

PUBLIC COMMENTS ON  
NSF MAJOR FACILITIES GUIDE (MFG) DRAFT, DECEMBER 2020  
WITH NSF RESPONSES  
July 26, 2021

## Public Comments on Major Facilities Guide (MFG) December 2020 & NSF Responses

Cmt #	Sec Para, page no.	Source	MFG Language and/or Observation	Comment	NSF Response/Resolution
1.	1.4.4, 1.4-2	NSF DACS-LFO	“If the TPC for research infrastructure is within the mid-scale project range as defined by statute, it is considered mid-scale research infrastructure throughout its full life cycle.”	Please clarify if the design stage of a potential mid-scale implementation project is considered a mid-scale project and subject to Section 5 of the MFG.	Accepted. “Implementation” was added to the text to clarify mid-scale projects are defined by the “construction, implementation, or acquisition” stage not the “design, operations, or associated science program costs”.
2.	1.4.6, 1.4-2	NSF DO	<p>“NSF’s “No Cost Overrun” policy was originally codified for major facility projects in the Fiscal Year (FY) 2009 Budget Request to Congress<sup>2</sup> which...</p> <p>The policy has been continually reinforced in subsequent budget requests to Congress for the purpose of instilling diligence and rigor in establishing the Total Project Cost (TPC) at award and a strong NSF oversight position for major facility projects.”</p>	This Section needs a sentence that says, “The implementation of the No-Cost Overrun Policy is defined more fully in Sections 4.2.5.1 and 4.2.5.2.”	Accepted.

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3.	1.4.8, 1.4-3	NSF-MPS	<p>"The Science Appropriations Act of 2019 includes the following under NSF's Administrative Provisions:  <i>The Director of the National Science Foundation (NSF) shall notify the Committees on Appropriations of the House of Representatives and the Senate at least 30 days in advance of any planned divestment<sup>1</sup> through transfer, decommissioning, termination, or deconstruction of any NSF-owned facilities or any NSF capital assets (including land, structures, and equipment) valued greater than \$2,500,000."</i></p> <p>Footnote 1: "Divestment - the partial or complete transfer of real property or equipment to another entity's operational and financial control (with or without reduction in project scope), "moth-balling" the facility so that operations can be restarted at a later date, or decommissioning. Refer to Section 2.6 of this Guide for more information on the Divestment Stage of a facility life cycle."</p>	<p>The footnote provides an apparent definition of divestment, which includes "moth-balling" of a facility. I would suggest that this definition be carefully reconsidered to exclude moth-balling</p> <p>Furthermore, I would suggest potentially distinguishing between the divestment of a FACILITY, as extensively discussed in this document) from the more general "divestment" (getting rid of) "any NSF capital asset" (which is not really the subject of the divestment discussions in this document but is of course covered (as a separate item connected by "or") in the legislative language quoted in this section.</p> <p>For example, immediately after the legislative language quote in 1.4.8, one could add something like...</p> <p>In its discussion of the Divestment Stage of a facility life cycle (in sections 2.6 and 3.6, among others) this document provides guidance and procedures relating to the divestment of NSF-owned facilities covered by this legislative language. The divestment of "any NSF capital assets... valued greater than \$2,500,000" is discussed elsewhere in NSF policy and procedures.</p>	<p>Accepted.</p> <p>Footnote 1 was deleted, and the following paragraph was added to the end of the section:  "Sections 2.6 and 3.6 of this Guide discuss the Divestment Stage of the major facility lifecycle and provides guidance and procedures associated with the divestment of NSF-owned facilities covered by this legislative language. The divestment of NSF capital assets valued greater than \$2,500,000 is governed by the Federal property management requirements and award terms and conditions."</p>

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4.	2.3	NSF BFA-LFO		Scrub and modify the 2021 MFG to state: "A strategic assessment of a project's priority relative to other opportunities is made before NSF considers a request to NSB for inclusion in a future budget request."	Accepted.
5.	2.5.1, 2.5.1-2	NSF BFA-LFO	In general, these upgrades and renewals will be funded from R&RA funds, either from a portion of the operating funds designed for such purposes or from separate equipment and instrumentation programs. Funding for more significant upgrades <u>(if they exceed the major facility threshold)</u> may come from the MREFC account. In that case, the approval process is the same as that for a new major facility project	Delete the underlined phrase and reference Section 1.4.2 MREFC Threshold.	Accepted. Sentences were revised to the following: "Funding for more significant upgrades that exceed the major facility threshold <sup>1</sup> require the same approval process that for a new major facility project." Footnote 1: Refer to Section 1.4.3 of this Guide for the major facility threshold.
6.	2.5.2, 2.5.2-1	NSF BFA-LFO	Section 2.5.2 Renewal/Recompetition	Update Section 2.5.2 Renewal/Recompetition for alignment with the new internal Standard Operating Guideline (SOG).	Accepted. Section 2.5.2 was revised to include discussion regarding NSF's determination prior to expiration of O&M award and the triggers for competition.
7.	3.5.2, 3.5.2-1 and 3.5.2-2	NSF BFA-LFO	Section 3.5.2 Procedures for Renewal or Recompetition of an Operating Major Facility	Minor administrative updates are needed to align the MFG with the new internal Standard Operating Guideline (SOG). For example, paragraph two could begin with "In accordance with internal NSF standard operating guidance..." and talk about an "internal" review as opposed to a panel review. Paragraph one might have to be moved down and the text modified to align with the SOG with regards to an annual operations review, rather than a special review.	Accepted.

