

# PROJECT PROGRESS SUMMARY

April 23, 1991

## FET Operations

- Six shifts of operation were performed this period. The other days were devoted to RF and software checkout, and recovering from CHL computer problems.
- The gradient and Q of the cavities in the cryomodule were measured and found to agree with measurements previously obtained in the test lab. The cavities meet or exceed specifications, but two cavities are limited operationally to 3 MeV/m by a waveguide leak. Tests uncovered significant microphonics due to the Kinney pump and other noise sources in the tunnel. The problem is under investigation.
- The electron beam was accelerated to 13.6 MeV through the cryomodule in initial tests of the first four cavities. Further tests were postponed until damping of the vibrations could be accomplished.
- The beam was successfully transported to the 45-MeV spectrometer dump and initial checkout of those transport elements was performed.
- A helium leak in the cryounit JT valve was repaired on site, following beam operations.

## WBS 1

- One cavity pair, which exhibited helium leakage during the pair test, is having one HOM load replaced to correct the problem. One cavity pair tested fine last week. Another pair has been assembled using the new solid window frame. It was to be tested yesterday. A second pair with solid window frames was to be assembled today.
- Two cryounits are in the cryounit assembly area. One helium vessel assembly is finished and going into the cryostat, and the other is having the insulation and magnetic shielding installed.
- The cryomodule (traveller #6) is assembled and being aligned. It will be moved into the test cave and cooled down this weekend in preparation for testing next week.
- The cryomodule (traveller #5) in the tunnel was commissioned last week. It provides 22 MV at design heat load. The cryomodule was turned over to FET Operations on Friday.
- Testing continues on various materials for HOM loads.
- Two windows with solid frames were turned over last week. Two additional windows were to be ready yesterday. Three additional welded windows with solid frames are at the RF testing stage, and one is having an electron-beam-welding leak repaired. Six new windows have been brazed, are leak tight, and have been thermally cycled. They are ready for electron-beam welding.

## WBS 2

### Magnets:

- The first three coil sets for the wide 2-meter arc dipoles (BRs) and one coil set for the standard 2-meter arc dipoles were shipped from United Magnet Technology to Process Equipment Co. for assembly into their respective magnets.
- The sign-off process started for the revised drawings of the Spreader/Recombiner dipoles and for the dogleg dipoles.
- The proposals for arc quadrupoles (QAs) were received and their evaluation started.
- The drawings and specifications for the extraction corrector dipole (BM) were signed.

### Vacuum:

- The drawings and specifications for the connection pipes between magnets in the east arc were signed.

### Survey and Alignment:

- The stand location marking of the west arc was completed.

## WBS 3

### RF Systems/Front End Test:

- Ran 13-MeV beam on Saturday. Excessive microphonic noise limited progress causing power trips and large fluctuations in phase and gradient. We are working on better isolation of noise sources.

#### Fabrication:

- Four new analog boards were built by Tri-Circuits and delivered on Friday. One of these will be populated immediately and tested this week.
- Initial check of the six layer I/O board was completed last week, minor corrections were made, and checking of the final artwork is under way.
- Design (from Rosenblatt) is complete for the control rack air cooling system.
- The "Blue Crab" shop is now fabricating and assembling cables, racks, power supplies, crowbar assemblies and waveguide components. Operations are in full swing.

#### WBS 4

- Core drilled four 4-in.-diameter holes in E6 so that WBS 5 work can proceed.
- Connected P2 panel for WBS 7.
- Finished grounding HPAs in zone 5 of north linac service building.
- Finished installing rack bases in east arc service buildings (E1 through E5).
- Started installing rack base support steel in south linac service building.

#### WBS 5

##### Safety:

- All ODH equipment for the accelerator has been received.
- Conduits for south access building started.
- All FSD modules for the accelerator are operational and ready for installation.

##### Diagnostics:

- North linac BPM coherent detector chassis received and are being assembled.
- North linac BPM master oscillator distribution components ordered.

##### Controls:

- The contract for GPIB crate controllers has been awarded to DSP Technology.

#### WBS 6

- Hall A expects the request for best and final offers (BAFOs) for their dipole iron to be released within a week. Expected contract award date remains 23 August.
- Bids for the various components of the Hall C support structure are progressing well. The bids on the front bearing and leveling jacks were received last week; the bids look good (schedule, cost, and technical) and awards will be made shortly. The invitation for bids (IFBs) for the rail and motor controllers went out last week. IFBs on two of the major structural components of the high-momentum spectrometer (HMS) carriage also will be released next week.
- The final technical drawings for the Hall C dipole were released Monday. Planned contract award for the dipole remains June 1991. The quadrupole contract is still on track with bids expected 8 May.

#### WBS 7

- The cryogenic system is at 2 K in support of the FET.
- The French, LAL/S2M, are scheduled to operate the cold compressors at ambient for the first checkout this week.
- All oil pumps except C5 have been realigned.
- CVI is starting to investigate the diode problem in the cold box.
- CHL computer was shutdown, last week to update the controls, and then restarted.

#### WBS 8

- The dome subcontractor continued erecting shoring in Hall A in preparation for constructing the concrete domes.
- Continued placing first- and second-lift concrete wall sections in Hall B.
- Continued placing second- and final-lift wall sections in Hall C.
- The walls for the truck access tunnel C are 95% complete.
- Placed 80% of the mud slab for truck access tunnel B.

#### Computer Center

- New NCSA telnet handouts available for the MAC and PC.
- Five of the nine SRF Trailers have been wired for data.

## Support Services

### Machine Shop:

- Fabrication of alignment arc girder for WBS 2 is in process.
- Began fabrication of eight waveguide tubes for WBS 1.
- RF control support brackets is being fabricated for WBS 3.
- Fabricated revised portion of HOM filter support bracket for WBS 3.

### Stockroom:

- Weekly withdrawal activity: \$35,191.21.
- Total monthly expenditures: \$66,023.71.

### External Fabrication:

- Modified the HOM filter support bracket for final quantity bid of 44 units (WBS 3).
- Received prototype breaker lockout samples for evaluation (WBS 4).

### Technical Illustration:

- Upgrade of all CEBAF evacuation plans is commencing.
- Two-color 1991 Accelerator Instrumentation Workshop poster completed for distribution.
- The airbrushed/hand-painted CEBAF brochure illustration was requested for use in a university textbook; 15,000 copies of the brochure to be printed.

## Announcements

- All-staff meeting and Service Awards luncheon, Monday, 29 April will include State of the Laboratory Address by Hermann Grunder, Director.
- Next CEBAF Science Series presentation (for kids of all ages): "Aerodynamics in a Tabletop Wind Tunnel," Wednesday, 24 April.