

# The Equity Engineering Group

## Smart Technology, Expert Consulting

The Equity Engineering Group (E<sup>2</sup>G) is internationally recognized as a leader in developing fixed equipment engineering standards and advanced technologies that help keep oil refining and petrochemical plants safe and operating at top capacity.

Our focus is on aging infrastructure service and support - to help clients improve plant profitability through proactive technologies and consulting strategies that manage risk, maximize equipment availability and control inspection costs through a plant's equipment lifecycle.

E<sup>2</sup>G commits significant time to developing technologies through industry committees such as API, ASME, NACE and PVRC. We have developed a strong reputation for leadership in developing industry standards for Pressure Vessels (new Division 2), Risk-Based Inspection, Fitness-For-Service, and Materials/Corrosion disciplines, which are our core business areas. E<sup>2</sup>G clients benefit because our specialists understand how to use these technologies for maximum benefit, while ensuring safe operations at the plant.

## Consulting Services

We pride ourselves on attracting the best people in the business, many of whom are internationally recognized in their area of technical expertise. Most of our senior engineers have an owner/user background, so they understand the pressures you face and can help you make practical decisions that will ensure the safety and reliability of your equipment.

- Fitness-For-Service
  - Piping
  - Pressure Vessels
  - High Temperature Assessments
  - Flange/JointTech
  - ThinkTank
  - Stress Analysis
  - Finite Element Analysis
- Risk-Based Inspection
  - Implementation, Updating/Evergreening
  - Program GAP Analysis
  - Materials Operating Envelopes
  - Pressure Relief Devices
  - Heat Exchanger Bundles
- Materials & Corrosion
  - Corrosion Reviews
  - Damage Mechanism Assessments
  - Materials Operating Envelopes
  - Weld Repair
  - HF Alkylation Troubleshooting & Benchmarking Studies
  - Metallurgical Failure Analysis
  - Materials Selection
- Pressure Relieving Systems
- Turnaround Support & Work Scope Reviews
- New Equipment Design including Pressure Vessels
  - Designed to the new Division 2 Rules
- Capital Project Consulting



*Smart Technology for Aging Infrastructure*

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www.equityeng.com



## E<sup>2</sup>G Software

E<sup>2</sup>G's proprietary software tools are used by companies worldwide to manage risk.

**API RBI Software** – The ONLY official API RBI software developed through the API consensus standards process and documented in API 581. This software provides risk values and metrics for equipment, enabling plants to identify areas of potential failure and prioritize inspection dollars based on measured risk. In addition to pressure vessels and piping, modules include heat exchanger bundles, atmospheric storage tanks and pressure relief systems.

**VCESage™** - A collection of modules providing an easy-to-use computerized design/analysis resource consistent with the new API 579-1/ASME FFS-1 standard. The modules enable users to review and/or analyze existing and new equipment for structural integrity, code compliance, re-rating, hot-tapping and remaining life evaluations.

**VCEDamage Mechanisms™** - A quick reference guide to identify the potential damage mechanisms that can cause equipment failure. It helps users navigate through the damage mechanism identification process, helps in selecting the best inspection method for each damage type, and provides simplified Process Flow Diagrams showing where damage will likely occur.

**VCEIntelliJoint™** - The Total Solution to bolted joint leakage using the latest advanced bolted joint technology, including assembly procedures and gasket test results. The program provides industry best practice gasket specifications and incorporates knowledge in areas required to effectively identify the root cause of a leakage problem.

**VCEPractices** - The management system to design, build, buy, commission, maintain, monitor, test, inspect, repair and modify refinery equipment. Designed to satisfy industry directives and focused on sharing industry Best Practices, they have been used on numerous capital projects for major oil refining and petrochemical companies.

## Training

The Equity Engineering Group is the exclusive API subcontractor to develop and deliver training programs for FFS, RBI, Damage Mechanisms and Pressure Relief System Design. We are a certified API TPCP provider, which means that API has evaluated the essential elements of these courses including instructional materials, instructor qualifications and delivery. API certified training courses ensure that this training meets the highest standards of professional quality worldwide.

Equity Technical Institute also offers training for the API RBI and VCESage software programs, as well as training in Pressure Vessels including the new Division 2 rules and Design-By-Analysis Rules, Welding Engineering, Materials Engineering, and Process Piping.

Public courses are held at E<sup>2</sup>G offices and locations world-wide; private courses can be held at your site. Courses can also be customized to meet specific client needs. To find out more about E<sup>2</sup>G training courses, visit our website or contact Joel Andreani or Jim Sowinski at [training@equityeng.com](mailto:training@equityeng.com).



## Contact Us

For more information on E<sup>2</sup>G products and services, please check our website at [www.equityeng.com](http://www.equityeng.com) or contact Greg Alvarado at [gcalvarado@equityeng.com](mailto:gcalvarado@equityeng.com) and 281-537-8848 or Gary Frantz at [gprantz@equityeng.com](mailto:gprantz@equityeng.com) and 281-414-5039.

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