



**MQXFA19  
Coils Acceptance Review**

US-HiLumi-doc-5354  
Other:  
Date: Sept 25, 2024  
Page 1 of 3



**US HL-LHC Accelerator Upgrade Project**

**MQXFA19 Coils Acceptance Review**



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Page 2 of 3

## 1. Goal & scope

The HL-LHC AUP project is planning to start assembly of MQXFA19. This is the 16<sup>th</sup> low-beta quadrupole magnet (MQXFA) for the Inner Triplet of the High Luminosity LHC. If MQXFA19 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 skip MQXFA19 vertical test. Therefore, the coils presented at this review were selected because they do not have critical Discrepancies/Non-conformities. Nonetheless, an alternative plan is being evaluated and a decision is expected shortly.

For MQXFA19 assembly AUP is planning to use these QXFA coils: 156, 161, 248, and 251 with 244 and 163 as spare coils.

Conductor and series coil specifications are presented in [2-6]. Discrepancy or Non-conformity Reports are generated whenever a component does not meet specifications.

Coils 161 and 244 were review during the MQXFA18 Coils Acceptance Review [7]. Therefore, reviewers are requested to review discrepancies and non-conformities in strands, cables, and coils for the following coils: 156 (cable P43OL1197), 163 (1210), 248 (1147), and 251 (1205).

## 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 MQXFA19?
5. Do you have any other comment or recommendation regarding these coils and their conductor for allowing MQXFA19 to meet MQXFA requirements [1]?



# MQXFA19

## Coils Acceptance Review

US-HiLumi-doc-5354

Other:

Date: Sept 25, 2024

Page 3 of 3

### 3. Technical information

#### Committee

Arup Ghosh (chairperson), BNL retired

Susana Izquierdo Bermudez, CERN

GianLuca Sabbi, LBNL

#### Date and Time

September 25, 2024. 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

[MQXFA19 Coils Acceptance Review \(September 25, 2024\) · 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) *MQXFA18 Coils Acceptance Review*, US-HiLumi-doc-5084