9-cell cavity coordination

CM Ginsburg

SRF Meeting

28 Apr. 2010

Production Cavities in progress

- TB9ACC013 (dressed)
  - In ICB. No smoking gun seen in Questar cavity inspection. HPR +HTS re-test (displaces TB9AES010).
- TB9AES009 (dressed)
  - In HTS; cooldown today for the first time after coupler alignment problem fixed; test complete ~5/10
- ACCEL8 (dressed)
  - Preparation for HTS: at MP9; expect ready for HTS by 5/10
- TB9AES008 (dressed)
  - Preparation for HTS: HPR at ANL last week
- TB9AES010 (dressed)
  - At MP9. Will be next after TB9ACC013 (re-prep) for HTS preparation
- TB9ACC016
  - At MP9 in process of dressing. Ti ring was welded
- TB9AES007 (@JLab)
  - 41 MV/m vertical test at JLab 3/16. To be packed up today, sent out tomorrow, arrive guestimate ~5/10 for dressing measurements, HPR+VTS prep, VTS, dressing
- TB9RI018 (@JLab)
  - vertical test took place before final EP (goal: qualify furnace; however additional items were in furnace); 21 MV/m with field emission limitation
  - To run another light EP on TB9RI018 with new acid (things are slow due to construction; estimate another week before EP)
  - NW8 permeability too high (>1.1) and blamed as possibility for low Q0
  - Who to do the assembly? Jim Follkie last day is this Friday 4/30

- (continued…)

Production Cavities (cont.)

- TB9RI024*
  - Had light-EP at ANL, 120C bake and IB1 VTS test
  - At 2K, maximum gradient 28.8 MV/m with Q0=6.5E9, limitation quench/FE. Mode measurements plus very crude second sound measurement implicate cell#2 or possibly cell#1.
  - To be field flatness measured and optically inspected
- TB9RI026
  - Was 800C furnace treated at JLab
  - At FNAL/ANL: optically inspected, tuned, light-EP and VTS prepped
  - IB1 VTS test delayed due to IB1 cryoplant shutdown; test today
- TB9RI019(@JLab)
  - At JLab bulk-EP, ethanol rinse, HPR, 800C HT (only item in furnace), NO final-EP
  - To be installed in vertical test dewar today for cool down and vertical test at JLab
- TB9RI029*
  - At ANL for light EP+VTS prep [first trial of lower-temperature light-EP]
- TB9RI021* shipped Friday (UPS) back to FNAL after JLab for 800C HT (arrive tomorrow?)
- TB9RI020 optical inspection complete; to ANL for bulk-EP (prefer TB9RI026 results 1st…)
- TB9RI022*, TB9RI027 done with incoming inspection; to optical inspection one-by-one
- Incoming inspection started on TB9RI028
- To be inspected: TB9RI025*, TB9RI023*
- TB9NR001, TB9NR002 incoming inspection complete, to be optically inspected
  - Expect some discussion with vendor about incoming QC results this week
- New cavities
  - The first AES cavities expected in ~month. Remainder (4) NR due ~June

R&D Cavities in progress

- AES003 (spot polished at KEK)
  - light EP and VTS prep completed at ANL; to be tested at IB1 VTS
- ACCEL6 and ACCEL7
  - Held in reserve as CM2 backup cavities until they can be replaced by better cavities
- TB9ACC014 (after dented cell was tuned to lower field)
  - Vertical test 15.Feb.: 29 MV/m at 2K; some FE observed. Q0 @max grad=1.4E10
    - max gradient to be confirmed by 24.Mar – still waiting 4/28
  - retest with second sound and different thermometry configuration later this week
- TB9ACC017
  - Limited in VTS to 12.3 MV/m, limiting pit found in HAZ cell#4
  - Pit replica study in progress
- AES001 (dressed)
  - Pit replica study performed by KEK personnel at FNAL last week

- TB9ACC010, ACCEL9, TB9AES005, TB9ACC015 (@ Cornell)
  - are in various stages of tumbling and VEP. Being used for VEP commissioning and performance improvement.

- TS7MSU001 & TS7MSU002 (visual inspection and tuning only, then return)
  - FNAL work completed
  - At MSU for process/test

9-cell Cavities - By Facility

- Incoming inspection
  - Next: TB9RI025*, TB9RI023*[re-inspection]
- Tuning/field flatness measurement
  - Next for tuning: TB9RI021* (after JLab furnace visit; available this week)
  - Next for FF: TB9RI024*
- Optical Inspection
  - Next: TB9RI024*, TB9NR001, TB9NR002, TB9RI022*
- Tumbling
  - Select a 9-cell for first 9-cell tumbling test planned mid-May
- FNAL/ANL
  - (dressed – for HTS prep) TB9AES008, TB9ACC013 (re-prep), TB9AES010
  - (bare – for VTS prep) TB9RI029* light-EP+VTS prep in progress [first test of lower-temperature light-EP], TB9AES007 HPR+VTS prep only, bulk EP on TB9RI020
  - more light EPs to come down pipeline [TB9RI021*, TB9RI022*, TB9RI025*, TB9RI023*]
  - several heavy EPs on NR and AES cavities anticipated
- VTS
  - Second sound system: full system commissioning this week during TB9ACC014 test
  - TB9RI026 this week; TB9ACC014 (with second sound and modified thermometry) this week, AES003, TB9AES007, TB9RI029*, TB9RI024*
- HTS
  - TB9AES009 (through ~5/10), TB9ACC013 re-test, ACCEL8, TB9AES008, TB9AES010
  - Assume 2-week test duration for each cavity
- MP9
  - HTS prep for TB9AES010 (dressed), ACCEL8 (dressed), TB9AES008 (dressed)
  - Next for dressing: TB9ACC016 , TB9AES007
- Cryomodule-ready: [None]

underline=production cavity

No change since 4/12/2010