ASD Weekly Highlights for the Week Ending 17-Mar-2006

Operations

Pre-ARR

Asher Etkin was at the SNS to inspect the shielding changes and the certification of PPS V 4.0. We have a recommendation from the ARR Chair to SNS Management to allow operation "As we operated in the Ring Commissioning"
Ran RF in preparation for LDRD Running
Run some beam to LINAC Dump Wednesday in preparation for ¾ running for LDRD
Ran LDRD studies Friday
No running to the Extraction Dump until the ARR

ARR – Clearing Action Items

Procedures/Policies
Still no resolution on the He spill issue
ASE and AOE
Records Retention for important data from CECs and ASEs (EPICS)
Goal for System Signoff is March 28.

Check with Paul Gibson on:

Borated Poly at Front End
Installation schedule of Concrete (which days needed for next week)

Accelerator Physics

RF Systems

Ring RF

We are continuing to work with the Brookhaven Low Level RF system.
We are generating parameter requirements for an upgraded LLRF System.

Ion Source

A newly conditioned ion source was installed on Monday and conditioned on Tuesday. On Wednesday, after the routine 20-minute cesiation, it produced 43 mA. This is the highest current that has been produced after the first cesiation. Lowering the e-dump to 0.8 kV reduced the current to the desired 25 mA.

Instrumentation and Controls

The new framework for running archive engines and serving the data has been working for most of this week on 'archive1' and 'web2'. The configuration has been changed such that now all of the 2005/2006 data looks like a single archive – far more convenient than the previous configuration where one had to pick from a list of ~45 archives. The ability to view "current" data (typically today's data) has yet to be implemented.

New Magnet PS Control Screen Layout for the integrated SNS magnet PS controls from FE to RTBT have been agreed. An initial release will be ready for review and comment next week.

Procedures for archiving credited engineering controls were discussed and both short-term (pre-ARR) and long-term strategies agreed.

Information on the "power chains" for control system IOCs has been collected and is being entered into the SNS technical database (Oracle.) Below is an extract from a power tree/chain report as viewed from the Controls Web page. This report can be run in reverse order, naming an IOC and discovering its power source.

