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| DUNE Far DetectorSingle Phase Detector Support System30% Design Review Report  |

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# Introduction

This document is the report of the Conceptual Design review of the Single-Phase Detector Support System that was held 20−21 August 2018 at CERN. This review is part of the DUNE Far Detector Design Review Plan (DocDB-9564).

The committee congratulates the design team on all of the work involved in preparing for this review. Overall the committee found … The committee recommends…

# Technical Evaluation

## Requirements (Farshid, Dan)

## Evaluation of how the design meets detector requirements and are interfaces properly addressed

## Design standards (Olga, Dan)

## Evaluation of design standards and design codes

## Engineering analysis (Dimitar, Peter, Dan)

## Evaluation of engineering analyses, manufacturability, installation scheme and functionality

## Scope (Steve, Farshid, Peter)

## Evaluation of cost, schedule, and scope

# Answers to Review Charge Questions

1. Does the design address the requirements in accordance with detector requirements: installation, positional tolerance, cool down, load capacity, grounding, testing and alignment?
2. Do preliminary engineering drawings, schematics and models provide sufficient information to ascertain constructability, installability and functionality?
3. Have interfaces with other detector components been identified and addressed? Are the interfaces with the cryostat and the TPC well defined and understood?
4. Are preliminary engineering analyses and documentation sufficient to ensure the design is on the right track?
5. Does the DSS present a reasonable scheme for installation of detector elements, and are similarities and differences to ProtoDUNE taken into account?
6. Have applicable design codes and standards been identified and are they appropriate?
7. Have appropriate manufacturing methods been identified and rough cost estimates and schedule been determined? Are plans for required engineering resources consistent with scope of work?

# Recommendations

# Appendices

## Review Website and Agenda

<https://indico.fnal.gov/event/17719>

<https://indico.cern.ch/event/742569>

## Committee Members

Steve Kettell (chair), Farshid Feyzi, Olga Beltramello, Dan Wenman, Dmitar Mladenov, Peter Sutcliffe

## Applicable Documents

DUNE Far Detector Design Review Plan (DocDB 9564)

DUNE DSS Design (DocDB 6311)

## References