Response to findings, recommendations, and suggestions from the BERAC Committee of Visitors review of BER's Climate Change Research Program

On March 1-3, 2004, a Committee of Visitors (COV) reviewed BER's Climate Change Research programs, especially the management and decision-making processes used by those programs. The review was conducted in response to a charge from Dr. Ray Orbach, Director of DOE's Office of Science, to DOE's Biological and Environmental Research Advisory Committee (BERAC) chaired by Dr. Keith Hodgson from Stanford University. The COV was chaired by Dr. Gene Bierly, a member of BERAC. It consisted of 18 individuals, including both scientists with expertise in areas relevant to BER's Climate Change Research programs and current or former Federal employees from other agencies with experience in managing Federal research programs.

The COV was divided into groups to evaluate the nine separate programs that comprise the Climate Change Research sub-element in BER. Each group, consisting of at least two COV members, was provided a series of questions to answer about (1) the quality and effectiveness of the program's use of merit review procedures, (2) the selection of reviewers, (3) the resulting portfolio of awards (funded proposals), and (4) management of the specific program under review.

The following are findings, recommendations, and suggestions (in quotes) from the COV report that warrant a response by BER, followed by the BER response and actions implemented, pending, or planned by BER management to address those requiring action. The page numbers refer to the page in the electronic PDF file of the report posted on the DOE Office of Science web site where each of the quoted COV findings, suggestions, or recommendations is located. The web site address where the report can be accessed for reading and downloading for printing is:
(http://www.science.doe.gov/ober/berac/Reports.html)

Many of the COV's findings, recommendations, and suggestions in the "Program Findings" section of the report are redundant across the nine programs reviewed by the COV. This redundancy is most likely a result of all BER Climate Change Research Programs using the same or similar decision-making processes and documentation, some of which the COV found to be inadequate. The review of each program by a different group of individuals on the COV could also account for some of the redundancy.

BER Responses and Actions

Executive Summary

Page 4: "The report concludes that processes presently in place that are used to solicit, review, and recommend funding actions for both DOE laboratory projects and university grants are adequate on average. Processes in place to documenting funding actions for university grants are also adequate; however, those for DOE laboratory projects are inadequate. Processes need to be put in place to document the basis for funding actions of projects at DOE labs. Further, changes can and should be made to modify and standardize

documentation of funding actions so that such material in program jackets can be found more easily."

BER Response: Processes are now in place to document the basis for funding actions of projects at DOE labs. The processes include the preparation of a selection statement for each DOE lab project. Documentation required in the selection statements is the same as that required and in place for documenting the basis for funding university grants. The standardized documentation of funding actions for university grants and DOE lab projects, and the inclusion of the documentation of lab funding actions along with progress reports and continuation funding recommendations in the lab project jackets, should make it easier for future COVs to find the material.

Action: See BER response above. Action completed effective June 23, 2004.

Page 5: "Documentation of materials that should be in the grant and declination jackets needs to be specified and implemented."

BER Response: Materials that must be in the jackets for university grants and DOE lab projects is specified and implemented. Material that must be in the declination jackets has also been specified. The latter includes a form for each declination that must be completed and signed by the program manager, documenting the basis for the declination decision. A completed and signed form is required for each declined university grant application and for each lab project proposal.

Action: Action completed effective June, 23, 2004.

Page 5: "Peer review procedures need to be better articulated and standardized."

BER Response: The peer review process used in the CCRD includes both panel reviews and mail reviews, although panel reviews are used more extensively by most program managers. The decision on which process to use depends largely on the amount of funding available to support new proposals and the number of proposals expected in response to a solicitation. The merit review and conflict of interest criteria used in the peer review process, however, are same for both types of reviews. Rather than standardizing the peer review procedure for all program solicitations, BER prefers maintaining the option of using either mail or panel reviews rather than using only one of these procedures in all cases. Articulation of the peer review procedure to be used or that was used will be better articulated to all applicants, including in the solicitation and in the award or declination letters.

Action: A proposal to have the Office of Science develop peer review guidelines with standardized procedures for all Office of Science programs is under discussion with the Office of Science. If such guidelines were developed, they would be available to all applicants and reviewers. In the meantime, CCRD program managers have been directed to articulate the peer reviewer procedures that will be used to all applicants.

Page 5: "Reviewers need to be better informed about what is expected of them."

BER Response: Panel review members are generally well informed about what is expected of them. To ensure consistency in the information given to reviewers by all program managers, guidance has been developed as to what reviewers should be told about what is expected of them. Both mail and panel reviewers will be better informed of what is expected of them by providing each reviewer with program-specific review guidance. This guidance will include instructions about the need to evaluate the scientific and technical merits of the proposed research as well as program-specific guidance to assess the potential of the proposed research to contribute toward meeting the specific goals and objectives of the program and the CCRD's long-term performance goal.

Action: Action completed**.**

Page 5: "Reviewer pools need to expanded and updated"

BER Response: The list of prospective reviewers for each CCRD program is being expanded and updated. In some program areas, the number of qualified reviewers is somewhat limited and with the need to avoid conflicts of interest, efforts are being made to expand the list of eligible and qualified reviewers who are likely to be available to review proposals when needed and who have a demonstrated record of providing scientifically and technically sound reviews in a timely manner.

Action: All program managers in the CCRD have been advised to expand and update their pool of reviewers. Action is ongoing and will continue.

Page 5: "Program announcements and solicitations need to be more focused and better reflect program goals."

BER Response: Program announcements/solicitations are generally written to reflect program goals and priorities. The solicitations must be consistent with the SC Strategic Plan (http://www.science.doe.gov/sub/Mission/Mission_Strategic.htm). Focusing these announcements more than is currently done could exclude proposals for research in some areas important to a program. Nonetheless, the CCRD recognizes the challenge of balancing the resources available to fund research in each program with need to fund a sufficiently critical mass of research to have an impact. The COV recommendation to have the CCRD program announcements more focused and better reflect the program goals is being carefully examined and as needed, the focus of future solicitations will be written so as to ensure they accurately reflect the breadth, goals, and priorities of the program and the resources available to fund new research.

Action: Each program solicitation is reviewed to ensure it reflects the breadth, goals, and priorities of the program and is consistent in scope with the resources available in a program to fund new research. Action ongoing and will continue.

Page 5: "National Laboratory and university investigators should be treated equally with regard to what is required from the initiation of a proposal to the completion of a research project."

BER Response: The unequal treatment of National Laboratory and university investigators is more a perception than reality with regard to what is required of them from the initiation of a proposal to completion of the proposed project. In fact, the requirements are largely the same for investigators from both types of institutions. Proposals submitted by prospective investigators from both kinds of institutions are subjected to the same merit review process using identical criteria. Funded investigators from both kinds of institutions are required to submit annual progress reports to DOE to receive continued funding, and both have the option of submitting a renewal proposal prior to the end of their period of performance if the program manager decides to request a renewal. In addition both kinds of investigators must attend science team meetings and their funded projects are subject to on-site reviews at any time during the period of performance. The one difference between the two is that lab investigators are not required to write final reports when their project ends, whereas university-based investigators are required to submit such a report.

Action: Action is pending to require lab investigators to provide a final report when their project ends. No other actions required.

Page 5: "A documented philosophy regarding the role of National Laboratories needs to be stated."

BER Response: The COV has raised an important issue regarding the lack of a documented philosophy with respect to the role of National Laboratories in the BER's climate change research programs. The National Labs play a special and unique role in many of the programs. Their role has evolved over time as programs have matured, as core capabilities at labs have been developed in different program areas, and as labs respond to program-specific solicitations to utilize their unique scientific strengths and capabilities. The DOE Office of Science is in the processes of developing a report on the current and future role of the Office of Science laboratories in the furthering DOE's programmatic mission.

Action: Pending the outcome of the report on the current and future role of the Office of Science labs in furthering the programmatic mission of DOE, the expected role of the Office of Science labs in furthering the mission of BER's climate change research programs will be developed.

Program Findings:

ARM Program:

Program Summary:

Page 11: "Communication between the Program Manager (PM) and the ARM science team is vital, but the COV did not see evidence of the science team's input into the proposal selection process."

BER Response: Because the science team is funded by the program, it would be a conflict of interest for members of that team to be involved in the process of selecting or recommending proposals to fund. Some science team members, however, are involved in providing comments to the ARM Program Manager on the relevance of proposals to goals and objectives of the program. Conflict of interest requirements are strictly adhered to so as to ensure that no science team members comment on the relevance of proposals submitted by either their own institution or individuals with whom they have a personal or professional COI, such as current or recent collaborators at other institutions.

Action: No action required.

Page 11: "The broad RFPs for ARM program do not demonstrate the goal-oriented needs of the program."

BER Response: Future solicitations (RFPs) from the ARM program will be reviewed more carefully to ensure they are appropriately focused and fully consistent with the goal-oriented needs of the ARM program.

Action: Action underway and will continue.

Page 11: "Also, because the infrastructure proposals for ARM are not peer reviewed, approximately 75% of this program is not evaluated by outsiders.

BER Response: The ARM infrastructure has been reviewed several times by outsiders, including the Washington Advisory Group and a subcommittee of DOE's Biological and Environmental Research Advisory Committee. An outside, independent group of experts will review the management of the ARM infrastructure, including the use of allocated funds in February, 2005. This will be the beginning of more regular reviews of the ARM infrastructure by independent experts.

Action: An outside, independent review of the ARM infrastructure will be done in February, 2005. This will be the initiation of more regular outside reviews of the ARM infrastructure.

Page 11: "ARM is a program that should be coordinated with other programs within the CCRD, but the COV saw no evidence of connections with other programs such as the Atmospheric Science Program. For example, it is not clear how ARM's mission to develop parameterizations for climate models is related to the U.S. Climate Change Science Program's climate modeling objectives that focus on models at NCAR and GFDL.

