



Department of Energy  
Office of Science  
Washington, DC 20585

February 16, 2017

Dr. John P. Hill  
Director  
National Synchrotron Light Source-II  
Brookhaven National Laboratory  
Box 5000  
Upton, New York 11973-5000

Dear Dr. Hill:

An upcoming peer review of the National Synchrotron Light Source-II (NSLS-II) has been formally scheduled for June 20-21, 2017 at Brookhaven National Laboratory (BNL). In the near future, I will provide you with a final list of the participating reviewers and observers.

Attached is the list of information requested for this review. Please post this information for access by the reviewers and provide an agenda to BES no later than **three weeks prior** to the start of the review. At the review, we would like to have copies of the presentations available to the reviewers. Also, please send an electronic copy of **all** information to Rocio Meneses at ([Rocio.Meneses@science.doe.gov](mailto:Rocio.Meneses@science.doe.gov)).

This review will cover the NSLS II performance period from start of operations in fiscal year (FY) 2015 to FY2016. Future reviews will be consistent with the standard BES triennial review cycle. Topics to be covered in this review are:

- Facility performance (schedules, reliability, users participation, etc.).
- Scientific productivity, research and development plans, future scientific directions, and BNL plans that may affect NSLS-II.
- Implementation of the BES recommendations from the June 2015 operations budget review.

Logistics for this review should be coordinated through our office. We look forward to a successful review.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter L. Lee", with a long horizontal line extending to the right.

Peter L. Lee  
Program Manager  
Scientific User Facilities Division  
Office of Basic Energy Sciences

Enclosure:

*Information Request from the Facility*

Attachments:

*Labor/M&S Cost*

*Facility FTE and Cost Summary*

*Staff Summary*

*Beamline Summary Table*

*Refereed Journal Publications*

cc: D. Gibbs, BNL

J. Misewich, BNL

F. Crescenzo, BHSO

H. Kung, DOE/SC-22

J.B. Murphy, DOE/SC-22.3

B. Garrett, DOE/SC-22.1

L. Horton, DOE/SC-22.2

R. Meneses, DOE/SC-22.3

T. Ledford, ORISE

C. Lansdon, ORISE

**Information Request from the Facility:**

1. Facility
  - i. Brief description of the facility (one paragraph).
  - ii. Recommendations from the 2015 operation budget review, and facility's actions to address the recommendations.
  - iii. Facility Budget Information:
    - a. Provide a fiscal year (FY) 15, and FY16 budget table of Department of Energy-Basic Energy Sciences (DOE-BES) funds for operating, Accelerator Improvement Project (AIP), and capital equipment as they were allocated for salary, non-salary, and power.
    - b. Provide a table summarizing the annual carryover of DOE-BES funds for FY15 and FY16.
    - c. Provide a table showing all other FY15, and FY16 funding (e.g., Laboratory Directed Research & Development, Work for Others, Proprietary Research Cost Recovery, etc.) for facility-operated beamlines.
    - d. Provide the following tables that (1) calculate labor multiplier based on \$100,000 base salary; (2) Materials and Supplies (M&S) indirect rate based on \$10,000 purchase; and (3) equipment indirect rate based on \$500,000 purchase for FY2015-FY2016. In addition, please provide tables which calculate labor multiplier based on \$100,000 base salary and M&S indirect rate based on \$10,000 purchase for a project (AIP, GPP, etc.). **See attached Labor/M&S Cost template.**
    - e. FY2015-FY2016 Operation Budget Details and FY2017 Operation Budget Projections: Provide a table that breaks down all staff and their assignments [FTEs and budget allocation to each specific assignment]: facility management and business operation staff, accelerator staff; accelerator operations staff; engineers and technicians assigned to accelerator operations support; facility beamline scientists; facility beamline operational staff; engineers and technicians assigned to user support, control, and computing; clerical and administration, and Environmental, Safety & Health/Quality Assurance. Indicate personnel and budget allocation to each of these assignments under DOE/BES and other funding. Describe each staffing category in this table (types of staff included in each category and their activities). **See attached Facility FTE and Cost Summary template.**
  - iv. Provide a detailed organizational chart which includes the names of all facility employees. Describe the functions of each major organizational unit and of the groups within these units. In addition, provide a summary table that indicate the job category( manager, admin, scientist, engineer, technician, post doc, and student), the organization unit, and the fraction of source(s) of support( BES Operation fund for regular function, BES Operation fund for beamline development, NEXT project, overhead, LDRD, and other), for each staff during FY2016. **See attached Staff Summary template.**
  - v. Brief description of accelerator operation milestone achieved and beamline developments completed during the review period.
  - vi. Brief description of ongoing research & development activities at the facility (accelerator improvements; beamline improvements; data processing; analysis and management developments; optic and detector developments, etc.).

