

NIETERT, RUSSELL E.

EXPERIENCE

ARGONNE NATIONAL LABORATORY, STRATEGIC SECURITY SCIENCES DIVISION & PREDECESSORS, 2004 - 2018

Principal Nuclear Engineer. Nuclear Team Leader supporting NNSA/NA 24 and NA242. Grew team from 2 to approximately 4.5 FTE.

Project Manager of a 3-year project for NA24 to develop updated handbooks of the Nuclear Suppliers Group (NSG) control specifications. Oversaw numerous individuals from 6 different national laboratories. Established/monitored project schedule and deliverables. Wrote approximately 20 and Reviewed/Edited/Rewrote all (approximately 200) sections for the two handbooks. Directed Graphics Arts in production of the handbooks. Earned a Pacesetter award for the performance of the project.

Serve on the NA24 Sensitive Nuclear technology (SNT) Assessment Team. Travel to U.S. locations proposing export of nuclear-related technology to identify if any SNT (as defined by the Atomic Energy Act and 10 CFR Part 810) will be exposed; propose mitigation plans when SNT could potentially be transferred to foreign individuals.

Oversee the ANL "810 Team" in supporting NA24 in developing technical analyses of nuclear-related technologies proposed for export in accordance with 10 CFR 810. Provide technical assessment of nuclear transfers of technology to foreign nationals and other entities.

Oversee the ANL "Nuclear Interdiction Team" in analyzing numerous Intelligence Community cables ("traffic") as part of NA242 support to the USG Nuclear Interdiction Action Group (NIAG). Provide technical assessment of nuclear and nuclear-related dual-use transfers of equipment and technology to states/programs of concern. Advise US State Dept. on level of concern for such transfers. Review for technical accuracy Clear Language Requests (CLRs) drafted by State Dept. for de' marches to foreign governments about these concerns.

Wrote commodity studies for NA24 of equipment of proliferation concern (nuclear grade graphite, pyroprocessing) and co-authored other analyses (light water reactor oxide fuel fabrication and India's baseline plan for nuclear energy development).

Participated in NA24 Technical Review Group (TRG) analysis of the changes required to harmonize the control lists of the Nuclear Suppliers Group (NSG) and the Missile Technology Control Regime (MTCR).

Provide technical assessment of nuclear-related dual-use commodities proposed for export as identified in export control applications for NA242 in accordance with the U.S. Export Administration Regulations (EAR).

Performed as the Proliferation Information Network System-ANL (PINS-ANL) (Secret Restricted Data computer network) Information Systems Security

Officer (ISSO) for 10-years. Wrote System Security Procedure (SSP) for Argonne implementation of PINS (classified IT system at Secret/Restricted Data level). Earned a Pacesetter award for the performance of the project. Designed and oversaw implementation of "diskless" conversion of PINS systems. Designed classified IT system at Top Secret/Restricted Data/Sensitive Compartmentalized Information level for ANL Field Intelligence Element (FIE). Driving force behind deployment of capability to investigate foreign entities with anonymous intelligence presence. Oversaw implementation of classified IT system at Secret/National Security Information level for connection to DOD's SipiNet.

Serve as Facility Security Representative (FSR) for SSS Limited Area. Modernized the security alarms/access system. Wrote the Facility Security Plan (SP). Provide training to new team members and as the SP is modified.

ARGONNE NATIONAL LABORATORY, NUCLEAR ENGINEERING DIVISION & PREDECESSORS, 1992 - 2004

Principal Nuclear Engineer. Performed calculations of material flows during the pyroprocessing/fuel cycle studies at ANL-West. Proved minimal analytical chemistry sampling provided insufficient characterization of material flows to adequately meet safeguards requirements.

Programmed an automated system to capture analytical chemistry analyses of Mark-IV/Mark-V electrorefiners and Cathode Processor samples from an Access database and automatically load results into an Oracle database for web-based data archival and analysis system discussed below.

Programmed a database-driven, web-based data archival and analysis system (CGS Scripting with Perl/Oracle database) for the Mark-IV/Mark-V electrorefiner experiments performed during pyroprocessing/fuel cycle studies at ANL-West.

Built a packed-column fluidized bed for remediation of the radon-220 (thoron) generated from the decay of radium-224 in the bldg. 200 M-wing hot cells. Developed a design review and presented to the Chemistry Division Design Review Committee. Oversaw experiments to quantify the ability of various oils to capture radon.

Managed a team of ANL and ANL-West professionals to perform an Integrated Safety Management (ISM) review of all of the facilities & buildings at LLNL. Earned a Pacesetter award for the performance of the project.

Pioneered a wireless data acquisition/trend monitoring system and applied it to ANL-West maintenance procedures; this was performed prior to the now common industry practice such as those used by FedEx and UPS. Implemented ANL's first wireless network to support data capture by portable computer.

Performed a probabilistic risk assessment of the APS personnel access system.

