	<b>\$10,603,640</b>	<b>\$51,876,219</b>

## 4 | RISK AND CONTINGENCY MANAGEMENT

This component describes the project risk management and the related Contingency Management Plans (CMP). Risk management includes a high-level overview of the risk management approach in the project Risk Management Plan (RMP), a list of high-level identified risks (Risk Register), and an estimate of the overall project risk exposure.

### 4.1 | RISK MANAGEMENT APPROACH

This subcomponent provides a high-level overview of the project plans and approach for the management of risk. This subcomponent includes a description of the philosophy, commitment, and approach to risk management on the project, including any specific standards or institutional policies and procedures that will be followed. The subcomponent also describes how contingencies will be estimated and used to manage risk. The general risk tolerance of the Project Organization is also included in this subcomponent.

### 4.2 | RISK MANAGEMENT PLAN

This subcomponent includes the RMP that will be used to identify and manage risks. The RMP should identify the responsibilities for risk management and describe the risk management process that will be followed, including roles and responsibilities, procedures, criteria, tools, and techniques to be used to identify, analyze, respond to, and track project risks. For more details see the draft revision document for RIG Section 3.5.

### **4.3 | CONTINGENCY MANAGEMENT PLAN**

This subcomponent describes the estimation and management of project contingency, which typically comprises three distinct types: budget contingency, schedule contingency, and scope/quality contingency. The CMP also describes management plans controlling, maintaining, and reporting contingency usage and status. The following additional points for each type of contingency shall be addressed (further details are available in the draft revision document for RIG Section 3.5): Contingency Estimation, Budget Contingency, Schedule Contingency, Scope/Quality Contingency, Contingency Management Plan (Contingency Use Profile and Contingency Use and Change Control), Liens List (Forecasting and Opportunity Management), Maintaining Adequate Contingency Levels, and Contingency Status Reporting.

## **5 | ACQUISITION PLANS**

This component describes the planned processes, strategies, and methods that will be used on the project to acquire (i.e., create and provide) and implement the scope, as defined in PEP Component 3 Performance Measurement Baseline. Additionally, it refers to plans for acceptance testing of the scope against the quality acceptance requirements that are also specified in PEP Component 3 Performance Measurement Baseline. Finally, it includes plans for determining, sourcing, and managing all the labor and non-labor resources required for acquiring and testing the scope.

### **5.1 | OVERVIEW OF ACQUISITION PLANS**

This subcomponent provides a brief, high-level description of the approach for acquiring the scope and ensuring it meets its Quality Acceptance Requirements. Acquisition Plans may include the approaches to any or all the following activities: development, design, analysis, site selection and permitting, prototyping, procurement, purchasing, construction, coding, assembly, integration, testing, commissioning, verification, and/or validation of the scope as defined in the WBS. The Acquisition Plan should also describe the high-level resource requirements (labor and non-labor) necessary to carry out the overall project plan and create, provide, and deliver the scope. Specific details of these topics are described in more detail below in the relevant subcomponents.

### **5.2 | SCOPE ACQUISITION PLANS**

This subcomponent describes the plans for acquiring all the project scope. Elements to highlight in these plans should include the areas noted in the draft revision document for RIG Section 3.5.

### 5.3 | QUALITY MANAGEMENT PLANS

This subcomponent describes the management plans and processes that will be used to ensure that all acquired scope will meet all specified Quality Acceptance Criteria. Plans and processes for reviewing and addressing non-compliant scope should be described herein. Quality Management includes both quality assurance (QA) processes related to preventing quality issues and quality control (QC) processes related to products and deliverables assessment, testing, or evaluation. Relevant plans for the Integration, Test, and Commissioning (IT&C) of the RI should be described, including areas noted in the draft revision document for RIG Section 3.5.

### 5.4 | RESOURCE MANAGEMENT PLANS

This subcomponent describes the Resource Management Plans necessary to successfully carry out both the Acquisitions Plans and the Quality Management Plans.

