

Robert Allan Clark

Education

Ph.D., Materials Science & Engineering/Metallurgy, University of California, Berkeley (Minors in Mechanical Engineering and Business Administration), 1979.

M.S., Materials Science/Metallurgy, University of California, Berkeley, 1973.

B.S., (Highest Honors), Metallurgy, University of California, Berkeley, 1971.

Affiliations

ASM International (formerly the American Society for Metals).

The Metallurgical Society (TMS).

American Society for Testing and Materials (ASTM).

National Association of Corrosion Engineers (NACE).

Society of Plastic Engineers (SPE)

Experience

1999 to date

GT Engineering

Redmond, Washington

Principal-Materials Scientist

As a founder of GT Engineering, Dr. Clark maintains a national practice in forensic investigations involving materials degradation and failures. This practice includes analysis of failure origins in metals, polymers/plastics/adhesives, ceramics, glasses, concrete and wood products. Clients include manufacturers, insurance companies, governmental agencies and legal offices requiring expert witness testimony. Diverse projects include loss investigations in the maritime industry, utility systems (electric, gas and water), petrochemical processing plants, plastics manufacturing, the construction industry, commercial and residential structures, and damages associated with equipment failures. He also has specialized expertise in corrosion and in nuclear power generation and has served as a consultant to the US Nuclear Regulatory Commission.

1994-1999

Golder Associates Inc.

Redmond, Washington

Associate

Dr. Clark joined Golder Associates Incorporated to continue the forensic practice developed under his previous employment. Association with Golder provided the benefit of addressing clients where a corporate conflict of interest existed at FaAA, specifically projects for the Federal Government. Dr. Clark also provided materials design support to the Golder group of companies.

1988-1994

Failure Analysis Associates, Inc.

Redmond, Washington

Managing Engineer

Dr. Clark joined Failure Analysis Associates (FaAA) as the Seattle branch office was established. His initial activities focused on development of a local market for FaAA consulting services for the insurance industry and in litigation related matters. In addition, opportunities for research and development contract research were pursued. During the following six years a local legal and insurance based practice was established, he developed and conducted three materials research programs, and Dr. Clark's expertise in the power industry resulted in his involvement as a principal participant in large litigation related projects and as on-site consultant during annual outages at the Trojan Nuclear Plant.



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Insurance and litigation activities focused on Dr. Clark's expertise in the areas of materials science and engineering, and corrosion. While at FaAA, Dr. Clark was involved in over 150 projects, most as a project originator, manager, and principal investigator. These projects spanned such topics as: corrosion of metallic materials, corrosion of glass, failures in plastics, manufacturing and materials processing investigations, quality control program review for a major manufacturer of plastic pipe fittings, structural failures, and failures in weldments. In addition, major litigation related work was conducted in wind turbine generators and pressurized water reactor steam generators. A national litigation support practice was developed including expert witness qualification and courtroom testimony.

1987-1988 **Photon Sciences, Inc.** **Bothell, Washington**
Vice President, Manager of Product Development
(see Flow Industries)

1985-1987 **Flow Industries** **Kent, Washington**
Director of Metallurgy

Dr. Clark was recruited to join Flow along with two other managers out of Battelle's Materials Department. The goal was to establish a Materials Research Division for Flow Industries. This division was to establish a contract research base, largely with the Federal Government, and develop intellectual property which Flow could then commercialize. The Division sold a number of contract research programs through the Small Business Innovative Research (SBIR) program, established an approximately one million dollar materials research facility, and employed nine staff within two years. Reversals in some of Flow Industries other business ventures forced a sell-off of several assets, including the Materials Research Division, which was sold into a newly formed venture capitalized firm, Photon Sciences, Inc. Photon Sciences, Inc. was never appropriately capitalized and failed in a few months.

While at Flow, Dr. Clark was the only metallurgist on staff. As such, he became involved in failure analysis and materials specification activities for several of the other Flow companies, including FloWind (wind turbine generators), Flow Mole (subsequently Utilix, underground boring for utility cables), Flow Drill (high pressure water aided deep well drilling), and Admac (subsequently part of Flow International, a company set up to provide high pressure equipment for mining activities).

1976-1985 **Battelle Pacific Northwest Laboratories** **Richland, Washington**
Research Scientist (1976-1977)
Senior Research Scientist (1978-1979)
Staff Scientist (1980-1981)
Manager, Corrosion Research and Engineering Section (1981-1985)

During this period, Dr. Clark was involved as a scientist, program manager and section manager with the Corrosion Research and Engineering Section of the Materials Department. Dr. Clark had extensive program involvement (scientist and program manager) in projects that related degradation in nuclear systems to the ability to nondestructively characterize this degradation during in-service inspections. Dr. Clark managed the Steam Generator Tube Integrity Program for the USNRC. This program acquired, transported, housed, and conducted research on a 220 ton radioactive steam generator removed from commercial service. Transportation of the generator was a precedent setting shipment of the largest radioactive component shipped at the time, establishing a procedure which has since been followed with decommissioning of other



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reactors. The steam generator research program included commercial demonstration of chemical decontamination techniques, nondestructive inspection and characterization, and concluded with destructive analysis of the radioactive component. Stringent control of personnel exposure, disposal of radioactive waste, and the need to train and schedule crews for around the clock task campaigns were parts of the management responsibility of this project.

Under EPRI sponsorship Dr. Clark established and managed facilities for testing pipe weldments, up to 26" diameter. These programs were in support of qualification of BWR pipe weld cracking remediation methods and development of technology for nondestructive pipe monitoring.

The Corrosion Research and Engineering Section served as a company center for the development of decontamination technology. Dr. Clark had management supervisory involvement in programs that addressed decontamination for maintenance and for decommissioning. Decontamination techniques included electrochemical, chemical foam and high pressure solutions. Dr. Clark also designed numerous high pressure high temperature test systems, including systems for remote operation in radioactive hot cells.

1969-1976 **Lawrence Berkeley Laboratory** **Berkeley, California**
University of California, Inorganic Materials Research Division

Research Assistant (3/71-2/76)

Teaching Associate (3/74-7/74)

Teaching Assistant (10/73-12/73)

Laboratory Assistant I (6/69-3/71)

1969-1970 **University of California** **Berkeley, California**
Structural Engineering and Structural Mechanics Division

Senior Engineering Aide

All work involved performance of University contracts in the qualification of concrete structures, specifically dams and nuclear reactor containments. Efforts included the casting, instrumentation, and testing of concrete specimens under applicable quality assurance requirements. Tests included those conducted on concrete ingredients prior to mixing, those associated with mixed concrete prior to set, as well as mechanical properties determinations as a function of cure, including beam bend tests, cylinder compression tests, long term creep tests, internal strain gage instrumentation, and effects of environmental cycling. Activities in this position were conducted under the supervision of Professor David Pirtz.

6/68-12/68 **Shell Oil Co., Martinez Refinery** **Martinez, California**

Engineering Aide, full time Co-op position

Performed plant inspections for determining material condition of components subject to corrosion within the refinery operations.