

# *FIELD REPORT-Mechanical*

**TO:** Frank John di Stefano, ADG  
**CC:** Cecilia Vaniman, MSU  
Don Platisha, CMS

**Date of Visit:** 5/10/12  
**Project:** MSU Cooley Lab Renovation  
**GDP Job No.:** 100104  
**Location:** Bozeman, MT  
**Contractor:** Dick Anderson Construction, Tri-County  
Mechanical, Williams P&H, Electro Controls  
**Present at Meeting:** Tim Tholt (DAC), Greg Schermele (DAC), Kirk Scheel (DAC) Ray Wagner & Kevin Scott (Williams), Larry & Don Blixt (Tri-County), Chad (Electro Controls), John Phillips (FICO), Todd Corder (TestComm), Dave Broquist (GPD), the electrician and the pipe insulation contractor.



## **Purpose of Visit:**

The primary purpose of the visit was to attend the commissioning process meeting but also to check on construction progress, conduct a walkthrough, and discuss any new mechanical issues with the contractors and the construction management team. A significant amount of time was spent discussing the requirements and physical arrangement of the autoclave, glasswash and electric steam generator equipment. The commissioning meeting commenced at 10:00, immediately after the sub-contractors progress meeting, and concluded at approximately 12:15. I walked the building with John Phillips and then met with Ray, Tim and Don regarding the autoclave/glasswash/steam generator equipment. I departed at approximately 3 p.m.

## **Meeting Agenda:**

John Phillips passed out the commissioning plan and discussed the major requirements of the commissioning process, the commissioning process schedule, the need for O&M literature in the near future and the training content and schedule. The group discussed the status of the systems and the anticipated startup dates, the status of the temperature controls systems and the proposed timeframe for testing and balancing to take place. Electro reported that their programming is on schedule to support startup and testing. John reminded them that there is a meeting for review of the graphics is specified and they will contact Loras upon his return from vacation. TestComm has not put together their test and balance plan yet and will do that shortly. It was noted that the T&B requirements are more extensive for this building than for many typical labs and that measurements and recordings are required for a significant number of operating configurations as well as other activities such as sensor accuracy verification, etc. The specified third party fume hood testing was also discussed at some length with a reminder that all systems need to be fully balanced and ready when the third party certifier begins his work.

### **Project Status:**

- Piping of the major mechanical equipment and systems in the lower level mechanical room continues at a very brisk pace. The main condensate pump and condenser water sumps have now been placed. The water heaters, R-O water skid and electric steam boilers appear to be the only major pieces of equipment that have not yet been placed in the mechanical room.
- The piping and ductwork on floors one through four is approximately 95% complete and awaiting equipment placement for final connection. Nearly all zone terminal coils are now installed and piped. Pipe insulation down the corridors and in the labs is very nearly complete and workmanship and appearance look to be very good. Duct wrap insulation has been placed on supply air ductwork located above lay-in ceilings. Fume hoods and laboratory casework are being installed. Rough-in work for temperature controls continues. The main supply air down the east shaft has been completed and insulation of the duct in the shaft is being completed.
- Work is brisk in the penthouse and fairly crowded. Pipe fitters are fabricating the drops and connections to the coils of the heat recovery coils. The main clean steam line for the humidifiers is in place but the drops to the individual humidifiers have not yet been fabricated.
- Sheet metal work continues to progress in the penthouse. The supply air duct main is now mostly or entirely assembled along the north wall. Sheet metal workers are engaged in assembling the intake and discharge ducts serving the main exhaust fans. The heat recovery ventilator is now resting in the penthouse but its final location and orientation have not yet been coordinated. The fresh air intake plenum has not yet been lined with tin. The Solar Wall has not been installed yet and the fresh air ductwork for the solar wall system is not yet installed.
- Overall progress of the mechanical systems is key to meeting with the building startup and commissioning schedule. All contractors seem to be on board with that fact and all are working toward that common goal. As previously noted, there generally appears to be as many pipe fitters and sheet metal workers on site as conditions will accommodate without sacrificing efficiency. Still, the schedule for startup and commissioning seems quite aggressive and it appears to me that the schedule may need to push slightly.

### **Items of Discussion:**

- Ray and I discussed the connection types, capacities and locations for the autoclaves, glasswasher and electric steam generators specified in Division 11. The equipment being supplied has different connection types, sizes, locations, etc than the basis of design and so we went through the information available on the submittals for the equipment. Some of the information allows Ray to move forward with planning but more complete information is needed and Tim is actively seeking better technical information on equipment installation. The autoclaves and glasswash unit are reportedly on site but the steam generators, for which the current information is least complete, will not arrive until the end of the month.

### **Critical Path Items:**

- Ray needs complete information on the electric steam boilers, autoclaves and glasswashers as soon as possible so that he can lay out and arrange the piping appropriately. Tim is attempting to gain the missing information and Ray, along with

DAC, will figure out the most optimal arrangement for the steam generating equipment once required clearances are known.

- I (GPD) will try to clarify with MSU whether soft water is desired for the autoclaves (aftercooler function only) and glasswasher (aftercooler and vacuum jet educator functions). A softener may need to be acquired for this purpose.
- Tri-County will check their bid scope to determine VFD startup by factory authorized personnel and also who they intend to do the dynamic fan balancing specified in Section 15820.
- **As we approach completion, all parties are encouraged to review the requirements of the test and balance specification. The T&B work required under this contract is significantly more involved than is typical for commercial or other institutional work as it involves some level of systems verification work that may more normally fall on others. It also includes simulation of certain system conditions and testing and balancing for virtually every possible operating configuration of the systems. All parties need to be aware of this and a concerted coordination effort will be required to operate the systems as they need to be in order for the proper test and balance activities to occur. This will, in some cases, preclude the ability to balance the air systems and then subsequently balance the water systems as both systems will need to operate in their final configuration. Work also includes optimization of systems and this will require additional time.**

**END REPORT**