

# Project Progress Summary

18 September 1990

## Injector and Front End Test

- Injector main pump and vacuum manifold installed.
- Fabrication of 5-MeV chicane vacuum chambers started on schedule at University of Illinois.
- Cables for injector magnets and controls pulled.
- First cryomodule has been mounted on its stands and cabling is proceeding.
- Vacuum pumps and manifold have been installed on the injector girder as injector reassembly continues.
- Electronics in the high-voltage cage for the gun were run successfully from the control room.
- Welding and leak checking of Helium transfer line end box for FET is under way.
- Dummy load for testing magnet power supplies is in tunnel. Power supply rack is undergoing installation in injector service building.

## WBS 1

- The High Bay cranes have been downrated to 2-ton capacity until repairs on the cables are completed.
- John Brawley electron beam welded 2 windows; both leak checked tight. They need coating and RF testing. They should be delivered to the cavity assembly area tomorrow.
- The third cryounit is waiting for the SMA connector. Cryounit #4 is being welded into the helium vessel.
- Meyer Tool will reply to Mark Waite by fax on the status of end can delivery. The current schedule is 1 October for the first end can and 15 October for the second.
- Cryomodule #1 is being rough-aligned in the tunnel. The third warm pipe was baked last week, the fourth is being assembled this week, the dummy cryomodule pipe is to be assembled.
- The quarter-cryomodule has been tested.
- Cleaned and assembled ten HOM loads to see if they stay clean for one to two weeks. If so, pre-assembly can be done here before shipping them for brazing.
- Brazing run with six windows had 100% success rate. These are BT brazed and need to be temperature cycled.
- Tested  $\text{Al}_2\text{O}_3$  powder ceramic; it was cracked during grinding. The Q measured  $1 \times 10^5$  sitting in the frame. This is .9999% pure alumina.

## WBS 2

- The first two girders for the magnetic elements for the Front End Test were assembled, aligned, and delivered to the accelerator tunnel.
- The installation of the linac pedestals started.
- The drawing of a prototype solid yoke for a QA quadrupole was sent to Procurement for fabrication.
- Studies of impact and solutions for the offset beam switchyard tunnels (A & C) were started.
- Layout of the 45-MeV spectrometer for the end of the Front End Test, using existing stand hardware and elements, was started.

### WBS 3

#### RF Power:

- Applied power to the HPA and started checking interlocks and controls. ETM is shipping two more HPAs this week.
- Received six more modified circulators from Ferrite Components. Tested one unit with good results. Will test the remaining five circulators this week.

#### RF Controls:

- Received 25 RF panels from Advex.
- Module front panels being silkscreened and fabricated.
- Waiting on IF board from vendor.
- Transformers being fabricated at Blue Crab Road.
- Analog board in process of being stuffed.
- All digital boards are in house.

### WBS 4

-Finished WBS 7 cable pull.

-Installed trim system rack in injector service building and connected to 32-channel dummy load in tunnel.

-Completed general system drawing for the trim system rack.

-Finished FET cable pull schedule for WBS 2 VAC system and ordered cable and transformers for VAC ion pumps.

-Received seven transformers for arc service buildings.

### WBS 5

#### Controls:

- Running HPA test software on local computer in injector service building.
- Ran first tests of gun controls from MCC.

#### Safety:

- Completed access room wiring in injector and north access buildings.

#### Beam Diagnostics:

- Completed detector board schematic and started art work for 1500-MHz monitor.

### WBS 6

-Hall C dipole RFP went out 13 September.

### WBS 7

-Dual 80-K purifier piped. LN<sub>2</sub> dewar and connecting piping 85% complete.

-NW end box 2-K circuit installed along with NE quadrant supply transfer line 2-K circuit. Welding and leak-checking complete.

-Supply and return CHL transfer lines to south linac loaded into sleeves.

-Kinney pump in W5 building was checked out after power connection; breaker trips. Kinney notified and replacement shipped. Also pulley in blower shaft fractured; replacement shipped.

-Warm gas interconnection line fabricated by cryo group. Two 80' sections given to WBS 8 for in-ground installation.

-30,000-gallon LHe dewar complete at CVI. Waiting for shipment permits; should ship this week.

-10,000-liter dewar cold-shocked and leak-checked. No apparent leaks.

-CVI/CEBAF completed pressure test on 4-K system with nitrogen. Repairs in process. GHe pressure test was to start Monday, 17 September.

-Main cryoline from 30,000-liter dewar to bayonet can fabricated; will be installed prior to dewar delivery.

-CTF is operational on the cryo unit; vertical dewar this week also.

-Started loading purified recovery piping to south linac.

- Terminating cables to injector cabinets for FET.
- Completing power connection to the CHL recovery compressor.
- Developing software for the cryogenic controls for the FET.
- Installing water filters for the CHL Kinney vacuum pump.

## WBS 8

### Accelerator Enclosure

- Completed painting the east arc tunnel.
- Completed the siding on the west arc service and exit stair buildings. Roofing and interior work continuing.
- Continued with underground utilities to the south linac service building.
- The contractor has permanent power to the south access building.
- Virginia Power continues to work on the power line to the master substation. They plan to energize the substation no later than 15 October.

### End Stations:

- Subcontractor reported a nonconformance is the BSY tunnel location. CEBAF is evaluating correction options.
- Forming the second lift on the counting house stairs and elevator shaft walls.
- Continued to form and pour beam line tunnel walls to Halls A and C and the SOG to Hall B.
- Completed excavation for beam dumps A and C.
- Began placing lean concrete in beam dump C.

### EEL Building:

- Formal joint contractor/CEBAF punch list inspections will begin this week. The anticipated BOD is 1 October.

## Linac Installation

No report received.

## Accelerator Division Support Services

### Machine Shop:

- Faraday cup fabrication completed (WBS 5).
- FET tunnel model now displays HPA and power supply cabinets.

### Stockroom:

- Two new electronic kits were added to support WBS 5.

### External Fabrication:

- 25-W cooling plate drawings complete and parts being processed (WBS 3).
- Procurement package developed for 38 beam viewers (WBS 5).
- Run safe box parts for FET received (WBS 5).
- Power supply chassis and crates due this week (WBS 4).
- Beam steering coil (50 ea) and yoke (12 ea) ordered.

## Linac 90 Conference

CEBAF staff presented a dozen papers at Linac 90 in Albuquerque last week.