

BOYD MICHAEL BEETS

SUMMARY: R&D Engineer with specialization in process measurements, electronics, and RF technologies. Thirty years of experience in instrumentation and electronics for applications in national security, explosives technologies, chemical and nuclear fuel reprocessing, and advanced sensor systems.

WORK EXPERIENCE

ORNL: Currently performing R&D work for the National Security Directorate. This work requires the design of vacuum systems, mechanical devices, sensors and electronic circuits to develop special systems.

Also, engineer and director of operations for the R&D Barrier Penetrator Project, which requires the design, assembly, directing of testing and data analysis for very high explosive devices.

2003-present

Test Engineer/Systems Engineer for MSRE Conversion Project Responsibilities included the design of electronic safety significant circuits to meet NUREG design standards, cost estimates, writing test procedures, and directing all electrical work.

2000-2004

Designed an Artifact for the NRC (Nuclear Regulatory Commission), which is used to compare EMI (Electromagnetic Interference) test methods and procedures. Results of testing are in publication "Electromagnetic Compatibility Testing for Conducted Susceptibility Along Interconnecting Signal Lines", August 2003. 1999-2000

Worked with outside companies to reduce EMI of their circuits, enabling them to pass FCC tests, which is required before marketing electronic devices. Was primary investigator with Wadsworth Electronics. Planned and performed conducted susceptibility tests CS114, CS115, and CS116 for the NRC in order to determine susceptibility of digital channels in control rooms of nuclear plants. Corrected numerous EMI problems, such as for the Russian Blenddown Project. 1997-1999

Designed Xilinx and Altera PLD (Programmable Logic Device) circuits for Haliburton and CBMS (Chemical and Biological Mass Spectrometer) projects and performed strain gauge work on Seawolf project at Y-12. 1997-1999

Wrote specifications and purchased GTEM (Gigahertz Transverse Electromagnetic) cell, Merritt coil, and test equipment, which was >\$150k to develop an Environmental Effects Laboratory. Performed RF and electromagnetic susceptibility tests on various radiation detection instruments and analysis equipment.

Wrote calibration procedures and Labview programming for instrument control and data acquisition.

1993-1996

Planned and Performed Computer Security Surveillance Checks for the TEMPEST Program. (Areas covered included K-25, Y-12, ORNL, and Portsmouth), 1992-1996

Completed research paper, "The Effectiveness of Safety Meetings in the I&C Division" and gave division wide presentation of the results to the Instrumentation and Controls Division. 1993

Repair and Calibration of Oscilloscopes and Spectrum Analyzers in metrology lab. 1989-1992

Y-12: Maintenance and troubleshooting of fire alarm circuits and Utilities Management System.

1988-1989

Prototype fabrication and checkout of control circuits for Centrifugal Pellet Injector. 1985-1987

K-25: Repair and calibration of oscilloscopes, frequency counters, radiation detection instruments, and other electronic test equipment in metrology laboratory. 1978-1985

Maintenance and calibration of instrumentation for the Centrifuge program. 1975-1978

EDUCATION:

Digital Logic Circuit Analysis and Design (EE351, UT) 1998
Biology (2 semesters, RSCC), 1994
B. S., Applied Organizational Management, Tusculum College, 1993
“NACSEM 5112 Test Procedures”, (120 hrs.), Lackland AFB, Texas 1993
“TEMPEST Testing Basics, (117 hrs.), Lackland AFB, Texas 1992
“Strain Gage Technology”, Raleigh, NC 1992
Engineering Circuit Analysis (2 semesters, PSCC), 1992
A. S., Mathematics/Pre-Engineering, Roane State Community College, 1990
A. S., General Studies, Roane State Community College, 1988
Dale Carnegie, “Effective Speaking and Human Relations”, 1978
Electronic Specialist, Tennessee Institute of Electronics, 1974

AWARDS/HONORS:

Exceptional Effort Award for demonstration of Variable Velocity Weapons Systems, 2005
Significant Event Award for work on Video Intercept Receiver and work with FBI, 2000
Facilities and Operations (F&O) Directorate Excellence Award for March, 2001
Significant Achievement Award for work on Electric and Magnetic Spectral Receivers, 1995
Graduated Magna Cum Laude, Tusculum College
Graduated Magna Cum Laude, Roane State Community College
Gamma Beta Phi Honor Society
Martin Marietta Letter of Recognition (5 year perfect attendance)
Dale Carnegie, “Prepared Speech Champion”, 1978
Tennessee Institute of Electronics, GPA 3.86

PUBLICATIONS:

“Electromagnetic Interference Testing of the HEU Blend Down Monitoring System”, July 2004
“Electromagnetic Compatibility Testing for Conducted Susceptibility Along Interconnecting Signal Lines”,
August 2003

HOBBIES:

Guitar: Guitarist for Orchestra and Praise Band at First Baptist Church of Concord

INTERESTS:

Viewlogic
Xilinx and Altera FPGA Programming
Labview Programming
Analog/Digital Circuit Design
Biological Systems
Management