1) We need ~ 1 W rf applied to one laser, to make a beam with a rep rate

compatible with the 1/4CM at 1497 MHz and the 750 MHz buncher that FEL will let us use for free

2) We think this free FEL buncher is "ready to go", complete with a water skid Gubeli designed, and a solid state amp system. Does it come with a control module?

3) We hoped perhaps there were "wimpy" CEBAF klystrons we could use for start-up, for free. We would need the HPA that Rick tried to order last week.

4) WE have the 1497 MHz chopper cavities in our beamline design, as insurance, to guarantee we don't send beam to HDIce "out of time" which could lead to depolarization. They will be placed on the beamline but if we are truly dirt poor, we can begin operations with them unpowered (and detuned)

\_\*bare bones list of components:\*\_ a master oscillator, control module for laser and for two cavities inside 1/4 CM, probably one for the 750

MHz FEL buncher (unless it comes for free?), HPA that can be used one day to drive three good klystrons, two "wimpy" klystrons, any water skids that are needed and that don't come "for free" from FEL.

0) maybe we learned we need the choppers, in which case we need one rf control module and one amp, per cavity + water skid

1) At some point the FEL will want their 750 MHz buncher. Tom Powers says when this happens, we can have the old 1497 MHz buncher, also for free. I think this means we get an old water skid, and the klystron they use to drive it, not sure if it comes with a control module. When we move to this configuration, the HPA must drive three klystrons.

2) to get more beam energy from the 1/4CM, we might need better klystrons

\_\*full rf needs,\*\_ if we learn we need it: one control module and one amplifier for each chopper cavity, more water skids?,any stuff for the free 1497 MHz FEL buncher that doesn't come with it, better klystrons to reach 10 MeV