Resource Allocation to complete Wastewater Experiment Installation

(As compiled 6.23.21 / M. McCaughan)

Installation group: 1 person week (LCW line routing, hanging unistrut, mounting gas bottle rack)

CIS/GUN: Per Joe

EES-DC (From Sarin) ~5 person-weeks before experiment + 1 after

1. For the pair of new correctors we will have to re-purpose existing channels to the new locations since we do not have 4 spare channels. This task will be 2 persons for 1.5 days to move cables, complete measurements and finish HCO. At least 4 hours for software to updated UED and configure the rack channels.
2. The solenoid power supply effort will be as follows:
   1. 3 weeks engineering to test interface with controls box, scale the power supply and configure interlocks including overcurrent, ground fault, over temperature and PSS interface. This will include a LOTO OSP procedure for the power supply.
   2. Is the PSS interface really necessary? Has this gone through a design review? For the HDICE solenoid magnet, we did not tie that power supply in to PSS since it was determined that engineered control over the magnet leads was sufficient.
   3. If we design a "rack on wheels" to hold the power supply and electronics, can we install this in the cave instead of upstairs in the gallery? This will save us from having to pull cable from up on the mezzanine to the cave through the penetrations [Going with this option]
   4. 2.5 person-days of work for electricians to pull electrical power to solenoid power supply and output dc cables to magnet and for QA checks.
   5. 3 person days for installation and checkout of full system including controls through Epics, interlocks, and operating current into the magnet with operators.
3. We will have to spend about 1 person-week of effort to undo all of the above at the end of the experiment.

EES-IC: 9 person-weeks total

1. BPMs: 1 person-week
2. Camera/Viewers: 1 person-week
3. Faraday Cups: 0.5 person-week
4. Wire Scanners: 1 person-week
5. Vacuum:
   1. Valves: 1 person-week (Cable slow valves, install fast valve electronics)
   2. NEGs: 1 person-week (Install and Cable power supplies)
   3. Cathode Gauge: 0.5 person-weeks (Cable, Interface, UED, & EPICS)
6. BCM + Current Clamp: 2 person-weeks to install & test receiver
7. Target Mechanism: 1 person week to install

LLRF: Yao/Bunch length cavity: 2 person-weeks to install & test receiver

Software: 2 person-weeks in screens, IOC updates/reboots, UED updates, and Low-level interfacing work.

SSG: 1.5 person-weeks total

1. MPS interface for Solenoid + BCM: 1 person-week
2. Placing BLMs: 0.5 person-weeks

UITF Ops: 2 person-weeks total

1. Build supports & shield FC3: 0.5 person-weeks
2. Build shielding table for target: 0.5 person-weeks
3. Preparing cave/control room for experiment: 0.5 person-weeks (Removing and stowing equipment, cleaning, doing ops HCO etc)
4. Placing deca-rad heads: 0.5 person-weeks

FML Shielding install or RCG supplementary shielding: ???

Some of the time against IC may be able to be swapped to UITF Ops depending on free cycles.