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8.	3.5.2, 3.5.2-1 and 3.5.2-2	NSF BFA-DACS	Section 3.5.2 Procedures for Renewal or Recompetition of an Operating Major Facility	MFG is applicable to both cooperative agreement and contract awards. This Section needs to be revised to align it with FAR.	Accepted. The text was revised to reference the FAR for renewal of contracts for operating a major facility.
9.	4.2.5, 4.2.5-1	NSF BFA-LFO	4.2.5 Budget Contingency Planning for the Construction Stage	Change to: "4.2.5 Risk Planning for the Construction Stage"	Accepted.
10.	4.2.5.1 and 4.2.5.2 4.2.5-1	NSF BFA-LFO	4.2.5.1 NSF Policy Positions 4.2.5.2 Introduction	<p>Revise as follows:</p> <p>4.2.5.1 – Implementation of NSF's No Cost Overrun Policy.</p> <ul style="list-style-type: none"> <li>Make first paragraph in 4.2.5.2 and the 5 items the lead text for this Section.</li> <li>Add a sentence before the 7 items that reads <i>"NSF uses the following practices to implement the five mechanisms above:"</i></li> <li>Change second sentence in item 1 to read: <i>"<u>The amount of management reserve (if any) is determined by NSF and held by NSF following authorization and identification of the funding source.</u>"</i></li> </ul> <p>4.2.5.2 - - Introduction to Budget Contingency. Lead sentence starting with <i>"<u>Budget contingency is...</u>"</i></p>	Accepted.
11.	4.6.2, 4.6.2-1	NSF BFA-LFO	During the Construction Stage, the Project Director, who is responsible for executing and controlling the project in accordance with the PEP and the award instrument, reports to the Program Officer (PO) on a periodic basis <u>(monthly for MREFC-funded projects and no less than quarterly in other cases).</u>	Revise to indicate monthly reports for all major facility project in construction.	Accepted. Sentence revised to: "....on a periodic basis (monthly for major facility projects and no less than quarterly in other cases).

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12.	4.6.2, 4.6.2-2	NSF BFA-LFO	“For major facility projects in the Construction Stage, the PO is responsible for providing <u>to the LFO a written monthly summary of this information in a standard format</u> provided by the Head, Large Facility Office (HLFO).”	Change underlined wording to: “to the LFO Liaison a copy of the monthly project report in a standard format...”	Accepted.
13.	4.6.3.3, 4.6.3-2	NSF BFA-LFO	“Further information and various details of the BSR process are provided in the BSR Guide, <sup>2</sup> which defines....”  Footnote 2: See "Business Systems Review (BSR) Guide" at the NSF Large Facilities Office website.	Add the website link in the footnote for the LFO website.	Accepted.

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14.	4.6.3.4, 4.6.3-3	NSF BFA-DACS	“For cooperative agreements, NSF conducts an incurred cost audit for major facility awards at the end of the award and potentially during execution of the award based on an annual risk assessment conducted by the Large Facilities Office and the Cooperative Support Branch at NSF. These incurred cost audits are required for construction awards.”	<p>It should be clear upfront it is required for construction awards then we should say it can be used for others based on risk. Suggest the first two sentences of the paragraph be revised to:</p> <p>“For cooperative agreements, NSF is required to conduct an incurred cost audit for major facility awards during construction and at the end of the construction award. NSF may conduct an incurred cost audit for any major facility during the execution of the award based on an annual risk assessment conducted by the Large Facilities Office and the Cooperative Support Branch at NSF.”</p> <p>Recipients should be prepared for such an audit at any time based on 2 CFR § 200.205-7 of the Uniform Administrative Requirements, Cost Principles and Audit Requirements for Federal Awards and as stated in the terms and conditions in the Cooperative Agreement. For contracts, incurred cost audits are performed in accordance with in the FAR, the cognizant Federal Agency procedures, and terms and conditions of the contract.</p>	Accepted.

