National Synchrotron Light Source II

Project Progress Report

May 2013 Activity

A different view for May, looking southward from a northeastern vantage point at the water tower.

report due date:
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OVERALL ASSESSMENT

The National Synchrotron Light Source II Project continued to make excellent progress. The current-month schedule performance index (SPI) for the overall project is 1.60, +$4.4M; the cumulative cost and schedule indices for the overall project are 0.99 and 0.97. The project was 86% (88%) complete with 40% (52%) of contingency and management reserve for the remaining EAC (BAC).

The contract for the second satellite building was awarded and construction has started. The contractor's ES&H plan and detailed schedule will be reviewed before the notice to proceed is issued. Physical work on the ground is scheduled to start at the end of June 2013, with an expected construction completion date of June 2014.

Accelerator Systems continued to make excellent progress, as schedule performance continued to improve over the past few months. At the end of May, the monthly SPI for Accelerator Systems was 1.79, +$1.4M, with the cumulative SPI of 0.94. Extended Integrated Testing of the entire injector complex, including transfer lines, is ongoing. Installation of the storage ring continued at a pace better than planned, and installation of the cryogenic system is also on track to be completed by the end of September. The schedule for the insertion device installation has been accelerated and an enhanced radiation shielding analysis and design for the storage ring continued. Delivery and testing of the insertion devices continued to progress well.

Experimental Facilities made satisfactory progress with a monthly SPI of 1.04, +$117K. Delivery of major beamline components has begun. A shipment of 13 crates of HXN beamline components was received in late May, as preparation for the installation has ramped up significantly. Completion of the hutch installation is nearing and progress continued in utility installation. Extended visits to all vendor sites by NSLS-II Project staff confirmed excellent progress in fabrication activities. While some minor delays were noted, no significant delays are anticipated. Proposals for additional hutches to support future beamlines were received and are being evaluated.

Based on the progress of accelerator installation and on implementation of the Corrective Action Plan from the Linac beam mis-steering event, the project schedule has been continuously optimized. The project will continue to strive to complete activities to enable initial commissioning of the beamlines with beam by June 2014.

The project has 67% (10 months) of schedule contingency for the remaining duration of 15 months before the projected completion date of August 2014.

UPCOMING EVENTS

10th ASAC Meeting	June 20-21
DOE Review of NSLS-II Project	July 16–18
DOE CD-2 Review of NEXT Beamlines Project	Jul 30–Aug 1
NSLS-II First Experiments Workshop	Aug 12–13
BAT meetings for HXN, CSX-1, CSX-2, and SRX beamlines	August
XPD BAT meeting	September

ACCELERATOR SYSTEMS

Injector. The production, installation, and testing of the LBT-I Transport Line, the LBT-II TL, the Booster Ring, and the BST-I TL are completed. All required radiation shielding has been installed for LtB TL and the booster as well. Extended Integrated Testing (EIT) is ongoing and continues to provide useful test results so that small repairs and fixes can be completed prior to commissioning with beam. Final Survey of the booster was completed during May. The radiation shielding will be completed by the end of June; this will conclude all work in the booster tunnel. All the BST-II and Storage Ring Injection Straight (SR-IS) support tables are available and ready for installation. The SR tunnel floor has been drilled and scarified in preparation for the installation of the BtS TL-II and SR-IS Stands. Each of the five I-beams located above the SR Injection Straight to support heave-movable lead shields around the injection elements were successfully load-tested. All cables for the upstream end of the BtS TL-II have been pulled. The SR-IS racks on the SR mezzanine are in place. The installation of the Injector PPS hardware is complete and the final functional tests are being performed. The PPS software for the LtB tunnel is complete. Ten radiation monitors arrived at BNL during May. The last correction magnets for the SR-IS were also received in May and are scheduled for magnetic measurement in June. All support structure for the SR-IS is complete.

Two usable ceramic chambers arrived at BNL. The remaining chambers are expected to arrive in the latter part of June. All parts for the kicker pulsers (Fig. 1) have been received. The first pulser was assembled and tested successfully with the prototype kicker to the maximum operating voltage, 10 KV. The current-limiting resistors that bring the high voltage from the charging power supply to the capacitor bank heated to over 45°C at a pulse repetition frequency of approximately 1 Hz. This may result in excess heating of the pulser components, so work on cooling the charging resistors continues. A different type of resistor was tried, one that is attached to a heat sink. The first results look promising but the resistor has not yet been tested to full voltage. Assembly of the five remaining pulsers is under way.

