

Office of Basic Energy Sciences
GUIDE FOR PREPARATION OF REVIEW DOCUMENTS
TO BE SUBMITTED BY NATIONAL LABORATORIES
October 2022

A Review Document (RD) is a new or renewal proposal from a DOE National Laboratory submitted to the Office of Basic Energy Sciences (BES) following an invitation from BES to submit. The RD must be suitable for independent external scientific/technical merit review and should follow the preparation guidance in this document. This guide does not apply to applications in response to Funding Opportunity Announcements and Laboratory Announcements, which must follow the requirements in those solicitations. Field Work Proposals (FWPs) and the schedule for submitting FWPs are still governed by DOE Order 412.1, “Work Authorization System.” Laboratory FWPs are used by headquarters for annual budget planning and formulation, but they contain insufficient information for an external peer review. This *Guide for Preparation of Review Documents* contains information regarding the preparation of the RDs that BES uses for conducting external peer review, which are needed approximately once every three years upon request from BES. There typically is a one-to-one relationship between FWPs and RDs. The exception is that a RD for a multi-laboratory effort will correspond to an FWP at each participating laboratory.

Renewals and Triennial Reviews: The BES Division conducting the review of a laboratory program will contact the laboratory at least six months in advance of the potential review date and schedule the actual review dates (in the case of an on-site or virtual review) and the dates that the RDs are due to BES. BES may require that the laboratory provide a draft outline and/or a draft RD by email to the BES Program Manager coordinating the review well in advance of the RD due date. The Program Manager will check the draft RD for completeness and identify any needed revisions.

The laboratory will receive an invitation from the DOE-SC Portfolio Analysis and Management System (PAMS) to submit the final RD through PAMS.

New Proposals: BES will invite new proposals (those not submitted in response to a FOA or Lab Announcement) with a general timeframe for receipt of the RD. For these new proposals, the laboratory may be required to email the Program Manager an outline and/or a PDF draft of each RD within the timeframe established. After the draft PDF has been examined for completeness and any needed revisions identified, the laboratory will be invited to submit the RD into PAMS.

Please follow the guidelines given in this guide for the preparation of RDs; deviations may result in declination of a research proposal without merit review. **A Data Management Plan and a Plan for Promoting Inclusive and Equitable Research (PIER) are required for all review documents.** Failure to include either of these plans will result in a required revision of the review document and may result in a declination of the proposal without merit review. These are described in Sections 10.1 and 10.2 of this document.

Evaluation Criteria

RDs will be subjected to formal merit review with peer evaluation and will be assessed against the following criteria:

1. Scientific and/or technical merit of the project;
- for example, the influence that the results might have on the direction, progress, and thinking in relevant scientific fields of research; the likelihood of achieving valuable results; and the scientific innovation and originality indicated in the proposed research. What are the unique aspects of this project within the BES national laboratory system? Is the Data Management Plan appropriate for the proposed research? To what extent does it make the data available and useful to the scientific community, support the validation of research results, and provide for the usability of data beyond the lifetime of the research activity?
2. Appropriateness of the proposed method or approach;
- for example, the innovation, logic and feasibility of the research approaches and the soundness of the research plan.
3. Competency of the personnel and adequacy of the proposed resources;
- for example, the leadership of the lead Principal Investigator (PI), the background, past performance, potential of the investigator(s), and the research facilities.
4. Reasonableness and appropriateness of the proposed budget.
5. Quality and efficacy of the Plan for Promoting Inclusive and Equitable Research (PIER).
- for example, to what extent will the plan contribute to the goal of creating and maintaining an equitable, inclusive, encouraging, and professional training and research environment; support a sense of belonging among project personnel; address intentional mentorship; and lead to participation of individuals from diverse backgrounds?
5. Synergism among the PIs in a program, the programmatic focus of a multi-PI effort, and alignment with Laboratory priorities and existing BES efforts at the Laboratory.
6. Utilization of distinctive facilities or capabilities.

