



# Detector Support Group

*We choose to do these things "not because they are easy, but because they are hard".*

**Weekly Report, 2021-01-13**

## Summary

### Hall A – GEM Detector Gas Distribution System

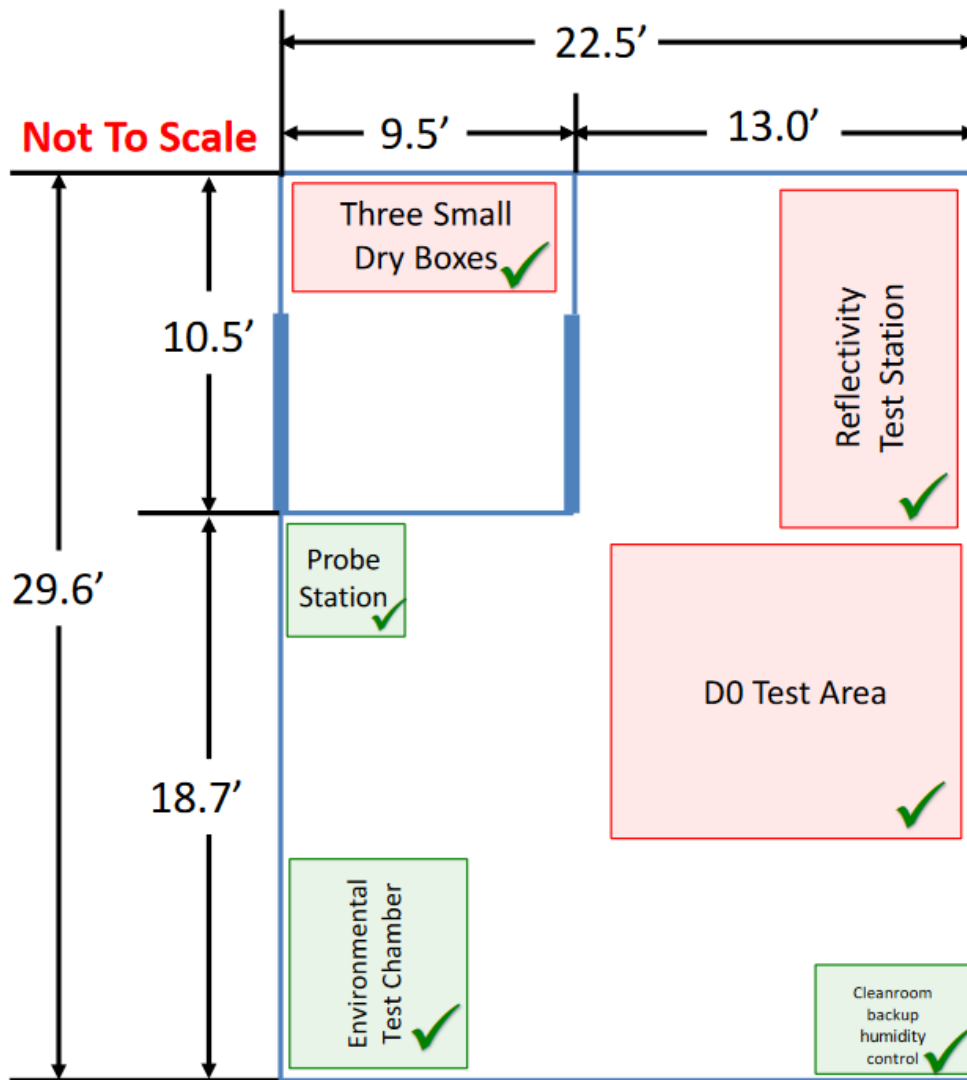
*Peter Bonneau, Brian Eng, George Jacobs, Mindy Leffel, Tyler Lemon, Marc McMullen*

- Troubleshooting prototype GEM gas supply panels; reassembled the gas supply pressure panel after leak found
  - ★ Ordered polyethylene tubing to replace all gas lines on GEM regulator panel
- Developing WEDM screen for remote monitoring of GEM gas flow

### Hall B – RICH-II

*Peter Bonneau, Tyler Lemon*

- Determined space needed in EEL 121, 124, and 125 for RICH-II assembly



✓ = Already in Clean Room

Floor plan of EEL 121 (DSG small cleanroom) labeled with space for RICH-II assembly



# Detector Support Group

*We choose to do these things "not because they are easy, but because they are hard".*

**Weekly Report, 2021-01-13**

## **Hall B – SVT**

*Peter Bonneau, Mindy Leffel*

- Completed continuity testing of the interlock system

## **Hall C – NPS**

*Mary Ann Antonioli, Peter Bonneau, Aaron Brown, Pablo Campero, George Jacobs, Mindy Leffel, Tyler Lemon*

- Developing fault condition flowcharts for the Hardware Interlock System
  - ★ Added temperature sensors from the frame area
- Reviewed and updated Hardware Interlock System sensor signals list

Location	Signal Type	Sensor	Qty	Comments
Crystal Array	Temperature	Type K thermocouples	112	Within NPS crystal array (56 front - 56 Rear)
Detector internal frame	Temperature	4-wire RTDs	20	Dual temperature sensors in 10 locations
Crystal zone cooling circuit	Temperature	4-wire RTDs	4	Dual sensors on input and output coolant dividers
Electronics zone cooling circuit	Temperature	4-wire RTDs	4	Dual sensors on input and output coolant dividers
Electronics zone cooling circuit	Temperature	4-wire RTDs	4	Dual sensors on top and bottom heat exchangers
External ambient (Hall)	Temperature	4-wire RTDs	2	
Detector internal frame	Humidity	Resistive RH	20	Dual humidity sensors in 10 locations
External ambient (Hall)	Humidity	Resistive RH	2	
Electronics Zone Heat exchangers	Speed	Fan RPM	4	2 fans on each heat exchanger
On frame access panel	Switch on/off	Contact micro switch	2	Protects personnel from HV when servicing
In NPS frame	Switch on/off	Coolant leak sensor	2	Monitors for leaks in the cooling circuits
Inside chiller	Pressure	Electronics zone chiller	1	All parameters are read from the chiller's RS232 communication port
	Set Readback Temperature		1	
	Coolant Temperature		1	
	Status		1	
Inside chiller	Pressure	Crystal array zone chiller	1	All parameters are read from the chiller's RS232 communication port
	Set Readback Temperature		1	
	Coolant Temperature		1	
	Status		1	

- Reviewed specifications for resistive humidity sensors from Ohmic Instruments
  - ★ Four sensor types will be procured for testing; 5 of each totaling \$175
- Terminated four Radiall 52-pin connectors for 140' multi-conductor HV cables
- Generated 864 of 1080 PMT Settings screens
- Compiled voltage ramp testing plots for five HV CAEN modules; 180 individual plots

## **EIC**

*Brian Eng*

- Reviewing costs/labor/schedule for Critical Decision 1 and Independent Cost Review
- GEM Transition Radiation Detector (GEM-TRD) added to tracking WBS