



James W. Page, PE

Director/Chief Technical Officer

Education

MBA, St. Edwards University,
1973
MS, Civil Engineering, Clemson
University, 1969
BS, Civil Engineering, The
Citadel, 1968

Year Joined AMPHION

2012

Years of Experience

Since 1973

Professional Registrations

Professional Engineer – North
Carolina, South Carolina,
Georgia, Ohio, & New York

Mr. James Page has experience in all phases of design and analysis of process equipment, boiler, and pressure and atmospheric vessels. This experience includes an extensive knowledge of the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, American Petroleum Institute Standards, Underwriters Laboratory Standards, and various insurance underwriters' guidelines. He has developed inspection programs, repair procedures, and specifications for process equipment, boilers, cranes, and both pressure and atmospheric vessels. Additionally, he has directed the on-site inspection and repair of process equipment, boilers, and vessels in the United States, Canada, Mexico, Peru, England, Switzerland, Holland, Luxembourg, Guatemala, Columbia, Venezuela, Argentina, Chile, Germany, India, Malaysia, Philippines, Indonesia, Australia, New Zealand, France, China, Taiwan, Slovenia, and Italy. He has provided consultation for process equipment, boilers, and vessels in South Africa, Zaire, Greece, Jamaica, and Costa Rica. Mr. Page is experienced in the area of nondestructive testing of metals and other materials. This experience includes the technical and managerial direction of projects, including radiography, ultrasonic, magnetic particle, and liquid penetrant investigation of building structures and manufacturing equipment.

Mr. Page has a broad range of expertise in the structural design, analysis, integrity evaluation and assessment of the superstructure and foundations of industrial, commercial, institutional, process equipment, cranes and bridge facilities utilizing steel, concrete, and wood. Included in this experience is the remediation of the excessive vibration amplitudes of rotating equipment, support structure, and foundations. This has required an extensive knowledge of the codes, specifications, and regulations related to design and construction and miscellaneous structures. He has worked extensively as a consultant to OSHA, both federal and state agencies, in root cause failure analysis and workplace hazard remediation.

Mr. Page has provided expert witness consulting services for a number of clients involved in litigation. This has included consulting with owners, OSHA, and their legal counsel plus providing depositions and courtroom testimony.

Global Management Advisory Services

Foundry Explosion Cause and Origin Determination

Lead project engineer responsible for determining the type, cause, and origin of a physical explosion that occurred in a New River foundry. The explosion resulted in extensive building and equipment damage, multiple serious injuries, and three fatalities. In determining the cause and origin of the explosion the following was accomplished:

- Evaluated the structural damage.
- Quantified the pressure required to cause the damage.
- Developed pressure wave attenuation models.
- Determined the location of the explosion center.
- Identified the type of explosion.
- Analyzed the equipment exhaust ventilation capabilities.
- Quantified the volume of the different quantities of fuels required to produce the pressure commensurate with the damage.
- Developed the fuel accumulation models.
- Identified the fuel that produced the explosion.
- Identified the ignition source.

The work had to be coordinated with various state and federal agencies, several insurance companies, a natural gas supply company, various contractors, and the foundry owner and his attorneys.

Off-the-Road Retread Tire Curing Press Overpressure Protection

Lead project engineer for a comprehensive failure analysis. In the past four years the client has had three chemical/physical explosions resulting in a catastrophic failure of an Off-the-Road (OTR) retread curing press/mold. When each of these failures occurred, extensive structural and equipment damage was experienced. A failure analysis was conducted. The results of the analyses of all three failures indicated the cause of failure to be an overpressure in the presses/molds due to burning of the rubber after auto-ignition of the rubber during curing. Determined the methods to relieve the pressure after auto-ignition of the rubber and designated the overpressure protection device. Provided the press component manufacturer design drawings and specifications to make the necessary component alternations. Conducted a load test to verify the mechanical integrity of the press after installation of the overpressure protection device. The addition of the overpressure protection device in the presses/molds reduces the risk of employee injury, property damage, and unplanned costly production interruption.

