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May 3, 2019

Scott Larsen,
R&D Program Manager,
NYSERDA,
17 Columbia Circle
Albany, NY 12203-6399

Dear Mr. Larsen:

This letter summarizes the activities performed at BNL and at Cornell University in the period April 1 through 30, 2019, in support of the Cornell BNL ERL Test Accelerator project, CBETA.

SIGNIFICANT EVENTS AND ISSUES

Beam Commissioning Results. A complete and final report on "Beam Commissioning Results from the CBETA Fractional Arc Test" was completed and is available as Technical Note 39, with 23 authors from 5 institutions. See https://www.classe.cornell.edu/CBETA_PM/notes/CBETA039.pdf

Task 9. Beam commissioning operations continued under Task 9 – "Single pass beam energy scan" – with 300 kV beam from the gun, 6 MeV beam at the exit of the Injection CryoModule, and energies as high as 42 MeV from the Main Linac Cryomodule. Beam at 6 MeV was passed through the splitter beamline S1. Operations with 42 MeV beam through S1 waited on completing radiation surveys that would permit daytime running.

Beam was also delivered into the upstream end of the dump line. Final commissioning of the dump line at 6 MeV is only required as a necessity before first turn Energy Recovery is being performed during Task 10.

Some installation activities continued in parallel with beam operations, ensuring that each section of CBETA is fully ready for beam as it arrives during single pass testing. Splitter beamline R1 was complete at the end of April, with the minor exception of finishing the bellow and sliding joints at each end of the line.

Sigma Phi multichannel power supplies were in the process of being modified at the end of April, updated to match the as-built inductances of the FFA correction magnets.

Progress towards multi-pass operation. Welding and cleaning continued on the vacuum chambers necessary for multi-pass configurations of the splitters. Coils continued to be wound for both septum 1 magnets. Designs for septum 2 magnets advanced.

ACTIVITY CALENDAR

April 22	Oversight Board meeting
May 9-10	Advisory Committee technical review
July 15-Aug 15	Experiment hall (L0E) summer shutdown
July 17	Collaboration meeting

Table 1: Technical milestones in the NYSERDA contract. **Boldface** milestones are go/no-go.

#	Technical milestone	Contract	Actual
	NYSERDA funding start date		31-Oct-16
1	Engineering design documentation complete	31-Jan-17	31-Jan-17
2	Prototype girder assembled	30-Apr-17	30-Apr-17
3	Magnet production approved	30-Jun-17	23-Jun-17
4	**Beam through Main Linac Cryomodule**	**31-Aug-17**	**16-Jun-17**
5	First production hybrid magnet tested	31-Dec-17	21-Dec-17
6	**Fractional Arc Test: beam through MLC & girder**	**30-Apr-18**	**20-Apr-18**
7	Girder production run complete	30-Nov-18	21-Nov-18
8	Final assembly & pre-beam commissioning complete	28-Feb-19	13-Mar-19
9	Single pass beam energy scan	30-Jun-19	
10	Single pass beam with energy recovery	31-Oct-19	
11	Four pass beam with energy recovery (low current)	31-Dec-19	
12	Project complete	30-Apr-20	

Kind regards,

Steve Peggs

Cc: H. Biedenkapp, D. Hatton, G. Hoffstaetter, E. Hunt, K. Jackson, S. McKeon, J. Mehlinger, R. Michnoff, J. Misewich, B. Mueller, S. Pankowski, R. Patterson, T. Roser, K. Smolenski, J. Thom, M. Torpey, D. Trbojevic, R. Tribble.