

Coupling Coil Update

MAP TB

September 13, 2011

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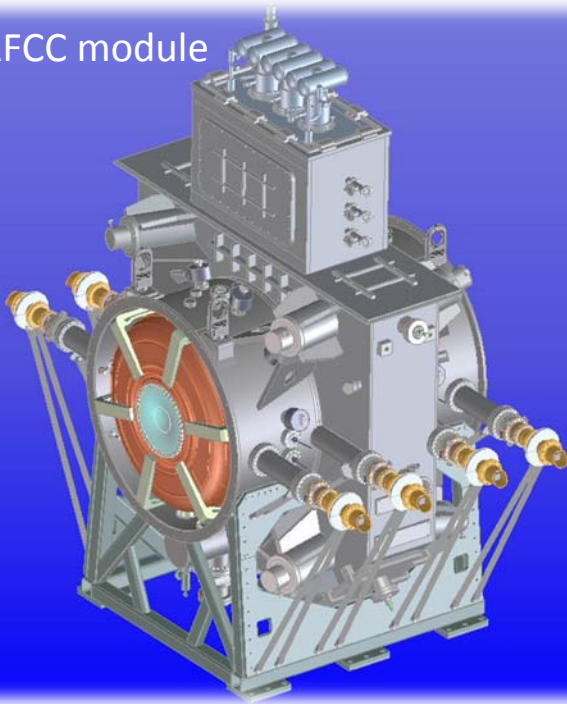
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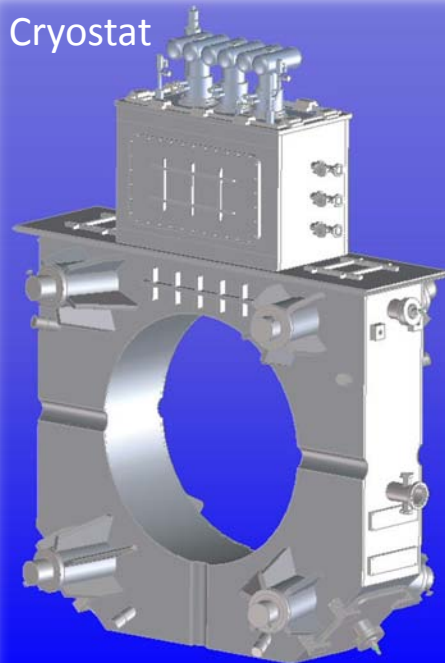
Coupling Coil Magnets

- LBNL is responsible for the CC magnets, in collaboration with Harbin Institute of Technology (HIT) and Shanghai Institute of Applied Physics (SINAP) in China

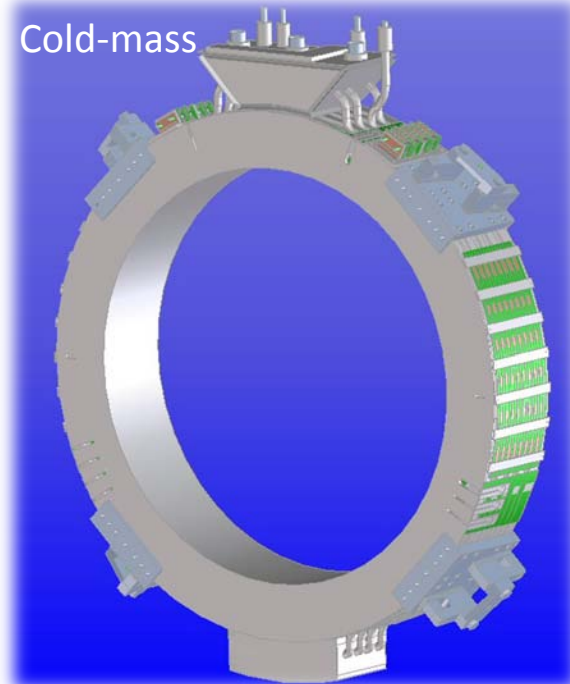
RFCC module



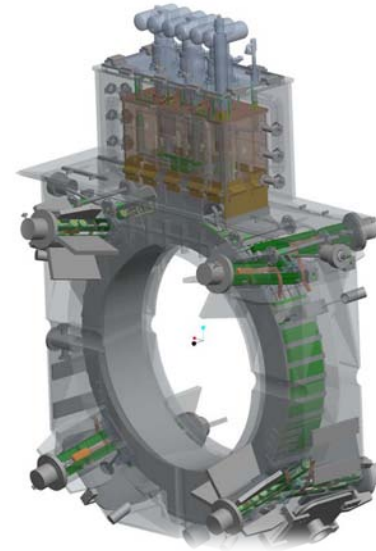
Cryostat



Cold-mass



CC Progress



Latest cryostat design with 3 cryo-coolers



Current Status

- Two main schedule drivers at this point (critical path)
 - Testing the first coil
 - Cryostating and testing the first completed coil assembly

Testing

- We have located a dewar large enough for the test at NHMFL
 - Fermilab is willing to install the dewar (useful for mu2e testing as well)
- The 1st cold mass welding is complete at HIT and will be shipped to the US on September 21
 - Tube welding and VPI will be done at LBNL prior to shipment to FNAL for test
- The cold mass test plan is being developed and preparations are underway at Fermilab;



Current Status cont'd

Cryostating and testing the completed coil

- Cryostat and cooling circuit design complete, fabrication drawings sent out for review
 - Initial review indicates that the drawings need additional details
 - Estimate of 3 man-months required (Allan and Steve V plus drafter with knowledge of Solid Edge)
- A cryostat fabrication review will be scheduled as soon as drawings are ready
- Fabrication of parts for both coils begins after review and any modifications identified during the review are incorporated
- Design of the quench protection and stabilization of current leads will be done through contract with MIT group.