**Staffing Plan.** The project's Staffing Plan should include time-phased plans and expectations for project-specific job categories and correlation to scope deliverables. The requisite expertise and qualifications of key staff should be included. Hiring and transition plans should be included that clearly describe the schedule and requirements for hiring, training, onboarding, managing staff resources, retaining, and ultimately transitioning resources off the project of all project staff.

**Non-Labor Resource Plan.** A non-labor resource plan should include the identification and time-phased Acquisition Plans for key materials, tools, workspaces, equipment, software, and other non-labor resources vital to successfully perform the Scope Acquisition and Quality Management of the project.

## 6 | ENVIRONMENTAL, SAFETY, AND HEALTH MANAGEMENT

This component outlines the strategies, plans, procedures, protocols, and responsibilities for managing environmental, safety, and health risk aspects throughout the project's life cycle.

### 6.1 | OVERVIEW OF ENVIRONMENTAL, SAFETY, AND HEALTH MANAGEMENT

This subcomponent provides a high-level description of the overall project approach to the management of ES&H. It describes over-arching policies and objectives, including a statement of the project's commitment to ES&H. A description of the ES&H management structure is described, including roles, responsibilities, and the reporting structure of all personnel involved in managing ES&H on the project. Communications plans as they relate to ES&H are described. Finally, ES&H emergency response plans should be discussed in detail or referenced if the supporting documents are too long to include. Specific details of ES&H

management topics are provided and described in more detail below in the respective subcomponents.

## **6.2 | ENVIRONMENTAL PROTECTION MANAGEMENT PLANS**

This subcomponent describes specific plans and approaches for managing environmental concerns during the execution of the project. Typical topics covered in an Environmental Management Plan (EMP) are noted in the draft revision document for RIG Section 3.5.

## **6.3 | SAFETY MANAGEMENT PLANS**

This subcomponent describes specific plans and approaches to managing personnel and equipment safety during the execution of the project. Typical topics covered in a Safety Management Plan are noted in the draft revision document for RIG Section 3.5.

## **6.4 | HEALTH MANAGEMENT PLANS**

This subcomponent describes specific plans and approaches to managing personnel health during the execution of the project. Typical topics covered in a Health Management Plan (HMP) are include in the draft revision document for RIG Section 3.5.

## **7 | PROJECT CONTROLS PLANS**

This component describes the plans for Project Controls, the integrated system of tools and processes that collect, organize, and analyze project data to support understanding and control of the key project parameters: scope, quality, budget, schedule, contingency, risk, and resources. Four major areas of Project Controls planning are addressed in this component: Performance Measurement and Management, Change Control, Reporting and Documentation, and Business and Financial Controls.

### **7.1 | OVERVIEW OF PROJECT CONTROLS**

This subcomponent serves as an executive summary and overview of this entire Project Controls component. The overview should briefly summarize the methods chosen for the other four Project Controls subcomponents. The overview should describe how the plans will be used to manage the project. It should also describe the tools (e.g., spreadsheets, databases, commercial software products) that will be used for the various Project Controls functions.



## 7.2 PERFORMANCE MEASUREMENT AND MANAGEMENT PLANS

This subcomponent presents the project Performance Measurement and Management (PMM) tools and methods that describe how the project will be managed and controlled during execution using information from quantitative comparisons of status to the planned project. There are two major processes in a PMM Plan that need to be addressed:

- **Performance Measurement.** Comparing and analyzing collected Status Inputs against the plans in the Project Definition.
- **Performance Management.** Making management decisions on actions to pursue based on the comparison analysis.

The PMM Plan should describe how the multiple PMM areas will be addressed, these areas are noted in the draft revision document for RIG Section 3.5.

## 7.3 | CHANGE CONTROL PLANS

This subcomponent describes the project Change Control Plans (CCP), which addresses how the project manages, controls, and reports changes to the Project Definition. There are two types of project changes addressed in CCP:

- Change Control, which typically refers to changes to the PMB and movements/usage of contingencies (budget, schedule, and scope contingencies).
- Configuration Control, which applies to changes to the technical details (i.e., requirements and design).

