

**Minutes – Friday, February 17, 2012**  
**Detailed Design Review**

- I. Slide 5:
  - a. Identify critical values, not just make it work - Thermosyphoning
  - b. Need to characterize - Thermosyphoning
- II. Slide 13: Engineering Specs – Thermosyphoning
  - a. Can we calculate all numbers?
  - b. What specific efficiency are we looking at?
  - c. Durability – more than a go/no-go
    - i. For example, make it a fixed number of times it has to last being able to take it on and off
- III. Slide 21: Vibration Isolation CAD
  - a. How flush will the plate be to the floor?
    - i. Is floor totally flat in that location?
  - b. How much force to pull the anchors out of concrete
- IV. Slide 25: Design Choice Justification
  - a. Any risk of the shocks bottoming out?
  - b. Add in cost of dampers to BOM – but then also note they were donated
  - c. Take a small sledge hammer to the rig and figure out where the natural frequency is at
    - i. Bill is big on this idea
  - d. This can also be done to test how much additional damping is being provided from shocks later on before you ever need to turn the machine on
- V. Slide 47: Thermosyphoning
  - a. Could run some FEA on the thermosyphoning mock-up to see how much deflection and stress there would be when the machine is running
- VI. Slide 52: Vibration BOM
  - a. Add in MR price as noted before (slide 25)
    - i. Reflect true price of shocks
    - ii. Then subtract out due to donation
  - b. Car shock pricing?
  - c. Look into whether or not we actually need to buy the fancy caulk gun for concrete anchors
  - d. Ball Valves – why so expensive?
    - i. Can we find cheaper valves or better setup so it's not so expensive?
- VII. Slide 56: Vibration Test Plan
  - a. How/where are we going to measure vibrations
  - b. Revise test plans overall – more detail
    - i. Where are sensors going to be placed, etc.
- VIII. Slide 59: Thermosyphoning test plan
  - a. Watch out for degrees of freedom installing TS
  - b. What's going to happen when welding heats up all of the pipe, elbows, etc.
    - i. Talk to DR? Mahany?