BER Response: Efforts have been implemented to better coordinate ARM research with other CCRD programs, including the Climate Change Prediction Program and the Atmospheric Science Program. A cloud modeling testbed jointly funded by ARM and the Climate Change Prediction Program (CCPP), for example, has been implemented in the Climate Modeling and Diagnostic program at the Lawrence Livermore National Laboratory. The purpose of this testbed is to evaluate the performance of cloud parameterization schemes in general circulation models. The cloud parameterizations and their incorporation in GCMs are supported by ARM, while the testing and evaluation of their performance are supported by the CCPP. Close collaboration between the ASP and ARM program are being planned, including organizing field campaigns around the stationary ARM CART sites and siting the mobile ARM facility in locations that would provide data essential for understanding and modeling the effect of aerosols on scattering and absorption of radiation and cloud formation and cloud properties. The relationship between the ARM mission and the CCSP climate modeling objectives is that ARM is providing improved cloud parameterization schemes that are available for incorporation in the atmospheric GCMs that are part of the coupled GFDL and CCSM global climate models.

Action: A strategic planning retreat will be held in January, 2005 that will include discussions of opportunities to enhance collaboration among all of BER's climate change research programs, including ARM. Pending the outcome of that retreat, actions will be taken to enhance the connections between ARM and other programs within the CCRD, other DOE offices, and other agencies.

Program Data

A. Quality and Effectiveness and the Program's Use of Merit Review Procedures

Page 12. COV response to Question 1: 'It seems inappropriate that ~75% of the budget is for infrastructure and was not reviewed by the COV. We did not see the reports that the infrastructure was reviewed so the COV could consider the program balance."

BER Response: The ARM infrastructure has been reviewed several times by outsiders, including the Washington Advisory Group and a subcommittee of DOE's Biological and Environmental Research Advisory Committee. Reports of those outside reviews of the ARM program, including the ARM infrastructure were provided to the COV for their review. The COV members who reviewed the ARM program apparently didn't have time or overlooked the reports and hence weren't aware that the ARM infrastructure had been reviewed by experts outside of DOE more than once since the inception of the program. An outside, independent group of experts will review the management of the ARM infrastructure, including the use of allocated funds in February, 2004.

Action: An outside, independent review of the ARM infrastructure will be done in February, 2005. This will be the initiation of more regular outside reviews of the ARM infrastructure.

Page 12: COV response to Question 3: "We [the COV] suggest adding a question about relevance to ARM goals for reviewers."

BER Response: Such a question will henceforth be included in program-specific guidance provided in advance to reviewers of proposals submitted in response to solicitations from the ARM program. A similar question will be included in guidance provided to reviewers of proposals submitted to other CCRD programs.

Action: Program-specific guidance to reviewers to assess the relevance of a proposal to the ARM goals will be provided to all future reviewers of proposals submitted to ARM solicitations.

Page 12: COV response to Question 4: "No documentation of the justification for university declines or National Laboratory awards or declines is given.

BER Response: A policy has been implemented requiring documentation of the basis for declining proposals submitted by universities and government labs and for awarding funds to investigators at DOE labs. The documentation justifying the basis for lab awards will be included in the lab project jackets for future COVs to review. The basis for each proposal declination will be retained on file for at least three years for review by COVs. The files for declined proposals will include the declined proposal, the reason for the declination, the merit reviews of the proposal, and a copy of the declination letter sent to the PI on the proposal.

Action: Policy implemented effective June, 2004, requiring all BER programs to document the basis for all declination decisions.

Page 5, Response to Question 6: "Much of the [ARM] program is not reviewed. It is not clear if there are well defined goals that are being met by the research. It is not clear how the program is coordinated with other programs within the CCRD."

BER Response: The COV statement that much of the program is not reviewed is incorrect. All of the ARM science projects are reviewed for scientific and technical merit and relevance. Reviews of the funded ARM science project proposals were available in the university grant jackets and lab project jackets for review by the COV. The ARM infrastructure has been reviewed several times by outsiders, including the Washington Advisory Group and a subcommittee of DOE's Biological and Environmental Research Advisory Committee. Reports of those outside reviews of the ARM program, including the ARM infrastructure were provided to the COV for their review. The COV members who reviewed the ARM program apparently didn't have time or overlooked the reports and hence weren't aware that the ARM infrastructure had been reviewed by experts outside of DOE more than once since the inception of the program. An outside, independent group of experts will review the management of the ARM infrastructure, including the use of allocated funds in February, 2005. This will be the initiation of more regular outside reviews of the ARM infrastructure. Copies of these reviews will be

included in the project jackets for review by future COVs. Research supported by the ARM program is meeting important program goals. However, information to address this question was not provided to the COV and the ARM program manager was not asked to provide the information to the COV because the question is beyond the charge given to the COV. See previous response concerning the coordination of ARM research with other programs within the CCRD.

Action: A review of the ARM infrastructure is scheduled for February, 2005. A CCRD strategic planning retreat is scheduled for January 2005 that will include discussions of opportunities to enhance collaboration between all programs within the CCRD, including the ARM program. Where opportunities exist, collaboration will be effected or enhanced.

B. Questions concerning the selection of reviewers

Page 12, COV response to Question 1: COV commented that three reviewers is adequate for most proposals but not for proposals with large budgets or multi-institutional collaborative proposals.

BER Response: A minimum of three reviews in required for all proposals. Program managers have been encouraged to seek more than three reviews of proposals with large budgets or that involve multidisciplinary research to ensure the reviews capture the full range and diversity of disciplinary research proposed. It will be left to the discretion of program managers to decide on which proposals should be reviewed by more than three experts.

Action: Action completed. See BER response.

Page 12-13: COV comment on question 2: There were some reviewers whose affiliations were not known to the COV.

BER Response: Henceforth, the affiliation of the reviewers of each proposal will be included in the jackets of all funded ARM projects, including university grants and DOE lab projects.

Action: Action completed. Reviewer affiliations will henceforth be identified in the jackets of all funded and declined proposals.

Page 13, COV response to Question 4: "Data [on COI] were not available. CCRD does not have guidelines for COI that are commonly used by granting agencies.

BER Response: Documentation in grant and lab project jackets on conflicts of interest (COI) is limited to the signed COI form by each reviewer. A prospective reviewer identified as having a potential conflict of interest is asked whether he or she would be conflicted as a reviewer of a proposal before sending them any proposal for review. Conflicted reviewers are not assigned to review any proposal on which they have a COI.

All reviewers of a proposal submitted to BER must sign a conflict of interest form, verifying they have no conflict of interest as a reviewer of the proposal. These signed COI forms are maintained in the file of the funded proposals. If a prospective reviewer is conflicted, a different reviewer is asked to review the proposal. No records of actual COIs that are identified are maintained on file. Beginning in July, 2004, all proposal solicitations from the CCRD will require that PIs and collaborators, including subcontractors on a proposal, provide information that will aid program managers in identifying potential conflicts of interest prior to the selection of reviewers. COI guidelines used for all proposal reviews by programs in the CCRD are those specified in the Code of Federal Regulations 10CFR1010.101(a) and 1010.302(a)(1). These guidelines specify that individuals may not review, discuss, and/or make recommendation on an application(s)/proposal(s) in which they have a conflict of interest. In the case of a panel review, the panel member must absent himself or herself from the panel meeting during the review and discussion of the application(s)/proposal(s) in which he/she has a conflict of interest.

Action: Policy implemented in July, 2004, requiring that program-specific solicitations request information from prospective PIs that will enable the program manager to identify reviewers who would be conflicted as a reviewer of the proposal.. No other actions required.

C. **Questions concerning the resulting portfolio of awards under review.**

Page 13, COV response to Question 3: "No conspicuous high-risk proposals were funded among the proposals that were reviewed."

BER Response: BER believes it is appropriate to fund at least some proposals that build on previous work. Science advances in part by building on previous work. However, more effort will be made to solicit and fund proposals that are considered to be high risk and exploratory and not based on building exclusively or largely on previous work.

Action: Program managers in the CCRD have been advised to encourage the submission of high-risk proposals in drafting program-specific solicitations and to give serious attention to funding some proposals that are considered high risk by peer reviewers.

Page 13, COV response to Question 4: "The program and RFPs are focused. Therefore, there are not many multidisciplinary proposals."

BER Response: Although the number of multidisciplinary proposals funded by the ARM program may be relatively small, the program does and will continue to encourage the submission of multidisciplinary proposals. It also encourages and facilitates collaboration between scientists in different disciplines, including some who are not funded by the ARM program. This is done through ARM working groups and the annual ARM science team meeting where investigators within and outside of the program meet

to share results and discuss opportunities and plans for collaboration. These efforts will continue.

Action: No action required.

Page 13, COV response to Question 5: "Most of the proposals build on previous work rather than making a jump or even a transition into a new area of research."

BER Response: For a focused program such as ARM, it is appropriate to not fund at least some proposals that build on previous work. Science advances in part by building on previous work. Also, innovative research is not necessarily mutually exclusive of research that builds on previous work. Nonetheless, more effort will be made to solicit and fund proposals that are more exploratory and not based on building exclusively or largely on previous work. BER does not believe the ARM solicitations encourage or limit the submission of proposals to only those that build on existing or previous research.

Action: In drafting solicitations, the Program Manager has been advised to encourage the submission of high-risk proposals that offer the potential to transition the program-specific research into new areas and to give serious attention to funding some proposals that are considered high risk by peer reviewers.

Page 14, COV response to Question 7: "Data are not available." "Keeping statistics on this issue [investigators not previously funded by the program and investigators proposing for the first time] at the division level would be useful."

BER Response: BER will henceforth compile statistics on the number of newly funded investigators for each program solicitation. This information will be retained on file and provided to future COVs.

Action: See BER Response above.

Page 14, COV response to Question 12: "It is not clear how ARM's mission to develop model parameterization for climate models is related to the U.S. Climate Change Science Program's climate modeling objective that focuses on models at NCAR and GFDL. Neither is it clear how the PM [Program Manager] is assessing the proposals' relevance to ARM's goals. It is not clear if the ARM science team has any input into these decisions. The RFPs are very broad and it is not clear whether the proposals solicited by the RFPs do meet the ARM goals."

BER Response: Improved parameterization schemes developed by the ARM program for climate models are being used in both the NCAR/CCSM and the GFDL models as well as in other climate models developed by modeling centers in Europe such as the Hadley Center Model in the U.K. The ARM program manager, with assistance from the ARM Chief Scientist, does assess relevance of the proposed research to the ARM

program's goals. The ARM science team has no input into proposal funding decisions because of conflicts of interest.