The quality of past performance (e.g., productivity and impact of the research) is a criterion for all renewal proposals.

Summary of Review Document Contents

- 1 Cover Page
Title and Abstract (requested separately in PAMS therefore not numbered)
- 2 Table of Contents
- 3 Tabular Budget and Staffing Summary
- 4 Narrative
- 5 Management Plan
- 6 References and Publications
- 7 Biographical Sketches
- 8 Current and Pending Support for all Key Personnel
- 9 Description of Facilities and Resources
- 10 Appendices, including required data management plan and PIER plan
- 11 Budget and Budget Explanation (PDF version only – not to be included with the proposal submitted in PAMS. The budget and budget explanation will be entered directly into PAMS)

Submitting the Review Documents

The RDs for new and renewal proposals may be required to be first submitted to the BES Program Manager by email as a single PDF file (including the budget). After BES checks the draft PDF for completeness and identifies any needed revisions, the laboratory will be invited to submit the documentation into PAMS. PAMS will require separate entry of the budget information. Therefore, the budget in Section 11 should not be included in the review document submitted in PAMS. Please allow sufficient time for the process of submitting the review documents into PAMS to meet the deadline.

Format of the Review Documents

RDs must be readily legible when printed and must conform to the following requirements: the height of the letters must be no smaller than 10 point with at least 2 points of spacing between lines (leading); the type density must average no more than 17 characters per inch; the margins must be at least one- inch on all sides. Figures, charts, tables, figure legends, etc., may include type smaller than these requirements as long as they are still fully legible.

Number pages consecutively at the bottom of each page throughout the review document. Start each major section at the top of a new page with the section number and title, for example, “2. Table of Contents.” Do not use unnumbered pages.

1. Cover Page

The Cover Page should contain the following information:

- Title of proposed project
- FWP Number(s) corresponding to the proposed project (if available)
- BES Program name
- Name of laboratory
- Name of principal investigator (PI)
 - Position title of PI
 - Mailing address of PI
 - Telephone of PI
 - E-mail address of PI
- Name of official signing for laboratory*
 - Title of official
 - Telephone of official
 - E-mail address of official
- Requested funding for each year; total request

If other institutions are participating in the project, include a table listing institutions, lead investigator at each institution, and requested funding for each institution at this point on the cover page.

Use of human subjects in proposed project: If activities involving human subjects are not planned at any time during the proposed project period, state "No"; otherwise state "Yes", provide the IRB Approval date and Assurance of Compliance Number and include all necessary information with the Review Document should human subjects be involved.

Use of vertebrate animals in proposed project: If activities involving vertebrate animals are not planned at any time during this project, state "No"; otherwise state "Yes" and provide the IACUC Approval date and Animal Welfare Assurance number from NIH and include all necessary information with the review document.

Signature of PI, date of signature

Signature of official, date of signature*

* The signature certifies that personnel and facilities will be available as stated in the review document, if the project is funded at the requested level.

Title and Abstract (Requested separately in PAMS and therefore not a numbered section)

Provide a brief abstract that is no more than 250 words for the overall FWP. In the abstract, give the broad, long-term objectives and what the specific proposed research is intended to accomplish. Indicate how the proposed research addresses the BES scientific/technical area (e.g. BES core program) for which the proposal is submitted.

2. Table of Contents

Provide the initial page number for each of the sections of the RD.

3. Tabular Budget and Staffing Summary

Include a summary table listing all key personnel (typically this will include the lead PI and all co-PIs), postdoctoral associates, and staff in other technical support roles. Include their proposed level of effort and corresponding budget request. Detailed budget and staffing information should be added using Form 4620.1 for the draft PDF submission. The detailed budget will be required for the final submission into PAMS and should not be included in the text of the review document; the Tabular Budget and Staffing Table should be included. For FWPs with large budgets, multiple PIs and multiple thrusts, provide a breakdown of the budget by thrust.

