Project Progress Summary

10 July 1990

Injector & Front End Test

-Injector tests during the past week have been fairly successful. We have delivered good beam to WBS 3 for their evaluation of the RF control system, and to WBS 5 for tests of the beam position monitors. Improvements to the control software have brought us to the point where setting up a good 5-MeV beam is (almost) routine. (C. Sinclair)

-Injector staff provided seven days of beam at 5 MeV for testing RF, controls, and diagnostics. Tests were extremely successful in that all high-priority validation activities are now $\geq$ 50% complete.

Test	Complete
Beam loss monitors	75%
Beam position monitors	
100 MHz	67%
1.5 GHz	50%
RF loading noise	75%
Bunch length by SRF #2 phase	100%

-Split-shift operation will continue with emphasis on getting to higher CW currents. HVPS design prevents proper long-pulse operation (but not CW), so alternatives are being investigated.

-Humidity in tunnel continues to impact FET installation activities. Reliability of dehumidifiers has been an issue, as has been the delayed commissioning of the third dehumidifier.

-Draft injector move plan has been produced and is being red-lined for issue 13 July.

-Schedule for cable installation has been initiated with defined dates negotiated for each WBS activity to supply data and cables.

-FET song sheet is being developed for signoff by each WBS.

WBS 1

Facilities (C. Reece):

-John Brawley finished welding 3 FPC couplers and 2 beam position monitors. A software upgrade for EBW QA printouts of the weld parameters has been ordered. Finished machining the solid HOM-Y coupler (2 halves). Running time on the CNC was 38 hours. The VTA control software, for filling and pumping while continuing to fill the dewar, has been developed. This reduces the transients on the pump pressure.

-A printed circuit board fabrication facility is being assembled on the first floor of the test lab near the mechanical area. This is intended for CEBAF-wide use. Tom Powers is the contact point.

Cavities (P. Kneisel): Pair #4 was tested last week. These are CEBAF cavities. Both cavities have solid couplers. Pair #5 was assembled Friday; however, it leaks on the gate valve stem inside the bellow. The valve assembly will be replaced. John Mammosser and Kenji Saito, with Mark Iaccobucci's help on software, evaluate cavity test results immediately during tests.

Compiled and distributed by the CEBAF Project Management staff. Please direct information and comments to Steve Corneliussen, Trailer City office 194, ext. 7582. Weekly deadline: 10 a.m. Monday (Friday preferred).

Cryomodules (W. Schneider): C′ cryounit was removed for leak checking. More checks will be made to isolate the problem and correct it. The helium vessels have been received from CVI. IA001/005 cavity pair is going into the cryomodule and will be tested the week of 23 July. The quarter-cryomodule is in assembly using IA002/003 cavity pair and will be tested the week of 20 July. The cavity pair received today will go into the next full cryomodule. The tuners arrive today. A current schedule is being distributed.

Acceleration System Interlocks (W. Schneider): More drawings have been signed off and turned over to Tom Mann. The issue of the arc detectors has not been resolved. Avoidance of overheating the cavities has not been resolved, in that there is no interlock to prevent the heaters from raising the cavity temperature above 295 K.

HOM Loads (I Campisi): Testing and thermally cycling loads. Preparing tests using a WR-430-HOM size taper to accurately map 1.9–2.1 GHz range absorption. When loads are cooled, two different frequency characteristics are observed. This phenomenon will be investigated. The HOMs in the new cavities are being looked at.

WBS 2

-Personal visits made to both common arc dipole contractors to clarify requirements and assure quality control of the products.
-Drawings and specification work continued on the spreader/recombiner dipoles procurement package and on the linac quadrupoles.
-Mounting and aligning the first FET magnets on their girders continued.
-The prototype arc dipoles were mounted on the stands in the west arc and the adjuster system passed its initial assessment by Will Oren.
-Transfer lines alignment done for WBS 7.
-A simplified version of the arc quadrupole girder was developed for production drawings as the stand design continued.
-Initiated survey of pedestal locations in the injector.

WBS 3

RF Power Group:
-DC crowbar fabricated and tested on the test stand power supply. It works properly as anticipated.
-Received three tubes from Varian (total 23 in).

RF Controls Group:
-The design review of the RF control module is being held this week with international experts.
-The RF group is getting a lot of experience with RF control and operation running the injector tests.

WBS 4

-Fabrication vendor has received trim regulator pc boards from board etch house. Loading of parts onto the boards will start this week.
-Specification for serial link scanner module has been finalized.

-A virtual disk has been established on the VAX system which will be used for storing approved cabling information. Cabling information from WBS 4 and WBS 7 will be entered this week.
-A large order of DC power cable for the north linac and east arc was received last week.

WBS 5

RF:
-Continued support of injector tests.
-Clarifying microprocessor software algorithms.

Safety:
-First production FSD boards undergoing tests.
-Area monitor spec complete; PR issued for 30 units.
-BLM system under test in injector test area.

Cryogenics:
-Serial highway driver software under final tests.
-Finite-state machine software in test.

Beam Diagnostics:
-BPMs being tested in injector test area; pulse tests look good, but still require CW beam.
-Cable layout for injector continues; should be complete this week.

General software:
-Local LAN software modified and tested to allow local computers to set operator input points.
-Bugs to user process interface software were discovered and fixed.

WBS 6

No report received.

WBS 7

Transfer line: Injector supply transfer line being welded. Remainder of NW quadrant being delivered next week.

CHL: Purifier being leak checked.

Piping: Work in NE quadrant in progress.

WBS 8

Accelerator Enclosure: The east end of the north tunnel and the remainder of the NLSB were turned over to the users last week. Humidity problems have inhibited tunnel painting. The 4160-volt service to the CHL was activated, and all compressors rolled in the right direction.

End Stations: Excavation is complete under the counting house lower level. The contractor is drilling in the steel housing for the elevator hydraulic cylinder. Concrete work continues on the beam tunnels. Temporary power has been installed to the site.

Test Lab: The 250-ton chiller is being readied for full operation next week. The main chem room ceiling is being installed.

EEL: The roof is almost enclosed. Interior mechanical, electrical, and partitions are progressing well. NOTE: Safety issues continue to be a point of contention. Hard hats and safety glasses are required.

Linac Installation

-North linac second BOD 6 July; WBS 7 was working there prior to BOD.
-Systems Meeting (this afternoon, CEBAF Center L103, 3:30) will have song sheets as an agenda item. Other systems integration agenda items: instrument air and tunnel cable.

Training Opportunities

-COTR Procedures, 8:30–noon, Room 47, this Wednesday, 11 July (tomorrow).
-Network Analyzer Users Course, 9:00–4:00, Room 47, 18 July.
-Intro to On-Line Stockroom, 2:00–3:00, Computer Center, 24 July.