



**Glen Stevick, Ph.D., P.E.**  
*Curriculum Vitae*

**Areas of Specialization**

Failure Analysis and Design of Structures, Industrial Equipment and Consumer Products: mechanical-electrical systems; turbines and reciprocating engines; automotive and aircraft components; offshore platforms and drilling equipment, pressure vessels/piping/containers, blowout and breakaway devices, heat exchangers and combustion analysis. Testing and mathematical analysis of hydraulic systems, fire causation and spread, explosion causation and prevention, structural dynamics, electronic control systems, material behavior, heat transfer and structure/fluid interaction are specialties.

**Background and Professional Experience**

*1/86 - Present, Mechanical Engineering Consultant*

Provide consultation in the areas of failure analysis and design of consumer products and industrial equipment. Failure analysis work has varied from assessing the failure of cranes, ladders, chairs, industrial presses, aircraft turbine engines, and propane/natural gas equipment and electronics to the analysis of defective safety devices on compressor/heat exchanger systems and fire investigation. Design projects have included the redesign of an electro-hydraulic, variable position hospital bed for burn victims; the design of a powered wheelchair that provides standing and sitting positions; the analysis and redesign of high temperature/high pressure piping and pressure vessels; the design of fire safe storage vaults for electronic media; dynamic damping devices for tall structures and bridges subject to wind earthquake loading; and the redesign of pistons and valves for high pressure hydrogen compressors.

*8/90 - 1/91, Mechanical Engineering Instructor, U.C. Berkeley*

Instructor for the Department's senior design course: ME-102B, "Mechanical Engineering Design". Conduct Lectures on the design of bolted joints, springs, gears, bearings, chain drives, wire ropes, and other mechanical components, and guide students through a major design project.

*3/82 - 1/89, Engineering Mechanics Specialist, Chevron Corporation*

Handle highly technical projects and provide technical consultation to field engineers in the areas of failure analysis, and design. Projects have included the redesign of compressor and turbine components, and the design of processing equipment for service temperatures above 1400 degrees Fahrenheit. Consultation varied from giving design advise on how to avoid structural vibration to calculating crack growth rates for offshore platforms in the North Sea.

9/81-3/82, *Project Engineer, Chevron USA Production*

Responsibilities included the design, and construction management of oil/water separation plants and gas recovery plants in the Bakersfield and Colinga oil fields.

### **Professional Affiliations**

Registered Mechanical Engineer, State of California, 1983

American Society of Mechanical Engineers

Vibration Institute

### **Education**

5/93, *Ph.D. Mechanical Engineering, University of California, Berkeley*

Major: Mechanical Engineering Design and Material Behavior; Minors: Dynamics and Controls, and Structural Analysis, Dissertation title: Failure of welds at Elevated Temperatures.

6/81, *M.S. Mechanical Engineering, University of California, Berkeley*

Concentration: Design and Materials; GPA: 4.0/4.0; Research Project: Three Body Abrasive Wear; U.C. Regents Fellowship and Research Assistant.

6/80, *B.S. Mechanical Engineering, Michigan Technological University*

Concentration: Solid Mechanics; GPA 3.85/4.0; Marathon Electric Company Scholarship

### **Patents**

“Thermo-electric Container” for heating and cooling liquids, G.R. Stevick and H. Sherback.

“Method and Apparatus for Dynamic Space-Time Imaging System”, G.R. Stevick J. Singer, and D. Rondinone.

### **Publications and Selected Reports**

Cheng, W., Finnie, I., Stevick, G.R., "Prediction of Stress Intensity Factor for an Internal Circumferential Crack at a Butt-Weld Between Cylinders Using the Plane Strain Solution", *Journal of Engineering Materials and Technology*, Vol 106, pp. 21-24, 1984.

Stevick, G.R., Soemantri, S., Finnie, I., "An Analysis of the Loaded Abrasive Column type Wear Tester", *Wear*, Vol 101, pp. 77- 80, 1985.