Action: No action required.

D. Management of the program under review

Page 14, COV response to Question 1: "It is not clear how the science team's input is being included in the program management. It also is not clear how gaps in the program are being recognized and addressed.

BER Response: The ARM science team input to program management includes identifying research gaps and needs, assisting in the design and implementation of field campaigns, and identifying opportunities to enhance collaboration with programs and scientists funded by other agencies and programs. Reviews of the ARM program by independent outside advisory bodies, such as BERAC, are also used to identify program gaps and needs. Gaps in the program have generally been addressed by, for example, identifying the gaps as priority research areas, when appropriate in ARM program solicitations and/or by implementing new or modified ARM measurement campaigns to collect the data needed to address such gaps.

Action: No action required.

Page 15, COV response to Question 3: "The COV is not sure what the planning process is. It seems unusual that a very goal-driven program like ARM would have such a broad RFP." "For a program with a budget this size, the amount available for grants is very small, so we expect prioritization to be important but do not know how it is achieved in the selection process."

BER Response: An ARM science program plan has been developed and is being implemented (**http://www.arm.gov/science/**). BER management believes the ARM solicitations (RFPs) are adequately and appropriately focused to meet program goals and objectives. The breadth of RFPs is and will continue to be assessed before they are released to ensure their focus is consistent with the program's goals and priorities and the amount of resources available to support new research. Prioritization in the process of selecting proposals to fund involves consideration of several issues, including the scientific and technical merit of the proposed research, the record of performance of the investigators on the proposal, and the relevance and importance of the proposed research to the near- and long-term goals and priorities of the program.

Action: No action required.

Page 15, COV response to Question 4: "Statistics should be kept on funding new investigators, young investigators, minority investigators, etc. Future COVs need to have more complete and consistent documentation on both accepted and declined proposals. Information on the PM's decision process should be included." "The PM should provide

funded investigators with copies of their reviews so they can benefit from authoritative criticism." "It would be useful to know specifically what is needed to meet the ARM goals listed in the RFP. Is there some document outlining why each topic listed in the RFP request is needed?"

BER Response: Summaries of the outcome of each solicitation will henceforth be compiled and will include statistics on the number of new investigators funded by the program. This information will be retained on file for review by future COVs. BER does not have permission to request, on a voluntary basis, information on the age or ethnicity of investigators who submit a proposal in response to program-specific solicitations. Hence, the information to compile demographic statistics from individuals submitting proposals to the program is not and will not be available. With the new requirements that have been implemented in all BER programs for documenting funding decisions, including declined proposals, future COVs will have more complete and consistent documentation of both accepted and declined proposals. Funded investigators are sent anonymous copies of the merit reviews of their proposals. Selection statements do describe how the proposed research addresses the program goals. An ARM science plan has been developed, describing the kinds of research needed to meet the goals of the ARM program (**http://www.arm.gov/science/**). This program plan is used in part to draft program solicitations for new proposals.

Action: See BER response. No further action required.

Atmospheric Science Program

Program Summary

Page 15, COV comment: "Information on declinations and negotiations/discussions with selected investigators was not available except from the PM. This limited responses to some of the questions on the report template."

BER Response: Information on declinations and discussions concerning a submitted proposal between the PI and the PM will henceforth be included either in the funded project file jackets or declination files that are maintained for all programs for review by future COVs. This will avoid the need for the program manager to be available to provide such information from his or her own files.

Action: Action completed**.** A new policy was implemented in BER in June, 2004, requiring the documentation of all funding actions, including summaries of discussions between the PM and the PI about their proposal. This documentation must be placed in the proposal jacket and will be available for review by future COVs.

Page 16, COV comment: "It was, however, the absence of information and/or documentation of the rationale on declined proposals and a general sparseness of decision documentation (e.g., funding decision rationale, discussions with PIs, funding changes, scope of adjustments) in the jackets for funded proposals that were most problematic. As

a general rule existing documentation was marginal for the purposes of the COV and, to COV members, insufficient for documentation of programmatic decisions. The lack of documentation for declined proposals was perceived to be a major shortfall." "The COV reviewers recommend that the rationale for all funding decisions, especially those involving highly ranked proposals that are not funded, be maintained and contain a thorough rationale for the decision."

BER Response: A policy requiring documentation of the rationale for all declined proposals and has been implemented across all BER programs, in the climate change research programs, such as the Atmospheric Science Program. The policy was implemented, effective June 23, 2004. The basis for declinations will be maintained on file in BER for a period of three years after a proposal is declined. The policy also includes documenting the basis for funding decisions regarding proposals submitted by DOE laboratories. The new policy includes a requirement to document the basis for funding changes in the selection statement prepared for each funded proposal. Program Managers are to document and include in the proposal jacket all discussions and email exchanges with PIs regarding changes in the scope of proposed research, changes in requested funding, and changes in proposed research that are intended to specifically address concerns and criticisms raised by reviewers of the proposal.

Action: New requirements implemented in June, 2004, requiring more or improved documentation of all funding actions, including declinations. See details in BER Response above.

A. **Program Data:**

Page 17, COV response to Question 2: "…limited documentation inhibited an assessment of the effectiveness [of the review process]. Review comments for funded proposals were available but only for non-lab proposals"

BER response: New requirements have been implemented, effective June 23, 2004, to improve documentation of the effectiveness and efficiency of the review and decision making process. Review comments of some lab proposals could have been provided by the PM if requested, but they were unfortunately inadvertently not included in the DOE lab jackets made available to COV members for review. A copy of reviewer comments will henceforth be included in all lab proposal files. All non-lab proposal files contained a copy of the reviews.

Action: Action completed. New requirements implemented in June, 2004, requiring more and improved documentation of all funding actions.

Page 17, COV response to Question 3: "Reviewers should be given guidelines as to how to weigh criteria to determine the numerical score. While the solicitation states that the current criteria are listed in priority order, the lack of specific guidelines does not promote consistency between reviewers in assigning numerical scores. The absence of

specific guidelines extends a similar concern to reviewer's comments and possibly to a frequently observed inconsistence between reviewers' comments and numerical scores."

BER Response: The four evaluation criteria for the merit review are listed in descending order of importance in each solicitation. In assigning a score to a proposal, it is expected that each reviewer will weigh the four criteria accordingly in assigning an overall numerical score. Reviewers will be henceforth be provided program-specific review guidance, reminding them of the need to weigh the four criteria in descending order of importance in assigning their score to a proposal. Reviewers will also be reminded to ensure that the assigned numerical score is consistent with their narrative comments on the proposal.

Action: Action completed. See BER response above.

Page 17, COV response to Question 4: "There is a lack of documentation on how decisions were made for grants to the DOE national laboratory PIs as this was not required in the past." Documentation of non-lab proposals is generally not sufficient" Issues used to determine criteria beyond numerical ranking, such as balance and relevancy, were not documented in any formal sense."

BER Response: New requirements have been implemented in BER, effective June 23, 2004, to ensure that the basis for funding PIs and projects at DOE labs is appropriately documented and that such documentation is filed in jackets for review by future COVs. The new requirements will also ensure that the basis for declinations of both lab and non-lab proposals are also adequately documented and that such documentation is available for review by future COVs for at least a 3-year period following the declination decision.

Action: Action completed. See BER Response above.

Page 17, COV response to Question 6: "Major issues that could contribute to a more effective COV in the future are..." "Maintain lab proposal review documentation" "Maintain summary documentation of review results for all proposals received in response to solicitation" "Maintain declination documentation and reasoning" "Maintain documentation of resolution of scoring disparities in files" "Maintain documentation of efforts to resolve scores and comments within a given proposal when scores do not reflect apparent intent of written comments" "It does not appear that peer review is the only driver used in making funding decisions. Other drivers, however, do not appear to be documented."

BER Response: New requirements have been implemented to improve the documentation of lab proposal reviews. A summary of review results from each program solicitation is now required. The summary will include information on, among other things, the number of proposals submitted, reviewed, declined and funded in response to each solicitation, and the number of investigators funded who are new to (not previously funded by) the program. New requirements have also been implemented in BER requiring enhanced documentation of the basis for each declined proposal.

Documentation of the resolution of scoring disparities will be done either in the Selection Statement for proposals to be funded or in the declination form if there are significant disparities between reviewers' scores. One other driver used in making funding decisions is program policy factors, such as the relevance of the proposed research to the terms of reference in the solicitation and the agency's programmatic needs. The extent to which these factors weigh in the funding decision is documented in either the selection statement or in the declination form. Submitted proposals that are far from being relevant to the terms of reference in a solicitation may be returned without review. Documentation of such decisions is generally only in the transmittal letter to the PI, explaining why the proposal was not reviewed and considered for funding.

Action: Action completed. See BER Response above. No other actions required.

B. <u>Questions concerning the selection of reviewers:</u>

Page 18, COV response to Question 1: "The reviewer pool needs to be broadened. We recommend that the PM work with other people in the SC and other Federal agencies to develop a broader list of possible reviewers." "It is recommended that a science panel be established for each solicitation to confirm appropriate assignment of reviewers." "Three is the absolute minimum reviewers for each proposal. In no case should DOE staff serve as reviewers, nor should awards be made with fewer than three reviews."

BER Response: The pool of reviewers was significantly broadened to review proposals submitted in response to the latest ASP solicitation on aerosol forcing of climate. Efforts will continue to identify and use a broad pool of reviewers for proposals submitted in response to future solicitations from the ASP. The use of panel reviews vs. mail reviews depends on the number of proposals expected in response to a solicitation. One advantage of panel reviews over mail reviews is that a panelist assigned a proposal can benefit from listening to and participating in the discussion of the same proposal by the other panelists assigned the same proposal. This discussion tends to eliminate major differences between panelists in how a proposal is scored and what panelists believe are the major strengths and/or weaknesses of a proposal. The PM is encouraged to use panel reviews whenever they are considered to be the most appropriate merit review mechanism. No proposals are funded without at least three reviews. The PM is and will continue to be strongly encouraged to obtain more than three reviews of multi-disciplinary or multi-institutional proposals that have large budgets. In no case does DOE staff serve as reviewers of research proposals. DOE staff familiar with the subject area, however, can serve as reviewers of proposals for scientific workshops and/or scientific meetings. A Program Manager is not permitted to be a reviewer of any proposal submitted to the program he or she manages.