Reports Online for Control Systems

Power Chain

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Elec:PwrPl_RN-4DP2-C
_____ Elec:PwrPl_RN-4PP14-C
_____ |__Ring_IDmp:IOC1
_____ |__Ring_MPS:IOC3
_____ |__Ring_PS:IOC4
_____ |__Ring_PS:IOC5
_____ |__Ring_PS:IOC6
_____ |__Ring_PS:IOC7
_____ Elec:PwrPl_RN-4PP2-C
_____ |__Ring_MPS:IOC1
_____ |__Ring_MPS:IOC2
_____ |__Ring_PS:IOC1
_____ |__Ring_PS:IOC2
_____ |__Ring_PS:IOC3
_____ Elec:PwrPl_RN-4PP12-C
_____ |__Ring_MPS:IOC4
_____ |__Ring_MPS:IOC6
_____
```

Improvements have been made to the BLM software to support increased measurement times. Times are now hardware limited to 4.75msecs. Like the MPS system, BLMs are now configured and tested from Oracle. RTBT BLM bias and signal testing was completed, and BCM 14 was installed. Timing measurements have been made for all instruments from the MEBT through the RTBT, and this work was reported in a Design Note. Four BPM computers are ready for installation as soon as the power supply board parts come in, probably next week. The Beam Shape Monitor Chassis are built and tested and ready for installation, and beam scraper electronics have been started. Additional Timing ETS trigger fan-outs are built and ready to install.

The PPS for the Transfer Bay had been certified by week's end, and BL2 IPPS system is ready to be certified next week. Alarm severity parameters were added to the PPS EPICS records and the PPS archive request files were updated. The Beam On/Off sign wiring and rack termination was completed.in racks. Fabrication of BL4 staff panel, and 4a, and 4b user panels were completed. Thermal test were conducted on 5 new chipmunks and calibration is in process. The entire PPS system was "walked down" to look for and replace burned out light. (There were several.)

Checkout of Target Utilities controls continues. Most MPS inputs have been tested and verified to work. Test procedures are 75% complete. Most critical items have been addressed and the remaining "punch list" is for operational improvements. The service bay evacuation alarms have been tested. Controls for the 50-ton crane are complete. Control wiring for the hotcell vacuum pump is being verified.

SRF Facility

Project Upgrade

Action Items from the Sept 05 SNS PUP Internal Review are being resolved in preparation for the DOE Pre-CD-1 Review in May, 06.
Dry runs for that review are planned for the week of April 17 to 21, 2006.
A firm date for Action Items to be resolved will be established by next week.

DOE direction has redefined the PUP project start to be in FY08. Planning for the SRF Facility is being re-evaluated based on this direction to address interfaces with PUP and priorities between superconducting linac support and PUP development to support cryomodule procurement..

Survey and Alignment

- BL17, BL18 base plate work, remove equipment from RTBT tunnel.

<u>RTBT:</u>

Map rad-hard test stand rails and mounts after welding.
Re-align QV29 on rad-hard test stand .
Map rad-hard test stand rails and mounts after QV29 alignment.
Re-align and map QV29 on rad-hard test stand (after rail motion discovery).
Re-map the rad hard rails and mounts.
Re-set QH30 on rad-hard test stand (after rail motion discovery).
Map QH30 on rad-hard test stand.
Map QV29 and QH30 in situ.
Map rad-hard test stand while it was clear of magnets.
Align QH28 on rad-hard test stand (compensating for rail/stand motion under weight).
Map QH28 on rad-hard test stand.
Map QH28 in situ.
Set QV27 on rad-hard test stand.
Map QV27 on rad-hard test stand.
Network Tracker observations completed.
Network level observations completed.
Network direction sets completed.

TARGET:
BL18: Observed local total station network
BL18: Aligned 6 base plates.
BL4A: Marked bolt hole positions in cave.
BL2: Chopper #3 re-aligned.
BL3: Fiducialize flight tube #1.
BL17: Re-set chopper shield cavity.
BL17: Re-set large base plate.
BL3: Begin setting flight tube #1 stand.
BL3: BL3: Complete alignment of guides on strong-back.

Ring Injection

- Continued exercise in modeling beam line trajectories through the Ring Injection Area.

Cryo Systems

Mechanical Systems

Shielding progress.

Ring Systems Installation Activities

The RTBT magnets DH13, QV13 and QH14 beamline vacuum joints were reinstalled and leak tested. Two of the joints require further effort.

The RTBT Target Quad magnet Q30 was re-installed and the vacuum joint to the HARP vessel joint successfully made.
The RTBT Target Quad magnet Q29 was installed and the vacuum joint to Q30 successfully made.
The RTBT Target Quad drift pipe DP28 was installed and its alignment pin removed for adjustment.
The RTBT Target Quad magnet Q28 was installed and vacuum joint to DP28 made but not leak tested.
The RTBT Target Quad magnet Q27 was re-aligned on the test stand.
The RTBT Target Quad magnets' buss cooling line installation continued.
The RTBT Target Quad / HARP air and He lines installation continued.
The RTBT Target Quad BLM track in the "T" section was adjusted and successfully tested.
The RTBT diagnostic Wire Scanners WS21, WS23 and WS24 were installed and leak tested.

Ring Water Systems Installation

The RTBT Collimator Closed Cooling System test and checkout was completed.

The RTBT Target Quad magnet buss cooling insulator installation continued.

The RTBT Target Quad magnet remote cooling connector installation was started.

Electrical Systems

Modulators

- Processed oil on SCLME-18
- Installed new design IGBT Drivers on switch plate assembly.
- Repaired firing circuit logic card on CCLME-4

Power Supplies

- Supported the magnet measurement effort to check the polarity on RTBT magnets 29 and 30
- Replaced two corrector supplies in RTBT_Mag:PS_DCH30 and DCV30
- Calibrated several spare PSIs
- Rewired IOC connections to reverse horizontal and vertical planes on RTBT_Mag:PS_DCH30 and DCV30

Installation

- Verified wiring connections on HARP vessel

Other

- Reinstalled LEBT Choppers
- Tested new spare Switch Board for LEBT Choppers