Topics for discussion

How quickly should CEBAF restore? What is our goal?

Does a simple machine like UITF restore by loading a file? Yes, but only if we don’t change the machine when it is OFF, open.

Process. The good and the bad. Slavish devotion to “process”. Process over substance. How often do we follow a process that provides little or no benefit?

Does HCO work? Does it help us restore the machine efficiently? My esteemed colleague Keith Cole highly values the HCO tool and since I respect Keith Cole, I will support HCO process. But I also notice we spend lots of time fixing things while we start the machine, i.e., after we’ve performed HCO and made all the boxes green, we still spend lots of time fixing things.

Should we adopt HCO at UITF? Sure, why not? if groups had time to perform at UITF, maybe turning it ON would be easier, more efficient from the Operator point of view. But UITF is a “best effort” accelerator, I think the old system is OK. We try to turn it ON and then call groups when we learn what doesn’t work. Maybe this is more efficient in global sense?

I think sometimes good “apps” get co-opted. ATLis started as an app to coordinate work and then became a safety tool. Beam Authorization starts as a safety app and then becomes a HCO motivator.

Process is good, so long as it solves a problem. It’s healthy to evaluate the effectiveness of process, to improve things. It’s OK to question process, if the goal is to improve it.

Who owns “gradient”? CMs are complicated and their operation impacted by many subsystems. At UITF it was difficult to find a person or group who would own the problem and help solve it. i.e., keeping the booster ON in GDR mode. Who wants to make a flow chart of all things CM? Cryo owns pressure and liquid level, some unnamed group in Engineering owns the heater to simulate RF heat when RF is not applied, heater controls live inside a box that also does some other things (what?), SRF installs the diodes used to measure temperature, but some group in Engineering is responsible for sending these diode signals to what, where? An interlock box?, high power RF provides the klystrons, and low level RF guys design feedback loops to keep cavities resonant, while SRF owns the “microphonics” that complicate the LLRF feedback loops, SRF tried to provide pzts to keep cavities resonant but apparently abandoned this idea (?)…. Can’t there be one POC to help us streamline troubleshooting? I felt I had to call everyone to plead for help and nearly all the time, the person I called passed the buck.

What would it take to make our BPMs provide absolute positions that are close to zero, ie., when we have good setup, I notice some absolute positions are millimeters from zero. Can our absolutes ever look like zero-pos-ed rels? It’s certainly not hard to hit the “zero pos” button, but what would it take to not require this? I guess I’m only saying this because sometimes positions are 5 mm away from zero…..

Vacuum, accelerators need it! How good should it be? How about we use our ion pumps as pressure gauges, a new diagnostic, viola!

Reproducing the machine: putting the beam in the right place at the right time. Is it really that simple? whole story? Too few temporal diagnostics?

If we change the machine, e.g., injector upgrade and CM swaps, we then restore ops in “commissioning mode” and not “restoration mode”, so it’s hard to expect to load a file and reproduce the machine.

Make a list of all the possible reasons the machine does not restore: we don’t save settings with cavities precisely crested (leaving gradient on the table), we don’t have BPMs everywhere so impossible (?) to put the beam “in the right place” over and over again, our magnets do not return to the same expected field, subtle reasons like “new Wien angle”,

The plan going forward: run C100s, C75s and maybe C50s into field emission mode, right? Which means we are going to destroy stuff. So why do we install valves with plastic seals that disappear over time? Does Ops need valves at CMs? What is the purpose of cold valves, why do they exist if they can only be used when CM is warm?