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15.	Table 4.6.6.3-3, 4.6.6-8	Trusted CI	<p>“Competency: Information Technology Description:</p> <ul style="list-style-type: none"> <li>• Able to manage information technology resources, such as personnel, equipment, etc. that support the project or program.</li> <li>• Demonstrates knowledge of the four pillars of information security programs (Mission Alignment, Governance, Resources, and Controls) and how to develop and manage a robust cybersecurity program.”</li> </ul>	<p>We are pleased to see knowledge of the Trusted CI Framework and cybersecurity programmatic referenced as a personnel competency. Consider updating this to include reference to the Trusted CI Framework’s fourth pillar (Mission Alignment) and the Framework Implementation Guide for Research Cyberinfrastructure Operators. See, <a href="https://www.trustedci.org/framework">https://www.trustedci.org/framework</a>.</p> <p>For alignment with the other TrustCI recommendations.</p>	Accepted.
16.	5, 5-1 through 5-4	NSF BFA-LFO	5. Guidance for Mid-scale Infrastructure Projects	Please clarify if the design stage of a potential mid-scale implementation project is considered a mid-scale project and subject to Section 5 of the MFG.	<p>Accepted.</p> <p>The following sentence was added to the first paragraph:</p> <p>“Similar to major facility projects, the design and development stages of a mid-scale project are used to advance the technical design and develop the project management processes to establish a Project Execution Plan ready for start of construction/implementation.”</p> <p>Also, “during the construction stage (also referred to as implementation)” was added to the end of the following sentence: “A Project Execution Plan (PEP) is required for all mid-scale projects in order to document the foundation for how the project will be managed by the Recipient.”</p>



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17.	6.3.2.1, 6.3.2-1	Trusted CI	<p>2<sup>nd</sup> para: “The three pillars of a cybersecurity program which rest on this foundation are governance; resources; and controls.”</p> <p>3<sup>rd</sup> para: “This framework is based on the previously mentioned three pillars of information security programs: Governance, Resources, and Controls.”<sup>4</sup>”</p> <p>4<sup>th</sup> para: “The three pillars of a cybersecurity program rely on a project-specific inventory...”</p>	<p>We recommend NSF update Trusted CI resource references to point Major Facilities to the Trusted CI Framework and the Framework Implementation Guide for Research Cyberinfrastructure Operators. While NSF might choose to reduce the language of section 6.3 substantially by referencing this new guide, NSF should at least make the following update:</p> <p>a. 6.3.2-1, second, third, and fourth paragraphs. Add reference to the Framework’s fourth pillar, Mission Alignment.</p> <p>The three pillars in the 2019 MFG is based on the 2014 Guide to Developing Cybersecurity Programs for NSF Science and Engineering Projects (<a href="https://trustedci.org/guide">trustedci.org/guide</a>). In March 2021, Trusted CI published the Trusted CI Framework Implementation Guide for Research Cyberinfrastructure Operators. This new guide supersedes the 2014 guide.</p>	Accepted.
18.	6.3.2.1, 6.3.2-1	Trusted CI	Footnote: “ <sup>4</sup> See, NSF Cybersecurity Center of Excellence program guidance, e.g., <a href="https://trustedci.org/guide">https://trustedci.org/guide</a> ”	Update footnote 4 to reference <a href="https://www.trustedci.org/framework">https://www.trustedci.org/framework</a> .	Accepted.
19.	6.3.3.2, 6.3.3-1	Trusted CI	Footnote: “ <sup>1</sup> See, NSF Cybersecurity Center of Excellence program guidance, e.g., <a href="https://trustedci.org/guide">https://trustedci.org/guide</a> ”	Update the reference to <a href="https://www.trustedci.org/framework/templates">https://www.trustedci.org/framework/templates</a>	Accepted.
20.	6.3.3.3, 6.3.3-2	Trusted CI	“In addition to the Trusted CI guide which is tailored to the scientific community, the Open Science Risk Profile Working Group (OSCRP), has developed and released...”	<p>Correct the OSCRCP reference to “Open Science Cyber Risk Profile (OSCRP) community project.”</p> <p>It is missing “Cyber” in the proper name.</p>	Accepted.

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21.	6.3.5.1, 6.3.5-1	Trusted CI	Footnote: “ <sup>5</sup> <a href="https://trustedci.org/guide">https://trustedci.org/guide</a>	Update footnote 5 to reference <a href="https://www.trustedci.org/framework">https://www.trustedci.org/framework</a> .	Accepted.
22.	6.3.5.1, 6.3.5-1	Trusted CI	<p>“An information system is a discrete set of information and related resources (such as people, equipment, and information technology) organized for the collection, processing, maintenance, use, sharing, dissemination, and/or disposition of information.<sup>8</sup>”</p> <p>These include, but are not limited to, mobile devices, routers, servers (the usual commodity IT equipment), as well as industrial control systems (ICS) / supervisory control and data acquisition (SCADA) systems, physical security systems, heating, ventilation, and air conditioning (HVAC) systems, and any other connected devices. The Draft MFG references these controls for ICS and SCADA systems in Section 6.3.6.1.</p>	<p>Add clarification that “information systems” includes both traditional information technologies (e.g., servers, mobile computing devices) as well as operational technology (OT), e.g., industrial control systems (ICS), Supervisory Control and Data Acquisition (SCADA) systems.</p> <p>Rationale: While the MFG references controls for ICS and SCADA systems in Section 6.3.5.3, a clarification of the scope of “information systems” is warranted.</p>	Accepted.