4. Narrative

The narrative should comprise the research plan for all of the FWP thrusts. Unless otherwise specified, the narrative should not exceed 20 pages. For FWPs with budgets larger than \$1.5M per year and/or having multiple thrusts (>3), possible exceptions to the 20 page limitation and options for alternate structure of the narrative should be discussed with the responsible Program Manager. The majority of the narrative should address the *Proposed Work*. The narrative should contain the following subsections:

4.1. Background and Significance: Briefly sketch the background leading to the present proposal, critically evaluate existing knowledge (including references to the literature) and ongoing

research at other institutions (nationally and internationally), and specifically identify the gaps that the project is intended to fill. Identify the unique aspects of this project within the BES national laboratory system. State concisely the importance of the research described in the proposal. Explain the relevance of the project to the research needs identified by BES. Describe the role and intellectual contribution of each key personnel (lead PI and co-PIs), and briefly outline the resources that will be available to accomplish the research goals. The need for a collaborative/laboratory approach involving several investigators and the means of achieving this should be clearly established.

4.2. Progress Report (renewal proposals only): Use this section to provide a summary of scientific and technical progress since the most recent award or renewal action. At the beginning of this section, provide the total budget for the prior period, the names of the key personnel who participated along with their level of effort (full time equivalents (FTEs) or person months (PMs)) and the total number of postdoctoral and undergraduate and graduate student participants. For large FWP's with multiple thrusts, provide this information for each thrust. If there were significant changes in budget or staffing over the prior period, a simple table with budget and staffing information for each year should be included to help the reviewers understand the productivity of the effort. A list of publications (with complete citations including the titles and names of co-authors) generated under and attributed to the previous award period must be included in Section 7.2, Publications from Previous Support.

4.2. Preliminary Studies (new proposals only): Use this section to provide an account of any preliminary studies that may be pertinent to the proposal. Include any other information that will help to establish the experience and competence of the investigators to pursue the proposed project. References to appropriate publications and manuscripts submitted or accepted for publication may be included. Copies of such publications or manuscripts may be included in the Appendix (Section 10).

4.3. Proposed Work: This section should constitute the majority of the narrative. For research in large FWP's organized with multiple thrusts, an introduction should establish the synergy among the thrusts and the contribution from each thrust to the FWP goals. At the beginning of each thrust section, name the key personnel (lead PI and co-PIs) who will participate, and state the proposed number of postdoctoral and graduate and undergraduate student participants. The proposed research (at the thrust level for larger FWP's) must include a clear statement of the work to be undertaken, objectives for the period of the proposed work, and the expected significance and the relation of the research to the following: the longer-term goals of the FWP; the present state of knowledge in the field; work in progress by the PI(s) under other support; and work in progress elsewhere (nationally and internationally). The Proposed Work should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures needed to accomplish the proposed work. In addition, it should describe new techniques and methodologies and explain their advantages over what currently exists.

4.4. Subcontract or Consortium Arrangements: If any portion of the project described is to be done with FWP support through a subcontract with another institution, provide information about the institution and why the specific component of the project will be funded at this institution. Further information on such arrangements should be provided in the sections

"Budget and Budget Explanation," "Biographical Sketches," "Current and Pending for Key Personnel," and "Description of Facilities and Resources."

4.5. *Unfunded Collaborations*: If appropriate, describe any proposed interactions and collaborations with other institutions and sectors, such as universities, other national laboratories, and industrial institutions that are integral to the planned research activities. Define the goals and planned research for each collaboration. Also describe the roles of the key personnel, the mechanisms planned to stimulate and facilitate knowledge transfer, and the potential long-term impact of the collaborations. Letters from identified collaborators should be included in an appendix to the RD (see Section 10).

