

Analyze Risk & Prioritize Maintenance Strategies

Risk-based inspection (RBI) quantifies risk and gives you the wisdom to make informed decisions about how, where, and when to inspect assets. Remove uncertainty by evaluating your equipment and refocusing inspection efforts onto the highest-risk items.

RBI identifies potential damage mechanisms and prioritizes an in-service inspection program based on the probability of failure (POF) and consequence of failure (COF). By adjusting coverage on lower-risk items and focusing on high-risk equipment, you can increase equipment run life, save money by eliminating unnecessary inspections, and have fewer unanticipated failures.

Our team has supported the implementation of RBI programs for many refining, energy, petrochemical, and chemical facilities across North America. As a pioneer in RBI methodologies, our experts collaborate with E²G's materials and corrosion experts to deliver the most experienced engineering consultancy.

BENEFITS

Improve safety and reduce risk of unexpected failures

Prioritize inspection strategy

Develop a repeatable risk assessment

Minimize unexpected failures and lost production

Proactively evaluate impact of service changes

THE DIFFERENCE

250+ years of combined field experience

Served as lead investigators on API 581

Pioneered development of RBI

Software agnostic RBI implementations

Developed the only API-branded and fully compliant API 581 RBI software

RBI Implementation

Inspection is necessary, so directing the best use of resources is critical, as adopting an RBI program has become an industry best practice. We create thoughtfully calibrated safety-driven inspection targets based on the POF and the COF. Our RBI expertise extends to performing assessments on all equipment types specified in API RP 580, including fixed equipment, piping, aboveground storage tanks, facilities, and terminals. We regularly handle RBI assessments ranging from new implementations to reassessments and inspection updating/evergreening.

Cross-Platform Software Support

We execute high-quality RBI assessments regardless of the software platform being used to meet the API RP 580 requirements. Our software versatility positions E²G with a wide range of skills and a comprehensive depth of knowledge that make us a formidable global RBI service provider. We collaborate with the materials & corrosion team to estimate and assign corrosion rates and active damage mechanisms rather than using calculators and canned results to determine these critical factors in the RBI process.

Inspection Test Plans (ITPs)

We offer our clients the option of developing expanded ITPs that include basic information, plus case-by-case consideration for the feasibility of intrusive versus non-intrusive inspections at all stages of the inspection planning process, as well as the option of active onsite turnaround support by our materials and corrosion experts. This collaboration provides a hands-on RBI approach that extends our expertise and oversight throughout all phases of the project.

Piping Circuitization

To efficiently inspect piping, which can often stretch across miles and involve thousands of distinct line numbers, we always consider grouping the piping into systems and circuits with similar process conditions and damage mechanism environments. This grouping is a standard deliverable, along with color-coded drawings on the process flow diagrams (PFDs) and piping and instrumentation diagram (P&ID) levels showing the system and circuit divisions, including any notable injection points and mix points. We also include updated piping circuit registry documents that specify the line numbers in each circuit as well as their specific P&ID locations, their process function, and the associated damage mechanisms.

RBI QA/QC Program

Our high-quality data quality assurance (QA)/quality control (QC) service applies our high degree of technical expertise to review the accuracy of the input data being used in any RBI software against the source information to provide users with a dependable RBI database and trustworthy calculated inspection recommendation results. We also use analytical and presentation tools to deliver to our clients a product that is both robust and easy to understand.

