

Director's Review of NSLS-II FY18 Operations Budget

May 11th and 12th, 2017

NSLS-II will ultimately deliver 500 mA and sub-nm-rad emittance electron beams, producing the brightest synchrotron x-rays in the world over a wide range of photon energies. In our third year of operations, we are currently operating at 300 mA in top-off mode with over 96% reliability year-to-date. The beamline buildout program has delivered 19 beamlines. Of these, 11 have been approved for General User operations and eight are in commissioning. A further nine are under construction. By the end of FY18, the total number of beamlines in service will be 28. As of 4/12/17 we have had 549 unique users in FY17 up from 477 in all of FY16.

The operations budget will support the operation and development of the accelerator as it ramps up to full performance, the ramp up of beamline operations and the user program, beamline development activities, the R+D program to support instrumentation development, management functions, and operational excellence. In FY18, we have the following goals for the organization:

- 1) Operate the accelerator and deliver 4750 hours for user operations at greater than 95% reliability, achieve 400 mA by the end of FY18 and remain on track to achieve 500 mA operations in FY20.
- 2) Operate the existing operational beamlines and commission and operate those finishing construction in FY18
- 3) Continue beamline development. Specifically
 - a. Complete the PDF, FXI, FIS and MET beamlines
 - b. Complete the SST-1 and SST-2 partner beamlines
 - c. Continue development of HEX beamline in partnership with NYS
 - d. Continue development of the CDI beamline
- 4) Maintain operational excellence

Charge to the Review Committee

The objective of this review is to assess the appropriateness and reasonableness of the budget projections for FY18 to carry out these activities.

The specific charge questions are:

- 1) Are the organization structure and staffing levels in each major activity; Facilities, Accelerator operations, Photon Science operations, Beamline development and ESH+QA, and their projected resources (budget and FTEs), appropriate and reasonable?
- 2) Is the projected budget allocation appropriately documented and justified? Are the basis of estimate and planning assumptions clearly explained and reasonable?

- 3) Is the projected budget adequate to achieve the FY18 goals of the facility? Does the proposed budget expose the facility to excessive risk in not achieving any of its stated goals?
- 4) Is the accelerator budget sufficient to reach design performance and deliver the expected reliability and user hours on the schedule shown? Is the spares budget clearly defined and appropriate? Is the preventative maintenance program well justified and appropriately resourced?
- 5) Are the individual beamline staffing levels and resource allocations (budget and FTEs) reasonable and appropriate for delivering an appropriate level of high impact science given their capabilities and investments made in them?
- 6) Is the support for operating Partner User beamlines appropriate and reasonable?
- 7) Is the current utilization of space reasonable and the plans to accommodate future growth adequate?
- 8) In each of the areas, evaluate the operational efficiencies the facility has implemented, plans to implement in future, or could implement (relative to FY15 operations). In particular, are there opportunities for additional efficiencies?
- 9) Is the facility maximizing its use of services provided from G&A? In the case where the facility is buying services from BNL, are these planned and used in an efficient way?

A review report is requested to be sent to the BNL Director by May 22nd, 2017.