Schedule Considerations

- Start winding 2nd coil as soon as QP design is completed and conductor arrives
 - Conductor order out for bid – no delivery date yet
- Subsequent milestones
 - Cryostat design/production readiness review
 - Develop plan and resource-loaded schedule
 - Update RFCC risk register
 - Final approval of RFCC plan



Schedule Considerations (cont'd)

- Cryostating Options being explored
 - Fermilab
 - Fermilab + Meyer Tool (various combinations)
 - LBNL
 - Qi Huan
- Less enthusiasm for doing this in China but cost could be an issue with other options
- We will consider all of them
- Schedule currently includes 6 months for RFCC integration at LBNL prior to shipment to RAL



Very Preliminary Schedule

- Based on many loose assumptions the first RFCC would be shipped to RAL in November 2013 followed by the second module in May of 2014



Summary

- Coupling Coil
 - First coil test is critical
 - Fermilab taking a major responsibility
 - Next hurdle is first cryostat assembly
 - Several options



Backup Pics



The Cover Plate Welding Setup at HIT



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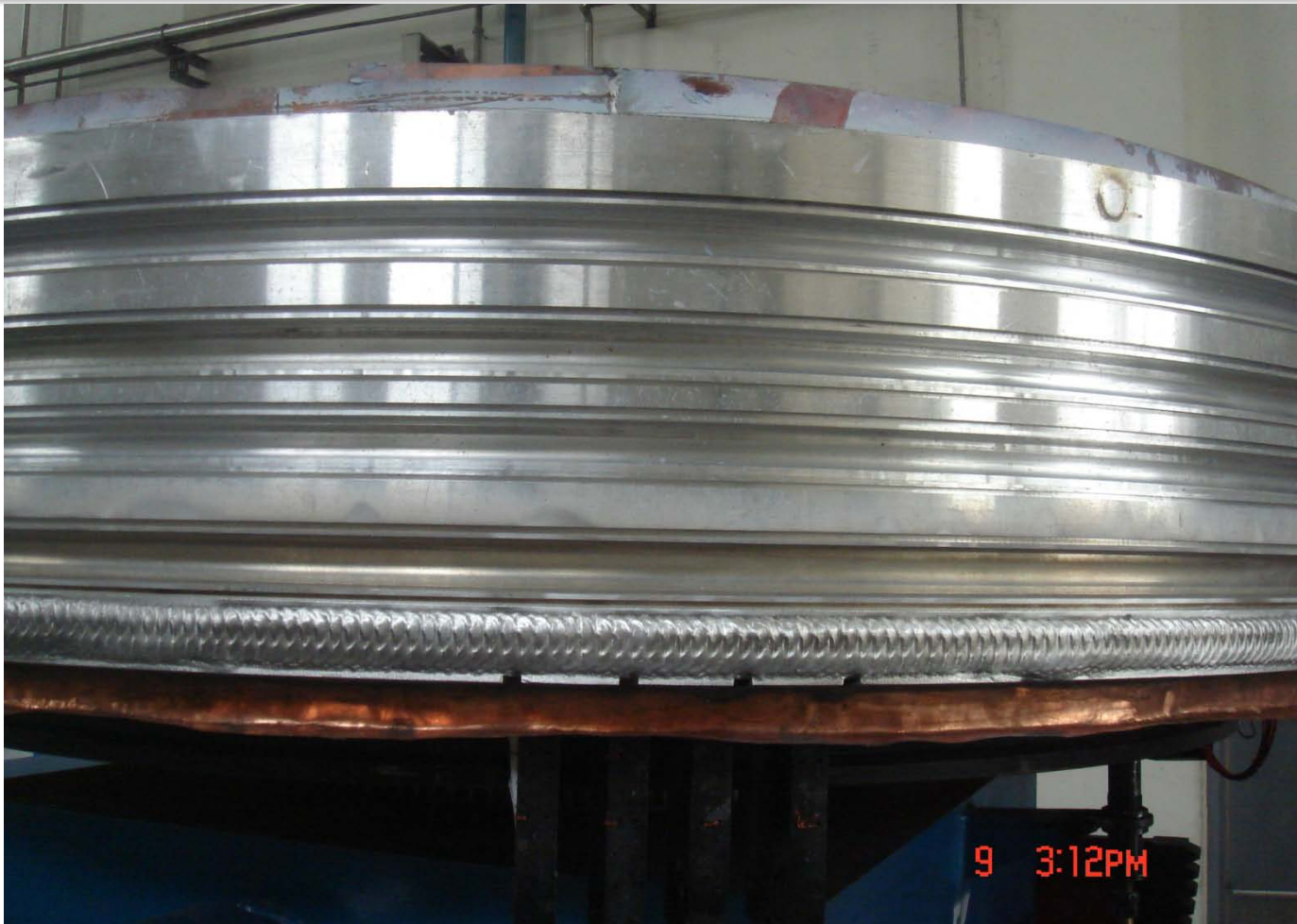
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Finished Cold Mass (close-up view)



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