

Karen Moore
MS Metallurgical Engineering
BS Mechanical Engineering
P.E. Mechanical Engineering State of Idaho
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EMPLOYMENT

Battelle Energy Alliance	Feb 2005 to present	Engineer
Bechtel BWXT Idaho, LLC	1999 to Feb 2005	Engineer
Lockheed Martin Idaho Technologies	1996 to 1999	Engineer
Lockheed Martin Idaho Technologies	1994 to Dec 1995	Engineer
EG&G Idaho, Inc	1991 to Oct 1994	Engineer
Tracor Aerospace	1984 to Dec 1990	Project Engineer/Manager
Brown & Root, Inc	1978 to Dec 1981	Mechanical Design Engineer

PRIMARY AREA OF EXPERTISE

Project Engineer, test development, team development, planning and execution, technical integration, materials evaluation, high pressure / high temperature systems, design for harsh environments, plant equipment selection.

EXPERIENCE SUMMARY

February 2005 to present Battelle Energy Alliance

Project Engineer (1M) on Sodium Separation Project for the design of an evaporation system for installation in a glovebox in FMF. Created and integrated design team with nuclear operations, nuclear safety, criticality, safeguards and environmental personnel.

Project Engineer (1.7M) on Next Generation Nuclear Plant (NGNP) Graphite Characterization project to convert non radiological lab space into radiological facilities to characterize irradiated graphite. Subcontracted the design and build of a glovebox.

Control Account Manager (\$3.4M) on Disposition of Unirradiated Fuel and HEU Scrap to Y12 project. Responsible for project execution plan, cost and schedule, subcontracts, design reviews, test plans for sodium recovery system. Fabrication Lead and Work Package Manager (\$2M) on the RERTR Advanced Fuel Development project.

Responsible for implementing technical requirements, project controls, schedules and quality processes into the fabrication of UMO fuels. Technical Lead for Integration and Scale Up to Production. Interface with external technical team members.

Vice President for ASME Technical Communities and District Operating Board member

July 2004 to February 2005 Bechtel BWXT Idaho LLC

Technical Integration on the NGNP Materials program. Responsible was planning, scheduling and execution of material research tasks.

Member of the ASME BPV Code Committee on Elevated Temperature Design.

August 2000 to July 2003 Bechtel BWXT Idaho, LLC

Principal Investigator for installing and testing thermal spray traces for strain sensor data transmission capability on natural gas pipelines. Test performed in FY03 on 50 ft long pipe; 3 patents awarded in this area. Performed research on the effect of strain and temperature on resistivity of thermally sprayed porous metal traces.

Provided team leadership to the DOE Geothermal Program for internal sprayed coatings for corrosion mitigation in steam lines.

Developed and testing bonded sprayed coatings to silicon carbide substrates for high temperature electronics.

Supported National Hydropower Program for resource assessments of small hydropower.

October 1999 to October 2004 Bechtel BWXT Idaho, LLC

Team leader for Technical Support to Legal Counsel. The team is tasked to evaluate the existing retrieval facility located at Pit 9. The nine member team consists of subject matter experts in areas pertinent to the evaluation.

January 1997 to September 1999 LMITCO Mechanical Engineering

Work Package Manager (\$250K in FY99) for the National Spent Nuclear Fuel Program investigating localized corrosion on fuel assemblies. Investigations focused on pitting, microbial induced corrosion, and developing examination methods for fuel conditions.

Supported (\$80K for FY99) corrosion testing of nickel alloys that have been modified using grain boundary engineering techniques.

Project engineer for a Work For Others agreement (\$622K in FY98) to perform corrosion testing for the U.S. Army Chemical Demilitarization Program using a supercritical water oxidation (SCWO) system. Supported the development of industrially robust electrodes for removal of impurities from molten copper. The task involved fabricating and testing components using plasma sprayed ceramic coatings.

October 1994 to 1996 LMITCO Mechanical Engineering

Project engineer (1.2 M) for a cooperative agreement with an industrial partner. The project was a data acquisition test for performance of a supercritical water oxidation (SCWO) system for DOE and various Navy wastes.

Project engineer for the design, assembly and testing of an electrodeposition unit using a supercritical water oxidation (SCWO) bench scale unit at the INEL IRC with a budget of \$80K. Also served as technical support for the feasibility study on remediation of the TRU pits and trenches at RWMC. Involved as lead engineer on the design of membrane separation system, and support to WERF.

January 1991 to October 1994 EG&G Idaho, Inc Mechanical Engineering

Project engineer and team leader on a project (\$250K budget) that designed, assembled, and operated a bench scale supercritical water oxidation (SCWO) system for corrosion measurement at the INEL IRC. Project manager and lead engineer in developing corrosion tests with several private companies involving proprietary agreements, (\$500K budget). Conducted corrosion tests of thermally sprayed multilayered ceramic coatings at an industrial SCWO plant. Project engineer working with Pennsylvania State University Center for Advanced Materials in developing corrosion measurement instrumentation, (\$360K budget). Supported the design of a SCWO system for the treatment of DOE mixed wastes. Resident engineer during DOE testing of commercial SCWO system. Support of transferring technology out of the INEL to private industry. This effort involved training engineers, meeting with industrial partners, organizing conferences, and acting as an interface between engineering, industry, the DOE, and ORTA.