5. Management Plan

This section should describe the overarching science/technology goals that link the groups and researchers together. An overview of the functions of key personnel and the relationships among the thrusts should be included. Include a description of any distinguishing institutional strengths for this particular research, such as alignment of the proposed scientific topic(s) to the core strengths and competencies of the laboratory; the synergisms among the investigators of a large interdisciplinary team; the ability to utilize distinctive DOE facilities at the laboratory; the benefits of collocation with researchers from other DOE programs; the ability to rapidly reconfigure research thrusts to respond to new challenges; and successes at working with other research performers on transferring results to technology applications and other fields of research. Cite specific examples to illustrate such distinguishing and unique strengths which deem the proposed program nationally and internationally competitive and timely. If DOE User Facilities are to be utilized as part of the proposed research, describe any preferred access arrangements, if applicable.

As appropriate for the research described in the RD, describe the role of any advisory committee, executive committee, program committee, or their equivalent. Identify any plans for administering educational programs and outreach activities associated with the proposed research. Plans for administering shared facilities should be described under Section 9, Description of Facilities and Resources.

6. References and Publications

6.1. *Literature Cited*: List all references cited in the narrative. Limit citations to literature relevant to the proposed research while making sure to adequately cover the relevant research in the scientific topic area. Please choose a standard journal reference format (may use APS, ACS, MRS, or other) and consistently report all authors, publication titles, and full journal citation. (Inclusion of DOI is optional.)

6.2. *Publications from Previous Support (renewal proposals only)*: For renewal proposals, a separate list of publications that are directly attributed to work done under BES funding during the prior funding period must be included. Please choose a standard journal reference format (may use APS, ACS, MRS, or other) and consistently report all authors, publication titles, and full journal citation. (Inclusion of DOI is optional.) *For each entry, use blue font for the authors who are PIs of this FWP, green font for students and postdocs supported by the FWP, and red font for authors who are PIs of other BES-supported research FWPs at your laboratory.*

Manuscripts for accepted or in-press publications that are considered highly relevant to the progress attained may be included as a separate Appendix (see Section 10). “Manuscripts in Preparation” should not be included.

The publications should be divided into two categories: (a) publications that were solely supported by this FWP, and those in collaboration with others that are based on research that is intellectually led by the FWP and advances one or more of the FWP’s objectives (in general these will be publications based on research that was primarily supported by this FWP); and (b) other publications based on research receiving support from this FWP. For case (b), a brief description of the portion of the work that was supported by this FWP should be provided. Publications that are not supported by this FWP or directly attributed to this FWP should NOT be included. Publications based solely on the use of equipment purchased with BES funds should NOT be included.

For RDs that are renewal proposals, provide electronic copies of the five (5) “best” peer-reviewed journal publications as an Appendix of the RD (see Section 10). These may include publications that have the most scientific impact, best demonstrate collaboration or new facilities, etc.

7. Biographical Sketches

Biographical sketches, limited to three pages per investigator, are required for all key personnel funded by the research, including those at subcontracting institutions.

A biographical sketch is to provide information that can be used by reviewers to evaluate the PI’s potential for leadership within the scientific community. Examples of information of interest are invited and/or public lectures, awards received, scientific program committees, conference or workshop organization, professional society activities, special international or industrial partnerships, reviewing or editorship activities, or other scientific leadership experiences.

SC requires the use of the *format* approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vitae (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://nsf.gov/bfa/dias/policy/nsfapprovedformats/biosketch.pdf>. If an interagency common format for a biographical sketch has been promulgated, that format must be used in an application. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. Labs do not need to use the exact NSF forms at the links above, but the biographical sketches included in the RD must follow that format.