**Change Control Process.** The Change Control Plan in the PEP should trace the path from submission of a change request, through the evaluation and approval processes, and end with implementation and reporting. It should be detailed enough that it can serve as guidelines for training and directing project team members responsible for delivering the project scope as planned and who are responsible for determining and implementing changes to the plan when necessary. The CCP should include multiple details noted in the draft revision document for RIG Section 3.5.

**Approval Thresholds and Authorities.** In addition to internal approval authorities, the defined Change Control process must include a provision for seeking prior written approval from NSF (Program Officer [PO] or higher, depending on the magnitude) for all actions that exceed the thresholds specified in the award instrument or NSF policy. See draft revision document for RIG Section 3.5 for an example of a Change Control threshold table.

### **Change Request and Change Control Log Formats.**

See draft revision document for RIG Section 3.5 for a list of the common elements included in a Change Request form and Change Log.

## 7.4 | REPORTING AND REVIEWS PLANS

This subcomponent describes how project status and progress will be periodically documented and reported. This description should address multiple sections noted in the draft revision document for RIG Section 3.5:

**Interim Progress Report.** At an interval that is specified in the project's award instrument, the project will create and submit to the NSF an interim progress report.

**Annual/Final Project Report.** This report generally contains the same type of information included in regular project status reports, but with a focus on the entire year's progress against plan and plans for the next reporting period. Additional content may be requested by the cognizant PO or negotiated as part of the terms and conditions for the award.

## 7.5 | BUSINESS AND FINANCIAL CONTROLS PLANS

This subcomponent describes the award management and business and financial procedures, policies, processes, and controls employed in executing the project. For projects involving partner institutions and/or other Subawardees, the host (award institution) acts as the central financial and accounting system for the project, collecting accounting information and invoices from the partners' financial systems. Various elements that should be described in this subcomponent are noted in the draft revision document for RIG Section 3.5.

**Segregation of Funding Plan.** A Segregation of Funding Plan is intended to establish internal guidelines to be used by the recipient and to inform a mutual understanding between NSF and the recipient of the recipient's practices and responsibilities to determine the appropriate award when allocating expenses, particularly when construction and design or operations activities overlap in time.<sup>2</sup> The plan describes the procedures the recipient will use to ensure that costs and activities are expensed to the proper award by clearly defining the separation between the different sources of funding. The Segregation of Funding Plan should include multiple areas noted in the draft revision document for RIG Section 3.5.

## 8 | CYBERINFRASTRUCTURE AND INFORMATION MANAGEMENT

This component describes the project's Cyberinfrastructure and Information Management (CIM) plans, which refer to the planned methods and processes for identifying, generating, gathering, organizing, storing, and sharing information within and external to the project. The cyberinfrastructure (CI) described in this PEP component is distinct and separate from project deliverables for science purposes. CIM plans consist of five key areas of focus:

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<sup>2</sup> 2 CFR 200.413 "Direct Costs" describes the criteria recipients must use when direct charging costs against a federal award.

cyberinfrastructure, information assurance (IA), data management, documentation management, and communications management.

## **8.1 | OVERVIEW OF CYBERINFRASTRUCTURE AND INFORMATION MANAGEMENT**

This subcomponent provides a high-level description and overview of the plans for the management of project information, which includes CI, IA, data management, documentation management, and project communications management. This subcomponent describes the overarching CI and information management policies and objectives, the management team structure, key roles and responsibilities, and other relevant high-level information. It serves as an introduction for the remainder of this component.

## **8.2 | CYBERINFRASTRUCTURE**

This subcomponent describes the information to include in the Cyberinfrastructure (CI) Plan that outlines the strategy and approach for CI during implementation or the Construction Stage. The CI Plan provides a structured approach for planning, implementing, and managing the CI aspects of the RI. Typical topics for a CI Plan include multiple sections noted in the draft revision document for RIG Section 3.5.

## **8.3 | INFORMATION ASSURANCE MANAGEMENT**

This subcomponent describes specific plans and approaches for the management of project information during the Construction Stage or implementation. Topics covered in this subcomponent's plans typically include multiple sections noted in the draft revision document for RIG Section 3.5.

## **8.4 | DATA MANAGEMENT**

Plans and approaches for managing project information are included in this subcomponent. Topics covered in this subcomponent's plans typically include multiple sections noted in the draft revision document for RIG Section 3.5.

