

NP04 Operations Planning

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FD1-HD Technical Board Meeting

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The six months ahead for NP04

- April: filling
- May: purification, HV ramp, commissioning & systems integration
- June: first beam in week 25 (17 June)
- July-September: stable running, cosmics & beam
- September: HV ramp & run at higher voltage, final tests, end of run, empty the Argon
- What about the following months? Should we make outline plans for a couple of scenarios?

Operations outline

- We would like to have a daily operations schedule asap during April (fill).
 - Experts driven, with DAQ group providing training.
- May to operate with day shifters (commissioning).
 - Activity-driven schedule by subsystems people; DAQ to provide expert support & training.
 - Groups invited to bring shifters to CERN for training.
 - Start 9am control room meetings (10-15 minutes).
- Continuous data-taking shifts from week 22 (27 May) to exercise all procedures and establish efficiency (uptime, data quality, experience) for a successful first beam run.
 - With daily targets and assessment.

Requirements from consortia / subsystems

- Plans and requests from everybody presented at the March 12 NP04 meeting <https://indico.cern.ch/event/1392327/>
- CE-HV-APA input for integration and voltages ramp plan (TPC HV, APA bias voltages)
- CE request for
 - ~2 days of noise tuning with stable detector
 - ~ 1 week for scans and calibrations for various settings
 - ~ 1 day laser runs with high purity and HV on
- DAQ detailed plan for systems tests, integration, commissioning: ongoing
- PDS: detailed plan presented, including regular calibration runs
- Laser, Source, Purity, Temperature: detailed requests presented
 - We agreed a 24-hour period of no recirculation at the end of fill for a reference T map

Requirements from consortia / subsystems

- Firm plan from now to week 22 to have everything in final configuration and demonstrated.
 - Define all together a transition date when normal operations take priority over further developments. Necessary to achieve robustness for efficient data taking.
- Daily planning: establish asap a (developing) daily plan to cover test runs and development by each group in defined time slots, including DAQ slot (start from requirements presented recently in this meeting).
- Data monitoring:
 - DAQ group provides online monitoring.
 - DRA provides data checklists, scripts etc.

PDS runs requirements example

		February			March			April			May			June				
		purging			cool filling						purification		regular operation					
Study	trigger																	
IV curves and Vbd	none				d	d	d	d	d	d								
Test data in GAR	self																	
DCR	TI				d	d	d	d	d	d								
Light yield vs pur.	self										d	d	d	d				
Gain calibration	TI													w	w	w	w	w
Self-trigger efficiency	TI+self																	
Light yield map with laser	self												?		?			
Physics	self																	

d=daily, w=weekly, TI=Timing interface command

Shifts: the big challenge

- From late May to mid-September need full cover: 21 shifts/week: about 6 shifters.
- DAQ arrange for expert cover and their share of shifts.
- The main “general shifters” pool must be covered by DUNE members from other consortia.
- How do we ensure that we get enough shifters?
- Do we need to formalize the shift load share?
 - Per consortium?
 - Per country?
 - Other ideas?
- Around 20 people resident at CERN, including experts, in <https://docs.google.com/spreadsheets/d/1943UfJ0lJdzGD72fRUE399Up4MXSa0inzshmnAQQAaQ/edit#gid=2077617541> are a good start but we need more.
- DUNE management support will be useful.