Stevick, G.R., Burke, B.G., "An Experimental Assessment of The Damping Provided By Chain Dampers on a Tall, Slender Stack", *Proceedings of the International Chimney Conference*, April, 1988, London, England.

Marsili, D., Stevick, G.R., "Ductile Fracture Protection of the Canyon Reef Carrier Natural Gas

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Pipeline", *Proceedings of the 65th annual Society of Petroleum Engineering Conference*, September, 1990, New Orleans, Louisiana.

Stevick, G.R., Finnie, I., "Stress Concentrations Resulting from Longitudinal Butt-Welds in Piping at Elevated Temperatures", *Creep in Structures* (M. Zyczkowski ed.), pp. 629-636, Springer-Verlag, Berlin, 1991.

Stevick, G.R., Finnie, I., "Failure Assessment of Weldments at Elevated Temperatures", *Mechanical Behavior of Materials-VI* (M. Jono and T. Inoue eds.), Vol. 2, pp. 149-154, Pergamon Press, 1991.

Finnie, I., Stevick, G.R., Ridgley, J.R., "Influence of Impingement Angle on the Erosion of Ductile Materials", *Wear*, Vol. 152, pp. 91-98, January 1992.

Stevick, G.R., "Failure of Welds at Elevated Temperatures", *Welding Research Council Bulletin 390*, Welding Research Council, April 1994.

"Tension Leg Platform Production Riser Crack Growth Analysis", Chevron Engineering Department, by G.R. Stevick and B.G. Burke, May 1984.

"Gaviota, CA - Fatigue Analysis and Redesign of the 40.5 inch Diameter Gas Compressor Pistons", Chevron Engineering Department, by G.R. Stevick, January, 1985.

"Richmond, CA - Isomax Plant Compressor Valve Failure and Redesign, K-950, K-960", Chevron Engineering Department, by G.R. Stevick, April, 1986.

"El Paso, TX - Failure Analysis and Design of a New FCCU Flue Gas Cooler", Chevron Engineering Department, by G.R. Stevick and W.A. Ebert, May, 1986.

"Fiberglass Underground Storage Tank Design Methodology for External Loads", Chevron Engineering Department, by G.R. Stevick, November, 1986.

"DNL Construction Crane Failure", by G.R. Stevick for George Ashford & Associates, Honolulu, Hawaii, May 1987.

"Gaviota, CA - Onshore Pipelines Weld Flaw Acceptance Criteria", Chevron Engineering Technology Department, by G.R. Stevick, June, 1987.

"Recommended Practice, RP-33, Vibration Guidelines", Chevron Engineering Technology Department, by G.R. Stevick and W.A. Ebert, December, 1987.

"El Segundo, CA - Buckling Integrity of Column C-6 for Wind and Earthquake Loads", Chevron Engineering Technology Department, by G.R. Stevick, June, 1988.

"Crane Turret Bolt Failure Analysis", by G.R. Stevick for Dave's Mobile Crane Service, Los Altos, CA, June 1988.

"High Pressure Toxic Filter/Pressure Vessel Design", by G.R. Stevick, for Filterdyne Systems, Inc., January 17, 1990.

"Structural Analysis of Fluidized Catalytic Cracking Unit Regenerator Internals", by G.R. Stevick, for Chevron USA El Segundo Refinery, June 22, 1990.

Redesign of an 8000 psi Test Vessel using Bolted Construction, 2 reports by G.R. Stevick, for SAIC Rock Mechanics Laboratory, September 5, 1990, December 12, 1990.

"Stress Analysis of Hospital Bed Frame Components", by G.R. Stevick for American Life Support Technology, July 1, 1991.

"Whitney Canyon/Carter Creek, WY - Gathering System H<sub>2</sub>S Risk Assessment", Engineering Technology Department, by G.R. Stevick, November, 1988.

"Batch-Reactor Heater-Coil Thermal & Fatigue Analysis", by G.R. Stevick and B.R. Cuzzillo, for Chevron Research and Technology Company, Inc., Richmond, CA, August 25, 1993.

