Fire Cause Analysis
A DIVISION OF IFT INC.

CURRICULUM VITAE
Peter J. Risse

Expert in metallurgical, corrosion, and materials engineering

Employment

12-93 to Present **Consultant, Richmond, CA**

- Serves as an expert witness in the fields of metallurgy, corrosion, and forensic engineering. Clients include: AETNA, ARCO, BEAR, EBMUD, FCA and FTI. Provided expert opinions to the following law offices: Bowles & Verna, Cozen & O'Conner, Knapp & Viola, Steinhart & Falconer, and Robins, Kaplan, Miller & Ciresi.

06-09 to Present **Senior Staff Materials Engineer, Chevron Energy Technology Co., Richmond, CA**

- Provide day-to-day materials expertise and leadership to Chevron Lummus Global (CLG – TEMA) and Chevron-Phillips Chemical Company. To create a seamless transition team for CLG support. Lead CLG through the transition from the old team (Jim Johnston and Dick White) to the new team (Peter Risse and Barbara Cooke). Deliver and co-teach Inspector and Senior Analyst training in numerous topics including: Fired Heaters, Crude Units, Hydroprocessing Units, FCC's, Amine and SRU's to GM and third-party joint venture clients.

4-01 to 06-09 **Senior Material Engineer, Chevron Global Manufacturing, Richmond, CA**

- SME for local Richmond refinery. Represented GM as a FO&R (Facilities, Operations, and Reliability) TMT team member. In this role, I evaluated, acquired and directed new technology for GM and the Corporation. I was the MRENT BIN Team leader and worked to identify and address top reliability concerns for GM. As the Materials Engineer SME, I was responsible for roughly $1B worth of materials selections, design, construction, fabrication and procurement issues for GM projects. I mentored junior materials engineers to understand GM reliability concerns and provide materials expertise to the Richmond refinery.

- Provide day-to-day materials expertise to Chevron's Richmond Refinery. Responsibilities include: providing support during shutdowns and during shutdown planning, building multi-discipline teams for failure investigations, developing repair options for fixed equipment, as well as selecting materials for routine maintenance and capital projects.

- Serve as back-up relief to the Equipment Reliability Manager and Lead Fixed Equipment Inspector. Direct and coordinate activities of other materials engineers, a contract materials engineer, and mentor summer interns. Review equipment reliability plans, risk-based inspection (RBI) programs, worst-actor resolution and failure mode and affects (FMEA) methodologies as well as reliability centered maintenance (RCM) methodologies.

- Manage inspection programs including C-1/2 Mo High Temperature Hydrogen Attack program, wet H2S program, carbonate cracking program, amine stress corrosion cracking, aging Hydroprocessing reactor integrity Management of Change, and crude slate change programs for Richmond Refinery.

- Facilitate meetings with other ChevronTexaco refinery materials and reliability engineers. Coordinate resolutions of refinery system-wide "hot" items and coordinate funding for research projects, as well as developing and implementing best practices.

12-93 to 4-01 **Staff Materials Engineer, Chevron Research and Technology Company,**
Richmond, CA

- Serves as teacher/mentor. Taught and co-taught classes on Furnace Reliability, Hydrogen Plant Reliability and Machinery Failure Analysis. Mentored first year engineer, summer intern and Materials Laboratory technicians on refinery corrosion and failure mechanisms, failure analysis techniques and on report writing skills. Co-edits the Materials Engineering Downstream Newsletter.

- Manages Chevron's C - 1/2 Mo High Temperature Hydrogen Attack program for refining. Responsibilities include developing a new susceptibility model for evaluating C - 1/2 Mo equipment and communicating the risk management strategies to refinery management.

- Provides materials expertise to refineries and chemical plants. This includes acting as back-up relief for refinery materials engineers, building multi-discipline teams for failure investigations, providing litigation support and developing repair options for leaking in-service equipment.

- Creates natural multidiscipline teams to resolve complex forensic scenarios and develops unique cost effective solutions.

3-86 to 12-93 **Senior Metallurgist, Anamet Laboratories, Hayward, CA**

- Performed failure investigations and evaluated mechanical properties, microstructures, and alloy compositions of a variety of materials to determine their suitability for specified applications. Advised on alloy selection for weldability and product design life based on service environment. Investigated failures in aerospace, automotive, marine, electronics, medical, petroleum, and chemical processing industries.

