



# California Institute of Technology

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**Richard Seligman**  
**Associate Vice President**

June 20, 2008

Mr. Thomas Cooley, Director  
Office of Budget, Finance and Award Management  
National Science Foundation  
4201 Wilson Blvd.  
Arlington, VA 22230

SUBJECT: BSR Subcommittee Final Report

Dear Tom:

I am pleased to enclose the final report of the BSR Subcommittee of the Advisory Committee for Business and Operations. I believe that it is fully responsive to the charge that was issued on January 15, 2008. The title of our report, "What a Difference a Year Makes," is intended to convey our overall impression that the Business Systems Review process has demonstrated considerable progress and improvement over the past year.

I thank the members of the Subcommittee for their efforts prior to, during, and following the Subcommittee meeting in April. The final report is a reflection of their dedication and hard work.

We would be happy to respond to any questions or comments that you wish to bring to our attention.

Sincerely,

Richard P. Seligman  
Associate Vice President for Research Administration

cc: Dr. Mark Coles  
Dr. Florence Rabanal

**BSR Subcommittee  
Of the  
NSF Business and Operations Advisory Committee**

***What a Difference a Year Makes:***

***A Second Look at the NSF***

***Business Systems Review Process***

**June 20, 2008**

## Subcommittee Members

Richard Seligman, Chair  
Associate Vice President for Research Administration  
California Institute of Technology

Jerry Fife  
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Vanderbilt University

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## **Executive Summary**

The Business Systems Review Subcommittee of the Advisory Committee for Business and Operations met at NSF on April 28 and 29, 2008. The Subcommittee was reconvened to review the progress on the Business Systems Review (BSR) process since its original review which was conducted in March, 2007. The Subcommittee was asked to advise NSF on six specific topics or charges related to the BSR process. In addition to a review of BSR documents provided by the NSF BSR Administrator, the Subcommittee interviewed a group of five Subject Matter Experts (SMEs) who had participated in at least one completed BSR that was conducted during 2007.

The deliberations of the Subcommittee have led to the preparation of this report, which includes responses to each of the six charges as well as a detailed set of key conclusions and key recommendations to NSF management. The Subcommittee is pleased to conclude that considerable and significant progress has occurred since its previous review and commends the BSR staff for its work thus far. The key recommendations are briefly summarized here:

### **Summary of Key Recommendations of the Subcommittee:**

1. The BSR staff should continue the process of revising the Business Systems Review Guide, but limit revisions to no more than one each year.
2. NSF Senior Management is urged to endorse and support the relevance and importance of the “scoping” of each BSR so that the review is maximally beneficial to both NSF and the entity being reviewed.
3. The BSR Team should coordinate the BSR activities with the recipient facility’s cognizant federal agency for audit at the earliest stages of planning a BSR.
4. Participation of experienced Subject Matter Experts (SMEs) is essential for a successful BSR and the Subcommittee urges NSF Senior Management to make this a requirement for all BSRs.
5. The Subcommittee stands behind its earlier recommendation that NSF consider the use of outside Subject Matter Experts.
6. Wherever possible, BSRs should be conducted on a five year cycle that places the BSR in the first year or two of each project period.
7. The review module for “Procurement Systems Review” should serve as a model for the revision of the remaining seven review modules that comprise the BSR.

8. NSF Senior Management should strongly encourage the coordination of program division reviews concerning the business-related operations of large facilities within the BSR process wherever possible.
9. The NSF Director should make every effort to seek greater coordination within the various divisions of the National Science Foundation and the Office of Inspector General to minimize the burden of duplicative reviews.

**The Subcommittee concurs unanimously in the contents of this report.**

## **Subcommittee Charge**

### **Second Meeting of the Business and Operations Business System Review (BSR) Subcommittee**

The BSR Subcommittee is asked to reconvene for one additional meeting, to be held prior to the first Business and Operations Advisory Committee of 2008, to examine the updated NSF Business Systems Review process.

Specifically, the BSR Subcommittee is requested to advise NSF on the following:

1. Comment on the appropriateness of the detailed subject matter areas covered in the BSR and the effectiveness of the examination processes defined in the Guide as a means for ascertaining that the business processes pertaining to the facility examined are in compliance with 2 CFR Part 215. Is NSF looking at the right topics and the right supporting materials? Is the review methodology described in the BSR Guide the most efficient approach for accomplishing this examination? The BSR Subcommittee is invited to recommend alternate methods that offer improvement.
2. How should individual BSRs be scoped to account for the Cognizant Audit Agency role in auditing the business systems of the institution hosting the facility? When should NSF accept cognizant agency reports and when should NSF make its own determinations to substantiate compliance?
3. While BSRs are described to the community of awardee institutions as being compliance assistance rather than an audit, the current BSR process has many aspects in common with audits. If the BSR is conducted at a time that informs NSF's decision to recompute the management of a major facility, this reinforces the audit-like aspects of the BSR. Are there steps NSF can take to promote the compliance assistance objective of the review without compromising the effectiveness of the review process?
4. Review the workload impacts of carrying out a BSR on the Awardee institution and NSF staff and offer recommendations for improved efficiency (for example, further narrowing of the BSR focus, greater emphasis on desk reviews, cognizant agency reports, identifying areas where there are opportunities for improvement in planning and coordination between NSF and the organization that will be the subject of the review, etc.) or utilization of outside resources (for example, use of external reviewers from similar institutions) to lessen the workload impact on NSF. If external reviewers were to participate in BSRs, how would they be used? What portions of the BSR are inherently governmental and must be carried out by NSF staff or contractors?

5. NSF normally awards Cooperative Agreements on five year intervals to the institutions operating large facilities. NSF intends to carry out BSRs of each Awardee at least once during each award period. NSF also intends to recompute the management of large facilities before the end of each award period, unless there is a compelling need that indicates it would not be in the best interest of the US Government. Given these factors, when during that 5-year period should BSRs be scheduled?
  
6. The BSR Subcommittee is asked to review at least one completed report from a recent BSR review, along with the working file that was developed to support the conclusions of the review. Are the conclusions of the BSR supported by the working file materials, or are there other materials or methods that could be used to better support the conclusions of the report? (Since the examination of the BSR methodology is within the scope of the annual NSF Financial Audit, NSF wants to ensure that the procedures used to carry out the BSR meet standards that would lead an independent examiner following the BSR process to the same conclusions.)

The Subcommittee will report its findings in writing, via the Subcommittee Chair, to the Business and Operations Advisory Committee. The Subcommittee shall have approximately five members. The chair of the Subcommittee shall be a member of the Business and Operations Advisory Committee. The Head of the Office of Budget, Finance, and Award Management shall nominate the Chair of the Subcommittee.

January 15, 2008

## **Introduction**

The Business Systems Review Subcommittee of the Advisory Committee for Business and Operations met at NSF on April 28 and 29, 2008. The Subcommittee was reconvened to review progress on the further refinement of Business Systems Review (BSR) process that occurred since its initial review in March, 2007. The Subcommittee was asked to advise NSF on six specific topics or charges related to the BSR process.

Prior to the meeting at NSF, the Subcommittee held a lengthy conference call in which the general strategy for the review of the BSR program was agreed upon and specific assignments were made for portions of the final report.

