

# Report on the vertical drift CDR

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# CDR status

Approaching conclusion of work on CDR draft for LBNC evaluation.

- Basic writing/editing now only on Chapter 1 and final brief summary
- Active work on other chapter for LBNC preliminary comments (work together with chapters contact persons)
- Cross-links, coherence checks underway on full document
- Chapters on CRPs, TDAQ, TPC electronics, Physics, PDS sent in preview to Spalding and Montgomery (starting last week)
- Current plan: complete document by Monday or Tuesday

# On CRP and TDAQ chapters

Spalding:

- *They look well written and easy to read.*
- comment on need to be clear about physics and engineering driven requirements, presumably in one place/table of the document. Presumably referring, when possible, to standard identifiers
  - Done/being done, reference table in Chapter 1.
- Consistent naming/counting for CRUs/CRPs
- Question on connections between CRP layers, and on CRP transparency, some editorial fixes

Montgomery

- *scope and level about right for a TDR, the TDAQ ended a little abruptly.*
- More figures for CRPS?
- TDAQ: more on relationship HD – VD?      More on TDAQ for PDS in near future?
- Some editorial fixes

# TPC electronics

Spalding:

- *The introduction does a good job justifying the 2-system choice*
- Comments/request of info on:
  - Reference for thermal/fluid flow, stability
  - Requirement on fraction of dead channels, length of cables for bottom, strip capacitance matching, validation of design of feedthroughs, for increased number of cards

# Physics chapters

Spalding:

- *In general the chapter covers things well*
- Charge signal:
  - What software development is needed
  - Benchmark validation of simulation with ProtoDUNE II
  - Some clarification on performance comparison
  - (lack of) relevance of reporting on two-view reconstruction (actually the text is explicit)
- Light signal:
  - More explicit in the design being simulated
  - Justification when mentioning large improvements in performance

Montgomery (preliminary reading)

- *I like it, it reads clearly and contains the message you want/need*
- Several editorial corrections/suggestions, same comment as above about 2-view studies

# PDS

Spalding:

- *As before it looks pretty good and I see nothing that's really major.*
- Comments
  - does a good job describing the reference and alternative, making the case for their performance in terms of signal size and uniformity versus the specs. The physics chapter should reference directly
  - Labeling specification
  - More accurate specification of transparency
  - Check that schedule/review/milestones are shown coherently with CRP
  - New ASIC for two stage amplification?
  - Various editorial comments