Action: Action completed. See BER Response above. No other actions required.

Page 18, COV response to Question 3: "Proposals appeared to be preferentially assigned such that most DOE lab proposals were reviewed by non-DOE reviewers and vice versa. This raises questions about the match between reviewer expertise and proposal focus.

BER Response: The intent of all proposal review assignment is and must be to ensure a reasonable fit between the expertise of a reviewer and the focus of a proposal assigned to them for review while avoiding conflicts of interest. Preferential assignment of reviewers such that DOE lab scientists review mostly non-lab proposals and university scientists review mostly lab proposals is appropriate only if and when the expertise available in non-lab institutions or labs is limited because of, for example, conflicts of interest among many members of the potential, qualified reviewer pool. Reviewer assignments will be closely scrutinized to ensure that such preferential assignment of reviewers of proposals submitted to the ASP or to other programs in the CCRD is not being done without a valid and compelling justification.

Action: Reviewer assignments by the program managers will be more closely scrutinized to ensure that the assignments are based on the match between the expertise of the reviewer and the proposed research, and not on the having university proposals reviewed only by DOE lab scientists and visa versa.

Page 18, COV response to Question 4: "No comments in any file reflected identification of conflicts-of-interest or resolution thereof."

BER Response: The COI guidelines used by all BER programs are that individuals may not review, discuss, and/or make recommendation on an application(s)/proposal(s) in which they have a conflict of interest. In the case of a panel review, the panel member must absent himself or herself from the panel meeting during the review and discussion of the application(s)/proposal(s) in which he/she has a conflict of interest. If a potential reviewer of a proposal is identified as having a conflicts of interest on the proposal, it is not assigned to them for review. If a reviewer finds that he or she is conflicted on a proposal that has already been assigned to them for review, they are asked to return the proposal without review. If there is no indication of a possible COI by a reviewer and the reviewer signs the COI form, it is assumed they aren't conflicted and their review can be considered in making the funding decision on the proposal. The signed COI form is included in the jacket of the funded project. For declined proposals, signed COI forms are also retained on file. Thus, conflicts of interest are resolved but are not documented other than in the signed COI forms. Additional information on possible conflicts of interest is now being requested from all investigators of proposals submitted in response to program solicitations. This information will assist program managers in selecting reviewers who do not have a conflict of interest on the proposal.

Action: All program-specific solicitations will henceforth request information from prospective PIs that will help the PM identify potential conflicts of interest in selecting reviewers for the submitted proposal. No other actions required.

C. **Questions concerning the resulting portfolio of awards under review**

Page 19, COV response to Question 3: "For the next COV, the PM should provide summary information on what are considered high-risk projects."

BER response: Such summary information will henceforth be compiled and made available to future COVs.

Action: See BER response above.

Page 19, COV response to Question 4: "The next COV should be given information from the PM about multi-disciplinary proposals. Where appropriate, solicitations should encourage multi-disciplinary collaboration to address large-scale problems.

BER response: Future COVs will be provided such information. The ASP, as do other Climate Change Research programs in BER, strongly encourages multi-disciplinary proposals when funding such proposals is considered useful if not essential to meeting the mission, goals, and objectives of the program. Annual science team meetings are held, in part, to foster and facilitate collaboration among investigators who were funded separately, rather than as part of a joint collaborative, multi-disciplinary project funded through a single proposal.

Action: See BER response above. No other actions required.

Page 19, COV response to Question 6: "It is apparent that there is a difference between how laboratory and non-laboratory proposals were treated"

BER response: Laboratory and non-lab proposals are, in fact, treated the same in terms of the review and the decision-making process for funding. A new policy has been implemented in BER, requiring more complete documentation of the basis for funding lab proposals. The required documentation of the basis for funding decisions is now the same for lab and university proposals. This should help eliminate the perception that lab and non-lab proposals are treated differently.

Action: See BER response. No other actions required.

Page 19, COV response to Question 7: "This also is unknown because there is no documentation on young/new investigators."

BER response: A summary of the outcome of each solicitation will be prepared and made available to future COVs. The summary will include statistics on the number of awards to new investigators who were not previously funded by the program.

Action: See BER response above.

Page 20, COV response to Question 8: "Not apparent. No awards were noted to regions of low Federal funding."

BER response: BER attempts to funds the best proposals with respect to their scientific and technical merit, and relevance to both the terms of reference in the solicitation and

the program's goals, priorities, and needs. Geographic balance of submitted proposals does not enter into the funding decisions.

Action: No action required.

Page 20, COV response to Question 12: "Due to redirection of the program, the PM requires broader community input. We recommend a scientific advisory board to assist a new chief scientist. The PM needs to consult with this board in selection of reviewers and establishment of balance across the program relative to laboratory versus non-laboratory funding, risk, evolving scientific opportunities, and other balance issues."

BER Response: The PM routinely consults with a broad segment of the research community to identify potential reviewers and to identify scientific opportunities and needs as the reconfigured program is implemented, evolves and progresses. This is done, in part at the annual ASP science team meeting. BERAC already exist to provide advice to CCRD programs, including the Atmospheric Science Program.

Action: See BER response above. No other actions required.

Page 20, COV response to Question 12: "Complete documentation concerning award decisions needs to be available. Requirements for continuity of PI participation should be documented as part of the proposal selection process. Consideration of balance and duplication need to be applied in a consistent manner.

BER response: See previous BER responses about the new requirements for documenting the basis for funding decisions. Continuity of PI participation is documented and is based on satisfactory progress and continued relevance of the investigators' research to the program, rather on the need for continued participation of a specific PI in the program. Progress and relevance of the research must be documented in annual progress reports for the first and second year of a 3-year funded project. Requirement or need for continuity of PI participation is based on scientific merits of ongoing or newly proposed research and demonstrated productivity of the PI. A renewal proposal is requested and recommended for funding only if it is considered scientifically meritorious and if the PI record of productivity on his or her previously funded research project is considered adequate and meritorious.

Action: See BER response above. No other action required.

Page 20, COV response to Question 12: "With the new CCSP document, it is important to assure that the portfolio decisions are clearly connected to the overall mission of the division and the objectives of the CCSP."

BER Response: The ASP has been reconfigured to assure that it is relevant and connected to the mission of the CCRD and the objectives in the CCSP strategic plan. Evaluation of the relevance of the newly proposed research to both the mission of the Division and the objectives of the CCSP is part of the funding decision process.

Action: No action required.

Page 20-21, COV response to Question 12: "There is no documented philosophy about the differences expected between laboratory roles and the roles filled by non-lab research efforts. The absence of a documented philosophy leaves the impression that the division apparently used an *ad hoc* process."

BER response: Although there is no documented philosophy *per se* about the role of labs vs. non-labs in the portfolio of research supported by the CCRD, labs are strongly encouraged to propose research they are uniquely suited to do because of their unique facilities and capabilities. Labs with core capabilities for research relevant to the ASP, for example, are encouraged to propose research that is both relevant to the goals and priorities of the program and will effectively exploits those core capabilities required for the research.

Action: A report is currently being developed on the current and future role of the Office of Science labs in furthering the programmatic mission of DOE. Any definition of differences between the role of DOE labs and universities in research sponsored by BER's climate change research programs, including the Atmospheric Science Program is pending and contingent on the content of that report.

Page 21, COV response to Question 12: "Improvement of the application process is necessary not only to minimize duplication and expenditure of effort on the part of the proposers, but also to assure that pre-applications are not used to preempt the peer review process."

BER response: Reasonable efforts are made to minimize the chance of unnecessary duplication and expenditures of efforts on the part of proposers, including the use of pre-applications. Pre-applications are not used to preempt the peer review process. Instead, they are used to identify the research a prospective applicant would propose and encourage the submission of proposals with ideas that are relevant to a solicitation. They are also used to discourage the submission of proposals that are not relevant to the terms of reference in the solicitation. Pre-applications, however, are not required, and prospective applicants can submit a proposal even if they are discouraged from doing so, based on the review of their pre-application by the PM. Submitted proposals that are considered non-relevant by the PM can be returned without being reviewed for scientific merit. If the PM is uncertain about the relevance of a proposal, he or she can subject them to the merit review and ask the reviewers to comment on the value and relevance of the proposed research to the goals and objectives of the program.

Action: No action required.

D. <u>Management of the program under review.</u>

Page 21, COV response to Question 1: "Organization management requirements for documentation need to be improved."

BER Response: BER management has implemented policies to improve documentation of funding actions in all CCRD programs, including the ASP.

Action: See BER response above.

Page 22, COV response to Question 4: "With rapidly evolving and emerging technologies and capabilities, DOE management needs to address actively the requirement for the PM to be able to keep up with changes. We recommend that the PM be offered periodically the opportunity to attend germane meetings and conferences and perhaps spend an extended period of time in a scientific institution. We perceive that current practices do not allow this to occur easily"

BER Response: BER management recognizes the need for all PMs to attend meetings and conferences that are germane to their program management responsibilities and allow them to remain abreast of the changing science in topical areas and disciplines relevant to the program(s) they manage. Congressional reductions in appropriated funds for program direction, which includes funds for official travel by PMs, has, however, reduced the opportunity for PMs to attend some meetings and conferences that are germane.

Action: No action required. If more funds for travel become available, the PM will have flexibility to attend more meetings and conferences that are germane to the Atmospheric Science Program.

Climate Change Prediction Program

Program Summary:

Page 23, COV comments in Program Summary: "We were disappointed to learn that the PM was not required to write justification for declined University proposals. We also were surprised to see that proposals submitted from National Laboratories were not required to be as well developed as ones from Universities and that the jackets for these proposals included little justification even for proposals selected for funding.

BER response: Documentation of the basis for declining each Lab and university proposal is now required, based on requirements implement in July, 2004. Proposals submitted by DOE labs must be as well developed as those from universities. Documentation of the basis for funding each lab proposal is also now required and is identical to that for funding decisions of university grants.

