

Committee Report

NLS-II Conventional Facilities Advisory Committee

March 10-11, 2009

Members present:

J. Harkins, LBNL
K. Hellman, ANL
M. Kirshenbaum, ANL
J. Sanford, retired BNL
J. Stellern, ORNL

Members absent:

R. Hislop, SLAC

The following is a report of the review conducted by the Conventional Facilities Advisory Committee for the NLS II Project. It is organized according to the charge provided to the committee by the NLS II Project.

The committee was impressed with the progress that has been made by Conventional Facilities since the last CFAC meeting to be well positioned as the project proceeds into the construction phase.

1. Are all necessary measures in place for the CF Division to manage the construction and achieve the cost, schedule, technical and safety objectives of the project and in particular, for the Ring Building contract?

- No language is included in the current ring building construction contract for impact if FY 10 and FY11 funding is not provided at the start of the FY. Suggest project negotiate appropriate carry over funding (i.e. funding in an appropriate month beyond Oct.) as accelerated schedule is finalized.
- Suggest formal partnering with Torcon.
- Confirm that the delivery dates for government supplied equipment are stipulated in contract. If not, should now specify and check for impacts to construction.
- Complete plan to streamline site access process ASAP! Current inefficient process will likely result in a claim from Torcon as they try to process their subcontractors.
- Need clarification as to who is responsible for certain aspects of the CM effort. Suggest that the CM plan is reviewed, evaluated and updated during the initial execution.
- Suggest exercise all aspects of the Contract Manager/Prolog software prior to implementation (in preparation for the barrage of submittals and RFI's).
- The project has now included (or is in the process of including) \$1M of the safety incentive in the budget and is including the remaining \$1M of incentive in their risk registry. This is an acceptable approach but should be evaluated based on initial contractor performance.
- Need to confirm that construction funds can be used for initial operation of the DI plant.

- Make sure that the excavations in areas where there are known abandoned sewer lines are observed by contractor and BNL staff to mitigate any possible spread of contamination.
- Will need to confirm permanent closure of ring building and Code required restrooms if any of the LOB's are not awarded.
- Allow Torcon to propose revisions to the Ring Building WBS that would allow schedule to be developed that is the most efficient representation of the current plan

2. *Are the Ring Building General Contractor's plans consistent with achieving the cost, schedule, technical and safety objectives for the Ring Building contract?*

- The award of the contract for the ring building is to Torcon Construction.
- Torcon has excellent experience in large construction projects including complex pharmaceutical facilities and a \$907M Terminal Expansion at JFK.
- Receipt of the Torcon project schedule is planned for end of March. This will be a key document in confirming Torcon's understanding of interface requirements (accelerator installation, experimental facilities, phased occupancy, government supplied equipment and utilities, etc.)
- Torcon has identified the key subcontractors and awarded most of them. Torcon has previously worked with most of the subcontractors on recent major projects.
- Torcon discussions indicate that there is very good availability of workers for this contract.
- Torcon has taken the initiative to plan to prepare mockups of the tunnel to ensure they can meet the required tolerances.
- Torcon team personnel have worked together on previous projects.
- Quote for "clarifications" will be first indication of posture of Ring Building contractor.
- Torcon is assertive in asking for a meeting with BNL and their commissioning agent to ensure they understand the interfaces. Set up meeting between Cx contractor and Torcon ASAP
- Torcon's planning is certainly consistent with achieving the cost, schedule and scope objectives for the Ring Building.

3. *Are the CF Division's plans to complete the remaining conventional facilities scope beyond the Ring Building appropriate?*

- The short answer is "yes." The schedule for the conventional facilities is adequate and supports the critical path of the project. In particular, it meets the installation needs of the accelerator division.
- There are opportunities to speed up the availability of the sectors if more funding is provided. With respect to the LOBs a vigorous effort is underway to advance their availability. This effort to advance the construction of the LOBs is very promising and should be encouraged. This will provide space for the CF staff and provide them closer contact during the commissioning phase of the standard equipment. Later, the accelerator staff will particularly benefit by having nearby space during installation of the technical components.

- The expansion and extension of the utilities (electrical and chilled water) are on an urgent and fast pace to meet the commissioning needs of the standard equipment associated with the ring building. A work around plan was presented to mitigate any delays on the electrical supply.

4. *Does the plan for design and construction of the LOB's provide the most efficient, constructible and balanced risk approach to achieving this required scope element?*

A. LOB Design and Construction Considerations

- The current plan for design, procurement, and construction of the Lab Office Buildings (LOB) has a start date for design in the first half of FY 2010 with a completion of construction in the last quarter of FY 2013.
 - This time frame should allow sufficient time to comfortably complete the planning, design and construction activities.
 - On that basis there does not appear to be any obstacle to achieving the successful design and construction of this scope element of the project.
- The project has raised the possibility of accelerating the design and construction schedule.
 - Benefits would include construction cost savings, early retirement of bid uncertainty, and providing needed office and laboratory space.
 - Also, it is less challenging to facility operation if building construction can be completed prior to major accelerator and beam line operation.
 - In discussions with the NSLS CF staff it appears that their staffing resources in conjunction with the current ring building construction schedule provides a window of opportunity allowing for an accelerated LOB schedule.
- The only impediment to schedule acceleration appears to be building programming; which is still in flux.
 - One major programming decision rests on the actual building square footage.
 - Based on past experience at other facilities it appears that more space should be created for laboratories, offices and general storage than provided in the latest LOB layout.
- The LOBs being primarily office buildings supplemented with basic lab space, the design and construction itself does not present any special or unique challenges.