The following NSF officials addressed the Subcommittee and participated in its discussions throughout the two days:

Thomas Cooley  
Mark Coles  
Florence Rabanal  
BAH Contractors

The following NSF Program Officials sat in on portions of the meeting:

Bob Robinson  
Wayne Van Citters  
Phil Puxley  
Jamie Allan  
John Walters

The Subcommittee reviewed the following BSR Documents:

Business Systems Review Guide Version 2.0, issued October 16, 2007

Matrix of Pending Changes for Business Systems Review Guide, Version 2.1

Draft Prototype: "Procurement Systems Review Module"

Final BSR Report on an NSF Large Facility (not identified to maintain confidentiality)

The Subcommittee interviewed the following NSF staff who have served as Subject Matter Experts (SMEs) on a recent BSR:

Rafael Cotto  
Chris Dozier  
Patti McNamara  
Florence Rabanal  
Charles Zeigler

These SMEs all participated in at least one completed BSR that was conducted during 2007. Most participated in at least two BSRs and several participated in four. The interview was structured around fourteen questions that are included in this report as Attachment 2. The results of the interviews are found in the sections of this report that discuss the Subcommittee's six specific charges.

The deliberations of the Subcommittee have led to the preparation of this report, which includes a specific response to each of the six charges as well as a detailed set of key conclusions and key recommendations to NSF management. The Subcommittee is pleased to conclude that considerable and significant progress has occurred since its previous review and commends the BSR staff for its work thus far.

## **The Charges and the Subcommittee's Response**

***Charge No. 1.*** *Comment on the appropriateness of the detailed subject matter areas covered in the BSR and the effectiveness of the examination processes defined in the Guide as a means for ascertaining that the business processes pertaining to the facility examined are in compliance with 2 CFR Part 215. Is NSF looking at the right topics and the right supporting materials? Is the review methodology described in the BSR Guide the most efficient approach for accomplishing this examination? The BSR Subcommittee is invited to recommend alternate methods that offer improvement.*

The BSR Subcommittee, in addressing the NSF Charge for this meeting, notes that our review report will provide comment on the NSF "Business Systems Review Guide, Revised Draft of October 16, 2007 (v2.0)" provided to the Subcommittee for this review by NSF, as well as on other topics and issues that pertain to the Subcommittee Charge but that do not directly relate to the contents of the Guide itself.

Is NSF looking at the right topics and the right supporting materials? As regards the list of core topics in the review, the Subcommittee believes that the "Core Functional Areas" identified in the Guide are the proper ones to span the needed scope of a BSR review and to ensure compliance with 2 CFR Part 215. The Subcommittee further observes that the Guide has been strongly improved for its mission of guiding reviewers in carrying out a BSR over the Draft Guide dated March 26, 2007 that was considered by the Subcommittee one year ago. Still, further evolution of the Guide continues at the present time and continued improvements are planned to be incorporated in the next version of the Guide that NSF intends to issue on October 1, 2008. The Subcommittee was provided with a draft of one core functional review module (Procurement Systems Review) of the next version of the Guide and we comment below on that review module. NSF stated that it was their goal to create seven more new review modules using the "Procurement Systems Review" draft as a model or template to replace all seven of the current core functional area review modules. By considering the new Procurement Systems Review module, the Subcommittee anticipated that using this module as a template would significantly improve the other seven core functional area modules in the October 2008 version of the Guide.

The newest "Procurement Systems Review" draft language spans the content of the October 2007 equivalent module, but is significantly expanded and improved over that earlier version (13 pages vs. 4.5 pages). Specific new guidance is provided to the NSF reviewer, both in terms of scope and goals of the topical area of review and procedures for the reviewer to follow to achieve those goals. A new section on "Review Procedures" has been included in the module to guide the reviewer in general aspects of carrying out the review of that module, as well as specifically noting both the desk review and on-site review aspects of the BSR. For each review module sub-area, an appropriate set of "Standards" is provided to validate the practices being reviewed. As in the earlier version, a list of "Reference Documents" is provided at the beginning of the module. Also new and useful, is a matrix of definitions to help the reviewer distinguish "Subrecipient" from "Vendor" and the criteria for assessing their respective roles in the

procurement system. The Subcommittee discussed the value and anticipated effectiveness of the new module format for procurement and concluded that it represented a significant improvement over the module format in the October 2007 version of the Guide. The Subcommittee strongly endorses the completion of the new version of the Guide, with all eight core functional areas modeled on the new module format, and its release by NSF on October 1, 2008.

The following technical comments are offered for consideration in future revisions of the newly drafted Procurement Systems Review module:

1. Under part 1.4, Supporting Documentation”, consider adding:

- Copies or written descriptions of any periodic purchasing reports provided to the major facility and/or host institution’s management.
- Copies of the standard terms and conditions used by the major facility and the host institution for the types of procurement and subaward instruments to be reviewed.
- Copies of any reports and audits, internal and external, related to the major facility or host institution’s purchasing and subaward system issued since the BSR or within the past three years if this is the first BSR.
- Awardee small business program policy statements and implementations procedures; description of any incentive or recognition awards for employees supporting the small business program; and records of outreach efforts to ensure small business participation.

2. The phrase “appears to be” could be replaced by more definitive statements when addressing the understanding, knowledge or experience of awardee staff. The phrase is used under “Standards for Validating the Practice” in Standard 1.2.3; Standard 1.3.4; Standard 1.4.2 and Standard 6.1.3. The phrase “appears to be” may not engender an appropriate level of confidence in the awardee staff, particularly if indeed the staff has the requisite understanding, knowledge and experience. Phrases such as “is knowledgeable”; “demonstrates sufficient understanding”; “is aware” or “is experienced” may be more appropriate.

3. The minimum sample size of transaction review set forth in 1.3, paragraph 4 should be increased. The minimum sample size should be scoped to be sufficiently representative of the variety of procurement transactions supporting the major facility. In most instances, a sampling of two transactions in each category is not considered sufficient to validate compliance with the Procurement Standards established in 2 CFR, Part 215 or to validate that the awardee has an adequate system for full cycle administration and oversight of subawards.

4. Under Standard 3.4.2, the sample files should document that the awardee is checking the Excluded Parties List System or obtaining the certification required by 2 CFR 180.

Moving on to the question of the appropriateness of the review supporting materials, the Subcommittee believes that the materials listed in Section 7.2.1 of the Guide, and also noted in the Reference Documents section of each Core Functional Area Review Module, are appropriate, appear to be complete, and constitute a compact and accessible way for the Subject Matter Experts (SMEs) and the Awardee participants to be made aware of the governing documents for each functional area of the review. This format is improved significantly over the earlier draft of the Guide that the Subcommittee considered.

The Subcommittee also observed that the value and goals of the “Scoping” phase of each BSR were not discussed in sufficient detail in the introductory material of the October 2007 version of the Guide and noted that this was an important area for elaboration in the next version. The NSF reported that they planned to draft and include in the October 2008 version of the Guide, an introductory section describing the scoping process for each BSR, emphasizing its importance for tailoring each review to the topics considered by NSF to most require attention in view of other recent reviews or audits of the facility. The Subcommittee was pleased to note this commitment to address BSR scoping in the Guide and supports it strongly.