Action: See BER response above. No other actions required.

Program Data

A. Questions about quality and effectiveness of the program's use of merit review procedures.

Page 23, COV response to question 1: "For large multi-disciplinary proposals, we recommend using more than 3 reviewers."

BER Response: CCRD programs have the discretion of using more than 3 reviewers for all large, multi-disciplinary proposals. Use of more than 3 reviewers for such proposals is and will continue to be strongly encouraged by BER management.

Action: No action required.

Page 23, COV response to Question 3: "Nevertheless, focused guidance to reviewers should be emphasized, especially when younger reviewers are used.

BER Response: BER concurs on the need to provide reviewers with guidance on what is expected of them. Henceforth, reviewers will be provided with such guidance. Planning is underway to develop guidelines on program-specific review guidance for reviewers of proposals submitted to all Climate Change Research programs in BER..

Action: See BER response above. Nor further action required.

Page 23-24, COV response to Question 4: "Yes for awards made, but no for declinations. For declinations, we suggest (1) justification statements in jackets should be as well developed as those for awards and (2) more explicit letters need to be sent to PIs indicating the reason(s) for declination (e.g., lack of funds, off-target, poor science, etc)."

BER Response: Documentation of the basis for all declination decisions is now required. This documentation will be accessible for future COVs to review. Also, more explicit declination letters stating why the proposal was declined are now required.

Action: See BER response above.

B. Questions concerning the selection of reviewers:

Page 24, COV response to Question 5: "We encourage the development of a strategy to enlarge the reviewer pool through selective addition of younger reviewers."

BER Response: BER agrees with this suggestion to enlarge the pool of reviewers by selectively adding younger reviewers to the pool. Program managers have been reminded of the need to expand the pool of reviewers, including the addition of younger reviewers to the pool for each program.

Action: See BER response above. No further action required.

C. **Questions concerning the resulting portfolio of awards under review:**

Page 25, COV response to Question 7: "Such information [on new investigators] should be retained by the PM for future COVs."

BER Response: Summaries of the outcome of each program solicitation, including new investigators who were funded from the solicitation, will be compiled and made available to future COVs.

Action: See BER response above. No other actions required.

Page 25, COV response to Question 12: There is a need for increased emphasis on regional-scale modeling. This area (a) has many scientific challenges and (b) provides the link with impacts work that will become increasingly important. DOE has an important opportunity to be a leader in this area.

BER Response: BER is supporting some work to improve climate modeling at regional scales. It is anticipated that as improvements in climate models continue, DOE will increase its emphasis on high resolution regional-scale modeling of climate.

Action: No action required.

D. Management of the Program under Review:

COV response to Question 2: "We strongly encourage the transformation of the present "niche-type" climate program into a more proactive program that reflects the DOE mission from the energy-climate perspective. Such a program would be at the forefront of developing national climate initiatives (e.g., CCSP). We also urge that the program seek access to the highest power DOE computational facilities.

BER Response: BER management does not believe the CCPP is only a "niche-type" climate program. It is relevant to the energy-climate perspectives by providing, for example, climate scenarios needed to address questions concerning future potential responses of the global climate system to different energy-related emission scenarios. The program has access to some of the highest power computational facilities at DOE labs, such as NERSC/LBNL, ORNL, LLNL, LANL, and PNNL.

Action: No action required.

Page 26, COV response to Question 4: "an important management aspect requiring improvement is the maintenance of the proposal jackets. These will need to be better organized and made more complete."

BER Response: See previous BER response to comments on the need to improve the documentation of both declined proposals and awards, especially awards to investigators at DOE labs.

Action: Actions have been implemented to make the proposal jackets complete. No other actions required.

Ecosystem Program

Program Data

A. <u>Questions about the quality and the effectiveness of the program's use of merit review procedures.</u>

Page 27, COV Response to Question 4: Selection memo to DOE management only exist for university and other government agency PI's. They do not exist for National Lab proposals. Award letters to PI's are *pro forma*. Selection memos generally have some sort of record of a phone conservation between the PM and the PI, although is this is variable. There is no documentation of a letter or email from the PM to the PI requesting responses to reviews."

BER Response: Selection statements in a memo form comparable to those written to fund university grants and to fund interagency agreements at other government labs are now required for funding projects at DOE labs. When reviewers of a proposal to be funded have written comments requiring a response by the PI, written responses will be required and filed in the jacket of the funded proposal, along with the other required material, including the proposal, the merit reviews, the selection statement, documentation of discussions between the PM and the PI about changes in the scope and/or budget of the proposed research, and the award letter.

Action: See BER response above. No further action required.

Page 28, COV response to Question 6: "There is systematic and disturbing difference between the documentation of the review process for National Lab proposals and outside proposals. Documentation for the former is lack important documentation."

BER Response: The review process for DOE lab and non-lab proposals is the same. Both are subject to merit review by a panel or experts or by mail reviewers using the same criteria. A difference in documentation of the basis for funding decisions of lab and non-lab proposals was different when the COV met and reviewed some of the jackets of proposals funded by this program. Documentation of the basis for funding decisions, including awards and declinations, however, is now the same for proposals from both kinds of institutions.

Action: See BER response above. No further action required.

B. <u>Questions concerning the selection of reviewers</u>

Page 28, COV response to Question 4: "There was no documentation of what constitutes a significant potential conflict [of interest] in DOE's determination, nor an indication that there is a common procedure for how reviewers have to address it."
BER Response: Potentially disqualifying conflicts of interest in selecting reviewers of proposals are that:

A reviewer cannot review a proposal if:

- the reviewer, the reviewer's spouse, minor child, or business partner;
- the organization where the reviewer is employed, has an arrangement for future employment or is negotiating for employment; or
- the organization where the reviewer is an officer, director, trustee, or partner

has a financial interest in the outcome of the proposal.

A potential reviewer also may be barred from reviewing a proposal if it involves individuals with whom he/she has a personal relationship, such as a close relative, current or former collaborator, or former thesis student/advisor. Such potentially disqualifying connections include:

- a reviewer's recent former employer;
- an organization in which the reviewer is an active participant;
- an institution at which the reviewer is currently enrolled as a student , or at which he/she serves as a visiting committee member; or
- an entity with which the reviewer has or seeks some other business or financial relationship (including recent receipt of an honorarium).

Individuals who are provided a proposal for review are asked to sign the conflict of interest statement and return it along with the proposal and their review after completing the review, or return the proposal without review if they are found to be conflicted after the proposal is provided to them for review.

Page 28, COV response to Question 5: "We are somewhat concerned that women scientists are under-represented both as reviewers and funded investigators."

BER Response: Women scientists are not under-represented in the program. As a percentage of the total number of scientists funded by the Ecosystem Program, the percentage of women is the same as that in the Ecological Society of American, the major professional society for ecological researchers in the U.S. To ensure that women are not under-represented as reviewers by the program, more effort will be made by the PM to select women as project and proposal reviewers.

C. Questions concerning the resulting portfolio of awards under review:

Page 29, COV response to Question 7: "Information of this type [on investigators seeking DOE support for the first time] should be retained by the PM and made available specifically to COVs in the future."

BER Response: Such information will be compiled in a summary of the outcome of each program solicitation. These summaries will be filed in BER and be available for review by future COVs.

Action: See BER response above.

D. Management of the program under review

Page 30, COV response to Question 1: "Documentation for National Lab proposals was significantly less so and often lacking key documents. This lack of documentation is especially true for proposal declinations."

BER Response: A new policy has been implemented by BER, requiring more documentation of the basis of funding lab proposals. The required documentation is the same as that required for funding non-lab proposals. The new policy also requires documentation of the basis for each proposal declination.

Action: See BER response above. No further action required.

Page 30, COV response to Question 4: "Three issues are important here that need to be raised in addition to those identified above. One is the lack of documentation of overall program balance and responses to solicitations. Evidently, no summary data on numbers of proposals, requested funds, number of proposals funded and declined, gender balance, etc. are either asked for or kept."

"The second is the difference between the described breadth of the program and the actual breadth. "In fact, the funded program focuses almost completely on major ecosystem manipulations and supporting studies. It is not entirely a closed shop, but the opportunities for breaking into this system are relatively few and inexperienced investigators would not be able to recognize them."

BER Response: Regarding summary data on the outcome of proposal solicitations, the COV was provided information on the number of proposals submitted in response to the latest solicitation from the Ecosystem Program and the number of proposals funded and declined. Summary statistics on the outcome of each solicitation, such as the number of proposals submitted, funded, and declined and the total amount of funded requested and awarded, will be compiled and made available to future COVs. BER is not permitted to request information on the gender of individuals who submit proposals to DOE. Hence, statistics on gender balance can only be compiled if the PM happens to know the individuals who submit proposals.

With respect to the described and actual breadth of the program and its current focus on major experimental studies, DOE has been willing to provide sustained support of major field experiments that are essential to understand the response of terrestrial ecosystems to climatic and atmospheric changes, despite their higher costs for implementation and operation compared to most kinds of experimental studies of ecological responses to environmental changes. This has necessarily limited the amount of funding available in this program to support other experimental, modeling, and observational research. The breadth of the program as defined on the BER web site will be assessed, and if appropriate, will be revised to ensure it is consistent with current near-term future focus of the program. BER believes the program provides opportunities for new, young investigators to be funded by the program" and has evidence to demonstrate that the program remains open to funding new investigators.

Action: See BER response above. No further actions required.

Integrated Assessment Program

Program Summary

Page 31, COV comment: "The COV identified opportunities to further enhance the IA Program and increase its already excellent performance. Particular suggested areas for future improvement include: (1) strengthening linkages to the new *Strategic Plan* for the federal CCSP, (2) being explicit about any programmatic choices that have been made to focus on the two major modeling groups at Battelle/PNNL and MIT, (3) improving the process for selecting peer reviewers for grant proposals, and (4) ensuring consistency and effectiveness of the review process and procedures."

