



SERVICE PROFILE

Downstream and Process Industries



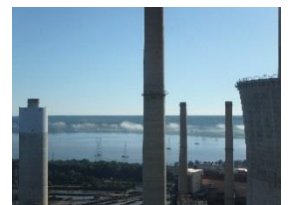
- Fitness for service assessments (API 579)
- Pressure vessel design and rerates
- Piping design and analysis
- Fire damage and extreme event evaluations
- Failure analysis and root cause analysis
- Nonlinear finite element analysis
- Turnaround support and inspection planning
- Material testing and analytical modeling
- High temperature applications
- Weld design and qualification

With nearly a half century of experience in industrial consulting, we are no stranger to the unique challenges posed by the process and refining industries. Our dedicated team of metallurgical and applied mechanics engineers have the tools and expertise needed to solve the biggest problems in the pressurized world. We offer full-service chemical and metallurgical laboratories, knowledgeable experts in process, corrosion, and pressure equipment experts that can rapidly assess aging equipment. We also offer pressure vessel design services, including high-pressure designs.

Our principal areas of practice include fitness for service assessments (API 579 / ASME FFS-1), pressure vessel design and rerates, piping design and analysis, fire damage and extreme event evaluations, failure analysis and root cause analysis, nonlinear finite element analysis, inspection planning and turnaround support, material testing and analytical modeling, high temperature applications, and weld design and qualification.

Our deep expertise in the process industry is supported by a multidisciplinary structures team to assist owner/operators with challenges related to the interaction of fixed equipment with its surrounding structural supports or foundations. Our in-house, advanced, state-of-the-art metallurgical and materials laboratories are equipped to handle a wide variety of materials characterization and testing, including composition and microstructure.

We are committed to using our extensive industrial consulting experience to help clients solve, repair, and avoid problems in both the pressurized and built worlds.



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REPRESENTATIVE PROJECTS

- Modeling of Post-Weld Heat Treatment (PWHT) processes for protection against structural collapse
- Evaluation of crack-like indications found in heavy-walled equipment, such as reactors, piping, and exchangers
- Process- and water-side corrosion assessments, remediation, and run-repair decision support
- Evaluation of Corrosion Under Insulation (CUI) damage, particularly around structural discontinuities
- Assessing the risk of buckling in large process vessels, including creep-buckling
- Performing calculations to support owner-use vessel rerate activities
- Storage tank foundation assessments, including ring-wall failure or settlement, and the effect of such failures on the safe capacity of the tank