ARGONNE NATIONAL LABORATORY, ENGINEERING PHYSICS DIVISION, 1989 - 1992

Principal Nuclear Engineer. Developed the project plans for the decontamination and decommissioning (D&D) of the Bldg. 212 plutonium glovebox facility and the EBWR reactor.

Build the division's Bldg. 309 laser facility.

Activated a 6-tesla superconducting electromagnet to study magneto-hydrodynamic (MHD) submarine propulsion (a.k.a. the Red October Program) including procurement of a liquid He refrigeration system.

LAWRENCE LIVERMORE NATIONAL LABORATORY, ATOMIC VAPOR LASER ISOTOPE SEPARATION (AVLIS) PROGRAM, 1981 - 1989

Section Leader/Lead Experimenter. Lead engineer providing operations insight into design/construction of a Special Isotope Separation (SIS) (plutonium) laser enrichment pilot plant. Developed activation planning for pilot plant and commissioned the pilot plant. These activities earned a special "finding of noteworthy practice" from the 1990 DOE "Tiger Team" that lampooned many other DOE projects.

Group Leader/Lead Experimenter. Performed development/lifetime studies of the SIS separator in the world's only plutonium AVLIS vaporization facility. Several 200-hr. runs performed to identify component performance problems and implement improved component designs.

Mechanical Engineer/Lead Experimenter. Developed the anode design for the SIS separator while operating a plutonium-surrogate vaporization facility.

EDUCATION PhD, Nuclear Engineering. University of Wisconsin-Madison, 1982.
MS, Nuclear Engineering. University of Wisconsin-Madison, 1979.
BS, Nuclear Engineering. University of Wisconsin-Madison, 1977.

OTHER DOE Q-clearance (since 1982) and all Secure Compartmented Information (SCI) "tickets."
Have designed, built, and tested classified Restricted Data hardware.
Member American Nuclear Society, 1984 – present
Operated as the NE Division's Oracle database manager.

EXTRA-CURRICULAR Directed church-based Wednesday-night youth program involving over 100 kids and approximately 100 adults (on a rotating basis).
Assistant coached youth ice hockey (both intramural and travel levels).
Head coached youth soccer (both intramural and travel levels).
Assistant coached youth football.
Assistant coached youth baseball.

PUBLICATIONS

R.E. Nietert, et al, "A Handbook for the Nuclear Suppliers Group Trigger List Annexes" (Title: U/Document: OOU), Argonne National Laboratory, ANL/GSS/CSS-16/1, February 2016.

R.E. Nietert, et al, "A Handbook for the Nuclear Suppliers Group Dual-Use Annex" (Title: U/Document: OOU), Argonne National Laboratory, ANL/GSS/CSS-16/2, January 2016.

R.G. Bucher, R.E. Nietert, India's Baseline Plan for Nuclear Energy Self-sufficiency," Argonne National Laboratory, ANL/NE-09/03, January 2009.

R.E. Nietert, Export Control Guide: "Electrorefining Technology" (Title: U/Document: OOU), Argonne National Laboratory, ANL/NE-08/22, August 2008.

R.E. Nietert, Export Control Guide: "Production and Application of Graphite in Nuclear and Missile Systems" (Title: U/Document: OOU), Argonne National Laboratory, ANL/NE-06/13, November 2005.

J. L. Jerden, M.M. Goldberg, J.C. Cunnane, T.H. Bauer, R.A. Wigeland, R.E. Nietert, Can spent nuclear fuel decay heat prevent radionuclide release?, *Proceedings Materials Research Society*, January 2004.

R.E. Nietert, F. Markun, K.V. Liu, J.D. Gabor, "An Experimental Analysis of the Feasibility of Fluid-Based Radon Removal Systems," *NT Technical Memorandum No. 43*, Argonne National Laboratory, 1998.

B. Rooney, K. C. Gross, R. Nietert, J. Valentine, W. Russ, "A fluid-based measurement system for airborne radionuclide surveillance," *19th Seismic Research Symposium on Monitoring a Comprehensive Nuclear Test Ban Treaty*, September 1997.

J.C. Braun, R.E. Nietert, H.P. Planchon, "Implement Reliability Centered Maintenance and Condition Monitoring at the ANL-W Site," *Argonne National Laboratory Annual Report of Laboratory Directed Research and Development Program Activities for FY 1994*, February 1995.

B.C. Gay, R.E. Nietert, "Maintenance Development: Project Status and Wireless, Paperless Procedure Demonstration," *University of Chicago Board of Governor's Review of the IFRO Division*, August 1994.

R.E. Nietert, J.C. Braun, "A State of the Art Client/Server Data Base System for Maintenance Management," *DOE Nuclear Facility Predictive Maintenance Symposium*, May 1994.

R.E. Nietert, "Integrated Maintenance Management," *IFRO/RA Coordination Meeting*, May 1994.

