Project Progress Summary

16 October 1990

Injector and Front End Test

-A major milestone for FET initiation was achieved with the completion of the FET Operational Readiness Review. A panel of external and internal experts heard presentations on the technical plans and all aspects of safety. Their reports says, "The procedures in place represent probably the most extensive and detailed preparations of any research accelerator commissioned in the past." A number of specific additions suggested in the report to make the operations more effective and safer will be implemented.
-All vacuum chambers for 5-MeV chicane received from University of Illinois cleaned and leak checked.
-All dipoles for 5-MeV chicane on hand.
-All components for region between capture section and quarter-cryomodule completed. Installation this week.
-RGA (residual gas analyzer) on injector finds one leak-faulty component to be replaced this week.
-Components for high-energy spectrometer and other downstream equipment in fabrication.

WBS 1

-The initial testing of the production cavity pair RF VCO (voltage control oscillator) and phase lock system was quite successful.
-Tested two cavity pairs last week: IA007/IA008 and IA010/IA016. Both passed and should be delivered this Wednesday and Thursday.
-IA014/IA015, the pair with the leak on the beam pipe to liquid helium vessel bellows, will be retested without reprocessing, and will then need to be reprocessed.
-A cavity with the new VAT gate valve is prepared and was to go on the test stand yesterday. Several tests will be made, including slow cooling, to see any Q degradation.
-Another cavity pressure sensitivity test is under way using a CEBAF cavity.
-Tuned several CEBAF cavities in preparation for assembly.
-Mechanical systems for the third cavity test rig are complete, and the vacuum systems are being started.
-The common assembly fixture for pair tests needs a modified roll-over fixture. If this checks out, six more will be made.
-One Lesker valve on the new cryomodule has a bellows leak. It was to be repaired 15 October and the final connection made.
-Reviewed the tunnel vacuum installation procedures.
-Reviewing the arc detector interlocks drawing. This will complete all the sign-offs. The fast shutdown of the beam has been resolved.
-Received over 95 more sets of ceramics for HOM loads and pre-assembled over 150 loads over the weekend.
-The batch of 12 windows is being worked. The EBW focus was off slightly on the first six, causing them to be erratically leaky. The repair and rewelding is fine so far.

WBS 2

Magnets:

- The contract for the QB quadrupole laminations was placed.
- Coils for two arc dipole magnets were shipped from the coil vendor to the core vendor to start assembly, and 52 coils are reported to be wound by the coil vendor.

Systems Integration:

- Preliminary access has started to the Ingres database file called *Five Pass*, which contains the lattice data for the entire accelerator, and element locations in the north linac and east arc have been validated along with the report generator that gives sagitta-corrected positions of the centers of dipoles.

Survey and Alignment:

- The group put in a calibration baseline as part of a preventive maintenance/calibration program for survey and alignment instruments.

Vacuum:
- The dipole magnet beam-tube package was sent to vendors for bid.

WBS 3
RF Controls:
- Infrared and arc detector boards on order; expect them to ship 22 October. Buffer and CPU boards assembly order placed with Golden Assembly Co.; expect delivery 24 October.
- The I/O board is now checked out.

RF Power:
- Gamma Microwave still appears to be on track with production of eight HOM filters for the FET.
- Installation crew now working on quarter-cryomodule and capture section HPAs. Plan to power up by 21 October.
- HOM filter support bracket attached to quarter-cryomodule. Plans are to check fit-up of HOM filter and waveguide this week.
- All remaining short waveguide pieces have been received from Hampton Machine, Inc.

WBS 4
-Installed two racks complete with AC power for WBS 5.
-Moved a loaded trim system rack and resistive load rack into WBS 4 test shed. We will soon be able to test at high ambient temperature again.
-Started work connecting FET trim system regulators to magnets.
-Updated specification for 32-channel, serial-link scanner module.
-Worked on further definition of slave serial-link card, which will reside in box power supplies.

WBS 5
RF Systems:
- Continuing up-processor and local control software.
- Running HPA tests locally and from MCC.

Magnets:
- Trim systems programmed for test and waiting.

Injector:
- Continuing to build operator screens.

Safety:
- Finishing work being performed on ODH system.
- Beginning cabling for Run/Safe boxes.
- Software HP to PLC tested and screens being built.
- BLM electronic boards in; sent out for part installation.
- Started fabrication of RF safety boxes.
- FSD boards being stuffed. The first 20 are to be delivered this week.
- ODH monitors installed. The system was to be ready for test by the end of last week.
- BLM digital boards delivered to be stuffed.

Diagnostics:
- FET racks moved in place and trunk termination in progress.
- Video system work in progress; system was to be complete 15 October to first five viewers.
- Plunger solenoids mounted; to be wired next week.
- All 100-MHz boards in for part installation (15 systems).
- 1500-MHz tunnel electronics delivered Friday to be stuffed. Detector board photoplots were approved. The boards are due 27 October.
- Beam viewers for 100-keV test were to be tested last week.

WBS 6
-Bidders conference held 10/11/90 for Hall C dipole was successful, with six vendors attending.

WBS 7
-NE end box complete. Ship to tunnel today.
-60-foot section injector return transfer line complete. To be placed in the north linac.
-Second half of the box purifier in place at the CTF. Waiting to be connected.
-CTF-CHL GHe cross-connect 80-foot sections in place. Pipe being welded to complete the line to the injector building.
-Purifier/recovery piping 100% complete in the south linac sleeve.
-LN_2 system is piped and being leak tested. Vacuum jacket in final leak check. 20,000-gallon LN_2 tank has been filled.
-LHe CHL distribution system 60%.
-10,000-liter dewar neck modification complete; ready to install.
-Started the D/B 127 compressor. Operated through the purifier at 6 atm. All hardware appears to be operational. It was planned to purify tanks and piping yesterday.

WBS 8
No report received.

Integration and Installation
-"Song Sheets" 28401-E-000301 Rev -, 28401-E-000302 Rev A, and 28401-E-000306 Rev - were approved and released. They cover Injector Tunnel Configuration, Machine Elements and Cool Water Distribution to STA 230.
-Accelerator site power is on the 40-MVA substation as of 15 October.
-NE turnaround box was delivered to tunnel today.

Support Services
Machine Shop:
- Completed modification of warm region beam-pipe flanges (WBS 1).
- Miscellaneous parts for Front End Test completed and delivered (WBS 1, 2, and 3).

Stockroom:
- Total business last week $32,259.75.