With regard to the “right topics” for the BSR reviews, the Subcommittee notes a circumstance that has not arisen earlier in any of our discussions with NSF. This is the topic of reviews commissioned by NSF *program divisions* to address *business operations* issues that arise outside the purview of the Large Facilities Office (LFO). Nominally, it would seem that program divisions should conduct reviews of *scientific and technical operations* issues for large facilities and that the LFO should conduct reviews of *business operations* issues (the already active BSRs), and that both NSF constituencies should communicate and cooperate on scoping, scheduling and carrying out of business operations related reviews. If program divisions feel a need to separately conduct reviews of business topics, perhaps engaging an outside contractor to bring to bear the needed business expertise, it would seem to indicate a state of poor communications between these divisions and the LFO, especially if the review subject matter significantly overlaps the scope of a BSR for the relevant facility.

Following discussions by the Subcommittee, we believe that NSF should investigate the subject of business related reviews conducted by program divisions with the goal of seeking ways to incorporate the scope of such reviews under the mission of the BSRs or, at least, to ensure that the reviews are coordinated with OLF and the BSR mission. We also observe that to promulgate the non-coercive spirit of the BSRs, it will be desirable as such reviews are scoped, to reformulate judgmental questions of the type, “Is this facility being operated efficiently?” to more objective sorts of questions such as, “Is this facility following best practices for NSF Awardees in similar lines of business?”.

We next comment on the efficiency of the review process in accomplishing the goals of the reviews. We certainly support the three phase process (Pre-Site Visit, Site Visit and Post Site Visit) as the correct review structure and note that the detailed descriptions of the phases in Sections 4, 5 and 6 of the Guide are clear, comprehensible and well balanced as to the level of detail provided. We believe that the BSR scoping consultation recommended by the Subcommittee in its first report, and subsequently adopted by the NSF, adds an important component to the focus and efficiency of the BSR reviews as they become tailored to the specifics of the facility under consideration. We note the useful words in the second paragraph of Section 2.1 (on page 4) and suggest that these might even be elaborated a bit to emphasize the desire of NSF to conform the specifics of each review to those topics of primary interest to the agency at that point in time, thereby demonstrating a refreshing alternative to the ‘one-size-fits-all’ format of many formal government processes. We also note the importance of continuing coordination of the BSR with NSF’s scientific program managers of the associated facility as noted in the Directorate/Program element of the Responsibility Matrix in Section 3.2. If the complementary aspects of science management of facilities and business management by the Awardee institution are not mutually understood, agreed upon and implemented, the successful construction and operation of the facilities will be put at risk.

The recommendations of the Subcommittee with regard to Charge Item 1 are:

1. NSF Senior Management should insist on the coordination of program division reviews concerning the business-related operations of large facilities within the BSR process wherever possible.
2. The BSR staff should continue the process of revising the Business Systems Review Guide, but limit revisions to no more than one each year.
3. The review module for “Procurement Systems Review” should serve as a model for the revision of the remaining seven review modules that comprise the BSR.

**Charge No. 2.** *How should individual BSRs be scoped to account for the Cognizant Audit Agency role in auditing the business systems of the institution hosting the facility? When should NSF accept cognizant agency reports and when should NSF make its own determinations to substantiate compliance?*

Office of Management and Budget Circular A-133, “Audits of States, Local Governments, and Non-Profit Organizations,” specifies that a cognizant agency for audit be designated for recipients that expend more than \$50 million a year in Federal awards. The role of the cognizant audit agency was not addressed in July, 2007 report of the BSR Subcommittee. Use of A-133 audit reports in the BSR scoping process is discussed in the report; however, no specific recommendation was made.

The wording of Charge No. 2 raises concern that there may be confusion with regard to the responsibilities assigned in OMB Circular A-133 to cognizant agencies for audit. Under OMB Circular A-133, the cognizant audit agency responsibilities do not include conducting reviews of recipients’ systems. The focus rather is on Federal oversight of auditee and independent auditor A-133 requirements and on coordination among Federal agencies of A-133 audit results, management decisions and additional auditing performed by Federal sponsors. See Subpart D, §\_\_\_ 400 (a) of the Circular for cognizant agency for audit responsibilities. Additional audits of recipients are generally program/project specific based on requirements of Federal sponsors or on behalf of the cognizant agency for indirect cost negotiation. While these audits may not be system specific, they frequently involve sampling of transactions in systems that give all sponsors additional insight to the adequacy of such systems.

Among the responsibilities of the cognizant agency for audit is coordination of audits or reviews by or for Federal agencies that are in addition to the A-133 audits, so that the additional audits or reviews build upon audits performed there under. Additionally, the cognizant agency for audit is responsible for coordinating the audit work and reporting responsibilities among auditors to achieve the most cost-effective audit. Subpart B, §\_\_\_215 of the Circular addresses the relationship of A-133 audits to other audit requirements. That part spells out the authority of Federal agencies to conduct or arrange for additional audits (e.g., financial audits, performance audits, evaluations, inspections, or reviews). Further it states: “Any additional audits shall be planned and performed in such a way as to build upon work performed by other auditors”. Thus, A-133 reinforces that it is incumbent upon Federal agencies to advise the cognizant audit agency of additional audit requirements and to coordinate in a manner that builds upon the A-133 audits and audit work performed by other agencies.

Given the above, it appears that it might be more appropriate to restate Charge 2 as follows: “How should individual BSRs be scoped to account for the Cognizant Audit Agency role in coordinating the A-133 and other Federal audits of the institution hosting

the NSF major facility? When should NSF accept A-133 and other Federal audit work and when should NSF make its own determinations to substantiate compliance?"

The Subcommittee believes that it is incumbent on NSF to consider A-133 and build upon other audit work in scoping individual BSRs. The first look should be to the most recent A-133 audit to determine whether there are findings that affect the systems normally covered in the BSR or that directly affect the NSF major facility. The cognizant audit agency should be approached with regard to the status of resolutions of any such findings that are cross cutting and the NSF audit resolution officials should be able to address any findings that are related solely to NSF awards. Second, all other recent Federal audits and reviews should continue to be requested. The cognizant audit agency may be able to provide information on whether any additional Federal audits were performed because of specific concerns of the Federal sponsoring agency. A review of an audit or review report may be necessary to determine whether it impacts any of the pending BSR review areas. In some cases the BSR team would benefit from direct contact with the Federal sponsoring agency auditors or reviewers. Understanding the scope of the audit or review, the methodology used, and breadth and depth of system testing can help shape the BSR particularly with respect to individual BSR modules. The BSR team should also ask the cognizant audit agency whether there are any ongoing audits or reviews at the hosting institution or any pending audits that would be ongoing during the planned BSR. Lastly, the BSR team should validate that the audit information received from the cognizant audit agency lines up with similar information from the hosting institution.

In a perfect world, all Federal sponsors would coordinate additional audit work and reviews with the cognizant audit agency and build upon recent audits and reviews. Conversely, the cognizant audit agency would provide the interested sponsoring agencies with the results of quality control reviews of A-133 audits; would promptly inform other affected Federal agencies of irregularities or illegal acts; would advise affected Federal agencies when corrective action on audit findings is not taken by auditees; and would coordinate a management decision for audit findings that affect the Federal programs of more than one agency. Unfortunately, this has not been the general practice of either sponsoring agencies or the cognizant audit agencies. This being the case, an agency conducting a review as broad as a BSR must be proactive in seeking out audit and audit resolution information in order to scope its review and to ensure that it has a reasonable understanding of the adequacy of the host institution compliance before it begins an on-site review.

