

LCW Upgrades Update

- **Booster Cavity LCW Isolation Valve Replacement.**
 - 8 valves and unions previously replaced
 - An additional 10 valves and unions were replaced during long shut-down. The remaining 20 will be replaced whenever possible - coordinate with cavity rework schedule.
 - All valves and unions are on hand
 - Remaining Stations: 9, 10, 11, 12, 13, 14, 15, 16, 17, 18
- **Booster Bus LCW Strainer and Isolation Valve Replacement.**
 - Remove existing Y-strainers and replace with basket strainers at wall opposite beamline
 - Strainers at 6 locations have been installed: 1, 3, 6, 7, 13, & 19
 - Basket strainer and parts for the remaining 7 locations have been purchased and will be installed when possible.

LCW Upgrades Update

Booster Cavity LCW Isolation Valve Replacement



Old Valves at 03 & 04



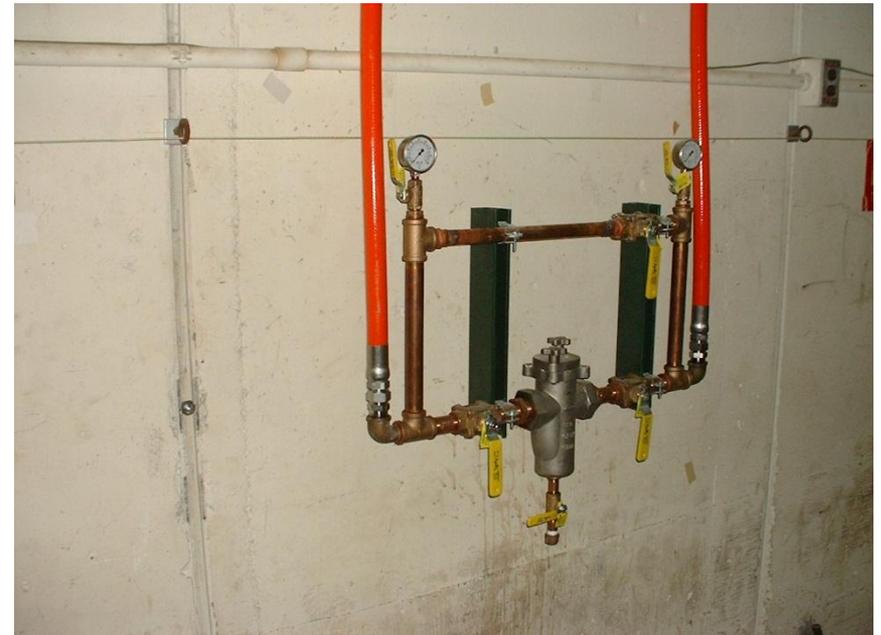
New Valves at 03 & 04

LCW Upgrades Update

Booster Cavity LCW Strainer & Isolation Valve Replacement



Old Strainer & Valves at 07



New Strainer and Valves at 07

LCW Upgrades Update

- Finish connection of LCW Return piping in East and West Booster Galleries to LCW Return piping at CUB.
 - \$128,800 Fixed Price Contract plus \$9,839 change order for additional work with Voris Mechanical
 - All work was completed at the end of August
- LCW Return Pump at CUB
 - Remove northern most old, existing return pump, and install previously purchased pump, and relocate valves to allow return pump isolation.
 - FESS T&M Contract with SEA, ~ \$45,000
 - Work is in progress and should be complete by Friday?

LCW Upgrades Update

LCW Return Pump at CUB



Old North LCW Return Pump



New Pump – Install in Progress

LCW Upgrades Update

- Install LCW Isolation Valves in CUB Utility Tunnel
 - FESS T&M Contract with SEA ~ \$18,000
 - Work is complete
- EDWA Magnets
 - Repipe EDWA magnet coils in parallel instead of in series
 - Work is in progress
- Remove LCW Piping for Long 13 New Absorber
 - Remove sections of 95LCW piping and cap
 - Remove sections of 55LCW Supply and Return
 - Work is complete
 - Some minor adjustment of the vertical alignment of the 95 LCW piping may still be required

LCW Upgrades Update

LCW Enclosure Isolation Valves in CUB Utility Tunnel



New Valve in LCW Return from Enclosure



New Valve in LCW Supply to Enclosure

LCW Upgrades Update

Remove LCW Piping for Long 13 New Absorber



Removed 55 LCW and Capped 95 LCW



Removed 55 LCW and 95 LCW

LCW Upgrades Update

- Miscellaneous LCW Work
 - Magnet bus hose fittings for drainage
 - Repair Choke leaks and Choke Tubing
 - Remove Candy Cane Stop-Cocks and plug
 - Replace Long 3 LCW Hoses
 - Replace 400 MeV LCW hoses up chute
 - Install LCW bypasses at return valves in the Galleries
 - Work above is complete

LCW Upgrades Update

- Booster Refill, Leak Testing, Commissioning and Balancing
 - Booster LCW is in the process of being refilled
 - Need to do leak checking
 - Need to do flow and pressure balancing