## **8.5 | DOCUMENTATION MANAGEMENT**

This subcomponent describes specific plans and approaches for managing project documentation. The project is responsible for ensuring that a document management system is in place that provides for the retention and retrieval of essential and significant documentation related to the project. A robust document management system will help

prevent miscommunications and misunderstandings and will ensure that future facility operators have the information required to maintain the facility. This plan should provide organized and straightforward access to project records as required for NSF oversight, audits, and post-award monitoring. Topics covered in this subcomponent typically include multiple sections noted in the draft revision document for RIG Section 3.5.

## **8.6 | COMMUNICATIONS MANAGEMENT**

This subcomponent describes specific plans and approaches for managing project communications. Awardees are recommended to put in place a stakeholder management plan that provides for the identification, analysis, and periodic review of project stakeholders, including an analysis of their needs and expectations. Topics covered in this subcomponent's plans typically include various items noted in the draft revision document for RIG Section 3.5.

## **9 | PROJECT CLOSEOUT PLANS**

This component describes the plans for closing out the project, when the project team verifies the completion of all scope contained in the WBS, completes all the necessary tasks to validate the technical performance of the RI, transitions all deliverables to owners/operations, and shuts down the project. This component has three elements to consider when closing out a project: technical closeout activities, administrative closeout activities, and programmatic/award closeout activities.

### **9.1 | OVERVIEW OF CLOSEOUT PLANS**

This subcomponent serves as an overview of the entire closeout component plans. It provides a brief description of the overall closeout approach and processes. It describes the high-level approaches for each of the three categories of closeout activities (technical, administrative, and programmatic/award). Specific guidance and details for each of these individual closeout categories should be covered in the three other subcomponents below.

### **9.2 | TECHNICAL CLOSEOUT PLANS**

This subcomponent describes the plans and approaches for the completion of all project scope. The primary goal of the closeout plan is to demonstrate how the project will formally complete the project scope, verify compliance, prepare for, and finalize transitions, and document all final project deliverables, ensuring that they have been completed, meet their required quality acceptance criteria, and are ready for delivery/transition. While every project is unique, these technical closeout considerations typically include multiple sections noted in the draft revision document for RIG Section 3.5.

### **9.3 | ADMINISTRATIVE CLOSEOUT PLANS**

This subcomponent describes the plans and approaches that the Awardee institution will use to complete the closeout of all institutional administrative activities. Depending upon the characteristics of the project, this typically includes multiple sections noted in the draft revision document for RIG Section 3.5.

### **9.4 | PROGRAMMATIC/AWARD CLOSEOUT PLANS**

This subcomponent describes the processes and approaches for obtaining validation, i.e., the formal affirmation from the NSF that all project work has been successfully completed such that the project award may be closed. Depending upon the characteristics of the project, programmatic/award closeout usually includes multiple sections noted in the draft revision document for RIG Section 3.5.

## **10 | POST PROJECT PLANS**

This component comprises the conceptual Post Project Plans that describe the expected activities and plans for deliverables after project completion and addresses the feasibility and reasonableness of those plans. These plans are high-level, conceptual estimates of the expected key activities, considerations, and costs that define the characteristics of these future life cycle stages. For further details see draft revision document for RIG Section 3.5.

### **10.1 | OVERVIEW OF POST PROJECT PLANS**

This subcomponent serves as an overview of the two plans included in this component, providing a brief, high-level description of each plan. It should describe how the plans will be created and elaborated during planning and how and under what circumstances they will be modified after project start. Specific guidance and details for each of these individual Post Project Plans are covered in the two remaining subcomponents, below.

### **10.2 | CONCEPT OF OPERATIONS PLANS**

This subcomponent describes the Concept of Operations Plan, which contains plans and expectations for the post project Operations Stage of the implementation and Construction Stage.

### **10.3 | CONCEPT OF DISPOSITION PLANS**

This subcomponent describes the Concept of Disposition Plan, which provides a high-level description of the expectations during the Disposition Stage, the last stage in the RI life cycle.