BER Response: Linkages between the Integrated Assessment Program and the goals and priorities in the CCSP Strategic Plan are being articulated and strengthened. The fact that the major integrated assessment modeling groups at PNNL and MIT have been the recipient of funding from the program is a result of the competitive review process. Other groups have the opportunity to compete for funding but have either chosen not to submit proposals or have not been successful in the competition for funding. The pool of reviewers for proposals submitted to the program is being expanded. The PM will ensure that reviewers are selected who are most qualified to review a proposal submitted to the program. Procedures have been implemented to address COV concerns about some inconsistencies in the review process and procedures and to ensure they are effective.

Action: See BER response above.

Program Data

A. Questions about the quality and effectiveness of the program's use of merit review procedures.

Page 31, COV response to Question 1: "There is incomplete documentation in the jackets of annual progress reviews."

BER response: If a Program Manager recommends continued funding for a project in its second or third year of a three-year period of performance, it is an acknowledgement by the PM that the annual progress report of the grant or lab project has been reviewed and found to be satisfactory. A signed statement by the PM on the continuation procurement request that progress has been found to be satisfactory is required. If progress is not satisfactory, continuation funding is either not provided or is reduced or delayed unless and until satisfactory progress is demonstrated.

Action: See BER response above.

Page 31, COV response to Question 2: "The process by which comments from reviewers were dealt with was inconsistent and sometimes inadequate."

BER response: Managers of all programs in the CCRD have been advised to request a PI to respond to questions and concerns raised by reviewers of their proposals and to ensure that each response is assessed by someone who is technically qualified to do so, preferably the reviewer who provided the comment to which the PI has responded.

Action: See BER response above.

Page 32, COV response to Question 2 "When significantly negative reviews are received and the size of the review panel is small, the PM should be required to solicit additional reviews and ask the new reviewers to focus on the specific issues of concern raised in the negative reviews."

BER Response: When all reviews are significantly negative, additional reviews would probably not be needed to justify declining the proposal. In cases where the reviews are mixed with some being significantly negative while others are positive, additional reviews are necessary and obtained before a funding decision is made.

Action: See BER response above.

Page 32, COV response to Question 3 "Reviewers should be provided copies of the CCSP's *Strategic Plan*, summaries of the Integrated Assessment Program's responsibilities as articulated in the *Plan*, and guidelines for evaluating grant proposals in the context of those responsibilities."

BER Response: Reviewers will be provided with additional guidance on evaluating grant proposals submitted to the program. This guidance will include references to the role of the program in the CCSP and its *Strategic Plan*. Providing a hard copy of the *Plan* to every reviewer is not practical. However, the web site where the *Plan* can be accessed for reading will be included in the guidance.

Action: See BER response above.

Page 32, COV response to Question 3 – "The Program should do a better job of insisting that proposals better articulate: (1) the specific incremental improvements in scientific understanding or model development that will be made by their research and (2) how these specific improvements will enhance the ability of the Program to meet DOE's mission and national needs as articulated in the CCSP *Strategic Plan*."

BER Response: BER concurs on the need for proposals to articulate what specific incremental improvements would likely come from the proposed research and how they would enhance the Program's ability to meet DOE's mission and national needs. The need for such articulation will be included in future proposal solicitations.

Action: See BER response above.

Page 33, COV response to Question 4: "For the purpose of future COVs, the program should ensure: (1) that all jackets are required to contain the same set of information, and (2) that jackets are complete, e.g., all reviews contain numeric scores as well as responses from reviewers."

BER Response: Policies have been changed to ensure that all jackets have the same set of information and that all jackets are complete. Some reviewers choose not to provide numeric scores of a proposal so it isn't possible to ensure that all reviews have such scores. Reviewer comments on a proposal, however, must be provided. Otherwise, the review is not used in making a funding decision.

Action: See BER response above.

Page 33, COV response to Question 6 – "The PM should more carefully scrutinize appropriateness of budgets prior to award."

BER Response: Proposal budgets are scrutinized by the PM to evaluate their appropriateness. In cases where a modified budget is requested, the basis for the request will be documented and included in the jacket of the proposal.

Action: See BER response above.

B. **<u>Questions concerning the selection of reviewers</u>**

Page 33, COV response to Question 1 – "Looking across all awards, the pool of reviewers was too small. The size o f the pool of reviewers actually used should be increased. Also, new "young talent" needs to be brought into the pool."

BER Response: The pool of reviewers for proposals submitted to this program is being increased, including a number of younger reviewers who are relatively new to the areas of research funded by the program.

Action: See BER response above.

Pages 33-34, COV response to Question 2 – "…review panels usually were too small and members drawn from the same limited number of disciplines (e.g., economics, public policy, energy modeling). More reviews should be solicited for each proposal and a wider range of disciplines reflected."

BER Response: BER concurs with the need for the reviewers assigned to review a proposal to have the range of disciplinary expertise that is reflected in the proposed research. The pool of reviewers for this program is being expanded to ensure that proposals are reviewed by individuals who have the range of expertise required.

Action: See BER response above.

Page 34, COV response to Question 4 – "The pool of reviewers actually used on panels should be enlarged to include proponents of alternative modeling approaches."

BER Response: The pool of reviewers is being expanded to ensure that all proposals are reviewed by qualified experts, including those who may be proponents of modeling or other approaches that are different from those proposed in the applications being reviewed.

Action: See BER response above.

C, Questions concerning the resulting portfolio of awards under review.

Page 34, COV response to Question 3 – "Not appropriate. Greater investment in high-risk proposals might enable the Program to better explore alternative modeling approaches that would help it better meet some of the nation's "decision-support" needs."

BER Response: Other programs in the CCRD support research on some alternative modeling approaches that should be useful for integrated assessment modeling in the future. Investing in some high risk proposals will be done as long as it doesn't come at the expense of research that is intended to advance and improve IA models that are still considered useful and reflect the state-of-the-science.

Action: See BER response above.

Page 35, COV response to Question 5 – "It does not have an appropriate balance. Although many innovative proposals were received, most were declined."

BER Response: The appropriate balance between innovative proposals vs. proposals that largely build on previously funded work is unclear. The COV response to Question 7 raises the possibility of a need for the Program to evaluate whether focusing the

available resources on the ongoing development of two major integrated assessment models (at PNNL and MIT) is limiting the amount of investment in alternative modeling approaches and thereby limiting and preventing the program from meeting the nation's decision support needs. BER will consider undertaking a separate review of the value of continuing the programs investment in only those two IA modeling groups and value of supporting other groups and approaches.

Action: See BER response above.

Page 36, COV Response to Question 12 – "The Program should explore opportunities to link its activities, which fall under the purview of the Climate Change Science Program, with the activities of the Climate Change Technology Program (CCTI). For example, the scenario development activities being undertaken by Battelle/PNNL could be better informed by, and leveraged with, DOE programs engaged in CCTP."

BER Response: In fact, the CCSP activities in emission scenario development are closely linked to CCTP efforts. Many of the same individuals are working on both.

Action: No new action required. BER will continue its efforts to link the research supported by the Integrated Assessment program with activities in the Climate Change Technology Program.

D. Management of the program under review.

Page 36, COV response to Question 1 – "BER and the CCRD do not have a strategic plan. We recommend that such plans be developed."

BER Response: The CCRD is currently in the process of developing a 5-year strategic plan.

Action: See BER response above.

Page 37, COV responses to Question 3 – "It remains unclear what the strategic goal of the program is: (1) fundamental advances in the field of integrated assessment; (2) exploratory modeling improvements and methodological developments (e.g., uncertainty analysis) for their own sake, or (3) modeling improvements in areas where scientific and policy interests are most keen. The goals need to be clarified."

"Recognizing that the Program is part of the larger U.S. CCSP, it is recommended that the Division ensure that there has been consultation with other federal agencies in the development of RFAs."

"The program should establish a formal ongoing mechanism for interacting with relevant scientific communities (e.g., the climate impacts research community) and user

communities (e.g., national policymakers and decision makers), to guarantee that its investments and priorities are properly focused."

"The program should consider developing RFAs that encourage "human dimensions" research that would foster significant advances ("breakthroughs") in integrated assessment modeling."

BER Response: BER concurs on the need to clarify the goals of the IA program. This will be done as part of the development of a Strategic Plan for the programs in BER's Climate Change Research Division.

The Program Manager has generally shared draft RFAs with the other CCSP agencies that support integrated assessment research and has requested their comments on the RFA. Every effort will be taken to ensure this practice is continued.

The program interacts with some scientific communities (e.g., the energy modeling community). More effort will be taken to interact with other scientific and user communities that should have an interest in and could both benefit from the research funded by this program and provide insights as to the kinds of information and assessment methods the IA program could provide to help meet their needs.

BER will review the scope of RFAs from the program to ensure they encourage the submission of proposals for research that can provide significant advances in integrated assessment modeling.

Action: See BER response above.

Ocean Carbon Cycle and Ocean Carbon Sequestration Research

Summaries

Page 37, COV comment – "The COV finds that although the technical aspects of proposal processing of the awards made under the "ocean carbon cycle" program were correct, the subject matter covered show evidence of being static and not now closely related to important science themes."

BER Response: Understanding the linkages between carbon and nitrogen cycling in the ocean is an important theme for ocean carbon cycle research given that fixation of carbon dioxide in most areas of the ocean is nutrient limited, with nitrogen being one of the most important limiting nutrients. BER is in the process of changing the focus of the Ocean Carbon Cycle program to focus on research to understand the potential ecological consequences of the uptake of excess CO_2 from the atmosphere by the ocean.

Action: See BER response above.

Page 38, COV comment: "The program has now sunk below critical mass. It needs refocusing and refunding. The program should take on the important task of defining impacts or benefits of the extraordinary rise in ocean fossil fuel CO_2 levels now occurring in the surface layers of the ocean that bathe our continental shelves. In this way the program would be returning to its roots with the fossil fuel artifact of mankind replacing the nuclear artifacts as the object of study."

BER Response: BER is changing the focus of the program to address the issue of the ecological impacts and benefits of increasing CO_2 levels in the surface layers of the ocean. A change in the programs focus could occur in FY 2007. This would allow time for the Principal Investigators of grants and lab projects currently funded by the program to complete the research that has already been funded and to analyze and publish the results.

Action: See BER response above.

