P0D Production at SBU

ND280 face to face meeting
December 6, 2008
DRESSING and SCANNING PODules

• POD Dressing Procedures
  • move dressed POD with forklift to storage rack
  • retrieve undressed POD with forklift and mount on rolling table
  • insert 260 fibers into fiber holes
  • insert 260 LI caps, LI strips, mount 10 LI plates, sand 4 LI block
  • mix 50 minute epoxy and apply dab on 260 ferrules
  • wait 3-4 hours for epoxy to harden, usually over lunch
  • attach mini-coax cables to 260 MPPC assemblies
  • Nitrogen brush MPPC’s, scan UPC codes, insert on to ferrule
  • screw on 260 shrouds
  • mount TFB interface boards on tables, attach 260 mini-coax
  • mount Dima’s power supply board under table
  • move table into scanning cage area

Typical time; requires minimum 3 people about 4-5 hours
DRESSING and SCANNING Pods, continued

• P0D undressing Procedures
  • after Dima finishes scan in morning
  • roll scanned P0D from scanner caged area
  • disconnect 260 mini-coax from TFB boards
  • tie wrap mini-coax into groups of ~8 and attach to PVC strip
  • move strong back, mount metal support plates and lifting plate
  • move roller table to center of room,
  • fork lift the strongback&P0D off table and move to storage rack

Typical time; requires min. 2-3 people about 1 hours

PEOPLE INVOLVED IN P0D DRESSING
• SBU Based; Dima, Trung, Bent, Walter, ChrisG, Peter, Glen, Arun, ChrisM, Kieran, Ian
• Pittsburgh visitors; Istvan, Vittorio, Donna,
• Rochester visitors; Steve, Hyup, Melanie
• CSU visitors; Norm, Vladimir (next week)
• Other Parts
  • All fibers arrived in time for P0D dressing
  • MPPC assemblies arrive just in time for P0D dressing
DRESSING and SCANNING P0Dules, status

• PROGRESS as of Dec. 6, 2008
  • 35 P0D’s scanned and 1 re-scanned.
  • recent production rates at SBU after first S-P0D assembly
    • Nov 3-7 week => 5 dressed & scanned
    • Nov 10-14 week => 4 dressed & scanned
    • Nov 17-21 week => 5 dressed & scanned
    • Nov 24-26 week => 3 dressed & scanned
    • Dec 1-5 week => 4 dressed & scanned
  • production rate is 1 P0D per working day

• Problem
  • all UPC labels are peeling off (any solutions?)
  • 1 – PVC frames ferrule holes were over drilled

• Remarks
  • delays due to failed overnight scans have significantly reduced
  • 4 more to be scanned, plus last P0D needs to be glued and scanned.
Last box of fibers had the corner smashed by truckers. We noted that long crates always were damaged if the trucker had problems moving long crates out of their trailer.
Pb Radiator Production at SBU

- Production steps
  - sand 4 pre-drilled s.s. sheets, 4 Al frames
  - pre-fit 2 sheets and 4 frames to check hole alignments
  - drill small nail holes into Al frames
  - alcohol clean sheets and frames
  - weigh and label 27 Pb tiles
  - place and tape two s.s. sheets on table
  - mix black epoxy and apply with roller brushes on to s.s. sheets
  - apply white epoxy to Al frames, carefully scrape thin layer
  - place Al frames on to s.s. sheets
  - dropsetPosition Pb tiles one by one on to s.s. sheets
  - apply black epoxy with roller brushes on to Pb tiles
  - place top s.s. sheets on Al frames & tiles
  - drape plastic cover sheets on radiator
  - cover with vacuum sheet and apply overnight vacuum
  - next day, drill and tap holes, attach iron frames, lift to back room
Pb Radiator Production at SBU; continued

Production rate
- Typical time; requires min. 3-4 people about 2 hours to glue
  And 2-3 people about 2 to prep the table including removing
  The glued radiator.
- actual production rate has been 1 per week (#8,9,10)

Problems
- original s.s. sheet holes were punched at SBU and it was too difficult. Now moved to outside shop. Some holes from outside job have been found missing.
- Al frame hole drills at SBU have been drilled slightly in the wrong position and occasionally the holes need to be further enlarged.
- It is difficult to check hole positions to avoid problems aligning hole with the P0D’s during S-P0D assembly.

Completion: need 4 more radiators, manpower available, before xmas?
Bottom s.s. sheet & frames glued
2nd to last Pb tile being placed
Top s.s. sheets being positioned
Vac. Sheet/frame placed on radiator
First Super Production assembly at SBU

- First S-P0D assembly
  - Aluminum support frame from CSU was modified at SBU and load tested by Jack in SBU tech shop and again in Jack’s office.
  - 1st ecal assembled with 7 P0D’s & 7 radiators and utilities mounted in one
    - Dave, Clark, Vittorio, Bent, Steve, Walter, Chris, Peter, Donna, and Trung involved in 1 week effort to assemble first S-P0D assembly.
    - some problems with radiator holes surmounted with dremel tool
    - actually assembly was over 3 days plus utilities mounted on weekend
    - some minor problems with brackets that blocked mini-coax.
  - 3 ton S-P0D & cart successfully (slowly) moved to back assembly room
  - cable numbering (Vittorio) & cabling plant scheme started (Norm, Clark)
- Second S-P0D cart and tested(?) Al support frame is ready for mounting
Photo#1, setting up load test in Jack’s lab

Photo#2, install 1st P0D Into S-P0D support/cart

Photo#3 install 1st Radiator into S-P0D

Photo#4 Wednesday afternoon After installation of 3 P0Ds+3 rads.
Photo#5 cleaning and Sanding the radiator

Photo#6, inserting rods into P0D & rad. holes around perimeter

Photo#7, utilities mounted by Sunday morning.

Photo#8, moving the 1st S-P0D cart.
PRODUCCION SCHEDULE at SBU

Tasks (Dec08 and Jan09)
• scan 5 P0D’s
• glue at least 1 (and 3 spares?) P0D
• glue 4 more Pb radiators
• assemble second S-P0D

• label cables (see Trung), attach utilities

• test utilities (power, cooling)
• water target S-P0D first assembly ??

Aim for first 4-5 jobs in December, but very tight.
How much manpower is needed for labeling??
Note ~wks left in Dec08 and there is a T2K meeting in Jan09