**Preparing a Mission Need Statement**

The Mission Need Statement (MNS) should be a high level and concise document (**approximately 8-10 pages**). The following pages describe the format and content of MNS.

This template serves as a tool for Headquarters Program Managers or Federal Project Directors (FPDs) developing a project Mission Need Statement (MNS). A MNS is the primary document supporting the Program’s decision to initiate exploration of options to fulfill a capability gap including but not limited to acquisition of a new capital asset.

MNS development occurs when a program identifies a capability gap between its current capabilities and those required to achieve the goals articulated in its strategic plan (this is commonly referred to as the project initiation phase). A MNS is the translation of this gap into a high level requirement that can only be met through material means. MNSs summarize the analytical process used by programs to evaluate and define the need.

The DOE O 413.3B requires a MNS and the approval of the MNS by the Program Secretarial Officer for projects with Total Project Cost of $50M or greater.

Note: The site for the project is not selected until alternative analysis is complete (as part of the CD-1) process. Therefore, in the MNS document, please do not include any site or laboratory logos, contract numbers, or other information that may be viewed as site selection already made.

**Mission Need Statement**

**for the**

**PROJECT NAME (ACRONYM)**

**[Designation as a major or non-major acquisition project]**

**Office of [Program Office]**

**Office of Science**

**U.S. Department of Energy**

**Date Approved:**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Month/Year**

**Mission Need Statement**

**Project Name (Acronym) Project at the**

**Submitted by:**

[Note: The MNS will be submitted by Headquarters Program Staff only—

even in cases where the MNS was prepared by the site office.]

 Date:

[Name], Program Manager

Office of [Program Office], Office of Science, DOE

 Date:

[Name], Other Program Staff As Needed

Office of [Program Office], Office of Science, DOE

 Date:

[Name], Associate Director

Office of [Program Office]

Office of Science, DOE

**Concurrence:**

 Date:

[Name], Director

Office of Project Assessment, Office of Science, DOE

[Do not include for project less than $20M.]

 Date:

[Name], Deputy Director for Science Programs

Office of Science, DOE

**Approval:**

 Date:

[Name], Director

Office of Science

1. **STATEMENT OF MISSION NEED**

Provide a clear, concise paragraph (**a few sentences**) that lays out the essential summary of the DOE, SC, and Program mission. Cite internal or external drivers for this mission need (e.g., legal ruling, statute, regulation, international agreement, earmark, or Presidential, Congressional, or Secretarial direction/priority).

***Example****: DOE’s strategic plan calls out two goals:*

*GOAL 3.1—SCIENTIFIC BREAKTHROUGHS*

*Achieve the major scientific discoveries that will drive U.S. competitiveness; inspire America; and revolutionize approaches to the Nation’s energy, national security, and environmental quality challenges.*

*GOAL 3.2—FOUNDATIONS OF SCIENCE*

*Deliver the scientific facilities, train the next generation of scientists and engineers, and provide the laboratory capabilities and infrastructure required for U.S. scientific primacy.*

*In support of these missions, the Office of Basic Energy Sciences (BES) mission is to “support fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels in order to provide the foundations for new energy technologies and to support DOE missions in energy, environment, and national security”.*

**2. CAPABILITY GAP/MISSION NEED**

**The MNS is a description of the mission as defined by a desired end-point, not a contract statement of work. Therefore it is not appropriate to include descriptions of the capability gap in terms of a construction of a physical system, decontamination and decommissioning, environmental restoration, procurement of a piece of equipment, construction of a facility, or other specific material.**

Clearly describe the problem, need, gap or shortcomings the mission need statement is addressing. The mission need statement should include the following:

* Summarize why facilities, equipment, or services currently existing or being acquired within the Department, other government agencies, public organizations, private entities, or international bodies are not sufficient to address the gap.
* Discuss the strategic risk to the overall mission of DOE, SC, or the Program of not filling the capability gap. Describe the impact (to safety, health, environment, security, capacity, operations, maintenance, cost, productivity, efficiency, or other factors) on the program’s ability to perform its mission if the capability shortfall is not resolved, including the timeframe when this impact would occur.
* Describe the priority of fulfilling the mission need relative to other programs, projects, and at the site, installation or laboratory.
* Describe benefits that may accrue from closing the capability gap (more efficient operations, increased safety, lower operational costs, or other savings).
* Identify any high-level interdependencies (within or external to the program) with other mission needs or capabilities that may be impacted or may benefit from addressing this mission need. These include: interfaces with existing and planned acquisitions; requirements for compatibility with existing or future systems; or cooperative opportunities, such as a program addressing a similar need at another Department component.

