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Engineering & Scientific Consulting

David Wills, P.E., CFEI, CVFI

Senior Managing Engineer | Metallurgical and Corrosion Engineering
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Professional Profile

Mr. Wills addresses issues related to failure and nonperformance analysis of engineered materials including metals, ceramics, polymers, and composites. He has metallurgical and materials engineering experience, which includes corrosion analysis, especially marine corrosion analysis, and the corrosion analysis of piping systems.

Mr. Wills performs fracture analysis of materials using photography, microscopy, metallography, and scanning electron microscopy techniques. Other areas of expertise include fabrication and machining methods, tube and heat exchanger fabrication, and prototype development. Mr. Wills has experience with welding and cutting methods and performs weld inspections.

He analyzes surface coating applications and properties. He conducts fire investigations. He also has particular experience with aluminum process metallurgy; aluminum ingot casting technology and machinery, and aluminum extrusion machinery, tooling, dies, and materials. In the area of accident investigation, Mr. Wills addresses industrial and marine equipment failures, slip and fall issues, boating, and marine accidents. Mr. Wills is trained in underwater inspection and photography. He has provided consultation to the boating, yachting and cruise ship industry for many years.

Academic Credentials & Professional Honors

M.B.A., Business Administration, Nova University, 1985

B.S., Metallurgical Engineering, University of Missouri, Rolla, 1977

Licenses and Certifications

Professional Engineer, Florida, #41264

American Boat & Yacht Council (ABYC) Advisor Certification-Marine Systems

American Boat & Yacht Council (ABYC) Marine Accident Investigation

American Boat & Yacht Council (ABYC) Master Technician Certification

American Boat & Yacht Council (ABYC) Metal Corrosion in Boats

American Boat & Yacht Council (ABYC) Technical Certification-Diesel Engines

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American Boat & Yacht Council (ABYC) Technical Certification-Marine Corrosion

American Boat & Yacht Council (ABYC) Technical Certification-Marine Electrical

American Welding Society Certified Welding Inspector (CWI)

Certified Fire and Explosion Investigator (CFEI)

Certified Vehicle Fire Investigator (CVFI)

Prior Experience

Plant Manager, Continuous Extruded Products, Inc. (Kaiser Aluminum), 1985-1988

Senior Research Metallurgist-Extrusions, Atlantic Richfield Metals R&D, 1982-1984

Development Engineer, Anaconda Aluminum Extruded Products, 1980-1982

Ingot Process Engineer, Anaconda Aluminum, Sebree Reduction Facility, 1978-1980

Professional Affiliations

American Society for Materials (member and past chapter chairperson)

American Welding Society (member and past chapter chairperson)

The American Boat and Yacht Council (member)

American Society for Testing & Materials (member)

Publications

Hoffman JM, Reitman M, Donthu S, Ledwith P, Wills D. Microscopic characterization of CPVC failure modes. Proceedings, ANTEC 2009, Society of Plastics Engineers, Chicago, IL, June 2009. Best Paper Award in Failure Analysis & Prevention.

Select Reports

Wills DP, et al. Cause of outboard separation from transom…Fastener issues identified. Exponent, Failure Analysis Associates, Inc., Report, January 2014.

Wills DP, et al. Sinking of Zorro due to over-speed marine diesel. Exponent, Failure Analysis Associates, Inc., Report, January 2011.

Wills DP, et al. Airport acid wash corrosion damage to stainless steel terminal façade. Exponent, Failure Analysis Associates, Inc., Report, January 2009.

Wills DP, et al. Sodium hypochlorite generator failure, Exponent Failure Analysis Associates, Inc., Report, May 2008.

Wills DP. Investigation of a jacketed stainless steel pipe failure at Wellman, Inc. Exponent Failure Analysis Associates, Inc., Report, March 2007.

Wills DP. Investigation of a failed CPVC fire sprinkler pipe at the Cipraini Condo. Exponent Failure

Analysis Associates, Inc., Report, January 2007.

Wills DP. *Aqua Novia* Piping Failure. Exponent Failure Analysis Associates, Inc., Report, May 2006.

Wills DP. *Sacajawea*-Fort Lauderdale shipyard incident of November 18, 2004. Exponent Failure Analysis Associates, Inc., Report, December 2005.

Wills DP. Investigation of pitting corrosion in new stainless steel distillery pipeline. Exponent Failure Analysis Associates, Inc., Report, October 2004.

Wills DP. Investigation of corrosion on the Research Vessel Walton Smith; condition assessment and remedial recommendations. Exponent Failure Analysis Associates, Inc., Report, December 2003.

Wills DP. Investigation of the failure of several PVC water mains. Exponent Failure Analysis Associates, Inc., Report, November 2002.

Wills DP. Design, operation and safety review of four Glatt GPCG-200, 2-bar fluid bed processors at Andrx Pharmaceuticals Incorporated. Exponent Failure Analysis Associates, Inc., Report, October 2001, with L.A. Swanger.

Wills DP. Swing gear failure on a Kobelco track excavator. Exponent Failure Analysis Associates, Inc., Report, August 2001.

Wills DP. Investigation of the condition of aging transit buses. Exponent Failure Analysis Associates, Inc., Report, May 2000.

Wills DP. Engine room fire aboard the *Starbrite*. Exponent Failure Analysis Associates, Inc., Report, May 2000.

Wills DP. *Hat Trick* vessel runaway incident at Roscioli Yachting Center on November 15, 1998. Exponent Failure Analysis Associates, Inc., Report, July 1999.

Wills DP. Airboat Propeller Failure. Failure Analysis Associates, Inc., Report, June 1998.

Wills DP. Investigation of cracking in a spiractor water treatment cone. Failure Analysis Associates, Inc., Report, September 1997.

Wills DP. Investigation of fractures in G.E. mixing valves. Failure Analysis Associates, Inc., Report, March 1997.

Wills DP. Corrosion of starboard oil/water separator on the *Florida Responder*. Failure Analysis Associates, Inc., Report, October 1995.

Wills DP. Hull corrosion damage on the MV *Gulf Coast Responder*. Failure Analysis Associates, Inc., Report, January 1994.

Wills DP. Multi-layer chemical vapor deposition coating for extrusion die mandrels. Report 84-TB-04, Atlantic Richfield Metals Co. Research and Development, March 1984.