

2019 Run Planning

December 20th, 2018

2019 Run list file

Added received inputs from Stephen and list shown by Gina. Additional inputs will probably come, mainly from PD and DAQ. List found at this [link](#).

	A	B	C	D	E	F
1	—	Actions/Tests	Timing	Goals	Pre-activities	Analysis/Simulation
53	COLD Electronics	Regular calibration of Cold Electronics with pulser	At regular intervals (few h once a month ?)	Monitor cold electronics calibrations to detect eventual drifts		Analyze calibration to detect ev drifts. If any drift is found tr correlate with changes in dete conditions. May need to be rep more frequently for significant c in detector status
54		Take very long events (100k+ events) or short events at very high regular rate (100 Hz)	1/2 day	look at low frequency noise	Check with DAQ group whether DAQ can sustain either of the two options	Analysis with cosmic data
55						
56	Miscellaneous	Change the APA bias voltages to collect data when charge is being collected on the induction plane.	1 day	?		Analysis with cosmics
57		Runs at different diverter biases	2 days	Check the effects of the diverters on data collection		Analysis with horizontal cosm
58		Pulse the cathode and measure the response in the electronics.	2 days	Check what level voltage step causes what noise.		Online analysis

2019 Run list file

Added 2 tabs to the file: January schedule and the list of Tests done in 2018.

List found at this [link](#).

	A	B	C	D	E	F
1	—	Actions/Tests	Timing	Goals	Pre-activities	Analysis/Simulation
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NP04 2019 Run - List of tests

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List of things to do January schedule Tests done in 2018

Tests done in 2018

Non exhaustive list of tests (activities) already taken (done) after end of beam.

List found at this [link](#).

A	B		
Activity	Does it need additional tests?		
PD tests with calibration module to calibrate PD bars (for TDR)	Maybe - to check with PD consortia		
CE pulser calibration at nominal and 0 field	Once/month more or less		
Run at different E fields from 500 V/cm to 50 V/cm, in steps of 50 V/cm	If requested after looking at data already collected	ArtDAQ tests done by Kurt	Probably
Replacement of PS for the 200 kV PS. Observed a reduction of V and I fluctuations	Felix tests by Phil for DUNE		
Implementation of an automatic recovery mode for streamers and tuning of recovery parameters	A couple of rounds of tuning done, more may be necessary	Cosmic data run with electron diverters at 75%, 100%, and 125% of the nominal value	If requested after looking at data already collected
Cosmic runs	More	Filters maintainance	Every few weeks as long as we keep these filters
Noise and ground investigations by Linda and Terri, with Maura and Xavier as well	Yes	Update of DCS software: wire biases, FC terminations and diverter values can now be set from a configuration file rather than manually	
		Replaced and tested bottom purity monitor electronics	

Draft January 2019 schedule

List found at this [link](#).

➤ Turn everything back on the first 1-2 days.

➤ 1-2 days at HV off to take CE pulser calibration runs at 0 field, and refill filters

➤ Start HV scans for space charge investigation from 0 to 500 V/cm. Important to start taking data as soon as target HV is reached. In the meantime, PM cross calibration and overnight remote DAQ test are possible

A	B	C	D	E	F
Day	HV	DAQ/computer activity	CE Activity	HV Activity	Purity Monitor Activity
January 7th	off	Turn back on computers, systems, etc. Check everything works	CE pulser calibration (0 V/cm field) in the afternoon if DAQ back on	Refill filters	
January 8th	off	Possibility for remote DAQ overnight tests not requiring specific HV settings	CE pulser calibration 0 V/cm field	Refill filters Install new filter? Investigate beam window change and new camera or PMT installation on acrylic tube	
January 9th	off	Possibility for remote DAQ overnight tests not requiring specific HV settings	CE pulser calibration 0 V/cm field	Install new filter? Beam window/new camera/PMT investigation going on in January	
January 10th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings		HV scan from 0V/cm to 500 V/cm in steps of 50 (or 100) V/cm to study development of space charge. 2 hours/run at least. Allow triggers immediately after target HV reached	PM Cross-Calibration (1 hour)
January 11th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings		HV scan from 0V/cm to 500 V/cm in steps of 50 (or 100) V/cm to study development of space charge. 2 hours/run at least. Allow triggers immediately after target HV reached	PM Cross-Calibration (1 hour)

Draft January 2019 schedule

List found at this [link](#).