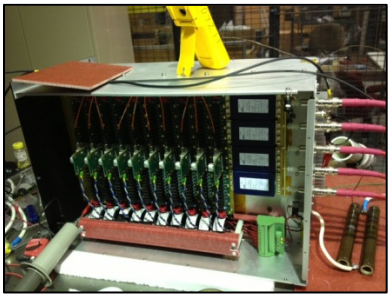


Figure 1. Completed SR Injection Kicker Pulser unit.

The capacitor bank and transformer subassemblies have been completed. These will next be assembled into the finished chassis and the pulser will be wired. There are approximately 2 person-weeks of work needed to finish all the pulsers, but we will not try to finish them completely until the resistor heating issue is solved. Three of the ceramic vacuum

chambers were shipped from Germany on May 28. Two of these will be used in the kickers, while the remaining one, expected to be of lower quality, will be used in the diagnostic pinger that is being developed in house. We expect to receive the remaining ceramics in July. The SR septum has been pulsed and tested at 1 Hz. The recorded current waveforms exactly matched these from the Danfysik Final Test Report. We will be closing the septum contract.

Vacuum. Cells 08, 18, 23, and 28 and two straight sections were successfully baked in May, for a total of twenty-seven cells and eight straight sections completed. Thirteen straight sections with day-1 chambers were assembled. Nine of them were aligned and are ready to be baked. One damping wiggler chamber was successfully coated with NEG. All SR RTD cables were pulled and are being terminated. Ethernet communication with all vacuum systems was established. Additional EPICS vacuum pages for GV, RGA, RTD, PLC, and TSP were developed.

Electrical engineering. The second unit of the SR Main Dipole power supply has been received at BNL. The first unit has been installed and the second one has been rigged in place on the SR mezzanine.

PSC chassis for quadrupole, sextupole, and corrector magnets have been installed in all of pentants 1–4 and cells 17 and 18 in P5. Pre-testing of all PSCs for P5 is complete. All PSI and regulators have been received. Testing is complete, except for units needed in cells 21–22. The first articles of the 90 AC powered amplifiers are in production now. Production is expected to be complete in August 2013. P4 power supply installation was completed in mid May. Electricians finished working in cell 29 for the injection straight and phase 2 of BtSR TL AC power requirements. We are now working on the AC power connections to the Main Dipole power supply.

RF. Installation and termination of the master oscillator distribution coax and fiber have been completed. Both are being characterized for thermal drifts, even though the experimental hall and RF racks are not yet temperature controlled. The coax phase drifts about 1.5 to 2 degrees, and the fiber drifts 4 to 5 degrees with a diurnal periodicity. A phase lock loop to reduce this drift by correcting for half the round-trip drift is being designed. Final components for the cavity PLCs have been ordered. The cavity PLC tuner feed-forward table has been programmed and awaits final temperature data, once the tunnel and cavity water skid temperatures are stable. Programing of the control loops with interface to the Linde PLC program has progressed significantly, with successful verification tests of the two programs co-existing on the PLC, switching control back and forth.

500 MHz cavity. A broken clean room led to contamination of the CESR cavity during final assembly prior to the vertical test. AES is waiting for repair of the clean room by the vendor. It takes approximately 5 days to clean and assemble the cavity.

Installation of the cryo-system progressed well. Various parts of the vacuum-jacketed transfer line were received and installed. HPK updated the fabrication schedule for Cryoduct, which will be integrated with the Linde installation schedule. The main components have been installed on the RF mezzanine. The design of the HOM damper system for the 1500 MHz landau Cavity is nearly complete; some of the completed antenna systems were power tested.

Clean Room panels have been delivered to the RF building and installation is scheduled to begin June 10.

Instrumentation. All instrumentation cables have been pulled. The transverse feedback and tune monitor systems' vacuum components have been installed (Fig. 2) and surveyed in-situ.

Figure 2. BbB feedback and tune monitor striplines.

