

Project Progress Summary

2 October 1990

Injector and Front End Test

- Injector cabling for first cryomodule is completed.
- The quarter-cryomodule is installed in the tunnel.
- Rough alignment of the front end for vacuum hookup has been completed.
- Klystrons were successfully reinstalled in the 2-seater HPAs after the move from the test lab.
- High-voltage power supply crowbars were successfully tested, as were control signal lines. Low-level RF should be run through HPAs this week.
- Cable pulling for safety system has been started.
- Solenoid focussing magnets on the injector were successfully operated.
- Commissioning of the CHL continues; oil has been loaded in the compressors.
- Agreement was reached on beam shutoff protocol: which signals, response times required, implementation.
- FET operation safety procedure is in final review/approval stage.

WBS 1

- The test lab high-bay cranes are once again rated at 25 tons.
- Completed all 16 in-house cavities. Also made one 5-cell cavity without couplers for heat treat studies. The last RRR niobium discs order has been inspected. IA007/008 cavity pair was tested okay; however, a gate valve leaked and it must be reprocessed. Received 2 more Interatom cavities last Wednesday, 26 September. They were to be processed today (October 2).
- One and one-quarter cryomodules aligned in the tunnel. Second cryomodule is being assembled.
- Received ceramics for 143 HOM loads.
- Twelve windows are ready to beam weld. Windows #27 and #28 were tested Friday, 28 September, and delivered 1 October.

WBS 2

FET:

- Three additional girders of magnetic elements (two installed already) for the Front End Test were installed near the quarter-cryomodule and aligned to be ready for vacuum tube, water and electrical hookup.
- The mounting and aligning of the remaining two sets of FET magnets on their girders started in the test lab.
- The stands for the linac magnetic elements were installed and aligned, and grouting was started.
- The layout and design of some of the diagnostic elements needed by the operations group for the FET was completed.

Magnets:

- The first coils were wound and potted by the coil vendor, and core machining was started by the core vendor for the common arc dipoles.
- The pre-bid conference for the spreader/recombiner dipoles was held on September 27.

Magnet Stands and Installation:

- The design of the east arc dipole stands entered the checking stage, and the west arc detail stand layout started.

System Integration:

- Two additional sheets (enclosure and water) and the "A" revision of the element sheet of the first drawing of the song sheet drawing set were signed off by representatives of all affected WBS groups and the operations group.

Survey and Alignment:

- The group is checking the skeleton traverse of the entire enclosure.

Cooling:

- The installation drawing of the injector water system continued in anticipation of being signed off and added to the contract for the air system for installation.

Vacuum:

- The statement of work and the drawing for the beam tubes for the system dipoles were signed off.

Magnetic Measurements:

- The dipole measurement stand was run under computer control.

WBS 3

RF Power Group:

- Equipment arrivals:
 - Two more HPAs arrived from ETM.
 - Received 11 flex sections from MEC (on schedule).
 - 24 elbows shipped Friday from Mega Industries (for FET only).
 - Two more klystrons received; total now is 46.
- Started testing the DC crowbar and power supply systems. We found that the substation main circuit breaker was programmed for minimum instantaneous current. Each time we crowbarred, it tripped entire substation. (Now correctly set.)
- Crowbar testing will continue next week along with RF dummy load operations.
- Mark Augustine on travel to Unique Systems to check on couplers and transitions.

RF Controls:

- Boards from Tri-Circuits received but having problems with quality control. Nine boards rejected so far; probably will be more. Problem is registration between planes.
- Software for RF control of FET coming along well; can now control up to RF on.

WBS 4

-Finished AC power design for:

- Ice ball heaters.
- Expansion of panel 1B-P in the injector service building.
- A mobile 208, 3-phase transformer and breaker panel cart called Bertha (Big Electrical Rig That Hops Around). Bertha will furnish 30 kVA of 208VAC, 3 phase and 115 VAC, 1 phase.

-Installed AC power in the last HPA in the injector service building.

-Received remainder of east arc power transformers.

-Established communications between the FET trim system rack and MCC.

-Did preliminary debugging on the prototype shunt regulator board. Regulator is capable of serial communications and of shunting a controllable amount of current.

WBS 5

RF:

- Programming 8-seater micro/local controls continues.
- HPA software continues test in conjunction with WBS 3.
- RF module software details continue to be defined.
- Test setup being built.
- First tests of new software scheduled for 5 October.

Beam Transport:

- Software for trim system being implemented for WBS 4 test runs (EC 1 October).

Safety:

- ODH system installation continues.
 - ODH cable runs complete NLSB.
 - Continued ODH cable termination MCC.
 - Began ODH cabling in tunnel.
 - Expected completion 19 October.
- Run/Safe boxes out for assembly (due back 12 October).

Diagnostics:

- 1500-MHz boards being stuffed; two complete (of 10).
- BPM rack being fabbed; installation next week.
- Wiring diagrams for BPA equipment complete.
- Camera mountings out for fab.
- Gun rail diagnostics software being installed; due 12 October.
- Additional harps for FET assembled and leak checked.

WBS 6

-Hall C dipole vendors conference set for 11 October.

WBS 7

CHL:

- Ambient pipe loaded in the south linac sleeves.
- Regenerating charcoal absorber.
- Oil in Howden Compressor.
- Final leak test in LN₂ system in progress. Hope to put LN₂ in dewar this week.
- CHL purifiers installed; cleanup in progress.
- Cooling tower operating on two pumps.
- South linac supply transfer line expansion can installed. Leak testing in progress.
- Fixes in warm piping in compressor room 95% complete.

Test Lab Fabrication:

- Second section of 80-K purifier for the CTF complete and ready for installation.
- NE end box 65% complete; due to complete 8 October.
- LHe piping for CHL is 25% complete.
- 10,000-liter head modification is 50% complete.

Tunnel:

- NW end box 3-1/2" line complete.
- NE quadrant supply transfer line 2-1/2" in leak check.
- Sixty-foot section of return transfer line placed through radiation wall in NW quadrant of linac.

WBS 8

Accelerator Enclosure:

- Completed painting from the east arc to exit stair #4 and will start painting remainder of tunnel this week.
- Completed all underground utilities to the buildings
- Continued with roofing and interior work on west arc service and exit stair buildings.
- Started remaining work on roads, parking lots, etc. (south linac and west arc areas).

End Stations:

- The subcontractor has been advised regarding the amount of corrective work required on beam-line tunnels A and C associated with their errors in laying out curves for these structures. The subcontractor has presented a proposed method of rework. It was furnished to DMJM and they gave their preliminary approval of it. The subcontractor plans to start cutting out walls this week.
- Completed beam-line tunnel to within approximately 10 feet of Hall C.
- Completed beam-line B tunnel walls to the counting house.
- Continued waterproofing the counting house walls.
- Completed placing lean concrete bases for beam dumps A, B, and C.
- Completed placing north, south, and west quadrants of the floor slab and the bottom half of the central pivot point floor slab in Hall A.

EEL Building:

- Exterior work is complete. Continued with painting, mechanical, and electrical finish work. Started project punch list inspections.

Linac Installation - No report received.

Accelerator Division Support Services - No report received.