Once programming is completed the current approach appears to fulfill all the needs to achieving completion of this scope element of the project.

B. LOB Procurement Considerations

- A direct award to Torcon was not considered because it was outside the scope of their current contract.
- As part of the procurement approach for the laboratory office buildings both a Qualified Invitation for Bid and a Best Value Request for Proposal were considered.
- The Qualified IFB was not deemed the best approach as it provides a minimally qualified contractor. Based upon experience with both the Center for Functional Nanomaterials and the NSLS II Ring building the most qualified and experienced contractors will not

participate. Due to the complexity of the project and the need to integrate the LOB construction with that of the ring building using the IFB method will result in the exclusion of the very contractors we are seeking to interest in the project.

- The Best Value RFP is an established procurement method that proved highly successful in the Ring Building Procurement. As the intent is to utilize the same procurement package for the LOB's as was used for the Ring Building procurement, it shortens the overall preparation and review time. The requirements set forth in that RFP addressed the needs of the project and considered the Contractors Safety Program, Past Performance, Subcontractor safety and performance records, contractor project management experience and quality approach.
- The best value approach provides the flexibility to select the contractor demonstrating the best mix of experience and price.

5. *Does the master plan for future development of the NSLS-II site provide a logical plan for future facility requirements?*

Current status of master plan – In Progress

- The project is currently working with the A/E firm to develop the master plan. Specific goals of this activity include confirming the site layout supports future modifications and improvements.
- Overall development of the master plan is relatively complete for most known requirements. Defined project needs such as electric service and chilled water have been designed to accommodate current scope and future expansion of the facility. The interface points for the utilities are well defined for the staged completion of the LOBs. Needs for the planned and expanded LOBs have been incorporated.
 - The master plan identifies potential future facilities but additional design development is required.
 - JPSI facility – location still draft, program undeveloped
 - Central Office Building – Need for COB recognized, no program developed, scope not included in project
 - Short-term residence facility – Recognized as a need for the BNL site, scope not included in project
 - NIH Life Sciences Facility – potential need, program undeveloped
- Master plan development should include commitments to sites for recognized potential facilities, improving ability to coordinate utility locations, program the facilities and improve functionality of the master plan.
- Currently, travel is required through parking lots to circulate between LOBs and around the ring building. Master plan development should be reviewed for potential improvements to road layouts.
- The new orientation of the NSLS2 facility has the main access from Brookhaven Ave., the primary avenue on the BNL site. The location of the ring building has also opened up adjacent space outside the main ring for convenient parking spaces and pathways to the nearby NSLS and CFN facilities. It will provide area where the JPSI building can be sited in convenient proximity to the NSLS2 facility. The preliminary master plan indicates non-construction zones covering the three fans that represent future long beam lines. Locations of future buildings arrayed along the outer ring road are sketched into the plan.

6. *Is the ES&H approach of the project and the construction contractor well planned?*

NSLS II safety staffing appears to be appropriate for the size and nature of the project.

The project Construction Safety Program document is comprehensive, as is the program presented by Torcon, Inc., the General Contractor.

Torcon has effectively incorporated NSLS II, BNL and 10 CFR 851 requirements into its program, as well as rigorous safety expectations of its own that go well beyond basic compliance with safety regulations.

Torcon is clearly flowing down BNL safety selection criteria in its own selection of subcontractors, such as screening them for:

- Experience Modification Rate (Insurance Rate) for the past 3 years
- OSHA 300 Logs for the past 3 years,
- Corporate Safety Health and Environmental Program
- Hazard Communication Program, and
- Environmental compliance records for the past 5 years

The Torcon safety document clearly defines required subcontractor submittals prior to authorizing them to start work:

- Corporate Safety Program
- Project-Specific Safety Plan (including Job Safety Analysis for all major tasks)
- Hazard Communication Program
- Name of the Designated Safety Supervisor (OSHA 30 Hour Trained)
- Material Safety Data Sheet
- Safety Training affirmation for each worker
- Agreement to participate in the DOE VPP Star Site program and
- Labor/Management Safety Committee

Although Torcon has not worked at a DOE National Laboratory before, the fact that their Project Management Team has worked together successfully, the fact that they have had a good safety record over an extended period of time and that they have achieved Voluntary Protection Program (VPP) Star status at 20 sites over the span of several years is a positive indicator that they should be able to implement an effective construction safety program on the NSLS II site.

NSLS II should work with Torcon to make sure that they do not over-commit, such as requiring every subcontractor to conduct a documented safety inspection in an attempt to satisfy their perceived BNL expectations of conducting daily safety walks.