- vii. Brief description of scientific staff research funded by the facility (research accomplished and proposed).
- viii. Describe external input to facility (scientific advisory committee, user organization committee, etc.) and frequency of this input.

## 2. Beamlines

- i. Drawing of the floor plan with beamline labels.
- ii. Fill out the attached **Beamline Summary Table** for each beamline.
- iii. For each beamline provide:
  - a. Overall description;
  - b. Beamline specifications (energy range, resolution, flux, etc.);
  - c. Names of beamline personnel and their FTE percentages allocated to the beamline;
  - d. Funding source(s) and fraction of funding for each source for FY2015-FY2016;
  - e. Operating funds for FY2015-FY2016 (staff, consumables, other, total);
  - f. Allocation percentages (General User; Partner beamline or Partner User; facility beamline staff);
  - g. Number of beamline users per year for each of the three user types;
  - h. Summary table of the total number of beamline publications showing the breakdown into total number of publications, refereed publications, high profile publications\* and high impact publications\*\* for each of the last 2 years. Next to each of these three numbers show in parentheses the corresponding numbers of publications where a beamline staff member has been an author/co-author; and
  - i. Provide a complete list of publications for CY2015-2016 broken down into refereed journal articles, refereed conference proceedings, and other publications (theses, book articles, etc.).
- iv. Provide a BES operation fund supported Beamline Capability Build-up plan including new world class beamlines with detail cost and schedule.
- v. Execution status of the Beamline Capability Build-up plan.

Because of the extensive nature of this beamline information, we would like you to include it in a separate volume together with the BES surveys for FY15-16, and other supplementary material.

## 3. Support Facilities (sample preparation, sample environments, computing capabilities, etc.)

- i. What is available?
- ii. What is planned?

## 4. Users

- i. How is beam time allocated to outside user?
- ii. Review process: A plot of the beam time allocations per year vs. the number of groups receiving this time allotment (i.e., Materials Science, Biology, etc.). Also, provide user experiments per year and proposals per year. Provide percentage of beam time per year allocated to facility scientists (as principal investigator or co-principal investigator).

## 5. Impact

- i. Provide a table that lists the number of publication for each individual refereed journal (exclude conference proceedings), and total number of high profile publications\*, and

of high impact publications\*\* for the past two years (**See attached Referee Journal Publication Table**) and a figure that shows the number of publication of each journal vs. the 5-year impact factor of the journal.

- ii. List the total number of other publications, conference proceedings, books or book chapters, dissertations, and patents since the start of operation.
- iii. List invited lectures and major awards for facility staff and external users.

6. Future

- i. Identify potential problems for facility operations.
- ii. What are the expected trends in user demand: internal, external, mode of operation and scientific discipline, and facility's plans in respond to the trends?
- iii. Strategic plan of the facility for the next five years.

**\* High Profile Journals**

Science  
Nature  
Physical Review Letters and  
Cell

**\*\* High Impact Journals**

Science  
Nature  
Physical Review Letters  
Cell  
Journal of the American Chemical Society  
Proceedings of the National Academy of Sciences USA  
Nano Letters  
Nature Chemical Biology  
Nature Chemistry  
Nature Geoscience  
Nature Materials  
Nature Nanotechnology  
Nature Photonics  
Nature Physics  
Nature Structural and Molecular Biology  
Angewandte Chemie International Edition  
Advanced Materials  
Environmental Science and Technology  
Applied Physics Letters and  
EMBO Journal