

# Solutions for Power Generation Industries

INTEGRATED INSPECTION, ENGINEERING,  
MAINTENANCE & REPAIR SERVICES



A HIGHER LEVEL  
OF RELIABILITY®



Acuren's ongoing relationship with the leading power generation providers in North America, gives us unique unmatched insight. Our services for the power generation industry are designed to minimize downtime, improve productivity, and decrease costs by extending component life and planning ahead for the replacement of critical equipment as it nears end-of-life. When you engage us, you can expect the commitment to quality, reliability, and safety that has earned Acuren a leadership position in the power generation industry.

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## Our teams have extensive field experience assisting power plants throughout all stages of equipment lifecycles including design, inspection, maintenance, repair, and failure analysis.

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- Nuclear – 3rd party oversight, QA/QC, BOP (Balance of Plant)
- Alternative and renewable energy
  - ◊ Hydroelectric
  - ◊ Wind
  - ◊ Solar
- Transmission and distribution
- Coal fired boilers
- Gas fired boilers
- Combined cycle



### FIELD MATERIAL IDENTIFICATION

Improve the integrity of your materials control system with Acuren's positive material identification services. Acuren's technicians will quickly validate raw materials before production has begun, enabling complete traceability. Because materials are accurately matched to a specific supplier, any quality issues can be documented and quickly resolved. Portable methods of chemical analysis offered include:

**XRF (X-Ray Fluorescence) | OES (Optical Emission Spectrometer) | LIBS (Laser-Induced Breakdown Spectroscopy)**

### LAB TESTING

#### MECHANICAL TESTING

Mechanical testing is vital to confirming any material grade, evaluating any component, or putting any critical design into practice. Mistakes here can lead to dangerous, costly, and time-consuming problems in the future. When safety, quality, and production efficiency matter, rely on Acuren. Our mechanical testing services include:

- Tensile testing – including elevated temperature
- Bend testing
- Charpy impact testing
- Weld procedure testing – ASTM, CSA, AWS, AWWA, ASME
- MTR assessment / product conformance certification
- Hardness testing
- Stress rupture testing
- Sour gas testing
- Fracture toughness testing (CTOD testing)

#### CHEMICAL ANALYSIS

Acuren operates eight service-oriented laboratories enabling us to deliver rapid results regardless of project size. Our field spectrographic equipment can travel to your site for fast, nondestructive chemistry testing. Results are delivered electronically for faster decision-making and improved collaboration. Our services can help you with:

- Ensuring compliance with materials specifications
- Identification of unknown materials
- Alloy sorting
- Evaluating weld procedure acceptability

## FAILURE ANALYSIS

When a failure occurs, thorough analysis can offer insight and preventive solutions for the future. At Acuren, our engineers undertake the meticulous examination of failed and damaged components to give you clear guidance on the failure mechanism and root cause to ultimately prevent future occurrences. Acuren can support owners in their accident investigation process and provide litigation support when required. A sampling of our procedures includes:

- Metallographic examination
- Micro and macrophotography
- Fractography
- Optical and scanning electron microscopy
- Oxide thickness measurement
- Mechanical testing (hardness, tensile and impact)
- Fracture toughness testing
- Chemical analysis
- Elevated temperature stress rupture analysis
- Energy dispersive X-ray analysis (x-ray diffraction)
- Corrosion scale analysis
- Root cause analysis

## CONSULTING SERVICES

At Acuren, we believe results come from specialized teams who understand your process in general, and your mill or plant in particular. We'll provide the right engineering experts who can offer cost-effective solutions to benefit your business. Acuren consulting services for power plants include:

- Materials selection
- Field analysis of failure causes
- Fitness for purpose
- Weld repair procedures
- Fracture mechanics
- Materials testing
- In situ metallography
- Corrosion studies
- Quality assurance/quality control services
- Training courses
- Water treatment and energy analysis
- Steam cycle chemistry evaluation
- Chemical cleaning support
- Chief inspector services

Acuren's engineers have a solid reputation for providing accurate and definitive materials integrity solutions. Our internationally-recognized team has extensive field experience assisting power plants throughout all stages of equipment lifecycles including design, inspection, maintenance, repair, and failure analysis.

