



MQXFA17 Structure & Shims Review

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US HL-LHC Accelerator Upgrade Project

MQXFA17 Structure & Shims Review



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1. Goal & scope

The HL-LHC AUP project is starting the assembly of MQXFA17 magnet. This is the 10th series magnet of the MQXFA low-beta quadrupoles to be used in Q1 and Q3 for the High Luminosity LHC. If MQXFA17 meets MQXFA requirements [1] it will be used in a Q1/Q3 cryo-assembly to be installed in the HL-LHC.

AUP is planning to install MQXFA16 and MQXFA17 in a cold mass without previous vertical test.

MQXFA17 coils were reviewed on October 6, 2023 [2].

MQXFA Series magnet specifications are presented in [3]. Discrepancy or Non-Conformity Reports are generated whenever a component does not meet specifications [4].

The goal of this review is to evaluate MQXFA17 structure and shim plan. Reviewers should also assess that discrepancies and non-conformities of the magnet structure have been adequately processed, and that the shims will allow MQXFA15 to meet MQXFA requirements [1].

2. Charges

The committee is requested to answer the following questions:

1. Have all recommendations from previous reviews [5] been adequately addressed?
2. Have discrepancies and non-conformities been adequately documented and processed?
3. If there are major/critical non-conformities [4], have they been adequately documented and processed?
4. Are the proposed shims adequate for allowing MQXFA17 to meet MQXFA requirements [1]?
5. Do you have any other comment or recommendation to assure MQXFA17 is going to meet requirements?



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3. Technical information

Committee

Peter Wanderer, chairperson (BNL)
Mike Anerella, (BNL)
Rodger Bossert, (FNAL)
Susana Izquierdo Bermudez (CERN)

Date and Time

October 18, 2023.
Start time is 7:00/9:00/10:00/16:00 (LBNL/FNAL/BNL/CERN)

Location/Connection

Video-link by Zoom, info by email.

Link to agenda with talks and other documents

[MQXFA17 Structure & Shims Review \(October 18, 2023\) · INDICO-FNAL \(Indico\)](#)

4. References

- 1) *MQXFA Functional Requirements Specification*, US-HiLumi-doc-36.
- 2) *MQXFA17 and MQXFA13b Coils Acceptance Review*, US-HiLumi-doc-4937.
- 3) *MQXFA Series Magnet Production Specification*, US-HiLumi-doc-4009.
- 4) *Handling of Discrepancies and Nonconformances*, US-HiLumi-doc-2484.
- 5) *MQXFA16 Structure and Shims Review*, US-HiLumi-doc-4912.