The biographical information (curriculum vitae) must include the following items within its page limit:

- **Education and Training:** Undergraduate, graduate and postdoctoral training; provide institution, major/area, degree and year. [Professional Preparation section of NSF form]
- **Research and Professional Experience:** Beginning with the current position, list professional/academic positions in chronological order with a brief description. List all current academic, professional or institutional appointments, foreign or domestic, at the applicant institution or elsewhere, whether or not remuneration is received, and, whether

full-time, part-time, or voluntary. [Appointments section of the NSF form]

- **Publications:** Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically. Patents, copyrights and software systems developed may be provided in addition to or substituted for publications. An abbreviated style such as the Physical Review Letters (PRL) convention for citations (list only the first author) may be used for publications with more than 10 authors. [Products section of the NSF form]
- **Synergistic Activities:** List no more than 5 professional and scholarly activities related to the effort proposed. Examples of synergistic information of interest are invited and/or public lectures, awards received, scientific program committees, conference or workshop organization, professional society activities, special international or industrial partnerships, reviewing or editorship activities, or other scientific leadership experiences.

SC strongly recommends the use of SciENcv to reduce administrative burden by allowing the use of digital persistent identifiers, including the Open Researcher and Contributor ID (ORCID).

In addition, provide a single Excel file listing individuals who should not serve as merit reviewers of this FWP. This information will not count in the page limit. For your convenience, a Collaborator Template is available at <https://science.osti.gov/grants/Policy-and-Guidance/Agreement-Forms> (the link to download the form is https://science.osti.gov/-/media/grants/excel/Collaborator_Template.xlsx). Provide the following information for each and every senior/key person who is planned to be or is identified in Section A of the R&R Budget for the applicant and any proposed subrecipients:

- Advisees (graduate students or postdocs) of the senior/key person
- Advisors of the senior/key person while a graduate student or a postdoc
- Close associates of the senior/key person over the past 48 months
- Co-authors of the senior/key person over the past 48 months
- Co-editors of the senior/key person over the past 48 months
- Co-investigators of the senior/key person over the past 48 months
- Collaborators of the senior/key person over the past 48 months

Do not identify any personnel at the applicant institution or any proposed subrecipient or team institution: Those personnel are prohibited from serving as merit reviewers.

Large collaborations of 10 or more researchers do not require that all collaborators be identified: rather, only list the researchers with whom the senior/key person actually collaborated.

For all identified individuals, provide the following information:

- The senior/key person to whom the individual was an advisee, advisor, close associate, co-author, co-editor, co-investigator, or collaborator, identified by first name and last name
- The individual's first (given) name
- The individual's last (family) name
- The individual's Open Researcher and Contributor ID (ORCID), if known
- The individual's institutional affiliation spelling out acronyms (For joint appointments, separate each institution with a slash ("/"). Do not list departmental affiliations.)

- The reason for listing the individual (advisee, advisor, close associate, co-author, co-editor, co-investigator, collaborator)
- The year when the individual last was a close associate, co-author, co-editor, co-investigator, or collaborator

Personally Identifiable Information: Do not include sensitive and protected personally identifiable information including social security numbers, birthdates, citizenship, marital status, or home addresses. Do not include information that a merit reviewer should not make use of.

8. Current and Pending Support for Key Personnel (lead PI and co-PIs)

NOTE: These instructions have been significantly revised to require disclosure of a variety of potential conflicts of interest or commitment, including participation in foreign government-sponsored talent recruitment programs.

Current and Pending support is intended to allow the identification of potential duplication, over commitment, potential conflicts of interest or commitment, and all other sources of support. The PI and each senior/key person at the prime applicant and any proposed subaward must provide a list of all sponsored activities, awards, and appointments, whether paid or unpaid; provided as a gift with terms or conditions or provided as a gift without terms or conditions; full-time, part-time, or voluntary; faculty, visiting, adjunct, or honorary; cash or in-kind; foreign or domestic; governmental or private-sector; directly supporting the individual's research or indirectly supporting the individual by supporting students, research staff, space, equipment, or other research expenses. All foreign government-sponsored talent recruitment programs must be identified in current and pending support.

SC requires the use of the *format* approved by the National Science Foundation (NSF), which may be generated by the Science Experts Network Curriculum Vitae (SciENCv), a cooperative venture maintained at <https://www.ncbi.nlm.nih.gov/sciencv/>, and is also available at <https://www.nsf.gov/bfa/dias/policy/nsfapprovedformats/cps.pdf>. If an interagency common format for current and pending support has been promulgated, that format must be used in an application. The use of a format required by another agency is intended to reduce the administrative burden to researchers by promoting the use of common formats. Labs do not need to use the exact NSF forms at the links above, but the current and pending support lists included in the RD must follow that format.