The interviews conducted by the BSR Subcommittee with NSF SMEs revealed varying levels of comfort with regard to reliance on audits by others. This is understandable, but not exploring and building upon prior audits and review can result in redundant work and increased burden on the host institution. One would hope that the body of independent A-133 audit work and additional Federal audit work would significantly reduce the need for intensive review of all host institution business systems; allow NSF focus on areas that have been troublesome, if any, and more importantly to focus the BSR on the NSF major facility.

The conclusions and recommendations of the Subcommittee with regard to the second charge are:

1. The BSR team should coordinate with the cognizant agency for audit prior to beginning the BSR scoping process. This ensures NSF compliance with A-133's stated responsibilities for Federal sponsoring agencies. Additionally, the cognizant audit agency can provide relevant information regarding audit findings, corrective action and/or the status of audit resolution.
2. NSF Senior Management should continue to stress reliance upon and the need to build upon A-133 audits and additional Federal audits and reviews in scoping BSRs. In many instances this will allow the BSR team to be more focused on the major facility, will help avoid duplicative effort and reduce the burden on the hosting institution.
3. The BSR team can benefit from direct contact with the sponsoring agencies that have conducted audits and reviews at the hosting institution. This may be particularly helpful when the cognizant audit agency is not a Federal research funding agency.

***Charge No. 3.*** *While BSRs are described to the community of awardee institutions as being compliance assistance rather than an audit, the current BSR process has many aspects in common with audits. If the BSR is conducted at a time that informs NSF's decision to recompute the management of a major facility, this reinforces the audit-like aspects of the BSR. Are there steps NSF can take to promote the compliance assistance objective of the review without compromising the effectiveness of the review process?*

Given the intensive nature of the BSR, the broad scope of the review, the potential impact on future funding, and the language used throughout the BSR Guide, it is likely that some awardees will view the BSR as an audit. Making the BSR less audit-like while not diluting the process is a significant challenge. In order to minimize this perception, the Subcommittee has the following observations:

**Scoping.** In its previous report the BSR Subcommittee recommended that BSR reviews include a scoping exercise as a part of its review. This scoping exercise was aimed at taking into consideration previous reviews and/or audits thus eliminating unnecessary duplication of effort.

During conversations with BSR Subject Matter Experts (SMEs), and from reviewing a completed BSR report, it is clear that progress has been made in the scoping of these reviews. However, we believe that the scoping exercise can be further expanded thus further reducing duplication with previous audits/reviews and in doing so reduce the perception of the BSR as an audit and allow NSF to promote the assistance objectives of the BSR review program.

The first method to expand the scoping process would be for NSF Senior Management to provide guidance to SMEs indicating that they do not need to duplicate external reviews of the Awardee and/or the Large Facility that were conducted during the last 12 months, unless there is a specific situation that demands otherwise. For instance, if the NSF funded facility utilizes the same procurement system as the parent institution and the parent has had an ONR Procurement System Review with no findings, then the BSR SME should rely on this for the procurement system portion of the BSR review. Similar consideration should be given for those portions of the A-133 Audit, Internal Audits and other reviews and/or audits which overlap with BSR.

A second way to assist SMEs in the scoping process is to clarify the SMEs authority to adjust the scope of the review based on previous audits/reviews. During conversations with the SMEs it was clear that they felt a keen sense of accountability for their area of responsibility. This is a good thing; however, it appears that the SMEs may require additional guidance and direction on what to “scope” and how to go about doing it.

A final way to assist in the scoping process is for the NSF OIG and the NSF Office of Budget, Finance and Award Management (BFA) to continue closely coordinating their activities to avoid duplicate review during the same year. Currently NSF attempts to avoid conducting a BSR of an organization undergoing duplicate reviews or audits during

the same year. This has resulted in the postponement of BSRs, making them potentially less beneficial to the recipient and the Large Facilities Office.

**Use Experienced Subject Matter Experts (SMEs) for BSRs.** From discussion with the SMEs and experience of the BSR Subcommittee members, it is clear that utilizing experienced SMEs for the BSR reviews will assist in both the scoping process and in reinforcing the concept of compliance assistance.

Experienced SMEs will be more comfortable in adjusting the scope of the review based on previous work and will also be more flexible in their approach. This will further aid in promoting the compliance assistance aspects of the review.

In order to ensure that an experienced group of SMEs is available for BSR reviews, the training program for SMEs should be expanded and enhanced. Whenever possible, each area of the BSR should team a senior SME with a junior staff member to develop their expertise for BSR review. The training program should include the junior staff member participating in at least one BSR with the senior SME. This approach, which calls for a commitment of staffing and financial resources, can work only if it has the support of the senior management of NSF.

**Compliment the Use of Best Practices.** Another method that will assist in promoting the compliance assistance aspects of the BSR is for the SMEs to continue complimenting the use of best practices observed while conducting the review. While it is important to point out compliance deficiencies requiring action, it is equally important to point out best practices.

This was included in the BSR report that subcommittee reviewed and it provided a nice counterbalance to the areas requiring action.

**Note Best Practices at Other Institutions.** A final method that will focus the BSR on compliance assistance is to point out the best practices observed in other BSR reviews. During the subcommittee meeting it was mentioned that this could be assembled ahead of time and distributed before or during the review. This would be an acceptable way to do this; however, it would be most useful to point out best practices in the text of the BSR report to ensure the proper attention to the area.

The recommendations of the Subcommittee with regard to Charge Item 3 are:

1. The BSR Subcommittee recommends the continued expansion of the scoping process prior to the on-site portion of the BSR.
2. The BSR Subcommittee recommends the use of experienced SMEs wherever possible. This may very well improve the value of BSRs to NSF and to the recipient institution.

3. The BSR Subcommittee recommends the continued use of identifying “Best Practices” of the recipient institution that are identified during the course of the BSR. This will encourage greater attention to business systems and will further reduce the image of a BSR as “another audit.”
4. The BSR Subcommittee recommends that BSR Reviewers find creative ways of providing information to staff at the awardee institution on Best Practices that have been observed at other Large Facilities whenever possible. The compilation of these practices should be a valuable resource to those responsible for managing Large Facilities.

***Charge No. 4.*** *Review the workload impacts of carrying out a BSR on the Awardee institution and NSF staff and offer recommendations for improved efficiency (for example, further narrowing of the BSR focus, greater emphasis on desk reviews, cognizant agency reports, identifying areas where there are opportunities for improvement in planning and coordination between NSF and the organization that will be the subject of the review, etc.) or utilization of outside resources (for example, use of external reviewers from similar institutions) to lessen the workload impact on NSF. If external reviewers were to participate in BSRs, how would they be used? What portions of the BSR are inherently governmental and must be carried out by NSF staff or contractors?*

In order to develop recommendations regarding the question of workload impacts, the BSR Subcommittee met with NSF Subject Matter Experts (SMEs), reviewed both the BSR Guide and a completed BSR report, and drew on personal experience. The discussions with the SMEs were particularly helpful in understanding the BSR workload and how the SMEs are assigned to a particular BSR. The SMEs varied in terms of their ability to set aside other work and focus on the BSR, based on the demands of their positions and the support of their management.

