

# 9-cell cavity coordination

CM Ginsburg

SRF Meeting

29 Mar. 2010

# Production Cavities in progress

- TB9ACC013 (dressed)
  - Was removed from HTS, arriving at MP9 24.Mar. Plan to remove cold coupler in cleanroom and inspect, then Questar inspection of cavity within two weeks using provisional setup, then HPR unless something plan-changing is found during the inspection
- TB9AES009 (dressed)
  - HTS installation last week
  - Eng Note signed off by the committee. Will be completely signed off in time.
- ACCEL8 (dressed)
  - At MP9
- TB9AES008 (dressed)
  - At ANL yesterday fit-up test because of 2-phase pipe; learned that we can handle cavities like this without new tooling
  - Will be next for HTS prep; HPR at ANL after TB9RI024\*
- TB9AES010 (dressed)
  - Will be next for HTS prep
- TB9ACC016
  - At MP9 for dressing. Ti ring welding at Sciaky is planned for 31.Mar
- TB9AES007 (@JLab)
  - 41 MV/m vertical test at JLab 3/16. To be sent back to FNAL for dressing soon.
- TB9RI018 (@JLab)
  - vertical test took place before final EP (goal: qualify furnace); 21 MV/m with field emission limitation; will light EP in two weeks and re-test
- (continued...)

# Production Cavities (cont.)

- TB9RI024\*
  - At ANL for light-EP and VTS prep starting Friday 3/26 [try to return to IB1 by Fri April 2 so can 120C bake over the weekend]; vertical test week of April 5.
- TB9RI026
  - Was 800C furnace treated at JLab and returned to FNAL; inspection completed 3/23; tuning 3/24, departed to ANL 3/26 for light-EP and VTS prep after TB9RI024\*
- TB9RI023\* (with the weld void at the transition ring)
  - RI weld void repair at RI completed; returned to FNAL 3/24; return to incoming inspection
- TB9RI019(@JLab)
  - bulk-EP 3/26, ethanol rinse, HPR start 3/26; 800C HT; final EP week of April 5<sup>th</sup>.
- TB9RI029\*(@JLab)
  - 800C HT done over the weekend, coming out of furnace today; to return to FNAL for tuning, optical inspection and light EP+VTS prep
- TB9RI021\* finished optical inspection; will go to JLab for 800C HT
- TB9RI020, TB9RI022\*, TB9RI027 done with incoming inspection; to optical inspection one-by-one
- Incoming inspection started on TB9RI028
- To be inspected: TB9RI025\*, TB9RI023\*
- New cavities
  - The first AES cavities are currently expected to arrive by the end of March. The first two Niowave-Roark cavities due this week(!) – squeeze into incoming inspection; remainder due ~June

# R&D Cavities in progress

- AES003 (spot polished at KEK)
  - Optical inspection showed interesting features which may explain persistent field emission; by-hand spot polishing, tuning complete
  - Transported to ANL 3/26 for eventual light EP and VTS prep after production cavities
- 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 3/28
  - retest with second sound and different thermometry configuration
    - second sound system in IB1 to be complete April 5
- 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)
  - Visual inspection complete, field flatness measurement complete, tuning complete
  - In transit back to MSU today(?)

# 9-cell Cavities - By Facility

NB: when in doubt, production cavities always have priority

- Incoming inspection
  - Next: TB9RI028, TB9NR001, TB9RI025\*, TB9RI023\*[returned] partially remain to be completed
- Tuning/field flatness measurement
  - Next for tuning: TB9RI029\* (upon return from JLab later this week), TB9RI021\* (after JLab furnace visit)
  - Next for FF: TB9RI023\*, TB9RI025\*
- Optical Inspection
  - TB9RI020, TB9RI022\*
- FNAL/ANL
  - (dressed – for HTS prep) ACCEL8, TB9AES008 (after TB9RI024\* and before TB9RI026), TB9AES010
  - (bare – for VTS prep) TB9RI024\* light EP+VTS prep; TB9RI026 light EP+VTS prep, AES003 light EP+VTS prep; more light EPs to come down pipeline [TB9RI029\*, TB9RI021\*, TB9RI022\*, TB9RI025\*, TB9RI023\*]; also several heavy EPs on NR and AES cavities
  - Weighing device to be procured this week, then operational in 2-3 weeks
- VTS
  - Second sound system: commissioning this week, to be completed ~April 5
  - TB9RI024\* (after light EP) April 5 week; TB9RI026 (after tuning, light EP) April 12 week; TB9ACC014 (with second sound and modified thermometry) try to squeeze end of April 12 week, same subsequent list as FNAL/ANL (bare) above
- HTS
  - TB9AES009 (installation last week; 3 week test duration), ACCEL8 (test duration: 2 weeks proposed), TB9AES008 (test duration: 2 weeks proposed), TB9AES010 (test duration: 2 weeks)
- MP9
  - TB9ACC013 (dressed) remove cold coupler in cleanroom and inspect, then Questar inspection (details TBC); TB9AES009 (dressed) HTS installation this week; HTS prep follows for ACCEL8 (dressed), TB9AES008 (dressed), TB9AES010 (dressed); TB9ACC016 then TB9AES007 are next for dressing