



**MQXFA17 and MQXFA13b
Coils Acceptance Review**

US-HiLumi-doc-4937
Other:
Date: 10/06/2023
Page 1 of 4



US HL-LHC Accelerator Upgrade Project

**MQXFA17 and MQXFA13b Coils Acceptance
Review**



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Date: 10/06/2023
Page 2 of 4

TABLE OF CONTENTS

1. GOAL & SCOPE.....	3
2. CHARGES	3
3. TECHNICAL INFORMATION	4
4. REFERENCES	4



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US-HiLumi-doc-4937

Other:

Date: 10/06/2023

Page 3 of 4

1. Goal & scope

The HL-LHC AUP project is planning to start assembly of MQXFA17. This is the 10th series low-beta quadrupole magnet (MQXFA) for the Inner Triplet of 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.

For MQXFA17 assembly AUP is planning to use these QXFA coils (including two spare coils): 150, 151, 152, 237, 239 and 242.

A spare coil may be used in MQXFA13b after MQXFA17 assembly.

Conductor and series coil specifications are presented in [2-6]. Discrepancy or Non-conformity Reports are generated whenever a component does not meet specifications. Magnet MQXFA17 is planned for use in Cold Mass 05 without previous vertical test. Therefore, the coils presented at this review were selected because they do not have critical Discrepancies/Non-conformities.

The reviewers are requested to review discrepancies and non-conformities in strands, cables, and coils for the following coils: 150 (P43OL1186), 151 (1190), 152 (1193), 237 (1182), 239 (1184), 242 (1189).

2. Charge questions

The committee is requested to answer the following questions:

1. Have all recommendations from previous reviews [7] been adequately addressed?
2. Have Discrepancies and Non-conformities been adequately documented and processed?
3. Is there any critical Discrepancy/Non-conformity?
4. Is there any coil that you recommend not to use in MQXFA17?
5. Do you have any other comment or recommendation regarding these coils and their conductor for allowing MQXFA17 to meet MQXFA requirements [1]?



MQXFA17 and MQXFA13b Coils Acceptance Review

US-HiLumi-doc-4937

Other:

Date: 10/06/2023

Page 4 of 4

3. Technical information

Committee

Arup Ghosh (chairperson), BNL retired

Helene Felice, CEA

Susana Izquierdo Bermudez, CERN

Date and Time

October 6, 2023. Start time is 7/9/10/16 (LBNL/FNAL/BNL-FSU/CEA-CERN)

Location/Connection

Video-link by Zoom, info by email.

Link to agenda with talks and other documents

[MQXFA17 and MQXFA13b Coils Acceptance Review \(October 6, 2023\) · INDICO-FNAL \(Indico\)](#)

4. References

- 1) *MQXFA Functional Requirements Specification*, US-HiLumi-doc-36
- 2) *Specification for Quadrupole Magnet Conductor*, US-HiLumi-doc-40
- 3) *Cable Specification*, US-HiLumi-doc-74
- 4) *Quadrupole Magnet Cable Insulation*, US-HiLumi-doc-75
- 5) *QXFA Series Coil Production Specification*, US-HiLumi-doc-2986
- 6) *QXFA Series Coil Fabrication Electrical QC plan*, US-HiLumi-doc-521
- 7) *MQXFA16 Coils Acceptance Review*, US-HiLumi-doc-4900