With regard to scheduling, the Large Facility Office staff pointed out that they work closely with the Awardee to make sure that the BSR is held at a mutually suitable time. In addition, the Subcommittee believes that other entities, e.g. the NSF Inspector General and the Program Office, should continue to be consulted to determine if there are any other conflicting reviews or other activities that would significantly impact the Awardee.

The Subcommittee addressed the question of use of external reviewers in the July 2007 report, including the following recommendation:

“The Subcommittee recommends that NSF add appropriate non-NSF subject matter experts to the (T) BSR review teams.”

The Subcommittee also acknowledged that:

“Even with the inclusion of non-NSF personnel, however, it is understood that the ultimate responsibility for the conduct of the (T) BSR and the resulting report must lie with the NSF.”

Specifically, the Subcommittee would like to point out a particular area in which non-NSF SME experts can bring important capabilities to the BSR teams. Obviously, NSF BSR team members can be, and are, chosen for their knowledge of NSF and other U.S. Government agency requirements that NSF Awardee institutions need to meet in their management of large facilities. This is especially important as these requirements relate to government-wide compliance requirements. On the other hand, outside SMEs can bring important and valuable information about, and insight into, business operations

issues within an Awardee institution, especially if the appropriate outside SMEs are chosen from the staff of comparable NFS Awardee institutions. The Subcommittee's observations are not motivated by the fear that NSF will be hampered in effectively communicating agency requirements to the reviewed institution, or be able to assess whether these requirements are being met, but rather that non-NSF BSR team member(s) could be effective at contributing to the understanding of methods used by the reviewed institution to meet the NSF requirements and how these methods interact with other missions of the institution as it carries out its business systems activities. We especially note that outside SMEs can act as an efficient conduit within the NSF facilities-management community of *best business practices* as they relate to the management of large NSF facilities.

We are, of course, aware that care will need to be exercised to assure that SMEs chosen as part of the BSR teams should not come from institutions that compete directly with the institution under review for specific scientific facilities and missions. These non-NSF SMEs should be chosen to bring in the knowledge and expertise of Awardee institutions that NSF believes have exhibited a record of outstanding management of NSF facilities and that have incorporated best practices in their operations. We are also confident that persons approached to participate as outside SMEs will see these duties as part of their community service obligation, and will agree and be permitted to serve on a BSR Team.

In discussions during the Subcommittee Meeting with NSF officers that manage the BSR reviews and select the review teams, the point was made by some NSF participants that the participation of external review team members would seriously complicate the logistics of preparing for the reviews and for generating the review reports would be seriously complicated by the participation of outside review team members (SMEs). This point was understood by the Subcommittee but they noted that such a point could be raised about virtually any of NSF's peer review or advisory committees. Such logistical issues are believed by the Subcommittee not to present prohibitive barriers to useful and productive participation by outside participants in other review and advisory venues, so we encourage NSF planners to reexamine the benefits and working modes that outside SMEs from large NSF facility managing institutions could bring to the BSR process.

The conclusions and recommendations of the Subcommittee with regard to the fourth charge are:

1. When scheduling a BSR, the Review Team needs to continue to take into account other demands on the Awardee, including A-133 audits, Inspectors General (IG) reviews and audits, cognizant audit agency audits and program office activities.
2. As discussed in the July 2007 BSR Subcommittee report, the BSR scoping activity is a critical element to managing workload. Done properly, the scoping activity will provide for focus on those areas where there are concerns and/or where the BSR might provide support to the Awardee in the establishment or strengthening of policies, procedures and

processes. In addition, the scoping process identifies the extent to which particular SMEs should participate in the site visit portion of a particular BSR.

3. Management support is critical in the BSR process, particularly in managing workload. As much as possible, SMEs need to be excused from their regular duties in order to focus on the BSR, not only during the onsite review, but as well in both the planning and reporting processes.
4. The BSR Review Team should take maximum advantage of relevant available reports, reviews and audits related to the Awardee and the Awardee institution from all sources. Sources may include the Cognizant Audit Agency (see Charge 2), Inspectors General reviews and audits, NSF program office panel reviews and external audits. These reports, reviews and audits can assist the scoping process.
5. The Subcommittee reviewed its earlier recommendation regarding use of outside experts and stands by this recommendation. As discussed in the July 2007 report, outside experts can be drawn from other Government agencies, FFRDC's and other Large Facilities, and from universities. These experts can enhance the process of identifying best practices and provide the benefit of operational experience. Another positive aspect of the use of experts from other FFRDC's and other Large Facilities is encouraging networking and sharing expertise among awardees. In addition, use of outside experts is consistent with the NSF peer review philosophy.
6. The Subcommittee discussed the question of whether portions of the BSR should be considered inherently governmental. The Subcommittee agreed that given the extensive use of contractors in the conduct of audits and reviews of BSR topics at NSF and across the government, none of these functions can be considered exclusively or inherently governmental.

***Charge No. 5.*** NSF normally awards Cooperative Agreements on five year intervals to the institutions operating large facilities. NSF intends to carry out BSRs of each Awardee at least once during each award period. NSF also intends to recompute the management of large facilities before the end of each award period, unless there is a compelling need that indicates it would not be in the best interest of the U.S. Government. Given these factors, when during that 5-year period should BSRs be scheduled?

The topic of the frequency and timing of BSR reviews for large facilities was discussed in detail in the July, 2007 report of the BSR Subcommittee. The conclusion of the Subcommittee was clearly reflected in the following recommendation:

“The Subcommittee recommends that (T)BSR reviews be generally set at 5 year intervals, but allows for a review as soon as 3 years later if driven by important, relevant changes in the facility.”

The analysis of this subject in the 2007 Report identified a series of possible situations that would impact the timing of the BSR review. The Subcommittee recognized that the complex, and not always predictable, nature of large facility operations certainly warrants flexibility in the timing of a particular BSR, but expressed strong support for a five year interval as the standard.

The charge for the 2008 review introduces a new consideration: the intent of NSF to recompute the management of large facilities “before the end of each award period.” Although recompetition of awards for management of large facilities is well beyond the scope of this particular subcommittee, there was concern expressed that recompetition of large facility management agreements on a five year cycle could create a whole host of problems and challenges that would make the timing of BSR reviews pale by comparison.

The Subcommittee revisited the frequency and timing issues and came to conclusions that were virtually unchanged from those of the 2007 Report. In general, the five year cycle for BSRs still seems to be quite reasonable. In the case of the first BSR review of a new MRE construction project, the Subcommittee believes that it is especially important to schedule and conduct the facility’s first BSR during the first or second year of construction. This approach to scheduling protects the MREFC construction project from entering its years of large funding expenditures without having received the benefit of a BSR. To the extent possible, the BSR should be conducted in the first or second year of the cycle in order to be of benefit to both NSF and the Awardee. The subcommittee expressed a strong preference for separating the BSR review from the recompetition process. The BSR was not designed to facilitate decisions about recompetition. Nor should it be used as a vehicle for “prequalifying” a particular Awardee.

