

Recommendatin Tracking for December 2009 PAC

Finding #	Description	Action Owner	Scheduled Close	Actual Close	Status	Response
F01	An evaluation of the tradeoff between a gain in brilliance (i.e. reduction of emittance) with the loss of space for the implementation of insertion devices should be made. Damping wigglers are not an optimum radiation source for a high performance light source and the incremental gain in emittance with an increasing number of damping wigglers is reduced for larger numbers of elements.	Steve Dierker	1/31/2010	6/30/2010	Closed	This tradeoff evaluation will be a continuing effort as we develop fully built out facilities plan. Process for the future beamline development proposals along with the NSLS-II Beamline development policy and User access policy has been established and implemented. The first call for proposal was issued on March 2010 and proposal evaluation process is expected to be completed by late September 2010. Decisions from this evaluation process will drive the specification of additional insertion devices. In addition, a dedicated external committee to review insertion devices is being assembled in order to provide sufficient technical and management (cost & schedule) oversights.
F02	The percentage of initial ID beamlines is comparably small. No planning was presented for the transfer of the NSLS beamlines. A resource loaded plan should be developed for the transfer of the 20 NSLS beamlines. It is unlikely that at the early stage of commissioning manpower from NSLS-II will be available for this operation. Also, the staff transfer from NSLS should be planned in more detail.	Steve Dierker	1/31/2010	6/30/2010	Closed	Plans for the transfer of NSLS beamlines (NxtGen), new MIE project beamlines (NEXT) and NIH funded beamlines are being formulated. This plan will follow the DOE BES funding guidance for the early operations and MIE and includes integrated resources required in detail for the outyears.
F03	Progress has been made with the booster procurement; three vendors would have the capability to execute the contract. Place the booster contract at the earliest possible date. Delays with the delivery have to be expected. Evaluate the performance of the vendor by looking at the execution of similar contracts. Part of the control system for the booster will be provided by the vendor. The Project should consider a fully harmonized control system for the booster by taking into account the double expertise needed for two different systems and the spare part policy.	Ferdinand Willeke	1/31/2010	5/7/2010	Closed	Booster contract was awarded in early May to BINP. We concur with the rest of recommendation and plans are in place to execute the booster contract, installation and commissioning accordingly. In particular on the controls integration, two BINP controls experts spent two weeks at BNL with the NSLS-II controls group to make sure that the booster controls will fit seamlessly into the NSLS-II control system.
F04	For the same reasons, place the Linac contract at the earliest possible date and evaluate if a full integration in the NSLS-II control system is possible.	Ferdinand Willeke	1/31/2010	3/15/2010	Closed	Linac contract was awarded in early March to RI . We concur with the rest of recommendation and plans are in place to execute the linac contract, installation and commissioning accordingly. NSLS-II controls group experts spent time at RI to assure that the LINAC control system will integrate well in the NSLS-II control system
F05	Only 20% of the magnets will be re-measured after arrival. Be prepared (and provide planning) to perform the magnetic measurements of all magnetic elements in house. The alignment philosophy of the multipoles on the girder and the girder in the storage ring is convincing.	Ferdinand Willeke	1/31/2010	1/31/2010	Closed	We concur with the recommendation and optional plans are formulated in case any additional in house measurements are required. Update: Magnet production has a very slow start up. As a consequence, much more magnets per unit time will have to be dealt with which exceeds present magnet measurement capabilities. Since beginning of 2010, we have been procuring long lead items for our magnetic measurement upgrade. In addition the existing measurement apparatus was refurbished with modern to ease doubling of the systems. Since December 2010 we are working on providing 4 functioning systems: 2 rotating coil systems (30mm coil, 25mm coil) and two "Mole" based systems. The process of providing additional labor resources in the budget to perform magnetic measurements is in progress.

