Two “new” considerations drive the schedule in terms of our most important milestone “Beam on HDIce”. These considerations are:

1. Facilities work extends to August 2016, i.e., we won’t have a beam enclosure until August. This impacts the completion of our PSS, our ability to construct the MeV beamline, the installation of cryo transfer lines to HDIce, etc.,
2. HDIce won’t be ready to install their hardware until November 2016, with first cooldown of an empty target happening January 2017, and installation of the first polarized target inside the IBC February 2017

So although the sub-milestone “apply RF to cold ¼ CM” remains very important (and a great motivator for Cryo and RF groups), it does not seem so important to meet this milestone by the previously stated April date. I want Cryo and RF groups continue to work toward this date, but I prefer our Plan A rely on the installation of the new ¼ CM which will be ready for installation during June/July.

UITF Schedule (January 28, 2016)

**Preferred path forward : install the new ¼ CM which will be ready for UITF in July**

Key issue, relax expectation that we will “apply RF to cold ¼ CM in April”. Cool the new ¼ CM in July and apply rf after facilities finishes work inside Cave2. Wait to commission the ¼ CM with RF, and to condition the gun, until there is a complete enclosure and safety system equipment (ODH and PSS). As things develop, we can reconsider installing temporary shielding for commissioning the cold ¼ CM and/or for gun HV conditioning via OSP, but only if it makes sense.

Key issue, can I expect ~ 3 to 4 wks of LHe from CTF during FY16, July, August or September, once Facilities work has wrapped up? CTF will be functional but I need to check on SRF plans.

Add to the schedule the EHS&Q milestones, when they must be completed

Full disclosure, this is my preferred path forward, as I am not doing some things twice: like installing old ¼ CM and removing it to install the new ¼ CM (lots of beamline must come out), I don’t look forward to writing OSPs and getting them approved for ¼ CM commissioning with temporary shielding, which would likely keep people off the roof and out of Cave2 where lots of work must be performed.

February 2016

Cave1 electrical work complete

Facilities has issued PR for Cave2 concrete and bracing, out for bids

Cryo: installed transfer line from spigot to ¼ CM location

Installation Group finished Cave1 PSS conduit and cable trays

Engineering Staff stuffing the racks, pulling cables

Ops Sys Admin: Network communications installed, terminals in control room

Ops Software installing software

CIS building gun and keV beamline

March

Installation Group helping Facilities secure Cave2 structure, installing other utilities

RF group installing control modules and klystrons

Engineering stuffing the racks, pulling cables, working with Ops Software when appropriate

CIS building gun and keV beamline

April

Cryo: CTF connection to ¼ CM + the controls complete

RF group installing klystron controls and waveguides

Engineering stuffing the racks, pulling cables, working with Ops Software when appropriate

Concrete for Cave2 arriving on site, installing it

Physics installs 2nd layer of concrete, adds bracing

May

RF group installing klystron controls and waveguides, complete

**Consider adding temporary shield blocks at Cave1 north entrance, for gun HV conditioning**

RadCon provides working CARMs (with software from Ops)

OSP, written and approved for gun commissioning (field emission hazard)

**CIS has a gun under vacuum, apply voltage to the new gun, high voltage process**

Cave2 including labyrinth complete, roof not yet installed

Engineering stuffing the racks, pulling cables, working with Ops Software when appropriate

June

Facilities moves the IPC power panel outside Cave2

Facilities focus shifts to utilities inside Cave2: electricity, lights, fire suppression, gate

Installation group finishes the PSS box conduit, LCW, compressed air and GN2 installation inside Cave2

SSG working on PSS and ODH systems

SRF Institute completes the construction of the new ¼ CM, tests it inside CMTF

Cryo working on u-tubes for ¼ CM

July

Cryo begins installing transfer lines to HDIce buffer dewar

Facilities continues to work on utilities inside Cave2: electricity, lights, fire suppression, gate

SSG completes the PSS and ODH systems

SRF Institute installs the new ¼ CM at UITF

Cryo group manufactures/installs u-tubes for ¼ CM

August

Cryo installing transfer lines to HDIce buffer dewar

Facilities completes utilities inside Cave2: electricity, lights, fire suppression, gate, entire Cave2 roof installed. All bracing complete

Facilities provides power to big Bertha from deisel generator (could happen later)

CIS building the MeV beamline

Engineering connecting MeV beamline components to racks and controls

EHS&Q reviews and paper work complete, full approval to apply RF to cold ¼ CM, and to apply voltage to gun, and to start making beam

**Cool the new ¼ CM and apply RF, one to two weeks (?) of CTF**

HV commission the gun

September

Cryo finishes installing transfer lines to HDIce (buffer dewar spigot inside Cave2)

**CIS making keV beam**

CIS finishes the construction of MeV beamline, to cup upstream of HDIce

Engineering finishes work on I&C and magnets MeV beamline

**Beam tests at MeV, beam delivered to cup upstream of HDIce (two weeks of CTF)**

October

CIS demonstrates gun at 350kV

CIS continues to make beam, keV and MeV beam when compatible with SRF plans

November, December

Team HDIce begins moving equipment into Cave2

Cryo manufactures u-tubes for HDIce, to buffer dewar

January, 2017

First Cool down of HDIce

February, 2017

First beam into IBC, empty target study

April, 2017

**First beam on polarized HD target**