DCCT installation in the tunnel has been completed. Installation of diagnostics beamline mechanical and vacuum systems (x-ray and visible) is well advanced. SLM hutch optics table and set-up room work is in progress. Mechanical and vacuum systems for the SR scrapers are in the final stages of assembly and planned to be installed in the SR tunnel in June. SR loss monitoring systems are in the final assembly stages. The SR RF BPMs installation is 95% complete. Integration into the control system will start in 4 to 5 weeks.

Insertion devices. Measurement of the first article DW is complete. The second DW is on its way to BNL. For EPU49, an engineering change notice and contract amendment are being prepared, to add PLCs and correction coil power supplies to the scope of the EPU manufacturer. The first chamber for the EPU is expected to be delivered in October 2013. Delivery of the in-vacuum magnetic measurement system (IVMMS) is expected on June 17. The mechanical system for IVU21 (SRX-IVU) is in production. The canting magnets for the EPU49 has been designed; the vendor is waiting for the magnet steel to be delivered. The factory acceptance test (FAT) for the first unit of the IVU20 is scheduled for June 10–12. The vacuum chamber has been transported to the manufacturer for the assembly test. A Contract amendment has been prepared to include extra power supplies and baking equipment. Preliminary magnetic measurements for the 3PW have been concluded.

Installation. The Storage Ring installation without IDs is currently projected to be completed in Oct 2013. The critical path for Accelerator Systems runs through booster commissioning, with the SR power supplies, SR area monitors, injection straight, cable pulling, PPS, cryo system, and RF cavity being on the critical path (<60 days). The ID

installation schedule has been accelerated to install the damping wigglers and potentially the IVUs before initial SR commissioning.

In the SR, flushing of the underground DI piping was completed soon after the leak in service building (SB)-4 was repaired. The P3 copper DI header and magnets have been tied-in to the DI system. Pentants 4 and 5 are tied-in to their SBs, but the connections to their headers and magnets are yet to be made. The survey team continued to work on the front end components, booster adjustments, and vacuum straights. EPOCH 6 will be starting on July 10 and last several weeks. Profiling will resume around June 24 in cell 3 (cells 23 through 2 have been profiled). The wiring of the Main Dipole power supply is in process and should be complete in mid-June. Pulling of special diagnostic cables is in process (75% complete). Installation of SR tunnel PPS gate extensions is in process. All baseline front end stands have been installed as well as collimators and bellows. Vacuum chamber welding rework is also complete.

The installation of the D&I stands in the SR is in process. The ID cable tray installation and AC work for racks will start in mid June. Installation of photon and safety shutters is in process. To enable the entire ring temperature to stabilize (to verify the HVAC system and enable the EPOCH/ profiling to continue), the SR ratchet wall doors have been closed. One or two doors per pentant will permit access. These have been covered with plastic.

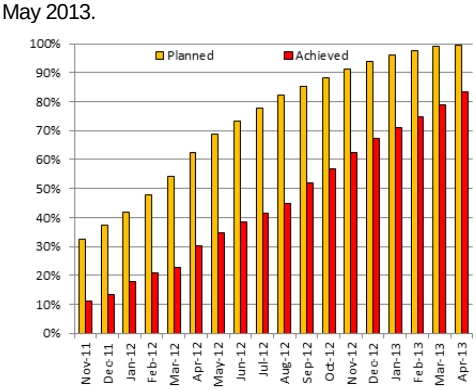
Figure 3. Lower RF mezzanine.

The first DW is scheduled to be moved to SB-5 the first week of July and into the tunnel (28-ID) in early August. The second DW is scheduled to arrive on site July 3. The P1 aluminum cooling lines are complete, excluding cell 23, which will take 2 to 3 weeks to complete. Linde is currently installing piping in the compressor building and piping supports in the RF building (Fig. 3). The pump/purge of the gaseous helium tanks is in process. The multi-channel line has been installed. The dewar has been rigged to the RF mezzanine and the valve box has been moved to its final location. The cold box (Fig. 4) has been transported to the RF building and the packing material removed. Installation of the RF clean room is scheduled to begin on June 10.

Figure 4. Cold box prepped for move to the RF mezzanine.

Table 1. NSLS-II Accelerator installation progress at the end of May 2013.