A. <u>Program Data</u>

Page 39, COV response to Question 1: "The COV recommends maintaining all records of the declined proposals for the COV review process."

BER Response: Records of declined proposals will be maintained for at least a three year period following a declination. These records will be available for future COVs to review. DOE is not required to maintain records of declinations for longer than a 3-year period.

Action: See BER response above.

Page 39, COV response to Question 3: "We recommend that the PMs provide future COVs with a summary input on program priorities, major research accomplishments, and future research directions in support of DOE's contribution to the CCSP *Strategic Plan.*"

BER Response: Future COVs will be provided with a summary of the program's priorities and major accomplishments. BER's Ocean Carbon Sequestration Research Program was not planned and implemented to support the CCSP *Strategic Plan* and is not reported as part of the CCSP budget. It is reported instead as part of the interagency Climate Change Technology Program (CCTP). Future COVs will be provided a summary on how ongoing and planned directions of the BER ocean sequestration research will support DOE's contribution to the CCTP.

Action: See BER response above.

Page 39, COV response to Question 4: "While the reviewer's comments were available for each of the proposals, the selection statement was not available to the COV with

respect to proposals from the National Laboratories. A uniform review policy should be established for all of the proposals."

BER Response: A uniform policy has been established by BER to ensure that selection statements for both university grants and lab projects are included in jackets and available for future COVs to review.

Action: See BER response above.

Page 39, COV response to Question 6 – "PMs should maintain all records of declined proposals for the COV review process."

BER Response: Records of declinations, including the basis for each declination will be maintained for a least a 3-year period for review by future COVs. DOE is not required to retain records of declinations for more than three years.

Action: See BER response above.

B. Questions concerning the selection of reviewers:

Page 40, COV response to Question – "The COV recommends that the PM work toward increasing the number of reviews." "The COV recommends a separation of mail and panel reviewers."

BER Response: At least three reviews are required for every proposal. In cases of large, multidisciplinary proposals and proposals with large budgets, more than 3 reviews are and will continue to be strongly encouraged. The PM will have the discretion of deciding on how many more to request in excess of the required minimum of three. In most cases, mail and panel reviews are completely separate. In some panel reviews, one or more mail reviews of a proposal may be obtained if the panel members assigned to review a proposal lack the expertise to assess the merits of some aspects of the proposal.

Action: See BER response above.

Page 40, COV response to Question 4 – "The COV recommends a separation of mail and panel reviewers."

BER Response: See previous response to the COV comment on the recommendation to separate mail and panel reviews.

Action: See BER response above. No action required.

C. Questions concerning the resulting portfolio of awards under review.

Page 41, COV response to Question 3 – " The Carbon Program should consider an investment in new and innovative attacks on this problem…"

BER Response: The COV comment doesn't distinguish between which of the two BER Carbon Program's it is referring to regarding the suggesting to consider "…an investment in new and innovative attacks on this problem." BER believes that solicitations from both the ocean carbon cycle program and the ocean carbon sequestration program encourage the submission of proposals with new, innovative ideas. Nonetheless, additional efforts will be made to encourage the submission of proposals with new, innovative ideas relevant to the changing foci of the ocean carbon cycle program and the ocean carbon sequestration research program.

Action: See BER response above.

Page 41, COV response to Question 4: "For the Carbon Cycle Program, the COV did not find evidence for significant multidisciplinary proposals. For the Carbon Sequestration Program, the COV finds evidence for promise in this area that could be further developed."

BER Response: Collaborative, multidisciplinary research is funded by both programs and is strongly encouraged. It is being done primarily be encouraging and facilitating collaboration by investigators who are funded separately. Thus, multidisciplinary research can be and is being done in the programs even though it isn't all funded through single large multidisciplinary proposals.

Action: See BER response.

Terrestrial Carbon Processes and Terrestrial Carbon Sequestration Programs

Summary

No COV comments that warrant a response by BER

Program Data

A. Questions about the quality and effectiveness of the program's use of merit review procedures

Page 44, COV response to Question 4 – "The documentation of recent National Lab proposals follows the same procedures as for University proposals but the earlier laboratory proposals that were examined were insufficiently documented."

BER Response: BER now requires the same documentation for both university and National Lab proposals. This requirement applies to both awards and declinations.

Action: See BER response above.

Page 44, COV response to Question 6 – "Better documentation of reasons for declining proposals would be useful. Merit reviews supported award decisions, but a specific statement of reasons from the PM would assist assessment of the review process."

BER Response: More documentation of the basis for declination decisions is now required in all BER programs, including those in the CCRD. More documentation for award decisions, especially for lab awards, is also now required for all programs. The selection statement prepared by the PM for each award must justify why the proposal is recommended for funding. This includes a discussion of the merit reviews of the proposal that were solicited from at least three qualified experts outside of DOE.

Action: See BER response above.

B. Questions concerning the selection of reviewers

No COV comments that warrant a BER response

C. <u>Questions concerning the resulting portfolio of awards under review.</u>

Page 47, COV comment to Question 12 – "Documentation of proposals and reviews for National Laboratory research was not of the same quality as documentation for other proposals." "Documentation of technical reviews and follow-up to reviews of National Laboratory research should be improved."

"The Strategic Plan of the Climate Change Science Program emphasizes the need for coordination with the Climate Change Technology Program (CCTP). The need for better integration of science and technology is particularly evident in the area of carbon sequestration. The DOE has unique opportunities to lead in this important area of national need, but the lack of integration across bureaucratic boundaries within the DOE is conspicuous."

BER Response: New requirements have been implemented in BER to ensure that the documentation for awards to National Labs is the same as that for awards to other institutions. The same also applies to declinations. PMs will be required to document retrospective technical reviews of DOE lab research and any follow-up actions resulting from such reviews. Such documentation will be included in the jackets of the lab projects.

BER's carbon sequestration research is being integrated and coordination, where appropriate, with other offices in DOE and with other agencies. In general, the terrestrial carbon sequestration research in BER is focusing on questions and issues that are distinctly different from the other offices in DOE, such as BES and the Office of Fossil Energy. The focus of most of BES' carbon sequestration research is on geologic sequestration, whereas BER is focusing on biological sequestration. Fossil Energy supports field demonstration projects where BER supports basic research that could lead

to the development of new technologies or strategies for enhancing the biological sequestration of carbon in terrestrial systems.

Action: See BER response above.

D. **Management of the program under review.**

No COV comments that warrant a BER response.

Cross-cutting Issues Raised by the COV

Documentation

Page 49, COV comment – "A program summary should be provided containing a short description of the program including goals, budgets, activities supported, and a few examples of outcomes, including some from grants regard as high-risk." "A table for each program, listing all proposals with their PI, title, amount requested, duration, institution, reviewers' scores, decision, award amount, and whether a new or renewal proposal is essential." Summary program statistics are needed on the number of proposals received since the last COV; the number of awards, declines, and withdrawals by university, DOE laboratory, or others; and statistics on diversity (gender, age, geographic location, type of institution, and new investigator)."

BER Response: Summaries of each program containing the information suggested will be available to future COVs. Tables of the list of proposals funded by each program, including the PI, the institution, the amount of funding provided, and whether a funded proposal was new or a renewal, were provided to the COV. Summary statistics containing some of the suggested information will be compiled, maintained in a file in BER and made available to future COVs. DOE is not permitted to request information need to compile some of the statistics on diversity suggested by the COV. This includes information on gender and age of individuals who submit proposals to DOE.

Action: See BER response above.

Page 49, COV comment – "Individual file documentation should contain the following information:

- PM's justification for decision (acceptance, decline, withdrawals, etc)
- A record of all communications (summaries of phone conversations and copies of all significant e-mails and correspondence between the PM and PIs or reviewers;
- A note on how disparate scores from a minimum number of reviewers was resolved,
- A timeline for processing proposal and contacts with PM,
- Indication of whether PI is a new investigator, young investigators, member of an underrepresented group, etc.

- An example of a request for review,
- Copies of all the reviews including reviewers' affiliation,
- Notification of decision, and
- Consistent documentation both for university and national laboratory files

Appropriate documentation for the user facility aspects also must be kept."

BER Response: Policies have been put in place in BER to ensure that documentation in the file jackets will include all of the above except whether the PI is a member of an underrepresented group. DOE is presently not permitted to request that PIs provide such information on even a voluntary basis.

Action: See BER response above.

Integration of climate and CO_2 programs into the CCSP

No COV comments that warrant a BER response

Quality and effectiveness of merit review procedures

Page 52, COV comment – "PMs need to ensure that when a grantee responds to significant reviewer questions or concerns, there is thorough documentation showing that the PM appropriately dealt with all of the responses and, in some cases, send the responses back to the reviewers for further evaluation."

"We strongly recommend that reviewers be provided copies of the CCSP's Strategic Plan or, at least, a summary of the Program's responsibilities as articulated in the Plan, where applicable, and guidelines for evaluating grant proposals in the context of those responsibilities."

Programs could do a better job of insisting that proposals better articulate: (1) the specific incremental improvements in scientific understanding or model development that will be made by their research, and (2) how these specific improvements will enhance the ability of the Program to meet DOE's mission and national needs as articulated in the CCSP Strategic Plan."

BER response: Documentation of how the PM dealt with significant reviewer questions or concerns is generally in the discussion of the merit reviews of a proposal section of the Selection Statement written by the PM. A copy of the PIs responses to a reviewer's questions or concerns is included in the jacket of the funded proposal. In cases where the PI's responses are sent to the reviewer for his or her further evaluation, that evaluation will be included in the jacket and discussed in the selection statement.

It is not practical to provide each reviewer with a hard copy of the CCSP Strategic Plan. However, guidance to reviewers asked to evaluate proposals submitted to one of BER's Climate Change Research programs will include a request to evaluate how the proposed

research will contribute to the specific CCSP Strategic Plan goal and objective it is intended to address. The guidance will include the URL where the CCSP Plan is accessible to read and download for printing.

Solicitations from BER programs will now include guidance to prospective applications to articulate what incremental improvements in understanding or model development would result from their proposed research and how those improvements will enhance the ability of the Program to meet its goals.

Action: See BER response above.