For every award and activity, include the following items:

- The title of the award or activity.
- The award or other identifying number (if available)
- The sponsor of the activity or the source of funding
- The award or activity period (start date – end date).
- The total cost or value of the award or activity, including direct and indirect costs. For pending proposals, provide the total amount of requested funding.
- The person-months of effort per year being dedicated to the award or activity
- Briefly describe the research being performed and explicitly identify any overlaps or synergies with the proposed research. [This information may be included in the

“Project/Proposal Title” section of the NSF format or may be appended to the end of the Current and Pending support form if additional space is needed]

SC strongly recommends the use of SciENcv to reduce administrative burden by allowing the use of digital persistent identifiers, including the Open Researcher and Contributor ID (ORCID).

Details of any obligations, contractual or otherwise, to any program, entity, or organization sponsored by a foreign government must be provided on request to either the applicant institution or DOE.

9. Description of Facilities and Resources

Describe briefly the facilities to be used for the conduct of the proposed research. Indicate the performance sites and describe pertinent capabilities, including support facilities (such as machine shops) that will be used during the project. List the most important equipment items already available for the project and their pertinent capabilities. Include this information for each subcontracting institution, if any. Describe any shared facilities and infrastructure to be established, including specific major instrumentation, and plans for the development of instrumentation. Describe plans for maintaining and operating new facilities, including staffing, and plans for ensuring access to outside users. Distinguish clearly between existing facilities and those still to be acquired or developed.

10. Appendices

Appendices should be limited to the required data management plan (see below for additional information), the required PIER plan (see below for additional information), letters of support from unfunded collaborators and/or institutions, critical publications that are accepted or in press, and (for renewal proposals) electronic files for the five (5) “best” journal publications from the prior period. Do **NOT** include letters of endorsement of the project. In press and accepted publications (and for renewal proposals only, the five (5) best published journal publications) should be included as separate PDF files from the RD PDF file, e.g., in electronic folders containing multiple PDF files of publications. Do not use an appendix to circumvent the page limitations of the RD. Information should be included that may not be easily accessible to a reviewer. However, reviewers are not required to consider information in the Appendix. Reviewers may not have time to read extensive appendix materials with the same care as they will read the RD proper.

10.1. Data Management Plan (DMP): This appendix should not exceed 2 pages. The DMP should address the following requirements.

1. DMPs should describe whether and how data generated in the course of the proposed research will be shared and preserved. If the plan is not to share and/or preserve certain data, then the plan must explain the basis of the decision (for example, cost/benefit considerations, other parameters of feasibility, scientific appropriateness, or limitations discussed in #4). At a minimum, DMPs must describe how data sharing and preservation will enable validation of results, or how results could be validated if data are not shared or preserved.
2. DMPs should provide a plan for making all research data displayed in publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital research data used to generate the displayed data should be

made as accessible as possible to the public in accordance with the principles stated in the Office of Science Statement on Digital Data Management (<https://science.osti.gov/Funding-Opportunities/Digital-Data-Management>). This requirement could be met by including the data as supplementary information to the published article, or through other means. The published article should indicate how these data can be accessed.

3. DMPs should consult and reference available information about data management resources to be used in the course of the proposed research. In particular, DMPs that explicitly or implicitly commit data management resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management at Office of Science User Facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMP. Information about other Office of Science facilities can be found at <https://science.osti.gov/user-facilities/>.
4. DMPs must protect confidentiality, personal privacy, Personally Identifiable Information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation, and U.S. competitiveness; and otherwise be consistent with all applicable laws, and regulations. There is no requirement to share proprietary data.