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F06	Promising solutions for the RF coupler were presented but there is still a substantial risk regarding its full performance. When considering enlarging the project scope give less priority to the implementation of the full RF-system if budget or manpower difficulties should arise.	Aesook Byon	6/30/2010	3/30/2010	Closed	Contingency spend plan will be continuously updated based on the project performance, remaining contingency and overall Photon Sciences Directorate priorities in order to maximize the science output at NSLS-II. The current plan has a relatively low priority on the implementation of the full RF-system.
F07	The design of the hardware architecture for the control system should be accelerated. Consider developing a staged implementation of the control system as a fallback solution.	Ferdinand Willeke	3/31/2010	3/31/2010	Closed	With increased staff, the Controls system has made great progress and on track to meet the planned schedule (assessment by DOE review committee on Feb 2010). Cost and schedule performance for controls system has greatly improved over last few months. A number of hardware procurement has started (PSC, PSI, cell Controller, BPM-controller, timing system) and upon delivery, they are being implemented already as small stand-alone control cells (test stands) which will be expanded and integrated into the large system. Update: The dual core switches and the edge switch systems which form the backbone of the controls network have been ordered and received. Network cabling is on order. Installation of these compenents have been planned in detailed and is part of the recently updated resource loaded P6 schedule
F08	Carefully monitor the installation of potential vibration sources and the adequacy of their damping systems.	Marty Fallier	6/30/2012		Ongoing	Potential vibration sources are being carefully monitored as installation progresses. N. Simos is performing vibration analyses as part of the factory testing and installation commissioning process. This will be on-going until commissioning of all building equipment through June 30th 2012.
F09	Relatively high priority is given to the current increase to 500 mA. Put the emphasis for initial operation rather on the achievement of the stability, the proper functioning of top-up injection and on the reliability of the machine.	Ferdinand Willeke	3/31/2010	3/31/2010	Closed	Commissioning plan puts an emphis on stability related issues. But we need to have a first look on high intensity behavior as early as possible. If there are any surprises, it will take most likely a considerable upgrade and time to fix it and we need to know early. For machine protection reason, the machine orbit has to be controlled to a level of 50 microns at least before high beam currents can be successfully injected into the accelerator. The entire equipment protection systems will have to be confirmed to work reliably before we work with high intensity. All these systems contain aspects and elements which are relevent for high precision orbit stability on the micron level. Thus high intensity effects and high orbital stability have a common set of necessary conditions for success. We still plan to work on high precision orbit control with larger priority than for high intensity.
F10	When considering enlarging the scope of the project, give beamline construction a higher priority.	Aesook Byon	6/30/2010	3/30/3020	Closed	Contingency spend plan will be continuously updated based on the project performance, remaining contingency and overall Photon Sciences Directorate priorities in order to maximize the science output at NSLS-II. The current plan has a relatively high priority on beamline constructions.
F11	Speed up the construction of the insertion devices to shorten the overall commissioning time; evaluate the possibilities for external contracts.	Ferdinand Willeke	3/31/2010	3/31/2010	Closed	Insertion devices will be all constructed by the external vendors. Damping wiggler contract was awarded on time and being excuted successfully. EPU, IVU and 3-pole wigngers are also being procured and process has been going smoothly.