Page 52, COV comment: "For the purpose of future COVs, we recommend that the PM ensure: (1) that all jackets contain the same set of information and (2) that jackets are complete, i.e., that all reviews contain numeric scores as well as responses from reviewers. In addition, information should be retained and documented on the resolution of scoring disparities, declinations, reasoning for support or non-support of proposals, under-represented groups, young investigators, and underrepresented areas of the country."

BER Response: New policies have been implemented in BER to ensure that all jackets contain the same set of information and that jackets are complete. It is not possible to ensure that all reviews contain numeric scores. All reviewers provide written comments but a few choose not to provide numeric scores of a proposal. However, the lack of a numeric score on a review is typically rare.

Action: See BER response above.

Page 52, COV comment: "DOE/BER should ensure that it has formal written procedures for what constitutes a scientifically sound peer review process."

BER Response: A description of the Office of Science Merit Review System is accessible on the Office of Science website (http://www.sc.doe.gov/grants/merit.html). A proposal to have the Office of Science develop peer review guidelines with standardized procedures for all Office of Science programs is under discussion with the Office of Science. If such guidelines were developed, they would be available to all applicants. In the meantime, CCRD program managers have been directed to articulate the peer reviewer procedures that will be used to all applicants.

Action: See BER response above.

Page 52, COV comment: "PMs should scrutinize more carefully appropriateness of budgets prior to award."

BER Response: PMs do evaluate the appropriateness of budgets in proposals. They have been reminded of the need and importance of doing so before they recommend an award.

Action: See BER response above.

Reviewers and selection of reviewers

Page 53, COV comment: "More detailed guidelines for evaluating proposals, especially budgets, should be provided to reviewers. In addition to rating a proposal with respect to formal and/or mandatory criteria, reviewers should be given supplemental evaluation instructions that are specific to the program and should be required to provide detailed grounds for a recommendation of declination."

BER Response: BER concurs on the recommendation to provide more detailed guidelines to reviewers, including where appropriate, supplemental evaluation instructions specific to the program. Such program-specific guidelines will henceforth be provided to reviewers. Reviewers of proposals submitted to DOE are not considered advisors and they are neither requested nor asked to provide a recommendation as to whether to fund or decline a proposal. The recommendation and decision to fund or decline a proposal is up to the PM after reading the merit reviews of the proposal and evaluating the potential of the proposed research to contribute to the program's goals and objectives, including its long-term performance metric.

Action: See BER response above.

Page 53, COV comment: "DOE should develop a conflict-of-interest policy such as that used by NIH or NSF."

BER Response: DOE has a conflict-of-interest policy that is comparable to that of both NIH and NSF. Unfortunately, the policy is not articulated in a single document or web site. The development of peer review guidelines and procedures that would include the DOE conflict-of-interest policy would make the policy more visible and accessible to everyone interested, including reviewers and prospective applicants of research funding from DOE's Office of Science. A proposal to have the Office of Science develop peer review guidelines with standardized procedures for all Office of Science programs is under discussion with the Office of Science. If such guidelines were developed, they would be available to all applicants. In the meantime, CCRD program managers have been directed to articulate the peer reviewer procedures that will be used to all applicants.

Action: See BER response above.

Page 53, COV comment – "More reviews should be solicited for each proposal using a wider range of disciplines where necessary."

BER Response: Where necessary, more than three reviews are solicited, especially for proposals in which multiple disciplines are involved. Reviewers are selected to include the full range of disciplines involved in the proposed research. PMs are and will continue to encouraged to seek more than three reviews for large, multidisciplinary proposals.

Action: See BER response above.

Page 53, COV comment – "The pool of reviewers actually used on panels should be enlarged to include proponents of alternative approaches. This is especially true of modeling proposals" "A minimum of three written reviews should be used before any decision is made."

BER Response: BER attempts to select the most qualified reviewers who have no biases or tendencies to be a proponent of only one particular approach. The importance of having reviewers who are knowledgeable about alternative approaches to those proposed in applications being subjected to review is recognized and efforts are made to involve such individuals in the merit review process, either on panels or as mail reviewers. A minimum of three reviews is and will continue to be required on all proposals before a funding decision is made.

Action: See BER response above.

Solicitations/RFPs/RFAs

Page 54 – "The COV recommends that the PMs rely on the expertise of their program Chief Scientist and other members of the community to hone the program announcement so it better reflects and carefully communicates program goals."

BER Response: Program managers ask for information on research needs from a number of sources, including members of the scientific community before program solicitations are drafted. This generally includes some individuals who are funded by program, such as the Chief Scientist. To avoid conflicts of interest and maintain a level playing field for all investigators and institutions who may wish to compete for funds from the program, members of the scientific community, however, cannot be involved in reviewing and honing draft versions of solicitations.

Action: See BER response above.

Page 54, COV comment: "The lack of specificity in RFPs for goal-oriented projects suggests programs that are drifting and not moving systematically toward their goals. It also reflects a management style that is not making use of its advisory committees and the expertise in the National Labs to plan carefully the program and its future.

BER Response: BER agrees with the COV on the need for specificity in RFPs from goal-oriented programs, such as ARM. More effort will be made to obtain input from experts in the field that will assist the PM in defining the specific research needs identified in future RFPs. Seeking such input will be done cautiously, however, so as to avoid getting advice that is or is perceived to be self-serving to those with vested interests in a program, instead of suggestions and recommendations from individuals with no

particular vested interests in the specific content of a program's RFPs. The emphasis is and will continue to be seeking input that is objective, balanced, and useful in defining the scope and specificity of RFPs, and thereby of most help toward meeting the program's specific goals and objectives. To ensure that BER's climate change research programs are moving toward their goals, the BERAC will continue to be asked to periodically review programs in BER's Climate Change Research Division.

Action: See BER response above.

National Laboratories

Page 55-56, COV comments: "…CCRD PM should extend the scope of their personnel expertise by aggressively exploiting the expertise found in the National Labs.

"The Laboratories should work with personnel from universities and other agencies when the expertise inside the DOE system is not sufficient to achieve DOE's goals"

"The merit review process and documentation should be the same for National Laboratory and university proposals."

"While the outside perception is that scientists in National Laboratories receive preferential treatment the CCRD proposal process, this may not be true." "…proposal jackets [for National Lab funding] provide an almost total lack of information on how Laboratory proposals are reviewed and processed, so it is difficult to dispel this perception."

BER Response: Whenever appropriate, Program Managers utilize the expertise in the National Labs. Experts at the National Labs are always responsive to requests for assistance from PMs. Thus, BER Program Managers have access to and effectively utilize the expertise that is available in the DOE lab system.

DOE labs are encouraged to collaborate and work with universities to meet goals and objectives of DOE programs. The CCRD is funding several projects that involve collaboration between Lab and university scientists and will continue to encourage such collaboration in the future.

The merit review process is same for university and National Lab proposals and policies have been implemented in all BER programs to ensure that documentation of the review and funding decisions for National Lab proposals is the same as that for university proposals.

As stated in previous responses to COV finding and comments, policies have been implemented in BER to ensure that documentation of the review and funding decisions for DOE lab proposals is the same as that for university proposals. As a result, information in Lab project jackets on how DOE lab proposals are reviewed and funded will be the same as that in university proposal files.

Action: See BER response above.

Staffing

Page 56, COV comment: "At present within CCRD, individual PMs are handling two, three, and sometimes four separate programs. The discipline diversity within CCRD is quite large so there is concern that any PM handling such a load probably is unable to do an adequate job. That is a disservice to the PM as well as to proposers, investigators, and the DOE.

BER Response: Staff losses and the inability to replace staff in a timely way with permanent hires or with temporary hires, such as IPA assignments, has necessitated assigning the "acting" management responsibility for some programs in the CCRD to other program managers. Currently, only two individuals in the CCRD are serving as "acting" managers of programs because the previous PMs are no longer employed at DOE and the positions have not yet been backfilled with either a permanent or temporary hire. One of the positions has remained unfilled for over two years because BER has been unable to attract qualified applicants to fill the position with an IPA assignee from an academic institution. The acting program management assignments are considered temporary, and recruiting efforts are underway to fill those positions as soon as possible with IPA assignees.

Action: See BER response above.

Recommendations

Page 58, Recommendation 1 – "The COV recommends that the CCRD compile a list of recommendations given in this COV report and document the subsequent response to each recommendation for review by the next COV."

BER Response: This report is a compilation of the finding suggestions, and recommendations in the COV report that warrant a response from BER. Hence, it satisfies this recommendation.

Action: Action completed. See BER response above.

Page 58, Recommendation 2 – "There would be real value in having one or two members from the previous COV included in the membership of its successor to bring some history and continuity to the process."

BER Response: BER concurs with this recommendation. An effort will be made to have at least one or two members from the previous COV on the next COV for BER's Climate Change Research programs.

Action: See BER response above.

Page 58, Recommendation 3 – "We recommend that CCRD staff take a proactive role in developing information on successes of both the program and the management/leadership of the program." "A 1 to 2 page self-assessment white paper of the performance of each CCRD program should be prepared from a management perspective and briefly described to the COV."

BER Response: BER concurs on this recommendation. A self-assessment paper such as that described will be prepared for the next COV.

Action: See BER response above.

Pages 58-59, Recommendation 4 - " It is recommended that the CCRD staff prepare a standard data set of information based on proposal jackets, both accepted and declined, in advance of the visit and that it be provided to the COV before they arrive."

BER Response: The data and information recommended will be provided to the next COV for the CCRD before they meet at DOE.

Action: See BER response above.

Page 59, Recommendation 5 – "The COV recommends that three years of data be made available to the COV."

BER Response: At least three years of data will be available to the next COV.

Action: See BER response above.

Page 59, Recommendation 6 – "Items pertaining to funding actions and decisions that pass over a PM's desk should be made available to the COV. That includes grants, declinations, withdrawals, solicitations. Only through receipt of such information can the COV determine the pressures on a given program."

BER Response: Information on the items that pass over a PM's desk related to funding actions and decisions will be provided in a summary form to the next COV. This will include the number of proposals submitted in response to each solicitation from each program, the number declined, the number funded, the number withdrawn, the solicitations from each program, etc.

Action: See BER response above.