The recommendations of the Subcommittee with regard to Charge Item 5 are:

1. The BSR Subcommittee recommends that the five-year intervals for BSR reviews previously recommended in the 2007 review continue to be the standard that NSF should apply in further development and refinement of the BSR process.
2. The BSR Subcommittee recommends that wherever possible, the BSR should be conducted within the first two years of the award period. This is particularly important for new facility construction projects. This will enable the Awardee to have the benefit of the BSR review in strengthening its business systems with sufficient time to “make a difference” before the award period comes to an end.
3. The BSR Subcommittee recommends that NSF specifically exclude the BSR from the process of re-competing management awards for Large Facilities.

***Charge No. 6.*** *The BSR Subcommittee is asked to review at least one completed report from a recent BSR review, along with the working file that was developed to support the conclusions of the review. Are the conclusions of the BSR supported by the working file materials, or are there other materials or methods that could be used to better support the conclusions of the report? (Since the examination of the BSR methodology is within the scope of the annual NSF Financial Audit, NSF wants to ensure that the procedures used to carry out the BSR meet standards that would lead an independent examiner following the BSR process to the same conclusions.)*

**Special Note:** The subcommittee has revised and, it is hoped, clarified the charge. The Subcommittee was extremely reluctant to review “working files” developed by BSR Team members in the course of conducting the BSR. The Subcommittee believed that it would not be appropriate for “outsiders” to review the working files of the BSR Team. In lieu of examining the working files, the Subcommittee met with five experienced subject matter experts (SMEs) who provided answers to 14 questions that the Subcommittee prepared and distributed in advance of the April 28-29 meeting. These questions probed the review techniques utilized by the SMEs during the review, determined how the Guide was used and how helpful it was, inquired about the communications that occurred between the Team and the Institution’s personnel, and prompted suggestions for improving the Guide, the process, and the level of consistency of review between highly experienced and less experienced SMEs.

The Subcommittee had the opportunity to review a BSR Report that had been completed during the past year. That BSR was conducted by the BSR Team using Version v2.0 (October 16, 2007) of the BSR Guide. The Subcommittee found that the BSR team performed the BSR utilizing the steps outlined in the Guide. The BSR Team:

- Conducted an accurate and thorough review of the subject NSF major facility
- Collected appropriate materials and documents from the administering organization
- Thoroughly reviewed these materials and documents using appropriate methods
- Arrived at appropriate findings and identified appropriate corrective actions, recommendations and best practices and that these conclusions were supported by the procedures they used in accordance with the Guide.

The Report was well written and the Subcommittee commends the NSF for the way that the Guide was revised and implemented in such an organized and comprehensive fashion. The Subcommittee noted tremendous progress all around by the NSF Large Facilities Office since our meeting and report of the previous year in developing, implementing, and effectuating a Business Systems Review that provides both the NSF and the facility operations organization with a complete picture of the facility’s administrative operations

and an excellent set of steps the organization can implement that will further improve oversight, effectiveness, and efficiency of the NSF major facility.

The Report of the Major Facility followed the structural approach recommended by the Guide. The report began with an identification of the major facility, the awardee, and the location of the facility, as well as a listing of the dates of important milestones in the review process (scoping visit and site visit). The Report listed the BSR Team members from the NSF and the awardee's participants from the Awardee organization and the specific NSF major facility.

An executive summary was provided that talked about the review process and identified the number of recommendations made, problem areas discovered, and best practices identified during the review process. The "Background" section dealt with the history of the facility and the facility's place within the organization. It clarified the relationship between the facility and the awardee organization, including the governance of the facility through identification of the applicable organizational and facility policies. The "Objectives and Scope" section provided the process that was followed in the review and the primary areas that were examined.

Following these introductory sections, the Report turns to a detailed analysis of each of the core functional areas. As directed by the Guide, each section covers the following:

- Scope – details the purview and subject matter of the core functional area.
- Sources and Methods – covers the materials and methodology employed in the review.
- Observations – provides a summary of the awardee's/facility's policies, procedures and practices and the overall analysis of the capability and performance of the organization in light of the administrative needs in the core functional area.
- Corrective Actions – identifies specifically deficiencies found in the review and steps needed to fix them.
- Recommendations – Outlines improvements that the SMEs believe will strengthen administrative systems within the core functional area.
- Best Practices – Shows where the facility is exceeding expectations of a proficient business system.

The Observation section might benefit from additional description. Within each core functional area certain "principles" are identified that "define" the ideal components that are necessary for good business practices. Then using the Guide, the reviewers look for certain activities that are spelled out which the SMEs are to look for. Here is a sample that tracks from the BSR Guide to the BSR Report:

#### GUIDE

- Core Functional Area - Financial Management Systems Review

- Principle 1. A system is in place to carry out the organization’s financial management responsibilities.
  - Practice 1.1. A structure is in place to carry out the functions related to the organization’s financial management systems.
    - Observation 1.1.1 A unit is responsible for performing work required for planning and formulating the budget.
    - Observation 1.1.2 It is clear what each position related to financial management does.
    - Observation 1.1.3 Lines of authority and staff responsibility for financial management are clearly delineated and duties are properly separated.

### COROLLARY IN BSR REPORT

- Core Functional Area – Financial Management
  - Overall Summary = Systems meet NSF’s expectations.
  - Observations
    - Principle 1. A system is in place to carry out the organization’s financial management responsibilities.
      - Report describes the unit responsible for financial management. Responds to Observation 1.1.1.
      - Report describes the separate roles of director, associate director, comptroller and accountant and states that duties are properly segregated and delineated. Responds to Observation 1.1.2.
      - Report identifies the policies and procedures in effect and the lines of authority and responsibility for staff. Confirms that policies are adequate to meet NSF’s expectations. Responds to Observation 1.1.3.

This comparison shows a very strong correlation between the Guide, the BSR Review, and the Report. This demonstrates that the BSR Team conscientiously followed the prescribed protocol established by the Guide. Comments that were read in the various observation sections also show that SMEs utilized their own background expertise and relevant experience to enhance on the Guide’s requirements with detailed descriptions and deeper inspection.

#### **Notable points:**

The Subcommittee identified a number of points made in the Report that show remarkable perceptions by the SMEs and explanations of how the facility could improve its oversight.

- Identified improved configuration of FastLane user permissions for the Financial Function. This recommended change strengthened the separations of duties and provides the NSF and facility with greater confidence in the internal controls that are being implemented.

- Identified a weakness in property inventory at a remote site that needed immediate correction. The Report further identified that a part of the problem was a lack of resources within the facility to accomplish it. This provided encouragement to the awardee and facility leadership to find the needed resources.
- Identified a best practice of the facility in regards to hiring and retention of staff at the facility that could provide a model for other facilities.

The Report ended with a summary of what the team found and their conclusions. This highlighted the most important items that needed to be “fixed” and provided plans for follow-up activities.

The appendices identified approximately 400 documents and samples that were provided to the reviewers by the Facility. This indicates that there must have been a very high level of cooperation between the review team and the reviewed team. The Facility provided these documents through a secured website to the reviewers so that they could be accessed during the desk review, site visit, and reporting preparation stages. The Report also included a listing of more than 200 work papers that were accumulated during the review process.