- Investigated tube ruptures in a black liquor boiler, and evaluated the use of the Butco Emergency Winch for compliance with UL standards for the State of California

Department of Industrial Relations. Analyzed a concrete pipe rupture from the Mojave Siphon, fractured pre-stressing wires from the Box Springs Turnout, and failed stud bolts from the Number 1 Power Unit at the Gianelli Pumping and Generating Plant for the California Department of Water Resources.

- Conducted corrosion coupon evaluations as a part of a joint EPRI/Florida Power Corporation project for the Crystal River nuclear power plant. Selected materials on behalf of the Golden Gate National Park Association for the refurbishment of the Agave Walk on Alcatraz Island. Evaluated metallurgical test results from hundreds of fasteners for specification compliance as a part of the quality assurance program established by the Defense Industrial Supply Center.
- Served as an expert witness in metallurgy, corrosion, and forensic engineering for product liability litigation.
- Operated scanning electron microscopes and energy dispersive x-ray fluorescence analyzers, performed microstructural evaluations, and carried out portable and microhardness testing programs. Gained a thorough understanding of qualitative and quantitative chemical analysis techniques, such as vacuum emission spectrographic analysis, x-ray diffraction, AA, ICP, ESCA, TOF-SIMS, GDMS, and FTIR.

5-81 to 8-84 Materials Engineer, Chevron Corporation, San Francisco, CA

- Provided technical support and service related to material selections for chemical plants, single-point mooring systems, submerged pipelines, and marine terminals.
- Performed failure analyses dealing with rotating equipment, piping, heat exchanger components, and pressure vessels. The analyses included documenting the physical failure mechanisms and recommending a course of action to prevent future occurrences.
- Participated in programs aimed at identifying oxidation- and sulfidation-resistant materials for use in coal gasification systems.
- Participated in writing specifications for the protection of underground steel piping from soil corrosion. Authored a section of Chevron's manual on corrosion problems and solutions in sulfur plant components.

9-79 to 5-81 Research Assistant, University of California at Berkeley

- Researched the internal oxidation and sulfidation of iron-based binary alloys. The investigation documented the interaction between chromium- and aluminum-containing iron alloys and the reducing environment of coal gasification units.
- Conducted undergraduate laboratory classes focusing on the evaluation of thermodynamic phase changes in alloys and ceramics. Responsibilities included instructing students, grading reports, assigning final course grades, preparing samples, and repairing test fixtures.

6-79 to 9-79 Assistant Project Engineer, General Dynamics Electric Boat Division, Groton, CT

- Verified flow rates and fluid pressure requirements for power plant piping of TRIDENT nuclear submarines.

Education & Professional Registrations

Professional Engineer, Corrosion Engineering, State of California, 1990.

Professional Engineer, Metallurgical Engineering, State of California, 1989.

Master of Science, Material Science and Engineering, University of California at Berkeley, Berkeley, CA. May 1981.

Bachelor of Science, Chemical Engineering,University of Rhode Island, Kingston, Rhode Island. May 1979.

Publications & Scholarships & Awards

Chevron Global Manufacturing President's Award, Recognized for efforts in 1Q2007 Refinery Shutdown event, 2007

Cornet-McCright Scholarship For distinguished service to the San Francisco Bay Area Section of NACE, 1990.

"Evaluation of Corrosion Coupons" EPRI/FPC Project, 1990.

"Internal Oxidation and Sulfidation of Iron-Based Binary Alloys" M.S. Thesis, University of California, May 1981.

Affiliations

API – Current Task Group Leader of 941 – Steels for Hydrogen Service at Elevated Temperatures and Pressures in Petroleum Refineries and Petrochemical Plants

API – Past Task Group Leader of 571 – Damage Mechanisms Affecting Fixed Equipment in the Refining Industry

American Society of Materials International (ASMI)

Tau Beta Pi

National Association of Corrosion Engineers (NACE)

Past Chairman of the San Francisco Section of NACE

Treasurer for the 1993 NACE Western Region Conference