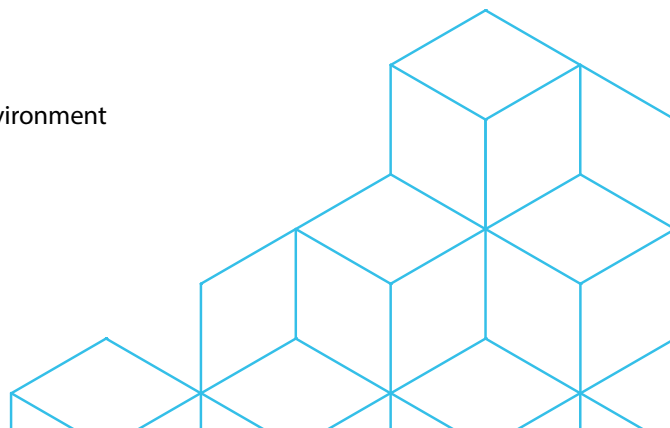


Expertly servicing the power industry for more than 40 years, Acuren has the skilled technicians & innovative technology you can rely on

## CORROSION LABORATORY

### Corrosion Testing:

- Accelerated corrosion assessment
- Testing of materials in a simulated corrosion environment
- Bacterial testing
- Autoclaves for pressure vessel simulations





## LIFE ASSESSMENT STUDIES FIELD SERVICES

Acuren's life assessment services reliably answer critical questions regarding equipment longevity that allow proactive repair and replacement planning. Real-time condition monitoring can give you an immediate snapshot of how your equipment is functioning. Our engineers are experienced in power generation processes, equipment, materials, and service demands. Specialized techniques include:

- In-situ metallography
- On-site alloy analysis
- Crack detection and analysis
- Macro and microhardness testing
- Strain gauging
- Stress analysis
- Fire damage assessment
- Finite element analysis
- Fitness for purpose

## CONVENTIONAL NDT SERVICES

- Radiographic Testing (RT)
- Magnetic Particle Testing (MT)
- Dye Penetrant Testing (PT)
- Ultrasonic Testing (UT)
- Remote Inspection – borescope
- Infrared Inspection (IR)

## ADVANCED NDT SERVICES

- UT crack detection/sizing
- Flow Accelerated Corrosion (FAC)
- Automated UT
- C-Scan corrosion mapping/flaw evaluation
- Digital Radiography (DR)
- Time of Flight Diffraction (TOFD)
- Phased Array (PA) – encoded
- EMAT boiler tube/hydrogen damage inspection
- Guided Wave UT
- ACFM examination
- Computed/Digital Radiography (CR/DR)
- Tubular inspection – IRIS/ET/RFT/NFT/MFL
- Wire rope examination
- Ground Penetrating Radar (GPR)
- Drones
- 3D laser mapping
- Flange Scanner ultrasonic testing

**Our industry leading experts can help plan outages and inspections with you to optimize schedules which reduce downtime, as well as help select the most appropriate NDE techniques for your application**

## FACILITY INSPECTION SERVICES

Acuren provides inspectors throughout the life cycle of your facility – design, construction, commissioning, planned and unplanned outages, maintenance activities, and decommissioning. Our industry leading experts can help plan outages and inspections to optimize your schedules to reduce downtime and select the most appropriate NDE techniques for your application.

- Tank inspection – API 653
- Vessel inspection – ASME VIII
- Piping inspection – ASME B31.1
- Boiler inspection – ASME I & NBIC IS/R
- QA/QC inspection – AWS CWI
- Refractory inspection – API 936
- Coating inspection – NACE

## SPECIALIZED SERVICES

- High energy piping inspection
- Turbine generator examination
- Comprehensive boiler examination
- Coal bunker inspection
- Above ground storage tank inspection
- Construction NDT services
- Steam Turbine Risk Assessment Programs

## ROPE ACCESS

In addition to offering inspection and industrial services from ropes, we also offer these other rope enabled capabilities:

- Contracted rescue services
- Industrial high angle rescue
- Fall protection and tower rescue
- Engineered fall protection services



BEYOND INSPECTION



Complete single-source in-house solution including engineering, consulting, integrated rope access industrial services, drone services, inspection, advanced NDE, and field or lab testing



CONTACT OUR EXPERTS TODAY

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