	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13
Mechanical Utilities	38%	39%	60%	61%	62%	68%	73%	74%	78%	80%	88%
Electrical Utilities	69%	72%	75%	80%	85%	91%	95%	96%	99%	99%	100%
Magnets	65%	68%	73%	78%	87%	93%	99%	100%	100%	100%	100%
Vacuum	14%	15%	21%	30%	38%	39%	44%	53%	65%	82%	84%
Power Supplies	22%	27%	30%	36%	43%	48%	54%	65%	70%	81%	87%
Instrumentation	35%	36%	37%	46%	53%	58%	63%	66%	74%	80%	83%
Frontends	0%	0%	0%	1%	2%	6%	6%	11%	15%	23%	32%
RF	33%	35%	38%	40%	45%	47%	49%	52%	57%	59%	64%
Inje Straight	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%
LINAC+Booster	42%	55%	74%	82%	92%	95%	96%	97%	97%	99%	100%
Total	**41%**	**45%**	**52%**	**57%**	**63%**	**67%**	**71%**	**75%**	**79%**	**84%**	**87%**



EXPERIMENTAL FACILITIES

May became an exciting month for Experimental Facilities with the first large delivery of beamline components. Optical components for the HXN First Optics Enclosure were fabricated by FMB-Oxford and are now being prepared for installation into the 3-ID beamline. Mirrors and gratings for CSX-1 and CSX-2 have also arrived and are ready for on-site metrology characterization. Nearing completion are the remaining procurements for beamline developments such as the CHX SAXS table and transfocator; XPD sample robot and multi-analyzer detector; IXS analyzer mechanism vacuum chamber; and various beamline endstation instruments. An extended visit by NSLS-II technical and procurement representatives to beamline component suppliers confirmed excellent progress with the manufacturing and fabrication of beamline components and optics. While a few delays were noted, no significant delays for beamline completion are anticipated. The Final Design Review for the photon shutters was held with Johnsen Ultravac on May 16–17 at BNL. Close attention was focused on the critical path activities, pressure safety, and interlock requirements, and the BNL specifications and SOW provisions were carefully reviewed. Shutter delivery is planned for late 2013, in plenty of time for installation.

CHX. Fabrication of the optical package by Bruker GmbH. continues to progress according to the established schedule. The final report for a long-lead critical path item of this package—a flat mirror manufactured by J-Tec, in Japan—has been approved by the CHX team and the mirror is now being prepared for shipment to BNL, where it will be scheduled for metrology testing prior to the arrival of the rest of the optical component package. Tests of the high-precision positioners (Optics Table legs) delivered by ITD, Ltd. last month have concluded successfully. Following an RFP, three offers were received for the CHX Transfocator package. Evaluations by the selection committee resulted in a very clear 'best value' offer; the procurement process is underway.

CSX. May was a busy and productive month for the CSX beamline. The utility installation is nearly completed, and preparations were made for installation of the first beamline components. The FAT for the coherent branch mirror, M3A, was successful, and the mirror assembly will be delivered to NSLS-II in June. Vacuum components for the coherent branch were assembled in the LOB laboratory and are scheduled for installation.

At the full polarization control branch, May was the month for optics. The monochromators' M2 internally water cooled mirrors arrived in April; the optics package from INSYNC was completed with the arrival of the M1A internally water-cooled mirror completed the optics package. The in-house metrology test occurred as planned. The M3B mirror from Zeiss arrived ahead of schedule. In the metrology lab, the mirror (Fig. 5) passed an initial visual test. Two gratings from the JY package were received and transferred to the metrology lab. As the final vacuum design is finalized, additional off-the-shelf vacuum components are being procured for the polarization branch.

Figure 5. Mirror M3B from Zeiss during visual inspection at BNL.

HXN. The Phase I beamline components package from FBM-O was received at the end of May in a shipment of 13 crates (Fig. 6). Preparation for their installation included surveying the locations for the base plates, drilling the floor to install them, installing instrument racks, documenting the cable management scheme, pulling cables (a combined length of about 3 miles), and terminating the cables with connectors. In just one month, installation labor equivalent to 1 "person-year" was expended in these preparation tasks.

Also in May, the final design review for the Phase II beamline components was completed.

Figure 6 On-time, 13 crates comprise the HXN beamline component package.

