Structural Integrity Associates, Inc.®

TURBINE GENERATORS

FULLY INTEGRATED ASSET LIFECYCLE SOLUTIONS

Structural Integrity provides comprehensive turbine and generator inspection and life assessment services for solid rotors, rotor bores, shrunk on disks, blade attachment dovetails, turbine blades, turbine main inlet sleeves and nozzle chambers, turbine and valve casings, generator rotor dovetails, retaining rings, coupling keyways, and other critical components. Our life assessment analytical services include **EPRI®-licensed SAFER-PC©** rotor analysis, **EPRI LPRimLife©** rotor disk rim dovetail analysis, **EPRI RRingLife©** generator retaining ring analysis, and finite-element stress analysis of shafts, turbine disks, blades, and other components. In the case of turbine failures, our metallurgical testing laboratory also offers a full range of testing services for rotor, disk, and blade failure analyses.

Our team brings an in-depth understanding of the complexities associated with turbine and generator operation and familiarity with industry issues, including known flaw locations and orientation in similar machines. This insight and experience leads to targeted inspections that maximize resources and minimize outage times.

SERVICES

INSPECTIONS & CONDITION ASSESSMENT

Structural Integrity's Turbine/Generator Group consists of industry-experienced engineers and technical staff that have developed and implemented numerous methodologies for evaluating the current condition of many types of generating equipment.

TURBINE AND GENERATOR COMPONENT LIFING
Structural Integrity has the capability to perform advanced analytical and inspection activities to accurately answer our clients' questions regarding their valuable turbine and generator systems.

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MATERIAL SAMPLING

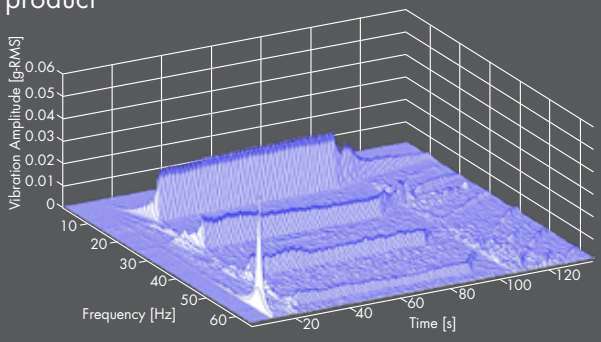
Characterization of material samples from the critical component may provide key information to allow continued operation of units that would otherwise be retired based on database properties. Structural Integrity offers miniature sample removal services to support accurate material property characterization.

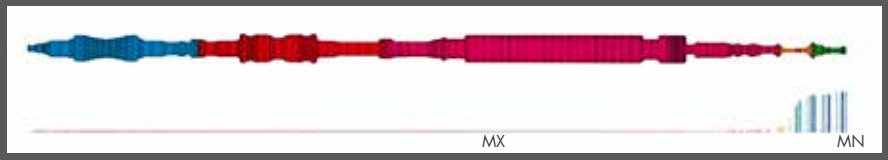
FAILURE ANALYSIS

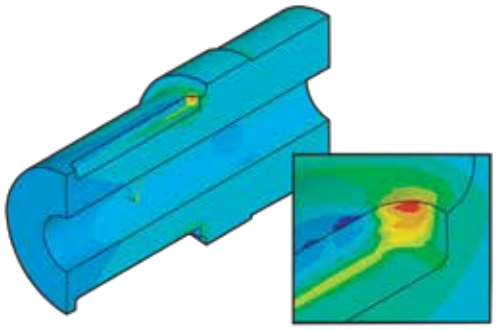
Structural Integrity's metallurgists and engineers have extensive experience in evaluating the damage mechanisms and causes of turbine component failures. SI has the resources to apply a multidisciplinary approach to failure investigation to answer tough questions surrounding turbine failures and identify appropriate corrective actions.

TORSIONAL VIBRATION

Our experts can dive deeply into existing data and recommend additional instrumentation and diagnostics when needed. To monitor the potential for torsional fatigue damage on turbine generator shafts, we developed a product called Transient Torsional Vibration Monitoring System (TTVMS) to measure and record transient torsional events for subsequent analysis of shaft torsional fatigue life.

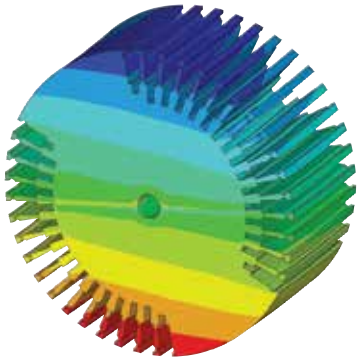






Generator shaft keyway cracking

Generator rotor dovetail inspection



Generator rotor dovetail analysis

Rotor bore machining and surface conditioning