



# HALLIWELL

## PETER WAGNER, P.E.

SENIOR FORENSIC ENGINEER, MECHANICAL  
ENGINEERING SERVICES

SAN FRANCISCO, CA

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### SPECIALTIES

- Mechanical Equipment Failure
- Metallurgical and Corrosion Issues
- Strength, Fatigue and Vibration Analysis
- Fire and Flood-related Structural Issues
- Seismic Loading and Equipment Anchoring
- Equipment and System Failures
- Appliance Failure
- Vacuum Systems
- HVAC

### BIOGRAPHY

Peter is a licensed Professional Engineer (PE) with more than 30 years of forensic and investigative engineering experience in analyzing mechanical equipment failures, metallurgical and corrosion issues, as well as fire and flood-related structural failures. He specializes in origin cause of equipment and system failures and provides thorough investigations using tools including advanced computer simulations to assess component integrity and pinpoint root cause. He conducts forensic and investigative engineering for HVAC and plumbing systems, mechanical and machine failure, small structure failures, appliance failure, accident investigation and materials analysis.

Peter has designed large scale media blasting facilities for military aircraft de-painting operations which include media material handling and processing, vacuum systems, ventilation, and large airflow dust collection systems. He has provided electrical system layout and design for 3-phase, 480v power systems for HVAC blowers, pumps, compressors, and material handling equipment. He also has experience with PLC controlled systems and power panel troubleshooting for new and existing electrical systems. In addition, he has expertise in mechanical equipment and system design for pneumatic particle conveyance, compressed air system design for high CFM abrasive blasting applications, and particle filtration using custom HEPA systems and dust collectors.

Peter has provided strength, fatigue and vibration analysis for FEA systems and equipment. He provides calculations to support mechanical designs including seismic loading and equipment anchoring.

### QUALIFICATIONS

University of Colorado, BSME

Naval Nuclear Power School, Graduation Certificate

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#### INDUSTRY CERTIFICATIONS, LICENSES AND MEMBERSHIPS

- Solid modeling and design – SolidWorks, Reconstruction, Computer Simulation, Motion Analysis, Materials Analysis FEA, Ansys.

#### PROFESSIONAL EXPERIENCE

- Halliwell, Senior Forensic Engineer, Mechanical Engineering Services
- In2Design, LLC, President
- Pauli Systems, Vice President of Engineering
- Mizuho OSI, Principal Mechanical Engineer
- Davco Engineering, Investigative/Forensic Engineer
- Lawrence Livermore National Laboratory, Senior Mechanical Engineer
- Westinghouse Electric Corporation, Senior Mechanical Engineer

#### REPRESENTATIVE ASSIGNMENTS

##### Tractor Trailer Turnover

Investigated large tractor-trailer accident involving high-rise crane turnover. Conducted metallurgical analysis of trailer construction, providing a comprehensive final report.

##### Foundation Failure by Fire

Conducted on-site inspection and testing of foundation damaged by fire, delivering a complete report with photos and results.

##### Slip and Fall Injury

Performed friction testing on-site, analyzed results, and issued a final report detailing findings.

##### Industrial Equipment Flood Damage

Inspected water-damaged metal-fabricated equipment using borescopes and measuring tools, assessing damage and compiling a detailed report with supporting photos.

##### Appliance Failure

Investigated washing machine failure in a residential setting, conducting tests to verify function and leak potential, with results provided in a formal report.

##### Industrial Equipment Fire

Investigated industrial screener fire, specifically documenting the cause of a diesel engine fire in the engine compartment. Documented details with on-scene photographs and provided final opinion.

##### Elevator and Roof Top Unit Flooding

Investigated flood damage to an elevator and roof top unit installed at a resort community. Documented details with photographs and delivered a final report with recommendations.

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### **Industrial Building Construction Flood**

Performed an investigation of a flood in the basement of a building that was under construction. Determined the cause, documented the site with extensive photographs and delivered a final report.

### **Battery Fire in a Solar Backup Appliance**

Performed a destructive lab examination of a lithium-ion battery fire in a solar energy storage system. Battery fire consumed additional components within the system. A complete photographic record of the examination was compiled, culminating in a comprehensive final report that outlined the findings and analysis of the incident.

### **Corneal Reshaping Medical Device Investigation**

Investigated the cause of a medical device failure where mechanical failure in corneal reshaping device was causing equipment malfunction. Performed an investigation of the causes and documented the findings in a comprehensive final report.