IXS. The IXS team worked on procurement packages for the multilayer collimating mirror, its positioning mechanism, and vacuum chambers to house the multilayer mirror and CDW analyzer assemblies. The RFP for the multilayer mirror was posted and received two proposals. RFP documents for the positioning mechanism and vacuum chambers are being reviewed and will be posted in June. The IXS team also made excellent progress in finalizing the utilities layout for the beamline. Utilities installation is expected to begin in June when the hutches are completed.

The IXS team used the final block of beam time at PETRA III to test some of the recently acquired crystal optics, in an experiment that runs until June 10. Figure 7 shows the system set up at the P01 beamline. The optics test system will be moved back to NSLS-II after the experiment is completed, and will be installed on the IXS beamline in July.

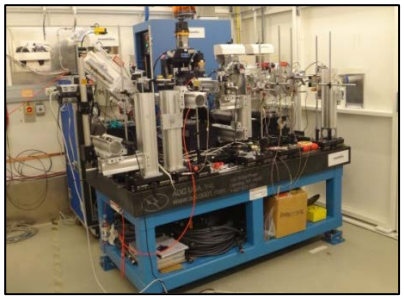


Figure 7. The IXS optics test system as installed at PETRA III P01 beamline.

SRX. We continued to closely monitor the progress vendors made in fabricating the components for both large optical packages, the SRX Beamline Optics and the KB Mirror System. Furthermore, we have weekly teleconferences in which vendors report their progress and work planning. Bruker-ASC reported the successful completion of the polishing process for the large horizontally focusing mirror (HFM, Fig. 8), a critical optical component in the SRX beamline. We are working further on the design of the sample stages, the sample environment, and the right choice of detectors. On May 10, the Beamline Advisory Team submitted a report from the April meeting; we are currently addressing those items.

Figure 8. Horizontally Focusing Mirror for the SRX beamline.

XPD. Excellent progress was made in all areas for the XPD beamline.

XPD beamline components – FMB-Oxford: All equipment is in FMB-O's factory (Figs. 9 and 10) except for the fixed aperture mask (FMK). The inside of the FMK was nickel-plated by error; it has now been sent back to the vacuum brazing subcontractor, where it will be thermally cycled to test the adhesion of the nickel plating. The shielded beam tube has been delivered from InnoSpec. The delivery date for the beamline components remains July 24.

Figure 9. High Resolution Monochromator (in End-Station C). The purpose of the channel cut monochromator is to select and transmit a thin band of x-ray radiation at the precisely desired photon energy from the incident monochromatic beam delivered from the upstream Laue-Laue monochromator. The single crystal has a 5 mm fixed gap.

Fig. 9a. The goniometer is based on a design previously delivered to Synchrotron Soleil and features large diameter, precision angular contact bearings and a substantial stainless steel support. The crystal cage (not shown) is mounted on the end of the drive shaft of the goniometer. The mounting comprises a precision-machined spigot on the main back plate of the crystal cage which locates on the ground goniometer shaft.

Fig. 9b. The support plinth is a massive block of granite that serves as a seismic mass. It is bolted to a steel baseplate that is pre-aligned and grouted into position to the floor. The vertical translation is made by a massive in-air wedge jack. This unit drives the assembly vertically with wedges mounted back-to-back moving relatively along a pair of precision guiderails on ground surfaces.

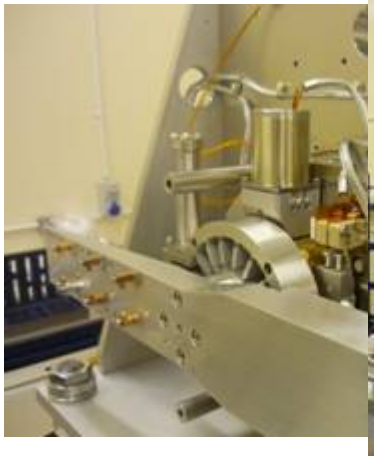


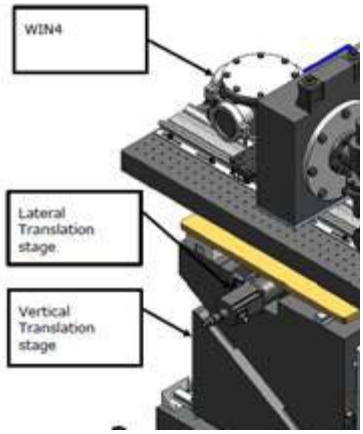
Fig. 9c. The crystal cage structure (not shown) is supported from this main back plate and the crystal cage mechanisms are in turn connected to it. Pitch motion is provided via a cartwheel, which is EDM wire eroded. The pitch flexure has a piezo electric transducer which is used to apply high-precision movements directly to the flexure.

