

7. BHE proposed a dedicated tempered water system (one pipe) to be provided with heating source in the basement to serve all Eyewash and Emergency Showers. This will potentially save piping cost and heating energy versus using mixing stations from the domestic hot and cold water. Piping for this would not need to be insulated as this water can be supplied at room temperature. Water to be heated only when used. Steve agreed this would be acceptable and requested drain points be added on the mains to reduce dead legs.
8. A lengthy discussion took place to resolve Emergency Power vs. Standby Power. The summary of this discussion was overridden at the CPS meeting later in the day. Standby power from the Central Plant has not been tested at this time, but it is anticipated that there will be approximately a 60-90 second delay. The project to proceed with all Human Life Safety issues including Fume Hoods to be on Emergency Power with all other items on Standby. (2) automatic transfer switches to be provided. Summary:
 - a. Emergency Power
 - o Emergency Lighting
 - o Fire Alarm
 - o Fume Hoods and associated support systems (support systems include automatic sash positioned controls and exhaust fans that serve the fume hoods.)
 - o Building Automation System (BAS)
 - b. Standby Power
 - o Telecom / Data Rooms
 - o Freezers + Cold Rooms
 - o Ventilated Cage Racks
 - o (2) outlets per lab
 - o Vivarium Air Handlers
 - o Subsequent to meeting: BHE recommends that supply fans and makeup air units that serve the wet labs and instrument lab spaces (any spaces that have fume hoods) are placed on standby power.
9. Fred relayed a few questions/comments from Ernie:
 - a. Ernie asked if there is an alternative system to cool the telecom rooms instead of split system units. Dave K proposed that during DD BHE look into supplying the rooms using lab air and exhausting the room to the lab heat recovery system to reclaim heat during the cold periods. (During warm weather the exhaust air will be routed around the heat recovery unit.)
 - b. Run equipment cooling water in labs at a warmer temp during hot / humid weather to eliminate condensation on pipes. Another option would be to design the equipment cooling water system to operate at a year round temperature that would always be well above dew point.
 - c. Controlled temperature rooms to have a small amount of ventilation.
10. Doug asked a question about the fin tube material. It is likely to be a copper system.
11. Kevin asked how the grounding loop at ISC 1 will be maintained during construction. Team will explore. Does the project need a low impedance grounding system? If so, how low? During the DD phase this issue will be discussed with the users.
12. Will there be a man-door from LISB to the tunnel? With the addition of the SS line crossing of the tunnel, a man door may be needed to get equipment into the tunnel. LISB will look into the addition of a man door to the tunnel. At this location, a switch for the tunnel lighting will be required.
13. Can we use steam condensate in the building for domestic or industrial water pre-heat? It was concluded that this approach may not really save much energy, except pipe heat loss in the tunnel, since heat extracted from the condensate at the building will need to be added back into the system at the steam plant.
14. Lighting in the bathrooms to be tied to occupancy sensors.
15. Will there be task lighting at the lab benches? Yes. The team needs to drill down on the FC issue. Users to visit existing labs which have recently been retrofitted with task lighting. Different labs have different lighting levels and controls. Task lighting at benches to be tied to

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- occupancy sensors in the aisles. Kevin suggested controls for each bench location. This to be evaluated by users along with lighting levels during visits to existing labs.
16. Comment: a generator is listed on pg. 65 of the narrative – no generator is to be provided. Emergency and Standby power to be supplied by the Central Plant.
 17. UPS for labs to might be consolidated. This will have to be discussed with the users.
 18. Jeff stated that DAS has new set point criteria for heating and cooling. 68 degree heating and 75 degree cooling with a 5 degree deadband.
 19. Jeff wants to make sure the design team reviews the fan curves when selecting fans so that they operate at maximum efficiency levels.
 20. Is it possible to use a fan wall? Other new projects on campus are using this technology. Dave noted that a true fanwall is a proprietary system by Hunt Air. If fan walls are specified as the fans to use, other manufacturers attempt to compete with the Hunt Air with their own hybrid version of fan walls using fewer and larger fans and motors. Overall they do not appear to embrace the technology. The SD narrative is currently based on traditional fans which allow more competition from a variety of manufacturers. Jeff will explore what systems are being used on other projects.
 21. Does the animal prep room in the MRI suite require exhaust? Denise pointed to ISC Phase 1 where a Bio-Optic Lab HVAC system had to be converted to exhaust (at a high cost) after move in because animal research was added to the room function. This is a long distance from the ventilation system for the wet labs. Team to consider re-locating the animal prep room.
 22. Where is the control panel for the cage wash equipment? Is it possible to remotely locate the controller away from the dirty side of the cages? This will likely need to be inside the animal facility. A slave controller can be located on the clean side of the cage wash.
 23. EHS requested direct connection of ventilation for the Chemical Storage Cabinets – this will help EHS get more comfortable with lower ACH in labs.
 24. A conference call will be scheduled soon with the design team engineers, EHS, Jeff Madsen and Fred to review Air Change Rates for labs.
 25. Doug Gorder expressed concern about the use of passive cooling systems as proposed in the SD narrative for the Dry Labs and Offices. He noted that the UO has had ongoing problems in recent. Bruce explained that the passive cooling system being proposed for LISB is different in that it has a mix of spaces, some of which use air conditioning and others that use passive style chilled beams for cooling. Given adjacencies, the temperature fluctuations should be limited. Heating will be done with and fin tubes.

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6. Remotely opening standby breakers if there is a problem at the central plant is an option though it is not desired to have remote closing capability.
7. Automatic Transfer Switches are to have exercise during lockout capability like the ATS's installed under ISC phase 1.
8. The building management system shall be on UPS.
9. Catwalk crossings are intermittent and should allow for distribution panels to serve the first and second floors.
10. Putting panels facing the front of TR racks in TR rooms may be an option.
11. Consider swapping TR and custodial spaces.
12. Heat recovery from the tunnel to be an air to water heat pump which is used for low temperature water (140 degree) in the building. Will pull 24,000 cfm out of the tunnel and pump 55 degree air back into the tunnel down stream.
13. Plant will provide 110 # pressure steady compressed air for the building. LISB to dry and filter the air at the building.
14. Domestic water metering to be tied to DDC system. EWEB charges an extra fee to read their meters, so the project will need its own meter.
15. Project must provide dual meters for energy (low flow / high flow steam readings). Reference campus standards.
16. Project to provide a kiosk / energy dashboard in the lobby.

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