Structural Integrity of Buildings

Lead structural/mechanical engineer for building evaluations. Within 24 hours following the tragic events at the World Trade Center in New York on September 11, 2001, the client requested an evaluation of two buildings near ground zero to determine if the buildings were safe for human occupancy. Within 48 hours of the request a structural team was on site in New York. By September 16 the team had evaluated the structural integrity of one building and provided the client written documentation that the structural integrity of the building had not been comprised. A preliminary structural evaluation of the second building had also been accomplished and a safe means of access had been identified allowing the client safe access to retrieve critical operational materials. The structural team also evaluated the glass mullion system, the interior and exterior window washing structural support system, and the exterior glass units.



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The team members initially coordinated with the Department of Buildings Commissioner Office for security clearances for the client's essential personnel and contractor personnel.

Chip Silo Evaluation, Design and Replacement

Lead project engineer for the evaluation of the structural integrity of an existing concrete stave wood chip silo, designed a replacement, monitored the demolition of the existing silo, and monitored the construction of the replacement silo. The structural integrity of an existing wood chip silo had been severely comprised by the climatic and operational environment. A part of this effort was temporary chip conveyor alterations to support the continuing paper making process.

Physical Explosion Cause and Origin Determination

Lead project engineer for the examination of a pulp and paper company wood batch digester that had experienced a catastrophic failure due to a physical explosion and conducted a root cause failure analysis. Examined 20 additional digesters and their structural supports to assess their suitability for continued use. Provided expert witness consulting services regarding this failure. There were three fatalities caused by this digester failure.

Foundry Physical Explosion Cause and Origin Determination

Lead project engineer responsible for examining the safety of damaged buildings at a foundry site. Determined a root cause failure and prepared the report which provided the description of the failure and how it developed. This was a phenolic resin dust explosion with the ignition source being gas fired shell mold ovens. Provided recommendations for remedial procedures that would preclude future explosions. There were six fatalities resulting from this explosion.

De-icing Boom Truck Structural Failures

The airline industry experienced three failures of airplane de-icing boom trucks in less than one year. Following these failures the Federal Aviation Administration grounded all de-icing boom trucks until each boom truck could be determined to be suitable for continued use. Conducted the structural analysis of each model of de-icing boom truck in the client's inventory, developed failure scenarios, designed repairs for each deficiency found, and implemented the repairs to all the trucks in the client's inventory. Assisted the airline industry and boom truck manufacturers in the development of performance and safety standards for the manufacturer and operations of de-icing boom trucks.

Steam Boiler Physical Explosion Cause and Origin

Lead project engineer for evaluating the failure of a coal fired watertube boiler. The top drum was cracked and there was excessive bowing of the waterwall tube headers due to overfiring. Determined the cause of failures and made recommendations regarding the suitability for continued use of this boiler. Work with the Indian government boiler inspector to establish criteria for future operation of such boilers to preclude this type of failure from occurring in the future.

Confidential Project

Consulting for a high profile lawsuit relating to leaking underground process sewers and storage tanks.



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Confidential Project

Lead engineer for this project which consisted of the inspection and weld repair of ten ASME Code stamped autoclaves in steam services with internal hydraulic cylinders and the rebuild of the ram hydraulic and steam packing boxes in each autoclave. Design, construction management, and quality assurance services were provided to this project. The autoclaves vary in size from 11 feet diameter to 21 feet diameter with hydraulic cylinders capable of developing 19,000,000 pounds force.

Confidential Project

Lead mechanical engineer for root cause failure analysis and design deficiency remediation of process equipment. A Mixer Extruder Pelletizer failed twice and the studs were shearing after being replaced. The longitudinal extruder screw force was calculated, this calculation was used to find the shear dowel area required. Finding a viable solution to this problem saved the client \$750,000.