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F12	Make an attempt to have the insertion devices installed right from the beginning in order to save an additional 3 months shut down for their installation after first commissioning. Soleil has demonstrated that commissioning can be easily performed also with insertion devices and low gap vacuum chambers in place.	Ferdinand Willeke	3/31/2010	1/31/2010	Closed	We disagree with this recommendation. We need installation time. We do not want to damage devices during commissioning. Plan needs to be updated and optimized to include additional off project devices.
F13	The risk on the vacuum system was evaluated as low but it might be higher than anticipated. Pay attention to the development of the vacuum system; for most of the light sources the vacuum system ended up on the critical path.	Ferdinand Willeke	1/31/2010	1/31/2011	Closed	Overall risk on the vacuum system was high in 2010 but revised to low in recent risk analysis. We are closely paying attention to the production of the various components and continuously re-evaluating our risk assessments. All main chambers have progressed well with 15% of the chambers already ready for installation (exceeding the plan). As far as technical risk is concerned, the technology for the S4A chamber was changed from inconel to extruded Al. The system is now behind schedule but the revised system has progressed well (5 months from design to completed prototypes good for one pentant) so we are in good shape and vacuum chamber production is not a large threat to the schedule.
F14	Place the order for beamline optics as soon as possible. Major delays have been experienced for their fabrication. This procurement may be in competition with TPS, the ESRF upgrade and the APS upgrade.	Qun Shen	3/31/2010	3/31/2010	Closed	We agree completely with the committee's comments. We will pursue procurements of major beamline components as early as possible.
F15	Continue to evaluate and improve oversight of contractors and subcontractors and their contractor and subcontractor ES&H programs.	Steve Hoey	1/31/2010	4/30/2010	Closed	NSLS-II continues to closely monitor the contractors safety program. An additional Construction Safety Engineer was added to supplement existing staff in April 10. Oversight assessments have been increased in frequency from quarterly to monthly. TORCON and NSLS-II conduct self assessments based on the elements contained within the TORCON Site Specific ESH Plan. NSLS-II has aligned their assessment schedule and priorities to cover those topical areas pertinent to the phase of construction. The assessment results are communicated formally to TORCON for corrective action response. TORCON's internal assessments are shared with NSLS-II and reviewed against program criteria.
F16	The project should begin planning now for the required safety readiness reviews (internal) for beamline commissioning.	Steve Hoey	11/30/2010	11/30/2010	Closed	Coordination between Experimental Facilities Division, Accelerator Facilities Division and ESH have been ongoing. A Beneficial Occupancy Readiness Evaluaton plan has been developed to assure proper turnover of facilities and systems. An accelerator commissioning plan has been developed which includes the installation of the six project beamlines. For subsequent beamlines procedures from the existing NSLS will be modified as necessary to accomodate all necessary ESH readiness requirements.
F17	The project should develop a detailed plan for the complete beamline installation scope, dealing specifically with manpower needs, coordination with contractors (who will not have left the site), as well as scientific rationale for particular choices.	Qun Shen	3/31/2010	6/30/2010	Closed	A detailed beamline installation plan has been developed and implemented in the NSLS-II Project official resource loaded schedule.
F18	The Booster procurement and subsequent vendor liaison should be closely monitored.	Ferdinand Willeke	1/31/2010	5/7/2010	Closed	Booster contract was awarded in early May and the contract is closely monitored. The final design review is in February 2011 well on schedule.

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F19	The detailed choreography associated with the experimental beamline commissioning, transition to operations, the role of the schedule float, and formal readiness requirements needs better definition.	Qun Shen	3/31/2010		Ongoing	A draft commissioning and readiness plan for the six project beamlines has been created. Commissioning, transition to operations, schedule float, and formal readiness requirements will be detailed out in 2011.
F20	Continue to monitor manpower needs to ensure adequate staffing is in place to handle the FY10 and beyond increase in contract administration workload. Consider adding two additional staff.	Diane Hatton	1/31/2010	5/1/2010	Closed	Procurement staffing needs are being monitored relative to the Experimental Facilities Division procurements that are being identified and the complexity of the contract administration issues associated with awarded contracts. All significant procurements have, or are about to be, awarded. Janet Schlock, Senior Contracts Specialist, joined the project in January of 2010 and Sherry Alexander, Contracts Specialist, will begin work in June of 2010, bringing the NSLS-II procurement staffing level to nine. Staffing will continue to be monitored and adjusted in consultation with BNL Central Procurement.
F21	The renegotiation of the safety incentive on the Ring Building should be completed as soon as possible.	Steve Hoey	1/31/2010	3/30/2010	Closed	The renegotiation and implementation of the revised safety incentive has been completed for the Ring Building contract.
F22	The new safety incentive should be included in the LOB procurement.	Steve Hoey	1/31/2010	3/30/2010	Closed	The new safety incentive has been included in the LOB procurement.
F23	Given the good cost experience to date and the assessment that remaining risks seem to be under control, the committee believes that it is fully appropriate to begin planning for effective utilization of contingency funds that might become available. Nevertheless, the project is many years away from completion and there could be many demands on this contingency that are currently unforeseen. The project should wait for significantly more cost experience before enlarging the scope in this way.	Aesook Byon	6/30/2010	3/30/2010	Closed	Contingency spend plan has been formulated and will be continuously updated based on project performance, remaining contingency and the overall Photon Sciences Directorate priorities. The plan includes the priorities and optimal decision dates for additional scopes being considered. Optimal decision dates for the majority of additional scope items are after the project is over 50% complete and project has a significant cost and performance experience.