RPC Gas System Installation C. Lu, *Princeton University* Draft V.1.0 (1/30/2009)

(Dates shown for DB Near Hall only)

- Generate detailed gas system assembly, installation and testing procedure
- Generate list of required personnel contracts? Hire through IHEP? Princeton personnel
- Finalize schedule Feb 2009
- Ship and deliver all gas system components to SAB June 2009
- Transfer gas system components to EH July 2009
- Assemble and Install gas system in gas rooms: --- July-Aug 2009 (7/15 8/15/2009)
 - Mount Argon automatic switchover panel and manifold, hook up gas cylinders --- 1 day
 - Mount R134A and SF6 manual switchover panels and digital/mechanical scales, hook up gas cylinders --- 1 day
 - Mount gas delivery pipe from gas mixing room to EH --- 1 day
 - Mount gas mixing/control crates onto racks --- 0.5 day
 - Mount gas distribution crates and digital bubbler crates onto racks --- 1day
 - Setup a PC as the digital bubbler readout computer, connect a 100ft USB cable from PC to a USB hub at the digital bubbler crate, connect all USB to RS232 converters from the hub to digital bubbler readout boards --- 1 day
 - Assemble gas cabinet (digital/mechanical scale, manual switchover panel, HAD sensor), hook up water pipe, ventilation duct, install air ventilation sensor onto the duct --- 2 days
 - Connect various cables and pipes from gas switchover panels, gas cabinet to gas control crate --- 0.5 day
 - Connect gas tubing from switchover panels to gas mixing panel --- 0.5 day

- Hook up temporary ventilation tubing onto gas digital bubbler crates --- 0.5 day
- Hook up temporary tubing from gas mixing panel to gas distribution crates --- 0.5 day
- Testing the entire gas system in this temporary arrangement --- 1 day
- Move the racks of the gas distribution/digital bubbler crates to EH and mount them to RPC support platform --- 1 day
- Prepare Polyflo tubing for 54 RPC modules (108 sub-branches, 216 tubes in total) --- 2 days
- Layout Polyflo tubing underneath the RPC modules and connect one ends to gas distribution crates, the other ends to RPC modules --- 2 days
- Install main gas manifold at gas distribution rack and hook up main gas pipe and 7 branch-tubing -- 0.5 day
- Hook up tubing from gas distribution/digital bubbler crates to ventilation duct --- 0.5 day
- Test the gas distribution/digital system crate by crate --- 1 day
- Setup the digital bubbler readout PC in electronics room and connect USB cable --- 1 day
- Test the digital bubbler readout software --- 1 day
- Calibrate HAD sensors --- 1day
- Install emergency shutoff button at the entrance of gas room --- 0.5 day
- Test slow control signals (work with slow control system group) --- 2 day
- Continuously operate the gas system for 3 months to gain experience, finish up the gas system installation by Jan 2010

RLS Entries

1.7.3. Install Gas system in gas room. 30days, 7/15 - 8/15/2009

1.7.3.2 Install RPC gas system 1 day

1.7.8.5.1 Install fixed panel cable/gas/water feed-thru 1 day

1.7.9.2 RPC Gas System Installation 1 day

1.7.9.2.1 Install Gas Mixing/Control System 1 day

1.7.9.4.3.5 Install gas distribution/bubbler racks 1 day

1.7.9.4.4.3 Install gas distribution/digital bubbler system 1 day