- Completed the 0 → 500 V/cm scan, two days for CE pulser calibration at nominal voltage then start 500 → 0 V/cm scans for space charge
- In the meantime, PM cross calibration and overnight remote DAQ test are possible

A	B	C	D	E	F
Day	HV	DAQ/computer activity	CE Activity	HV Activity	Purity Monitor Activity
January 14th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings		HV scan from 0V/cm to 500 V/cm in steps of 50 (or 100) V/cm to study development of space charge. 2 hours/run at least. Allow triggers immediately after target HV reached	PM Cross-Calibration (1 hour)
January 15th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings	CE pulser calibration 500 V/cm field		PM Cross-Calibration (1 hour)
January 16th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings	CE pulser calibration 500 V/cm field		PM Cross-Calibration (1 hour)
January 17th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings		HV scan from 500V/cm to 50 V/cm in steps of 50 (or 100) V/cm to study development of space charge. 2 hours/run at least. Allow triggers immediately after target HV reached	PM Cross-Calibration (1 hour)
January 18th	on	Possibility for remote DAQ overnight tests not requiring specific HV settings		HV scan from 500V/cm to 50 V/cm in steps of 50 (or 100) V/cm to study development of space charge. 2 hours/run at least. Allow triggers immediately after target HV reached	PM Cross-Calibration (1 hour)

Draft January 2019 schedule

List found at this [link](#).

- Completed the 500 → 0 V/cm scan, a series of DAQ and/or CRT tests can be started.
- In the meantime (and started at the beginning of January), replacement of the cracked window and possibility of swap filter and acrylic camera are being investigated

A	B	C	D	E	F
Day	HV	DAQ/computer activity	CE Activity	HV Activity	Purity Monitor Activity
January 21st	on	Possibility for remote DAQ overnight tests not requiring specific HV settings		HV scan from 500V/cm to 50 V/cm in steps of 50 (or 100) V/cm to study development of space charge. 2 hours/run at least. Allow triggers immediately after target HV reached	
January 22nd	on	DAQ and/or CRT tests TBD			
January 23rd	on	DAQ and/or CRT tests TBD			
January 24th	on	DAQ and/or CRT tests TBD			
January 25th	on	DAQ and/or CRT tests TBD			

Proposed organization

- First weeks of January used to plan the schedule for the rest of the year
- Share the items in the list of tests among 4-5 groups, each formed by 2-3 people:
 - ✓ HV and Purity: I suggest Stephen, Francesco, and Flavio
 - ✓ DAQ: I suggest Dave, Giovanna, and Karol
 - ✓ CE (mainly for Cold Box activities): TBD
 - ✓ PD: TBD
 - ✓ CRT: TBD
 - ✓ All the remaining: Gina
- Each group will come up with a coherent testing plan, starting from the list shown and based on what has already been done and what will come up from the January tests
- 1 or 2 representative of each group will meet with Filippo, Serhan, Andrea, and myself to merge these plans together and assign dates to them (the “wise” group). In addition:
 - ✓ The representative(s) of each group will take care of finding specific manpower if needed, and make sure data collected will be analyzed off-line (when necessary)
 - ✓ The “operational” group made by Filippo, Serhan, Andrea, and myself will provide support for the tests (i.e. interface with cryo, safety, and/or technical group), coordinate and follow the progress of the tests, and interface with the onsite “fast” analysis group to get feedbacks on the data being taken