J. Roglans, R. Nietert, R. Singer, D. Hill, "Reliability Analysis for Safety Systems at the Advanced Photon Source at ANL," *DOE Risk Management Quarterly*, January 1994.

M. Petrick, A. Thomas, L. Genens, J. Libera, R. Nietert, J. Bouillard, E. Pierson, D. Hill, B. Picologlou, O. Ohlsson, T. Kasprzyk, G. Berry, "Magnetohydrodynamic sea water propulsion," ANL/CP-75283, December 1992.

D. Hill, J. Libera, M. Petrick (R. Nietert acknowledged but uncited), "Reactivation and Operation of the Large Six-Tesla CFFF Superconducting Magnet," ANL/CP-75272, December 1992.

R.E. Nietert, "Building 212 Glove Box Decontamination and Decommissioning Project, Glove Box Detailed Description Document," Argonne National Laboratory, August 1992.

R.E. Nietert, "Experimental Boiling Water Reactor Decontamination and Decommissioning Project, Reactor Detailed Description Document," Argonne National Laboratory, September 1992.

M. Petrick, A. Thomas, L. Genens, J. Libera, R. Nietert, J. Bouillard, E. Pierson, D. Hill, B. Picologlou, O. Ohlsson, T. Kasprzyk, G. Berry, "Magnetohydrodynamic sea water propulsion," *International symposium on superconducting magneto-hydrodynamics propulsion ships*, October 1991.

R.E. Nietert, "Engineering Demonstration System (EDS) Operational Safety Procedure for Plutonium Operations" (Title: U/Document: UCNI), Lawrence Livermore National Laboratory, OSP332.112, L09864, October 1989.

R.U. Elwell, R.E. Nietert, "Engineering Demonstration System (EDS) Operations Personnel Training Program," Lawrence Livermore National Laboratory, TP-100, PPT-89-2923-1-A, June 1989.

R.E. Nietert, "Triton Experiment, Plutonium Vaporization for Laser Isotope Separation," Lawrence Livermore National Laboratory, OSP332.50, L08909, January 1987.

Engineering Demonstration System Operations Quality Assurance Plan," Lawrence Livermore National Laboratory, LLNL QA Report M-078-41, L08145, October 1988.

K.S. Schnoebelen, S.I. Abdel-Khalik (Nietert data acknowledged but uncited), "Local Nusselt Numbers for Flowing Packed Particle Beds in Circular Tubes with Constant Wall Heat Flux," *Journal Of Heat Transfer, American Society of Mechanical Engineers, Section C*, May 1986.

R. E. Nietert, J. L. Morse, J. H. Moyer, "Safety Analysis Report for the Triton Test Facility," UCID-20113, Lawrence Livermore National Laboratory, January 1984.

R.E. Nietert, "Operational Safety Procedure for the Nike-A Facility," Lawrence Livermore National Laboratory, OSP161.2, April 1982.

R.E. Nietert, S.I. Abdel-Khalik, "Heat-transfer characteristics of flowing and stationary particle-bed-type fusion-reactor blankets," UCRL-15521, Lawrence Livermore National Laboratory, February 1983.

R.E. Nietert, "Heat-transfer characteristics of flowing and stationary particle-bed-type fusion-reactor blankets," PhD Thesis, University of Wisconsin-Madison, December 1982.

R.E. Nietert, S.I. Abdel-Khalik, "The Effective Thermal Conductivity of Stationary Particle Bed Blankets with Gas Flow at Low Modified Reynolds Numbers," *Annual Meeting of the American Institute of Chemical Engineers*, November 1982.

R.E. Nietert, S.I. Abdel-Khalik, "Thermal Entrance Length Convective Heat Transfer in Falling Blankets of Solid Particles," *Annual Meeting of the American Institute of Chemical Engineers*, November 1982.

R.E. Nietert, S.I. Abdel-Khalik, "Thermalhydraulics of flowing particle-bed-type fusion reactor blankets," *Nuclear Engineering and Design*, **68** (3), 1981.

R.E. Nietert, S.I. Abdel-Khalik, "Thermalhydraulics of flowing particle-bed-type fusion reactor blankets," *6th International Conference on Structural Mechanics in Reactor Technology*, August 1981.

R.E. Nietert, S.I. Abdel-Khalik, "Thermal hydraulics of flowing particle-bed-type fusion reactor blankets," *Transactions American Nuclear Society*, November 1980.

R.E. Nietert and S.I. Abdel-Khalik, "An Experimental Investigation of the Convective Heat Transfer Characteristics of Particle-Bed Type Fusion Blankets," University of Wisconsin-Madison, *University of Wisconsin Fusion Design Memorandum*, UWFDM-394, October 1980.

R.E. Nietert and S.I. Abdel-Khalik, "An Experimental Investigation of the Convective Heat Transfer Characteristics of Particle-Bed Type Fusion Blankets," *4th ANS Topical Meeting on the Technology of Controlled Nuclear Fusion*, October, 1980.