

Cold Electronics Quality Control

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QC Meeting

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Introduction

- So far we have a number of smaller subgroup meetings focusing on specific QC issues. As we are approaching the start of FD1/FD2 production, we would like to consolidate the QC meetings
- Initially we will focus on ASIC QC issues. FEMB QC will be next follow by others
- Executing CD-3a scope now. Mostly buying FD1 components for PTC, WIB, and FEMB
- CD-3b scope will allow us to start fabricating a fraction of the FEMBs for FD1 and FD2. Expecting CD-3b ESAAB approval from DOE any minute now
- Planning for the FD1 and FD2 Production Readiness Review for FEMB around end of May/beginning of June
- Need to ramp up QC effort → the focus of this QC group
- Thanks to Jon for agreeing to lead this effort

- We have a master QC plan in [EDMS#2815079](#). It's a living document, will update as we learn more from the process

LBNF/DUNE-US
DUNE FD1 Time Projection Chamber
(TPC) Electronics and FD2 Bottom Drift
Electronics (BDE) Quality Control Plan

DUNE FD1 Time Projection Chamber (TPC) Electronics and FD2 Bottom Drift Electronics (BDE) Quality Control Plan Definitions, Acronyms and Abbreviations

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Long-Baseline Neutrino Facility (LBNF) / Deep Underground Neutrino Experiment (DUNE) - US 1-3

DUNE FD1 Time Projection Chamber (TPC) Electronics and FD2 Bottom Drift Electronics (BDE) Quality Control Plan Definitions, Acronyms and Abbreviations

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Long-Baseline Neutrino Facility (LBNF) / Deep Underground Neutrino Experiment (DUNE) - US 1-4

- Expectation for this group:
 - Maintain the master QC plan (high level plan)
 - Work with various subsystem experts to develop and document (in EDMS) detailed QC instructions, check list, travelers, etc.
 - Work with CE Database Group (led by Martin Tzanov + a BNL postdoc?) to centralize the storage of QC data
 - Bring up QC sites at various institutions
 - Ensure uniformity across different QC sites: BNL, FNAL, LBNL, MSU, LSU, Irvine, Cincinnati, Iowa State, Florida, CSU
 - First two priorities are:
 1. ASIC test-stands (~ summer to have all 6 sites operational)
 2. FEMB test-stands (bring up sites from ~ summer to end of 2024)
- Fabrication of the first batch of production FEMBs will start ~ summer of 2024

- Preparation for the FD1+FD2 FEMB Production Readiness Review requires a fairly extensive list of documents (excerpt of [EDMS#2493568](#) from Technical Coordination):
 - The QC Plan should include:
 - ✓ Applicable specifications, drawings, and procedures
 - ✓ List of components to be inspected and tested
 - ✓ Tests to be performed
 - ✓ Location where tests will be performed
 - ✓ Descriptions of technical requirements being verified by each inspection and tests
 - Develop traveller documents (e.g from QC sites to SURF)
 - Plan for documentation of non-conforming items
 - Documentation of assigned responsibilities for who signs-off on each step in the QC process