

Below are a summary and key takeaways from the subject presentation given at the 2017 Large Facilities Workshop.

MREFC Process from a Facility Perspective

Speakers: Demian Bailey, Regional Class Research Vessel (RCRV), Project Manager, Oregon State University (OSU);

Rita Pittmann, Planning & Controls Manager, Leidos

Description: Managers described their experience going through the Major Research Equipment and Facilities Construction (MREFC) review process for the RCRV and AIMS projects. The projects shared best practices and lessons learned, for the benefit of organizations that might go through the process in the future, and recommended process improvements to NSF.

Best Practices:

- In lieu of existing experience, the most important resource will be the Large Facilities Manual.
- Contact other programs/projects who have used the process.
- Engage stakeholders early, especially science/grantee community.
- Work with the NSF Program Officer, LFO Liaison, and Contracting Officer or Grants/Agreements Officer to understand the MREFC stage-gate review process, especially:
 - Organizations involved, including who makes what recommendations and decisions,
 - Evaluation criteria,
 - Timeline,
 - Information requirements and deadlines for read ahead packages,
 - Expect additional questions and clarifications from different review organizations that will require responses, including additional information, calculations, presentations, etc.
 - Leave enough time for internal reviews before providing information.
- If you have questions regarding the LFM, ask LFO as they can provide clarifications and identify flexibilities.
- Pay particular attention to timelines and provide sufficient time to meet and balance the following:
 - NSF requirements and reviews,
 - Congressional budget request cycles, including lag between budget request and award and potential complications like delays and continuing resolutions,
 - Subcontracting process
- The risk register is a living document, be prepared to routinely update the register and recalculate contingency.
- MREFC process is flexible with regards to facility/recipient management structures.
- Let the requirements drive the design and let the requirements-driven design drive the budget formulation.
- Recognize that NSF has prioritized the success of the project – they want you to succeed.
- Don't ask for direction. Use your team and propose solutions that work for the project, don't bring problems (NSF prefers to make decisions or give consent anyway rather than give direction, typically).
- The project is better off because of the various reviews, outside panels and consultants (“painful but worthwhile”).
- Business Systems Reviews (BSRs) can be impetus to improve wider university/organization business practices – gives the project leverage to help effect broader positive change.
- Stay ahead of evolving oversight and new developments and requirements.
- Don't underestimate the depth of project management requirements that NSF will want to see. As the project becomes more real, oversight and expectations grow for reporting and

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documentation.

- If you are an academic or used to being on a tight budget, think bigger. Don't try to do everything yourself, e.g., hire a project controls specialist early, hire a risk manager and contract out aspects of the project for which you don't have the expertise. Do it right.
- Read and follow the LFM closely and structure the entire project around it.
- Make choices based on what's best for the project in the long run... not what's easy or convenient in the short term.
- Align your Project Execution Plan (PEP) directly with the LFM, your Business Systems section of the PEP with the BSR functional areas to facilitate the BSR, align your Project Reporting section of your PEP with the ANSI EVM Criteria to facilitate your EVM verification.
- Assume positive intent. NSF wants to see your program succeed as much or even more than you do. They have a different set of demands that trickle down. Be open to their direction... but think critically about it and push back where warranted, but do your homework.
- Air your dirty laundry. Bring up sticky issues early and often. Even (or especially) those that you think NSF won't want to hear.
- Don't underestimate the importance of quality budget formulations and contingency development and use. These are the most important aspects of building a program that can withstand scrutiny.
- Keep a "beginner's mind". Avoid preconceived ideas and assuming you have all the answers.

Actionable Recommendations:

1. Provide training on NSF's large facility oversight process/requirements and reviews, for new Recipients and for changes. (Repeat of AR 1 from BSR Session)