The Subcommittee did note some areas that needed to be addressed to further enhance the Review and the Reporting process. We make the following observations:

- Appropriate Divisions within NSF should continue to be notified when a BSR is coming. It would be very helpful if these areas continue to provide the BSR team with any audits/reviews recently performed, currently going on, or planned during the BSR time period. This would greatly enhance the comprehensiveness of the Review.
- The NSF would benefit if the Large Facility Operators would get together periodically for sharing best practices, training on special areas of concern, and networking with peers who share the same responsibilities and daily challenges.
- The experience level of the SME is an incredibly important variable in the quality of the Review. Yet the Subcommittee notes the challenges NSF faces in getting the best qualified reviewers to dedicate so much time to the additional work the BSR requires. NSF should explore ways to maximize the level of experience on a BSR Team and when less experienced SMEs need to participate that more experienced NSF-SMEs be assigned as coaches to help them. In addition to the training currently underway, training material should be prepared for SMEs who are less experienced. This could be done through online modules, with video “case studies” provided showing examples of interviews and proper interpersonal techniques that should be employed on a BSR – which is not an audit. An online SME Resource Tool Box should also be developed that would provide additional

background information on important regulatory documents, concepts like “indirect (F&A) costs,” effort certification, and so forth.

- One area that the NSF needs to consider further is transaction testing. There seem to be different levels of sampling employed from one review to the next, depending on the experience of the SMEs, as well as how insecure a SME may feel about the quality of previous reviews ( a sort of “fear factor” that someone will second guess their techniques and conclusions). We do not encourage the NSF to get more prescriptive in the Guide – the Guide has the right level of guidance in our view. However, seeking more consistency on sampling size and techniques might be helpful. It is also very important, in our estimation, that the NSF Director lends his credibility to the concept of “scoping” reviews so that responsibility for the scoping concept falls on NSF senior management and not on BSR Team leader or SMEs. Also, we would recommend that once a scoping plan is accepted, it be approved by the Large Facility Office leadership. This will allow BSR Teams to better estimate what areas need to be thoroughly examined and the transaction testing that is necessary for those selected areas.
- The BSR process would benefit from enhanced cooperation between the OIG and LFO. The OIG has encouraged NSF to conduct BSRs and should continue to support the process by routinely notifying LFO when one of the major facilities is undergoing, or about to undergo, a review by the OIG.

## Conclusions

The review the subcommittee conducted of an NSF BSR on a major facility revealed that NSF has developed an excellent, well-balanced approach to conducting and reporting on the Review. The Report was very well written, followed the Guide with precision, adequately examined the facility/awardees business systems, and provided them with well-founded corrective actions, recommendations, and best practices. The BSR Team seems to establish a proper rapport with facility/awardee personnel in the spirit of conducting a BSR that is designed to help them improve their stewardship of a major federal research facility. The NSF Large Facility Office should be congratulated on the progress made in developing and implementing the BSR and should continue to improve the Guide in the ways that were previewed to the Subcommittee during our meeting.

The recommendations of the Subcommittee with regard to Charge Item 6 are:

1. The BSR Subcommittee recommends that the senior management of NSF strongly endorse the “scoping” process as essential to the conduct of a BSR.
2. The BSR Subcommittee recommends that BSR staff follow the example in the new procurement module and provide additional guidance and direction on the process of transaction testing as part of the BSR. Greater specificity in this area would be extremely beneficial to those conducting the BSR as well as to the recipients.

3. The BSR Subcommittee recommends that the Large Facilities Office identify venues in which the best practices of Large Facilities that have completed successful BSRs can be shared with other NSF funded Large Facilities.

## Key Conclusions and Recommendations

### Conclusions

1. The BSR Guide, version v2.0 dated October 16, 2007 represents a significant improvement over the version that was reviewed by the Subcommittee in the spring of 2007. The staff of the Large Facilities Office is to be commended for giving very serious attention to the many recommendations and suggestions offered by the BSR Subcommittee in its previous report.
2. The sample “Procurement Systems Review” module demonstrates considerable progress and improvement over earlier versions of the review procedures. The Subcommittee finds the new format of the system review module to be particularly effective and suitable for all of the modules that comprise the BSR. We therefore support use of the new review module as the best approach for revision of the systems review sections of the remaining seven modules. BSR staff reported its plan to continue the process of revising the Guide. The Subcommittee believes that the revisions should be limited to no more than one release in each fiscal year for official use on BSRs.
3. In the Subcommittee’s 2007 Report, the “scoping” process was identified by the Subcommittee as an extremely critical element in the planning and execution of a Business Systems Review. Done properly, the scoping activity will focus on those areas where there are concerns and/or where the BSR might provide support to the Awardee in the establishment or strengthening of policies, procedures and processes. In addition, the scoping process identifies the subject matter expertise needed for a particular BSR.
4. Refinement of the scoping process and its incorporation into the BSR Report was identified by BSR staff as a key goal of the next version of the Guide.
5. Subject Matter Experts (SMEs) play an essential part in the BSR process. This is not an easy assignment for the SMEs and it is clear to the Subcommittee that the BSR reviews benefit from the participation of highly experienced senior staff as subject matter expert members of the BSR Team. Recognition of the critical importance of using the very most experienced NSF staff for the BSRs must come from the very highest levels of management at NSF. Division heads should be encouraged “from on high” to unhesitatingly support the participation of their experienced staff in BSR activities.
6. The Subcommittee reviewed its earlier recommendation regarding use of outside experts and stands by this recommendation. As discussed in the July 2007 report, outside experts can be drawn from other Government agencies, FFRDC’s, other Large Facilities, and from universities. These experts can enhance the process of

identifying best practices and provide the benefit of operational experience. Another positive aspect of the use of experts from other FFRDC's and other Large Facilities is encouraging networking and sharing expertise among awardees. In addition, use of outside experts is consistent with the NSF peer review philosophy.

7. The five-year cycle for BSR reviews previously recommended by the Subcommittee should continue to be the standard that NSF applies in the further development and refinement of the BSR process. Wherever possible, the initial BSR should occur in the first year or two of the project so that there is sufficient time for the recipient to benefit from the review during the balance of the award period.
8. The BSR site visits and reports should continue to identify "best practices" at the recipient institution. It is important that the BSR identify both strengths and areas of needed improvement. As the BSR staff develops a more robust collection of "best practices," this information should be shared among NSF's Large Facilities in ways that will allow them to take advantage of practices that were developed at other NSF facilities.
9. The Subcommittee believes that the effectiveness of the BSR process can be enhanced if an early portion of the BSR Team's preparation activity includes reviewing A-133 and other audit reports. This will ensure NSF compliance with A-133's stated responsibilities for Federal sponsoring agencies. The cognizant agency can provide relevant information regarding audit findings, corrective action, and the status of audit resolution. Throughout the Subcommittee's Report, reference is made to A-133 audit reports, other federal audit reports and reviews, and their importance in shaping the BSR of a particular facility.
10. The Subcommittee has identified a very clear tension that exists between the stated intent in the BSR Guide that recent audits and reviews by government agencies and other audit organizations should be relied upon wherever possible and the pressure that BSR Team members feel to "see things for themselves" and not rely on work done by others. The Subcommittee recognizes and acknowledges the reality of this dilemma. Thoughtful attention and clarification by Senior NSF Management is required in order to assist the BSR Team to find the proper balance between reliance on previous work and conducting the review of a particular business system "from scratch."
11. The Subcommittee reviewed a completed BSR Report based on the BSR Guide, version v2.0 dated October 16, 2007. The report was very thorough, highly professional, and clearly followed the Guide. The Subcommittee concludes that the members of the BSR Team were able to successfully perform a BSR using the October 16, 2007 version of the Guide.