Fig. 9d. The Bragg rotation is driven by a sine arm arrangement of active length 230 mm. The goniometer sine arm is actuated by a linear translation stage using a wobble stick, an in-vacuum stepper motor, a gearbox, and a precision ballscrew driving along a linear slide.

Figure 10: The End-Beam optical bench has been designed where possible with "off the shelf" items; where this was not possible, FMB-O's existing designs were modified to provide the compliant solution.

Fig. 10a. The optical bench consists of a breadboard mounted on vertical and lateral motorized stages. These are then mounted on a granite plinth for improved vibrational stability.

Fig. 10b. The filter array consists of four pneumatically driven filter holders. The slits consist of four tungsten blades supplied by JJ-Xray. The fast shutter unit is a pneumatic rotary actuator that actuates through 45 degrees in 0.02 seconds (20 ms). The I0 Monitor consists of an FMB scintillation detector.



Laue-Laue monochromator – FMB-Oxford: Subsequent to testing last March at Diamond Light Source and several technical discussions and iterations, the Part 1 bender and cooling design have been revised and will soon be tested. Long-lead-time items have been purchased, but the machined components have been slightly delayed. This should not affect the overall schedule (delivery to BNL on Oct. 23), but clearly the Part 1 components need to be closed out as soon as possible.

XPD Vertical Focusing Mirror – Winlight-X: The FAT was approved by the NSLS-II Project team on May 21. The equipment was shipped from France in four separate crates, departing May 27. Delivery to BNL is expected on June 12.

XPD Diffractometer – RPI: Release of the detailed drawings of the sample table for production and completion of the design of the 3-axis spindle assembly are slightly delayed. Design of the camera mount has begun. Manufacturing of the vertical stage is complete and ready for assembly upon receipt of the granite elements early in July. Manufacturing of the detector mounting plates is underway. The casting for the linear stage is nearing completion. The three spindle shaft elements are currently being machined and the spindle housing casting is done (Fig. 11). The sample motor was shipped to BNL on May 31 for early testing using an in-house control system.

Figure 11. 3-axis spindle housing casting at the RPI factory.

XPD X-ray Photon Counting Pixel Area Detector (C10): More hardware was delivered and tested using a silicon module (S10). Substituting CdTe chips for the Si chips is straightforward. The wire-bonded C10 boards are expected shortly. Testing of the CdTe C10 modules is scheduled for June 17–20 at the ESRF.

XPD lead/steel enclosures 28-ID: Enclosures 28-ID-A, B, and C are completed, checked, and accepted. Installation of enclosure 28-ID-D is nearing completion. Turnover of this enclosure is expected in June.

XPD Multi-Analyzer Crystal X-ray Detector: The scope of supply and the specs are being revised to contain cost and delivery time.

XPD robotic sample manipulator: A solicitation for the XPD Beamline Automatic Sample Holder Manipulator was posted on Federal Business Opportunities on April 11. Three proposals were received on May 14. Initial scoring took place ten days later, on May 24.

X-ray flat panel detector: The purchase order was awarded to Perkin Elmer Corporation on May 4; delivery date, July 15.

Beamline photon shutter: Final Design Review with Johnsen Ultravac, Inc. took place May 16–17 at BNL. Most attention was focused on the critical path activities, on pressure safety and interlock requirements, followed by review of BNL specifications and SOW provisions.

COST/SCHEDULE BASELINE STATUS

The current-period schedule variance (SV) for the overall project is +$4.4M with an associated schedule performance index (SPI) of 1.60. This indicates strong schedule performance for the month due to positive activity in most areas of the project, including Accelerator Systems, +$1.37M, and Experimental Facilities, +$117K. The cumulative SV for the project has green status with a SPI of 0.97 (-$25.3M).

The current-month cost performance index (CPI) for the NSLS-II project is 1.41, +$3.4M. The cumulative Project CV (cost variance) has green status at 0.99 (-$7.4M).

