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RULEMAKINGS AND
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Emory D. Collins

Biographical Summary

Title: Senior Technical Advisor for Advanced Fuel Cycles and Isotopes
Oak Ridge National Laboratory
Post Office Box 2008,
Oak Ridge, Tennessee 37831-6152

2003— Present, Senior Technical Advisor

1997—2007, Senior Program Manager, Nuclear Science & Technology

1999—2007, ORNL Program Manager, Advanced Fuel Cycle Initiative.
Responsible for all programs in Separations, Fuel Development, Systems
Studies, and Transmutation Engineering

1998—2005, ORNL Program Manager, Defense Programs.
Responsible for coordination of programs in transuranium element
production, ^{252}Cf neutron source fabrication, criticality safety and radiation
shielding studies.

1997—2005, Theragenics Work-For-Others Program.
Responsible for isotope enrichment technical assistance, addition of new
hydraulic tube irradiation facilities in High Flux Isotope Reactor, and test
production of ^{103}Pd .

1997—2005, Member DOE Design Review Team for U.S. MOX Fuel Fabrication Facility.
Responsible for oversight over aqueous purification of plutonium, facility design, and chemical
safety.

1997—2005, Member DOE Russian Plutonium Disassembly/Dissolution Review Team.
Responsible for oversight of aqueous chemical purification processes for disposal of excess
weapons-grade plutonium as MOX fuel.

1987—1997, Chemical Technology Division Section Head of Isotopes Production. Responsible for
technical management of ~200 personnel involved in isotope production and facility management.

1990—1997, ORNL Program Manager for Isotope Production and Distribution Program.
Responsible for radioisotope and enriched stable isotope development, production, and
distribution.

1983—1989, ORNL Program Manager, Three-Mile Island-2 Assistance Program. Responsible for
coordination of technical assistance from ORNL for the recovery activities following the accident
at TMI-2.

1982—1987, ORNL Plant Manager, Radiochemical Processing Plant (Bldg. 3019). Responsible for
technical management of ~75 personnel involved in ^{233}U facility operation, Consolidated Edison
Uranium Solidification Project (CEUSP), and Mixed Plutonium-Uranium Microsphere Production
Project.

TEMPLATE = SECY-028

SECY-02

1979–1982, Project Lead, Development of Ion Exchange Process for decontamination of high-activity accident-generated water at TMI-2. Responsible for process development studies, process design, and plant oversight operations of the Submerged Demineralizer System, working with team from ORNL, Savannah River, DOE, and General Public Utilities.

1978–1982, Project Lead, Design, installation and development of fuel cycle equipment and processes. Responsible for design and operation of solvent extraction test facility and testing of high burn up Light Water Reactor spent fuels and fast breeder reactor spent fuels from the Fast Flux Test Facility reactor.

1975–1976, Technical Lead, Startup of ORNL Process Waste Treatment Plant. Responsible for planning, procedure preparation, and direction of startup testing and operations.

1972–1982, Group Leader, Technical Support for Transuranium Element Processing and Development Program at ORNL. Responsible for development and application of operation procedures, safety documentation, equipment design, and process development studies.

1965–1972, Engineer, ORNL Transuranium Element Processing. Responsible for startup, operation, equipment testing, and process development for production of transplutonium elements and isotopes.

1962–1965, Senior Chemical Engineer, Chemetron Corporation. Responsible for research and development processes for production of heavy organic chemicals and pharmaceutical intermediates.

1958–1961, Chemical Engineer, Texaco, Inc. Responsible for research and development of petrochemical production processes.

ORNL Committees

ORNL Directors' Review Committee—Radioactive Facilities Safety Operations, 1982–1987.

Lecturer, Workshops on Technical Aspects of Nuclear Weapons Proliferation, 1985–1989.

National/International Committees

Technical Assistance to Presidential Commission Investigating TMI-2 Accident, 1979.

Member, Technical Assistance and Advisory Group to GPU Nuclear Corp., TMI-2 Recovery Program, 1983–1988.

Member, Rockwell Hanford Operations External Review Committee, 1986

Member, DOE/EM Technical Advisory Panel for Hanford High-Level Waste Tanks, 1992–1996

U.S. Representative on Isotope Production, First U.S.-Argentina-Brazil Conference on Peaceful Uses of Nuclear Energy, San Carlos de Babiloche, Argentina, 1994

U.S. Representative, OECD-NEA Expert Committee on Isotopes, 1996

U.S. Representative, OECD-NEA Working Group on Scientific Issues of the Fuel Cycle, Expert Group on Chemical Partitioning, 2004–Present

Professional Consulting Activities

1980–1981, Petroleum Recycling Corporation—Recycle Oil Refining
1993–1996, Pacific Northwest National Lab—Hanford Tanks Advisory Board
1995–1996, M4 Corporation—Radioactive Waste Treatment
1997–2000, DeBusk Energy Systems—Technetium-99m Concentrator Development and Licensing
2003–2004, Appalachian Environmental Equipment Corp.—Radioactive Waste Treatment
2007–2008, Shaw Areva MOX Services – Chemical Safety Licensing

Professional Societies

1958–Present, American Institute of Chemical Engineers
2002–2004, Board of Directors, Nuclear Engineering Division
1987–1988, Chairman, Knoxville-Oak Ridge Section
1965–1985; 2001—Present, American Nuclear Society
2002–2004, Technical Program Chair, Fuel Cycle & Waste Management Div.
2004–2005, Secretary-Treasurer, FCWM Division
2005–2006, Chair Elect, FCWM Division
2006–2007, Chair FCWM Division
2010—Present, Executive committee, FCWM Division
1978—Present, Society of Sigma Xi
2000, American Association for the Advancement of Science
1993–1997, International Isotopes Society

Awards

Glenn T. Seaborg Actinide Separations Award, 2004
Engineer-of-the-Year, Knoxville-Oak Ridge Sections of AIChE, 1998
Technical Achievement Award, Knoxville-Oak Ridge Sections of AIChE, 1998
R&D 100 Award, Modular Technetium Concentrator, 1997
Technical Achievement Award, Lockheed Martin Energy Research, 1997
ORNL Significant Achievement Awards
2008—Technical Direction for Advanced Fuel Cycle R&D
2007—Conception of the Coupled End-to-End (CETE) Project for the Advanced Fuel Cycle Program
1996—Innovative Long-Term Contract for Stable Isotope Production
1993—Re-development of ORNL Isotope Program
1985—Design/Implementation of Safeguarded Storage for U-233

Patents

U.S. Patent 5,774,782 (June 30, 1998) – Technetium-99M Generator System
U.S. Provisional Patent 61/322,472 – Closed-Loop Advanced Dry Head-End of LWR Spent Fuel

Education Certification

B.S. Chemical Engineering, Auburn University, 1958

Graduate Studies in Chemical Engineering, Auburn University, 1961–1962

Graduate Studies in Chemical Engineering, Univ. of Tennessee, 1962–1965

Professional Engineering Certification, Tennessee, 1975