

# STEAM TURBINE CAPABILITIES

## Expertise for Your Aging Fleet

MD&A is one of the world's leading suppliers of steam turbine engineering services for over 40 years. Our steam turbine engineers provide support for power generators and steam turbine owners worldwide. This group provides experienced, on-site engineering personnel, most of whom are factory-trained and have completed years of field experience prior to joining our team.

Our MD&A Turbine-Generator Repair Facility centrally located in St. Louis, MO, includes steampath services, steam turbine valves, field machining, generator services, and a high-speed balance facility.

**An abbreviated list of capabilities provided by our Steam Turbine Services, Repairs & Parts teams includes:**

- Steampath Audits
- Bucket and Blade Cover Replacement
- Remaining Life & Finite Element Analysis
- Advanced Rotor Welding
- Outage Planning and Technical Direction
- Topless Alignment®
- Performance Testing & Analysis
- Custom Installation of Seals
- Turbine Control & Generator Excitation Retrofits
- Full Suite of Specialty Services



### MD&A TURBINE-GENERATOR REPAIR FACILITY

*For more information on this product or service please contact MD&A at 314-880-3000*

## Rotor Straightening

Our Turbine-Generator Repair Facility provides proprietary distortion correction for straightening bowed rotors in steam turbines. We provide computer modeling techniques and recommendations, plus an engineering analysis to find the root issue.

## Diaphragm Dishing

MD&A offers various repair options for your dished diaphragm. From minimal to severe dishing, we work collectively to help you determine the best repair solution based on each of your needs.

## Casing/Shell Analysis & Renovation

Our engineers offer multiple repair services and engineering to help determine the root cause behind casing/shell failure. Our capabilities range from computer-aided "stress" analysis, metallurgical testing, and innovative solutions to complete turnkey repairs.

## Machining Services

We provide a wide variety of steampath repair equipment and field machining services. Our machining capabilities include in-shop and on-site repair of horizontal joints for turbine casings, defective rotors, valves, or other turbine-generator components.

## Valve Repairs

MD&A provides inspection, repair, and upgrades of industrial and utility high-pressure valves and valve components. We offer full-service valve repair and upgrade of all high-pressure steam valves from various manufacturers and can address historic design flaws.

## Rexroth® Actuators

MD&A provides complete refurbishment of Rexroth® Actuators. A large inventory of Rexroth® hydraulic servos, solenoids, rebuild kits and disc springs are maintained to satisfy short-cycle turnaround requirements.

## Guardian® Packing & Vortex Shedder® Spill Strips

MD&A offers the patented Guardian® packing ring and the advanced design Vortex Shedder® spill strip. Guardian® Packing rings maintain a positive radial seal during shutdown, turning gear, start-up, and operation. The Vortex Shedder® incorporates an aerodynamic geometry to reduce leakage flow while improving stage heat rate performance.



## MECHANICAL DYNAMICS & ANALYSIS

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