Experimental Facilities' cumulative SPI of 0.90 (-$5.0M) continued to improve from previous months, due to improved schedule performance for the month in all but two beamlines contributing to an overall positive SV for May of +$117K and SPI of 1.04.

Conventional Facilities had a May SPI of 1.32, +$59K, for green status. The cumulative Conventional Construction SPI has green status also, at 1.0 (-$665K).

Accelerator Systems, WBS 1.3, had positive schedule performance in May of +$1.4M and a SPI of 1.79, due to continued positive schedule performance in many areas. The cumulative Accelerator Systems schedule performance has continued to improve, with a cumulative SPI of 0.94 reducing the SV to (-$17.6M), resulting in green status.

Accelerator Pre-Ops, WBS 1.6, Integrated Test and Commissioning, continues behind schedule in the current month; however, the Pre-Ops schedule variance for the month has a positive SPI of 2.67, due to performance taken for the transfer of Spares from WBS 1.3, Accelerator Systems. This has contributed to a significant improvement of the negative schedule variance for Pre-Ops by over $2M with an SPI of 0.91, up from 0.77 in April. The current-period cost variance of $3.3M is due to earning performance on spares transferred into WBS 1.6.4 in previous months.

The Project was approximately 88% complete as of May 31, with approximately 51.5% remaining contingency/MR on BAC work remaining.

At the end of May there was approximately $51.9M remaining of Contingency and MR on the Project, based on the PCRs processed and approved through May 15. The remaining MR is $4,856K.

The Project EAC is $888,446K and MR/Contingency is approximately 40.2% of EAC work remaining. Project percent complete based on EAC work remaining is 85.5%.

The critical path remains unchanged from last month. There are now 10 months of float between the Project's early completion milestone and CD-4, with approximately 40% schedule contingency.

ENVIRONMENT, SAFETY, AND HEALTH

Actions identified in the corrective action plan (CAP) associated with the beam mis-steering event that occurred at the linac on May 29, 2012 continue to be addressed. Staff are being recruited from other BNL organizations and through contracts to augment existing PS staff, to ensure timely completion of these actions. Accelerator commissioning with beam will not resume until all necessary corrective actions have been satisfactorily implemented and a successful ARR (Accelerator Readiness Review) is conducted. Increased attention is being given to revision/preparation of the authorization basis documents and procedures necessary to support the Instrument Readiness Review (IRR) and ARR. A new Authorization Basis Manager has been hired to help expedite preparation of these documents.

All BOREs (Beneficial Occupancy Readiness Evaluations) for the NSLS-II facility have been completed, and work to close out the remaining post-occupancy items continues. Operational Readiness Evaluations (OREs) were conducted for the first three of ten laboratories in LOB 3, and pre-start findings have been completed. These labs are being used for assembly and testing of beam line components. The remaining seven labs in LOB 3 are in the initial planning stages for determining operational readiness. The BORE and ORE processes ensure that life safety, code compliance, and work planning/controls are in place prior to commencing with laboratory work. Conventional construction activity is nearly complete; work to address punchlist items continues. Painting of the roof deck in P1 is ongoing to correct a paint delamination issue. The repainting job is approximately 70% complete and is expected to complete by mid July. Fireproofing of two columns by the installation of sheet rock enclosures will be planned in the very near future.

Installation of experimental hutches is nearing completion. BOREs are being planned to ensure safety requirements have been met and to allow the installation of beamline components to move forward.

