



E²G SERVICES & CAPABILITIES

ANSWERS FOR TODAY.



ROTATING & STRUCTURAL PIPING VIBRATIONS

E²G rotating equipment SMEs are available to provide technical support and/or staff augmentation as required. E²G engineers also have extensive expertise dealing with Engineering Procurement and Construction (EPC) contractors and can provide oversight.



PRESSURE RELIEVING SYSTEMS

Pressure relief is a serious business with heavy consequences. For unique design, sizing, installation, selection, and/or audits of PRDs, you want expertise that you can trust. E²G's pressure relief team specializes in this work and is made up of leading experts in pressure relief, including the current chairman of the API 520 Committee.



FITNESS-FOR-SERVICE (FFS)

When you identify an issue with your equipment, the question of whether to continue to run, repair, or replace the equipment has significant consequences. Difficult questions need to be expertly answered – “Can I run this equipment safely? For how long? Can it continue to run until my next turnaround?” Our experience and expertise helps you answer the run, repair, replace question (and the “how long?” question) accurately and with a unique level of assurance.



MATERIALS & CORROSION

Are you inspecting for the right damage? How effectively have you documented your corrosion loops and damage mechanisms? What about IOWs? E²G's Materials & Corrosion team members have an average of nearly three decades of plant experience. They have delivered solutions – damage mechanism reviews, CCDs and IOWs – for companies like yours with a level of expertise and experience unparalleled in the industry.



HIGH-TEMPERATURE HYDROGEN ATTACK (HTHA)

Accurately predicting HTHA failures has been challenging the industry for more than a century. E²G now provides a more accurate HTHA life prediction and associated FFS procedures that address this concern effectively.



MECHANICAL INTEGRITY (MI) AUDIT

Never has the need for an effective MI program been more important. How effective is yours? E²G's Mechanical Integrity Gap Assessment delivers the answer, including Special Emphasis MI for certain damage mechanisms and processes (e.g., CUI, ammonia production/storage, small bore piping vibration). The result of this gap assessment includes areas meeting best industry practices and areas needing improvement, as well as specific recommendations for actions to be taken in order to have a plant's MI program comply with industry best practices.



RISK-BASED INSPECTION (RBI)

In this market environment, the need to effectively optimize your inspection spending is absolutely critical. Can you be assured that your inspection efforts are effective and you are not overspending? As primary investigators for API 581 and API 571 among other industry standards, E²G's team can help you gain that assurance.



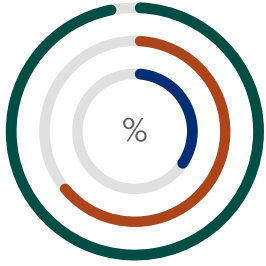
TURNAROUNDS

Shutdowns are one of the most significant portions of a plant's yearly maintenance budget, and there is significant risk to the bottom line that is directly related to the level of readiness for the turnaround. With over 200 years of experience combined amongst our engineers, E²G can help optimize scheduling and execution of inspections, address unexpected issues in real time during turnaround, develop immediate and effective repair strategies as needed in real time to triage during shutdown, enable speedy and effective decision-making, and apply lessons learned – your own and those of your peers – towards your next turnaround. Remember that less downtime means less lost revenue.



EQUITY ENGINEERING PRACTICES®

BEST PRACTICES, MAINTAINED BY US
AND CUSTOMIZED BY YOU!



97% AVG. CUSTOMER RETENTION RATE
As of 07.23.19 since 01.01.03

340 FACILITIES

65% USERS IN NON-REFINING INDUSTRIES

36 COMPANIES

+33% ACTIVE U.S. REFINING FACILITIES
CURRENTLY USING THE EEPs
As of 07.23.19

40 COUNTRIES

THE FOLLOWING TOPICS ARE COVERED BY EEPs

- Civil & Structural Engineering • Documentation Requirements • Electrical Engineering
- Heat Transfer Equipment • Inspection • Instruments & Controls • Marine Facilities • Materials • Mechanical Integrity
- Packaged Equipment • Pipeline Design • Pipeline Operation & Maintenance • Piping • Pressure Vessels
- Process Safety & Loss Prevention • Refractory, Insulation, & Fireproofing • Rotating Equipment
- Special Emphasis Mechanical Integrity (SEMI) Programs • Storage Tanks

TRAINING

E²G is the recognized leader on aging infrastructure service and support for the oil and gas industry. E²G significantly invests its resources in the committees that drive our industry, specifically, the American Petroleum Institute (API) and the American Society of Mechanical Engineers (ASME). It is the investment of our professional staff and our continued commitment to API and ASME Committees that provide us with a unique opportunity to preserve the quality and reputation of the oil and gas industry through educational programs and publication and presentation of technical reports that align with our core values of sharing knowledge and transferring expertise.

API University is dedicated to providing excellence in oil and gas industry training. E²G has a contract with API to deliver training programs for **Fitness-For-Service (FFS)**, **Risk-Based Inspection (RBI)**, **Damage Mechanisms (DMs)** in the Refining Industry, and **Pressure Relieving Systems (PRS)**. The practical knowledge gained from API University training enables participants to maintain professional competency and meet the ever-changing statutory requirements.

E²G Technical Institute (ETI) offers specialized training courses in the areas of pressure equipment (pressure vessels, piping, and tankage), materials and corrosion, welding, instrumentation/controls, and our proprietary PlantManager™ software. Leveraging our professional staff's experience and involvement on many of industry's relevant API and ASME committees, E²G has developed these specialized training courses that not only provide the fundamentals but also offer our unique perspective from both a design and in-service standpoint using the Life-Cycle Management philosophy.

Customizable on-site engineering training provides you with maximum flexibility and affordability. Bring a course to your location, eliminate costly travel expenses, and set your own schedule. Don't miss this opportunity to learn the latest information from our expert instructors.

SMART TECHNOLOGY. ANSWERS FOR TODAY. INSIGHTS FOR TOMORROW.

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