**Recommendations.** On the basis of its review of BSR documents, discussions with LFO staff, Subject Matter Experts (SMEs), and its own deliberations, the BSR Subcommittee makes the following recommendations:

1. The BSR staff should continue the process of revising the Business Systems Review Guide, but limit revisions to no more than one each year.
2. NSF Senior Management is urged to endorse and support the relevance and importance of the “scoping” of each BSR so that the review is maximally beneficial to both NSF and the entity being reviewed.
3. The BSR Team should coordinate the BSR activities with the recipient facility’s cognizant federal agency for audit at the earliest stages of planning a BSR.
4. Participation of experienced Subject Matter Experts (SMEs) is essential for a successful BSR and the Subcommittee urges NSF Senior Management to make this a requirement for all BSRs.
5. The Subcommittee stands behind its earlier recommendation that NSF consider the use of outside Subject Matter Experts.
6. Wherever possible, BSRs should be conducted on a five year cycle that places the BSR in the first year or two of each project period.
7. The review module for “Procurement Systems Review” should serve as a model for the revision of the remaining seven review modules that comprise the BSR.
8. NSF Senior Management should strongly encourage the coordination of program division reviews concerning the business-related operations of large facilities within the BSR process wherever possible.
9. The NSF Director should make every effort to seek greater coordination within the various divisions of the National Science Foundation and the Office of Inspector General to minimize the burden of duplicative reviews.

**The BSR Subcommittee concurs unanimously in the contents of this report.**

**NSF Business Systems Review Subcommittee**  
Agenda

April 28, 29, 2008  
Stafford II: Room 655.29

Monday, April 28, 2008

- |       |   |                |
|-------|---|----------------|
| 8:15  | Refreshments                                    |                |
| 8:30  | Welcome and Introductions                       | Tom Cooley     |
| 8:40  | Overview of the Agenda                          | Dick Seligman  |
| 8:45  | Begin Discussions on the Items<br>in the Charge |                |
|       | 1. Review and comment on the Guide              | Tom Kirk       |
|       | 2. Role of cognizant audit agency               | Chuck Paoletti |
|       | 3. Is the BSR an audit?                         | Jerry Fife     |
|       | 4. Workload impact of BSR                       | Katie Schmoll  |
|       | 5. Timing of the BSR                            | Dick Seligman  |
|       | 6. Review completed BSR Report                  | Bob Killoren   |
| 10:00 | Break and Refreshments                          |                |
| 10:30 | Continue Discussion of the Charge Items         |                |
| 11:45 | Subcommittee Executive Session                  |                |
| 12:00 | Working Lunch                                   |                |
| 1:00  | Interviews with SME's                           |                |
| 2:30  | Break and Refreshments                          |                |
| 2:45  | Continue Discussion of the Charge Items         |                |
| 4:45  | Adjourn   |                |
| 6:30  | Subcommittee Dinner (Meet at restaurant)        |                |

Tuesday, April 29, 2008

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|------|--------------|--|
| 8:15 | Refreshments |  |
|------|--------------|--|

BSR Subcommittee

8:30	Conclude Discussion of the Charge Items
10:00	Break
10:15	Contents, Schedule, and Drafting Plan for the Final Report
12:00	Executive Session with NSF Officials
12:30	Subcommittee Executive Session
1:00	Wrap up Session
1:45	Adjourn

Business Systems Review (BSR) Subcommittee  
April 28-29, 2008

Questions for the NSF BSR Subject Matter Experts

Name	BSR Core Area of Expertise	BSR Visit; Location/CY
Rafael Cotto	Financial Reporting	<ul style="list-style-type: none"> <li>• <b>NEES</b>; Davis/2006</li> <li>• <b>NRAO</b>; Charlottesville and GreenBank/2007</li> </ul>
Chris Dozier	Property and Equipment	<ul style="list-style-type: none"> <li>• <b>NOAO</b>; Tucson/2006</li> <li>• <b>NEES</b>; Davis/2006</li> <li>• <b>LIGO</b>; Hanford/2007</li> <li>• <b>AMISR</b>; Menlo Park and Fairbanks/2008</li> </ul>
Patti McNamara	Budget and Planning	<ul style="list-style-type: none"> <li>• <b>LIGO</b>; Pasadena/2007</li> </ul>
Florence Rabanal	General Management and Award Management	<ul style="list-style-type: none"> <li>• <b>NRAO</b>; Charlottesville, GreenBank and Socorro/2007</li> <li>• <b>NSCL</b>; East Lansing/2007</li> <li>• <b>LIGO</b>; Pasadena and Hanford/2007</li> <li>• <b>IceCube</b>; Madison/2007</li> <li>• <b>AMISR</b>; Menlo Park and Fairbanks /2008</li> </ul>
Charlie Zeigler	Financial Management	<ul style="list-style-type: none"> <li>• <b>NSCL</b>; East Lansing/2007</li> <li>• <b>LIGO</b>; Pasadena/2007</li> </ul>
<ul style="list-style-type: none"> <li>• AMISR = Advanced Modular Incoherent Scatter Radar; site-visit, telecon; video</li> <li>• IceCube = IceCube Neutrino Observatory; site visit; video</li> <li>• LIGO = Laser Interferometer Gravitational Wave Observatory; site visit</li> <li>• NEES = Network for Earthquake Engineering Simulation; site visit</li> <li>• NRAO = National Radio Astronomy Observatory; site visit</li> <li>• NSCL = National Superconducting Cyclotron Laboratory; site visit</li> </ul>		

1. Did you have time to read the relevant sections of the BSR Guide before you went to the site?
  
2. Did you have a clear picture of the purpose of the BSR before you went on site?
  
3. Was the Guide helpful to you in giving you an indication as to what you were supposed to be doing on the BSR, i.e. how to conduct a BSR of your particular subject matter area (e.g., finance, procurement, property)?

4. Did you have sufficient time prior to the site visit to review the awardee's information that was provided for the BSR Team?
5. Was the information submitted beforehand (as directed by the Guide) sufficient for you to prepare for the visit?
6. Did you communicate with the awardee prior to the site visit to ask for more information or get clarification on any issues?
7. Was there adequate time on site for you to complete all of the tasks that you intended to complete?
8. How would you describe the general attitude of the awardee's personnel during the review process – were they openly and fully cooperative, hesitant to provide information, nervous and anxious about the process?
9. Was there any information you wanted to get but couldn't?
10. How did you work with previous audits and reviews conducted on the same areas covered by the BSR, e.g., were you able to integrate findings of an A-133 audit or an ONR procurement review into your review without repeating the same steps?
11. Were there any significant problems that arose during the BSR that you were never able to resolve?
12. Did you learn anything unexpected when you were on site?
13. Could you have done a thorough BSR without having to spend time on site? How did on site location contribute to the review or did it? Could have been done electronically, for example via videoconferencing?
14. If you could change the BSR process to make it better from the point of view of the NSF SME's, what changes would you suggest?