Note: The mission need statement is NOT an engineering study or a proposed solution

to a capability gap in the mission

***Example****: Currently, the only facility in the U.S. to study xxx is in xxx location and is xxx years old. The technology available at this facility is out of date and capability to perform xxx is needed to ensure scientific breakthrough (tie to the mission need from section 1)….*

*If mission need is not approved, other countries and other U.S. competitors will gain advantage in the areas of xxx. In addition, there is a risk that health and safety of the user may be impacted due to unsafe facility. …*

*The Office of Science Twenty Year Outlook, which ranks the SC needs for the future, ranked xxx as #xxx. Also, the xxx advisory committee and the resulting xxx report ranks this project as ….*

*Other benefit of closing the gap is to reduce the energy consumption of the facility, …*

**3. POTENTIAL APPROACH**

Briefly describe what has been considered or what will be analyzed as potential strategies to meet the new mission need, such as potential alternatives. A detailed alternatives analysis will be conducted in support of Critical Decision-1; therefore, this section should also summarize the planned approach to conducting this analysis (e.g., engineering studies, pilot scale projects).

***Example****: The potential approaches to meet the mission need include:*

* *Construct a new facility*
* *Upgrade an existing facility*
* *Participate in a collaboration with other national and/or international organizations*

*A detailed analysis will be performed, as part of the CD-1 approval process, that includes a survey of the existing facilities that may be renovated and what needs to be renovated to meet the mission need. Another activity will be to solicit interest from other national and international organizations to collaborate on the project (through upgrade of international facilities or construction of a new facility). Finally, a detailed cost and benefit analysis will be performed for the most likely alternatives.*

Identify constraints or limitations that need to be considered to achieve the mission need. The following list offers examples of potential constraints:

* Limitations in effectiveness, capacity, technology, or other special considerations
* Limitations associated with the geographic siting, or location
* Environmental, safety and health (including legal and regulatory constraints/requirements)
* Schedule and cost limitations
* Safeguards and security considerations
* Interfaces with existing and planned acquisitions
* Affordability limits on investment
* Goals for limitations on recurring or operating costs
* Limitations associated with the organizational structure, competition and contracting,

***Example****:*

*Technology Constraints—Although similar but smaller facilities have been constructed at other universities and internationally, to achieve mission goals, tight tolerances, that have never been specified before, are required. The technical fabrication and verification of (tolerances) requirements makes this a complex and challenging project. Technically not being able to fabricate and verify the specifications may impact the achievement of mission need.*

*Geographic Siting or Location—This potential facility needs to be readily accessible to users in the Northeast part of U.S. At the same time, the technology requires a site that is geographically stable and has annual rainfall of less than 12 inches a year.*

*Schedule Limitations—The xxx country, a main competitor to the U.S,. is also proposing to construct a facility that will have the same capabilities as the proposed project by 4Q2016. In order for the U.S. to remain competitive, this proposed project must begin operation by 3Q2016.*

If applicable, describe, in general terms, any nuclear safety or safeguards and security issues that will need to be considered to address the mission need. This discussion should also present all safety considerations that have been taken into account in developing the mission need in accordance with Section 3.1 of DOE Standard 1189, Integration of Safety Into the Design Process, dated March 2008. The MNS should communicate the expectations for the execution of safety activities during the design process.

***Example****: There are no nuclear safety, nor safeguards and security issues, nor design process constraints associated with the execution of this mission need.*

**4. RESOURCE AND SCHEDULE FORECAST**

**4.1 Cost Forecast**

Provide a rough order of magnitude estimate of the project cost range to acquire various potential alternatives, which address the stated mission need.

***Example****: The estimated cost to acquire the various capability alternatives range from $500M to $2,240M.*

**4.2 Schedule Forecast**

To the extent possible, identify the estimated dates (**fiscal year only**) for meeting subsequent Critical Decisions (CD).

***Example****:*

|  |  |
| --- | --- |
| ***Critical Decisions (CD)*** | ***Fiscal Year*** |
| *CD-0, Approve Mission Need* | *FY 2006*  |
| *CD-1, Approve Alternative Selection and Cost Range* | *FY 2007* |
| *CD-2, Approve Performance Baseline* | *FY 2008* |
| *CD-3, Approve Start of Construction* | *FY 2010* |
| *CD-4, Approve Project Completion* | *FY 2015* |

**4.3 Funding Forecast**

To support programmatic strategic planning efforts and budget requests for the five-year planning period, identify the currently projected rough order of magnitude funding profile with a breakout of OPC and TEC (this will show approximately how much is being spent between CD-0 to CD-1). This projection should be based on the high end of the project cost estimate.

***Example****:*

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Fiscal Year***  | ***FY06*** | ***FY07*** | ***FY08*** | ***FY09*** | ***FY10*** | ***FY11*** | ***FY12*** | ***FY13*** | ***FY14*** | ***FY15*** | ***Total ($M)*** |
| ***OPC***  | *$20* | *$60* | *$60* | *$50* | *$20* | *$10* | *$30* | *$60* | *$50* | *$10* | *$370* |
| ***TEC***  |  | *$10* | *$70* | *$400* | *$400* | *$450* | *$350* | *$140* | *$50* |  | *$1,870* |
| ***Total Project Cost ($M)*** | *$20* | *$70* | *$130* | *$450* | *$420* | *$460* | *$380* | *$200* | *$100* | *$10* | *$2,240* |