"Structural Servicability of the Salcha River Crossing" for Alyeska Pipeline Service Company, by SSD Engineering Consultants, Inc. and Berkeley Engineering And Research, Inc., November 17, 1993.

"Fracture Evaluation of Fillet Welded Pipe Sleeves" for Alyeska Pipeline Service Company, by SSD Engineering Consultants, Inc. and Berkeley Engineering And Research, Inc., July 1, 1994.

"Coke Drum Material Crack Growth Tests", for Chevron Research & Technology Company, by Berkeley Engineering And Research, Inc., August 2, 1995.

"An Independant Review of Structural Methods Used to Evaluate the Integrity of the Trans-Alaska Pipeline" for Alyeska Pipeline Service Company, by Berkeley Engineering And Research, Inc., July 1, 1995

"Excel Spreadsheet-Based Fitness For Service Model Providing Inspection Interval and Remaining Life of Coke Drums", for Chevron Research & Technology Company, by Berkeley Engineering And Research, Inc., January 12, 1996.

"Computation of the Stresses in a Shaft Due to Torsion", for EC Engine Components, Inc., by Berkeley Engineering And Research, Inc., August 19, 1996.

"Study of Effects of Vibrations Due to Pressure Pulses on the Integrity of the Trans-Alaska Pipeline", for Alyeska Pipeline Service Company, by J.A. Maple & Associates, SSD Engineering Consultants, Inc. and Berkeley Engineering And Research, Inc., January 26, 1997.

"Main Propulsion Unit, Aft Second Reduction Gear Bearing Failure Assessment", for Northrup Grumman and the US Navy, by Mr. Paul Warner, Northrup Grumman; Dr. Glen Stevick, Berkeley Engineering And Research, Inc.; and Prof Thomas Eager, Massachusetts Institute of Technology, Department of Materials Science, April 9, 1999.

“Effect of the Windshield on Roof Strength and Displacement”, for James Collins and Associates, by Berkeley Engineering And Research, Inc., October 6, 2000.

“Rolling Mill Structure and Mandrel Finite Element Analysis” for USS-POSCO Industries, by Berkeley Engineering And Research, Inc., August 20, 2002.

“Golden Gate Bridge, Phase II Seismic Retrofit, Calibration Testing of Pylons S1 and S2 - Fort Point Arch Longitudinal and Transverse Energy Dissipation Devices, for the Golden Gate Bridge District by Berkeley Engineering And Research, Inc., July 1, 2005. This project won the American Society of Civil Engineers 2007 Opal award for the most outstanding civil engineering achievement.

“Fracture Analysis for Pipeline Girth Welds in High Strain Applications.” G. Stevick, J. Hart, C. Lee and F. Dauby of Pacific Gas & Electric, 2004 International Pipeline Conference, January 2006 issue of PipeLine and Gas Technology magazine.

“Marine Crude Oil Transfer Breakaway, Hawaii Single Point Mooring Terminal”, by Berkeley Engineering And Research, Inc., G.R. Stevick, for Tesoro Corporation, May 19th, 2008.

“Olympic Spirit Vapor Recovery System Fire Investigation and System Review”, by Berkeley Engineering And Research, Inc., D. Rondinone and G.R. Stevick, for Tesoro Corporation, May 18th, 2009.

“API Aboveground Tank Leak Detection Liquid Level Measurement Technique Evaluation”, for the American Petroleum Institute by D. Rondinone, A. Sagle and G.R. Stevick, November 9, 2009.

“Portable Gasoline Container Explosions and Their Prevention”, by G.R. Stevick, D. Rondinone, A. Sagle, and J. Zicherman, research paper draft, January 12, 2010.

## **References**

Available upon request

## **Fees and Terms**

\$375/hour, \$450/hour for deposition, arbitration, and court appearances.

\$1,500 retainer required, to be applied toward final invoice.

Net 25 days, 2% per month due on past due balances, collection costs after 3 months.

Minimum fee per case is \$500; minimum time unit is 1/4 hour.

Forwarding of case material implies acceptance of fees and terms.