

PROJECT PROGRESS SUMMARY

July 2, 1991

Semi-Annual Review

The 9th CEBAF Project Semi-Annual Review was concluded successfully last week. The committee found CEBAF to be healthy with no technical show stoppers, and recognized the significant progress made on Experimental Equipment. Excellent performance on civil construction was acknowledged. The Front End Test and achievement of 45 MeV beam was recognized as an important milestone toward CEBAF's becoming an active accelerator and nuclear physics laboratory. The entire staff deserves credit for and should take pride in these accomplishments and in the outcome of the review. Thanks.

FET Operations - No report received.

WBS 1

Facilities:

- Eight pair parts were turned over to the cavity assembly group last week.
- Changed the lapping machine that is on order to one that will do four independent parallel operations with variable speed.

HOM Loads:

- Eight heated loads are on hand.
- Working on the electropolishing technique for flanges in preparation for unheated loads.
- Studying HOM spectrum with loaded heaters on and off.

RF Windows:

- Processed sub-assembly parts that need EBW.

Cavity/Cavity Pairs:

- One pair test exceeded specs.
- Two pairs turned over to the cryo unit assembly area.
- Chemically processed 12 cavities and prepared them for final steps of assembly.
- Cavity pair production was halted on 27 June pending review of cavity pair assembly and test procedures, and similar review of HOM loads, RF windows and pair parts.

Cryo unit/Cryomodules:

- One of the cavity pairs received last week will be used in a quarter-cryomodule thermal cycle test. The other pair will be assembled in a cryo unit for traveller #8 buildup.

WBS 2

Magnets:

- The first seven wide-pole, 2-meter dipoles (BRs) and the first three 2-meter dipoles (BBs) were received from Process Equipment Co.
- The extraction quadrupole (QC) was signed off.

Stands:

- The first articles of both the east and west dipole stands were inspected at the vendor's plants.
- One of each of the two main styles of quadrupole girders for the arcs was fabricated by the CEBAF machine shop. The girders were installed in trials on the stands of the east arc and no problems were encountered.
- A trial installation of the BE dipole was made on the stands of the east arc to assess what final positioning tools were necessary to place the magnets.

Alignment:

- The first half of the east arc quadrupole stands underwent final alignment.

Vacuum:

- The formation of the first racetrack-form dipole vacuum chamber tubes at the vendor's plant was observed by Jim Parkinson.

System Integration:

- Layout drawings of the entire accelerator showing all magnet elements in a tunnel format were issued for information.

WBS 3

RF Power:

- Received 18 HOM filters from Gamma Microwave this week. Ferrite Components shipped 18 circulators, and Unique Systems shipped 20 directional couplers to ETM for installation in the HPAs there.
- Received 10,000 ft of 1/2-in. coaxial cable and 12,000 ft of 1/4-in. coaxial cable from Andrews this week.

WBS 4

- Cable tray installed through first half of east arc.
- Two trim racks each have been installed in east arc service buildings E1 and E2.

WBS 5

Safety:

- All run/safe boxes received from vendor.
- Spare KOH cells ordered for north linac ODH monitors.
- All controlled-area radiation monitors received from vendor.

Diagnostics:

- North linac Zone 15 BPM cables terminated. Detector chassis are being tested and will be installed this week.
- North linac Zone 13 video systems are installed and being tested.

WBS 6

Hall C HMS Spectrometer:

- The two dipole contracts -- coil/cryo and iron components -- were awarded to Elin and JSW, respectively. So far, 9 of the 21 support structure contracts have been awarded, and the first of the support structure items are beginning to arrive. The last contract is scheduled to be awarded by early September 1991, in time to be ready for the Hall C initial occupancy date of January 1992.

Hall C SOS:

- Argonne National Laboratory plans to award the contract for the unmachined steel and copper conductor for the short orbit spectrometer (SOS) this fiscal year.

Hall C Detectors:

- The HMS drift chamber fabrication has begun; final assembly will be accomplished this fall in the EEL. The remainder of the detector components are under design at the various collaborating institutions.

Hall A Dipole (Iron Portion):

- The iron portion contract for the Hall A dipole was submitted to DOE for approval on 27 June. Award is expected by 12 July 1991.

User Group

- The CEBAF Summer Workshop/User Group Meeting was held June 10 and 11 with 150 attendees. Collaboration Meetings for all three halls were then held during the remainder of the week, June 12 to 14.

N* Workshop

- Thirty-six theorists and experimentalists attended the N* Workshop held at CEBAF June 17-28.

WBS 7

- Cooled the 10000-liter and 30000-gallon dewars to 9 K and 11 K, respectively.
- 2-K cold box cooled to 80-K for further testing, with CVI on site.
- Completed the welding on the vacuum jacket of the return tee in the north linac. Leak testing has been initiated.
- Completed leak test on the 10000-liter dewar. No leaks identified.
- Leak testing the 30000-gallon dewar. High background still present.
- The supply transfer line southeast end box has completed leak testing.

WBS 8

- Continued removing the shoring from the inside of Hall A.
- Completed the wall sections in Hall C and continued working on wall sections in Hall B.
- Completed the last concrete roof placement for truck access tunnel B. The concrete work in all three truck access tunnels is now complete.
- Backfilling continues around Halls A, B, C and the truck access tunnels.
- MCI, the end stations above-ground subcontractor, started furnishing submittals for Plant Engineering's review.

Support Services

Machine Shop:

- Fabrication of a "Chamber Grabber" has begun for WBS 6.
- Fabrication of an HOM load polishing fixture has begun for WBS 1.

Stockroom:

- Withdrawal activity for the week: \$44,784.76.
- Total month expenditures: \$123,338.49
- Received 96 six-pack assemblies; 300 more assemblies are on order.
- Bar-coding assessment has involved the Computer Center to assist in the selection of compatible hardware for VAX usage.

Technical Illustration:

- New color site plan generated.

Document Control:

- Microfilming of drawings of "CHL" and "CEBAF Center" has been initiated.
- Drawing trimmer now available for users of the high-speed plotter.

CEBAF Summer Science Series

Lectures are being held in the auditorium at 3:30 each Friday this summer for teacher fellows, student interns, and other interested persons. The series began last week, when Bev Hartline discussed the CEBAF Project.

Future talks:

| | | |
|---------|--|------------------|
| July 5 | CEBAF Experiments and Experimental Equipment | Bernhard Mecking |
| July 12 | Quarks, Gluons and All That! | Nathan Isgur |
| July 19 | Accelerator Hardware | Charles Sinclair |
| July 26 | Accelerator Physics | Joe Bisognano |
| Aug. 2 | Data Acquisition and Scientific Computing | Roy Whitney |
| Aug. 9 | Accelerators and the Future | Hermann Grunder |

CEBAF Colloquium

Alan Krisch (U. Michigan) "Violent Collisions of Spinning Protons" Wednesday, July 3 at 4:00 p.m. in CEBAF Center Auditorium. Coffee, tea, and cookies at 3:30 p.m.