January 1984 to December 1990 Tracor Aerospace, Aircraft Countermeasures

Management of contract for a baseline design package project to the AN/ALE 40 aircraft countermeasures system. Efforts include USAF customer interface, cost and schedule management and engineering direction. Design and development of a new generation of automated chaff coiling machine. Involved in machine development from concept to manufacturing prototype. Worked in Manufacturing Division to oversee the operation of 20 robotic chaff coiling machines. Coordinated the fabrication and assembly of production machines, valued at \$150K ea. Project Engineer for the design and testing of cockpit control unit for both flare and chaff dispensers. Developed threat adaptive dispenser hardware. Configuration control board manager and procedures writer for installation and modification instructions for field engineers in Israeli Air Force.

August 1978 to December 1981 Brown and Root, Inc. Marine Engineering

Worked on the prototype design of a mechanical underwater trencher. Designed pressure vessels, steering mechanisms, analyzed corrosion protection, material selection, and paint systems. Also design piping systems for barge septic systems.

EDUCATION

University of Idaho	1999-2006	MS in Metallurgical Engineering	
University of Texas	1989-1990	Graduate School - Engineering/Business	
University of Oklahoma	1982-1983	Graduate School - Business	
University of Houston	1981	Graduate School - Business	
State University of New York at Stony Brook	1974-1978	Mechanical Engineering	Bachelor of Engineering 1978

PERSONAL

Married, 3 children

PUBLICATIONS

Application of Data Transmission Capability on Natural Gas Pipelines, K.A. Moore, R. Carrington, J. Richardson, October 2002, ASME Proceedings IPC 2002-27074

Internal Coatings for Geothermal Components, K.A. Moore, September 2002, GRC Proceedings

Materials Performance for Hydrolysate Test Plan, K.M. Garcia, R.E. Mizia, December 1997, INEEL EXT -97-01117.

SCWO Data Acquisition Testing, K.M. Garcia, August 1996 INEL-96/0267

Penn State Development of Instrumentation for Electrochemical Measurement of Corrosion in SCWO, K. Garcia, June 1994 EDF ID121717-1025

Corrosion Investigation of Multilayered Ceramic and Experimental Nickel Alloys in SCWO Process Environments, K.M. Garcia, R.E. Mizia, J. Flinn, October 1994 EGG-WTD-11501

Supercritical Water Oxidation Design Factors, K.M. Garcia, R.E. Mizia, C. Barnes, January 1994 EGG-WTD-11145

Corrosion and Deposition as Design Factors for SCWO of DOE Mixed Wastes, K. Garcia, November 1993 EDF ID121717-1010

Pressure and Temperature as Reactor Design Factors for SCWO of DOE Wastes, K. Garcia, October 1993 EDF ID121717-1009

Remote Measurement of Corrosion in SCWO, K. Garcia, October 1993 EDF ID 121717-1003

Treatment of Simulated Mixed Waste with Supercritical Water Oxidation, C. Shapiro, K. Garcia, J. Beller, March 1993 EGG-WTD-10700

PRESENTATIONS

November 2002 International Pipeline Conference, "Damage Detection and Location for Natural Gas Pipelines"

September 2002 Geothermal Resource Council Meeting, "Internal Coatings for Geothermal Components"

September 2001 NACE, Western Region "Internal Coating of Geothermal Pipes"

August 1997 Fourth Biennial Mixed Waste Symposium "Issues for Retrieval of Buried Waste"

November 1996 Oxidation Treatment Conference "SCWO Data Acquisition Testing"

November 1995 ASME Winter Annual Meeting, "Corrosion in SCWO Environments"

August 1995 Third Biennial Mixed Waste Symposium "Hydrothermal Oxidation for Treatment of DOE Mixed Waste: An Update"

February 1995 First International Workshop on Supercritical Water Oxidation "Corrosion Investigation of Multilayered Ceramic and Experimental Nickel Alloys in SCWO Process Environments"

December 1994 DOE-HQ National Hydrothermal Oxidation Program Steering Committee Corrosion Workshop, "Corrosion in SCWO Environments"

December 1994 16th Annual DOE Low-Level Radioactive Waste Management Conference, "Feasibility of SCWO for Treating Mixed Waste"

August 1994 Biomedical Mixed Waste Workshop, "SCWO Development for DOE Mixed Waste"

SECURITY CLEARANCE Q U.S. citizen

TECHNICAL SOCIETIES

American Society of Mechanical Engineers, District Operating Board, 2006-2010

Vice President, Technical Communities 2004-2006

Vice President, Environment & Transportation Group 2003

Member, Environment and Transportation Group 2001 - 2002

Chair, Environmental Engineering Division 2000

Chair, Hazardous Waste Committee 1998-2000