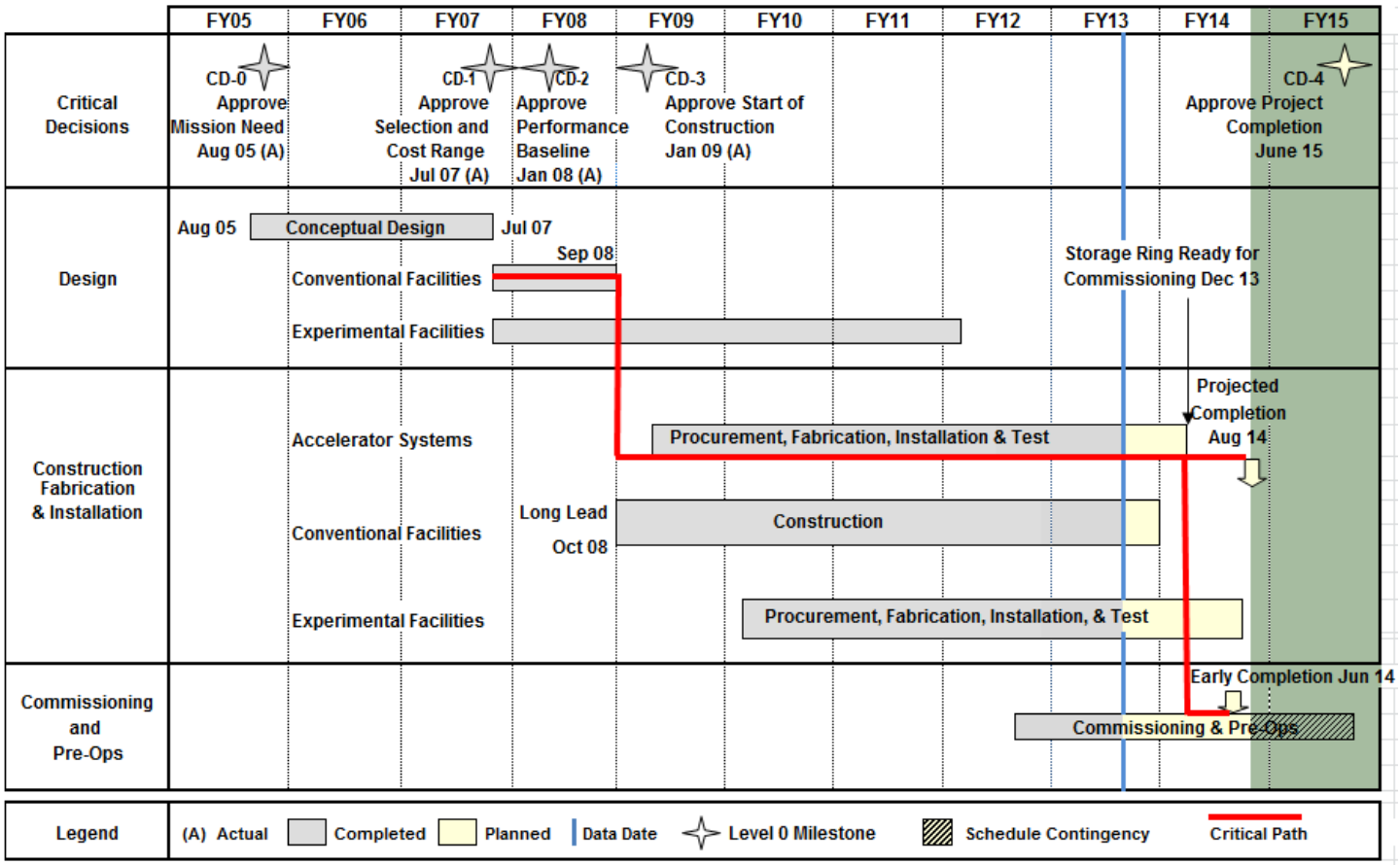
There were two recordable injuries in May. The first involved a cut to a worker's hand when he contacted a sheet metal support. Sutures were required to close the wound. The second was a contractor who sustained a hand injury while preparing a metal surface for painting. An antibiotic was prescribed.

NEWLY HIRED

Ciro D'Agostino – Electrical Engineer, Controls, Accelerator Division
James Klepper – Mechanical Designer, Accelerator Division
Steven Moss – Authorization Basis Manager, Conduct of Operations
John Trunk, Technician, XPD Beamline, Photon Division

The NSLS-II Project is being carried out to design and build a world-class user facility for scientific research using synchrotron radiation. The project scope includes the design, construction, and installation of the accelerator hardware, civil construction, and experimental facilities required to produce a new synchrotron light source. It will be highly optimized to deliver ultra-high brightness and flux and exceptional beam stability. These capabilities will enable the study of material properties and functions down to a spatial resolution of 1 nm, energy resolution of 0.1 meV, and with the ultra-high sensitivity necessary to perform spectroscopy on a single atom.

DOE Project Milestone Schedule



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The NSLS-II Project Progress Report is prepared monthly for submission to the Department of Energy.

This condensed version is available to the public at the NSLS-II website in PDF format. For questions or comments contact the editor, Kathleen Robinson, at krobinson@bnl.gov,

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