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DOE AMUG Update

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PLM, Environmental Monitors

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AGENDA

- What is the Environmental Monitoring product line?
- Problems Resolved (and Not)
- Obsolescence Strategy
 - S/PING
 - RMS II

Products

■ What is this product line?

• Air Monitors

- For the work place (personnel protection)
- For low level environmental monitoring (Erlangen)

• Area Monitors

- RMS-3, FHT 6020 and RadEye for work place monitoring (personnel protection)
- FHZ621GL and FHT191N for environmental monitoring (Erlangen)
- Systems with interlocks to prevent access into high radiation areas

• Sample Counters

- HandECount - Work place (portable, battery powered, quick answers)
- Laboratory (Erlangen products) true low level counters (lots of lead shielding)
- Single or multiple counting channels



Resolved Product Issues

- RMS-3 – serial communications network issue
- When more than eight RMS-3's were used in an RS-485 network, individual RMS-3's would drop off the network or reset to default parameters.
- No problems noted with RMS-3 monitors used on Ethernet networks
- Found a code conflict with the temperature routine and deleted it.
- This resolves the communications issue but there is no longer a temperature reported by the RMS-3
- New software is being released



Resolved Product Issues

- DA1-1 and DA1-6 dead-time issues
- Spare DA1-6 boards sent to Savannah River reported zero dead time but were also found to be non-linear.
- Found slight differences in the components used but testing also high-lighted a design problem with the amplifier circuit on the DA1-1 and DA1-6 boards
- Changed two resistors and added a jumper to the board (as described in MI2530)
- Design change applies to all DA1-1 and DA1-6 variants. Suggested upgrade at annual calibration.



Resolved Product Issues

- Alpha-7 Server Upgrade to version 2.0.0.4
- Fixed latching alarm logic to handle multiple latched conditions.
- Fixed Eberlogger to log simultaneous status condition changes.
- Set smart head logic to recognize and load spectrum parameters from radial head every time an MCA is connected.
- Fixed DAC unity logic to compensate for flow unit changes.
- Added user configurable relay logic and registry settings.
- Changed parameter handling algorithm to eliminate oscillations.
- Added air gap to calibration software printout.
- Spectrum Channel 212 is logged correctly.
- Added user configurable spectrum and coefficient logging features.
- Fixed region of interest code.
- Added auto spectrum reset logic and registry settings.

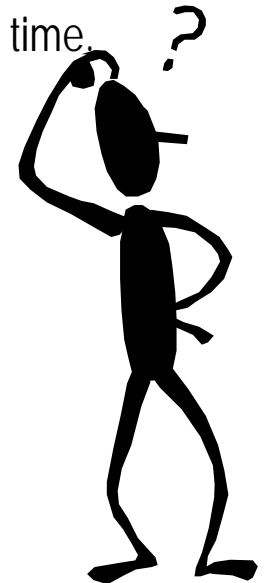
Hardware Changes

- Alpha-7A and Alpha-7L
 - Various detectors available – 3 main suppliers
 - Updated the filter to detector distance value used
 - Changed the wiring harness slightly to improve grounding
 - New single board computer being used
 - USB ports are being added (prototype available soon)



Unresolved Product Issues

- **DA1-8 – drift with very high integrated doses**
 - During calibration of A DA1-8 to dose rates higher than 10,000 R/h, testing a new quadratic calibration method, it was noted that the detector drifted.
 - This drift effect has been confirmed for high dose applications
 - Currently investigating a solution.
- **HandECount – drifting over time**
 - Several HEC's at a nuclear power plant failed a source check after several months. Control carts showed that the efficiency on several units had drifted lower over time.
 - Same issue was encountered at SRS and other facilities.
- **Alpha-7A – new hardware configuration, testing at LRRRI**
 - Testing is planned at LRRRI but not yet scheduled.
 - Reinvestigating INEEL report of RFI problem



Obsolescence Issues

- Santa Fe Ceased Manufacturing in 2007
 - Installed Systems (SPING, PING)
 - Are no longer being manufactured.
 - Some spare parts are available from the service department
 - Installed area monitors (RMS II)
 - Are no longer being manufactured.
 - DA1-x detectors are still available
 - IB-x interface boxes and ECx-x display modules are not
 - Many products moved to Erlangen (Germany) or Beenham (UK)
 - Many other products were not – eliminating any possibility of spare parts for them.



Complete Product Listing

- Beenham Environmental
 - Mini 900 series monitors
 - Mini 920 monitors
 - Mini Alarms

- “Santa Fe” Environmental
 - Alpha-7A air monitor
 - Alpha-7L air monitor
 - AMS-4 air monitor
 - HandECount sample counter
 - RMS-3 area monitor

- Erlangen Environmental
 - FHT 6020 area monitor
 - FHZ 621GL intelligent probe
 - FH59 series air monitors
 - FHT770 series sample counters
 - Several other variants
 - RadEye PRD

- Software/Hardware Networking
 - ViewPoint and Plug-ins

Questions

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