DMPs will be reviewed as part of the overall SC research proposal merit review process. Consult the Office of Science website for further information and suggestions for how to structure a DMP: <https://science.osti.gov/Funding-Opportunities/Digital-Data-Management>

Do not attach the DMP as a separate file. This appendix will not count toward the project narrative page limitation.

10.2. Plan for Promoting Inclusive and Equitable Research (PIER): This appendix should not exceed 3 pages. The PIER plan should describe the activities and strategies of the applicant to promote equity and inclusion as an intrinsic element to advancing scientific excellence in the research project within the context of the proposing institution and any associated research group(s). Plans may include, but are not limited to: strategies of your institution (and collaborating institutions, if applicable) for enhanced recruitment of undergraduate students, graduate students, and early-stage investigators (postdoctoral researchers, and others), including individuals from diverse backgrounds and groups historically underrepresented in the research community; strategies for creating and sustaining a positive, inclusive, safe, and professional research and training environment that fosters a sense of belonging among all research personnel; and/or training, mentoring, and professional development opportunities. Plans may incorporate or build upon existing diversity, equity, accessibility, and inclusion efforts of the project key personnel or applicant institution(s), but should not be a re-statement of standard institutional policies or broad principles. The complexity and detail of a PIER is expected to increase with the size of the research team and the number of personnel to be supported.

Please see additional information at <https://science.osti.gov/SW-DEI/DOE-Diversity-Equity-and-Inclusion-Policies/Q-and-As#definitions>.

Do not attach the PIER plan as a separate file. This appendix will not count toward the project narrative page limitation.

10.3. *Other Appendices*: Add other appendices as needed and as described at the beginning of Section 10.

11. Budget and Budget Explanation included only in the draft PDF version. PAMS will require this information separately when uploaded.

A budget, conforming to the guidelines given below, is required for the entire project period, which normally will be three years, and for each fiscal year. In addition to budgets for each year, a summary budget should be provided. Budgets should also be provided for each research institution that is funded by a subcontract under the FWP, with a similar level of detail as the budget for the lead Lab (i.e. personnel, materials/supplies, travel, etc.). [For large FWPs with multiple thrusts, individual thrust budget information may be required at the discretion of the program manager.] For draft RD PDFs, DOE Form 4620.1 can be used for the budget information (Form 4620.1 is available at <https://science.osti.gov/-/media/grants/pdf/BudgetForm4620.pdf>). On Form 4620.1, list the names of the principal investigator and other key personnel and the estimated number of person-months or percentage of time for which DOE funding is requested. Proposers should list the number of postdoctoral associates and other professional positions included in the proposed work and indicate the number of FTEs or PMs. For graduate and undergraduate students and all other personnel categories such as secretarial, clerical, technical, etc., show the total number of people needed in each job title and their level of effort. Note that the final budget for the version of the RD that is peer reviewed will be submitted directly into the PAMS system. Form 4620.1 should not be included as part of the final RD submitted into PAMS.

A written budget justification should be included with explanations for each category with funds in the budget. For personnel, this should include a one-sentence statement of the role of the person in the project. If there is a substantial increase in the budget compared to the prior period, prior approval for such a request should be obtained from the cognizant BES Division Director (DD), and an explanation of what the increase will support should be included in this section.

Equipment: Inclusion of equipment requests in the review documents is at the discretion of the cognizant BES DD. If approved by the DD, on Form 4620.1 and in the PAMS budget, provide the total equipment budget requested for each individual piece of instrumentation and equipment that is proposed for the research that has an acquisition cost of \$100,000 or more. Note that inclusion of a specific item of equipment in a RD does not guarantee that additional funds will be provided by BES. Additional description of the equipment listed in this section should be provided in the budget justification section of the RD.

Current version: October 1, 2022
Supersedes the following versions:
November 19, 2002; August 29, 2002; June 10, 2003; May 25, 2007;
November 4, 2011, December 23, 2014, September 21, 2020;
January 15, 2021, March 24, 2022