

## VALVE ACTUATION SYSTEMS



### *Solutions for Rotating Machinery Control & Safety*

**CASE RMC is an industry leader in the design and implementation of valve actuation systems for your rotating equipment.** Our Valve Actuation Systems can supplement your existing actuation system or can provide a complete actuator / servo system replacement, including individual valve actuation on control valve assemblies (removal of cam assemblies or lifting bar). We also provide conversion of low pressure to high pressure (EHC) actuator systems.

Installation of a complete system will provide the following benefits:

- **Improved Reliability**
  - Fault Tolerant components (Redundant Servos / LVDTs) with on-line testing and on-line repair
  - Replacement / removal of older and degraded components reducing potential for failure
  - Replacement of antiquated, hard to source parts with industry standard commodity components
- **Improved Diagnostics, Troubleshooting and Maintenance**
  - Critical Parameters (Alarms and Trips) are monitored and can be logged (e.g. servo, LVDT, etc.)
  - Isolation valves, access, and redundant components allows for extensive on-line maintenance
- **Improved System Functionality**
  - On-line valve testing available for display and operation through the plant DCS
  - Critical parameters are monitored, utilized for alarming / trip indication
  - Allows for turbine valve actuation and testing of valves without requiring starting or operation of the turbine
  - Individual Valve actuation allows for more system flexibility through multiple control valve operating modes

**Actuation systems provided for all steam, gas, and hydro turbine applications. Designed to provide highly reliable operation and online maintenance.**

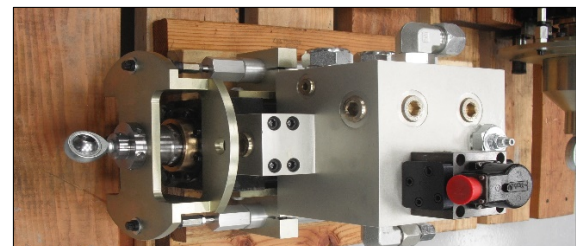
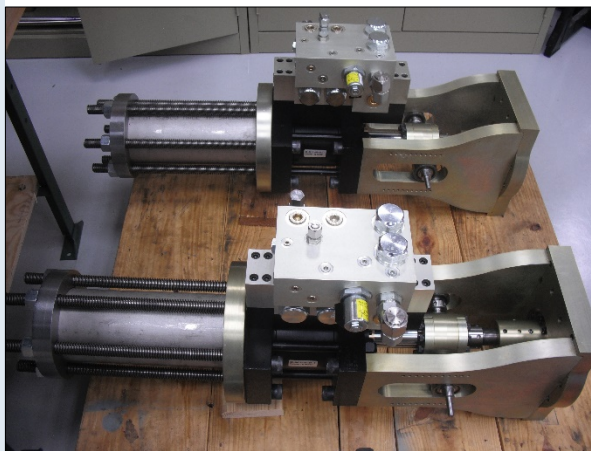
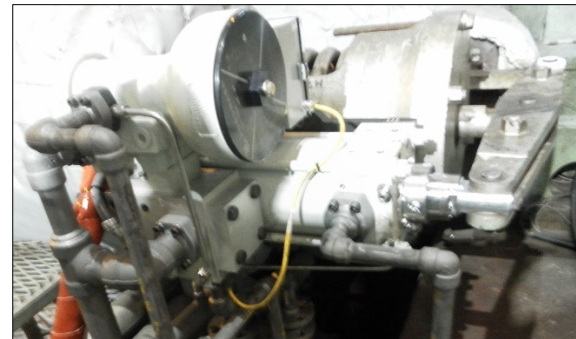
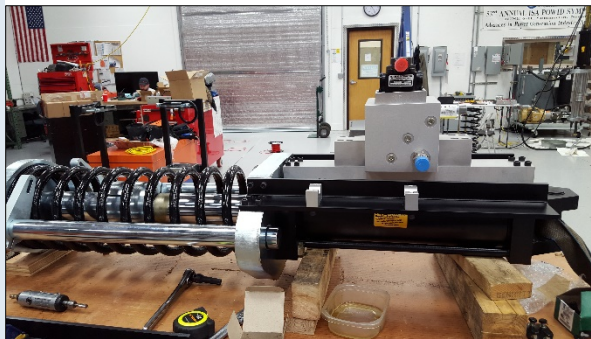
*Delivering Value  
Oriented Solutions &  
Services*

*Actuation Systems*

*Custom System  
Configurations*

**CASE RMC, LLC** delivers excellence in Rotating Machine Control with nearly 400 years of combined industry experience. Headquartered in Northern Colorado, CASE RMC is centrally located to support North American and Global clients. Customers can expect attention to detail, follow through, and prompt service **24 hours a day, 7 days a week**. Together CASE RMC and Wunderlich-Malec can provide complete process control, safety and rotating machinery controls solutions for the most demanding project requirements.

**CASE RMC** offers a variety of Actuation Systems for any steam, gas, or hydro turbine application. Actuation Systems can also be applied to any application requiring linear or rotational operation. Typical designs include single and redundant servo / LVDT configurations. CASE RMC addresses customer's challenges with cost-effective solutions which are custom designed, installed, and commissioned requiring minimal burden on the customer. The Actuation Systems are be seamlessly integrated with the control system and turbine trip system. Implementation of a new actuator with new EHC hydraulic system will allow for actuation of valves during turbine / boiler are shutdown. This allows for calibration and testing of valves during non-critical times.





## Typical Features

CASE RMC designs **Custom Actuation Systems** to meet **Customer Needs**

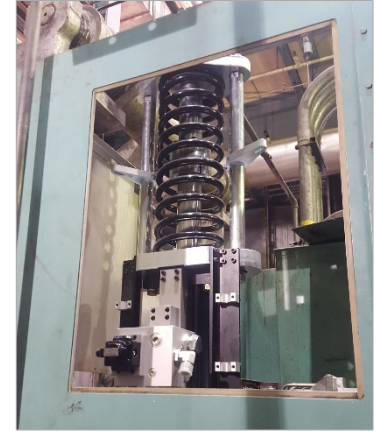
- Pilot Actuators (Interface to existing Servo as controlling mechanism)
- Redundant Servos / LVDTs
- Failsafe Design
- Individual Control Valve Actuation
- Integration with existing or new trip circuit utilizing custom manifolds / piping
- Hydraulic, Electric or Pneumatic Actuation

## Installed Actuator Systems



## Purpose-Built Actuation Systems

CASE RMC supplies Purpose-Built Turbine Actuation Systems for exact system requirements. Designed to operate on existing hydraulic system or high-pressure systems. Actuation System components are common across all turbines – common spare parts.



CASE RMC is an industry leader in the design and implementation of actuation systems for your rotating equipment. All assemblies are designed by CASE RMC utilizing over 30 years of actuator implementation on different OEM equipment and various types of applications. CASE RMC procures all components. Assembly and testing is conducted at CASE RMC. Customer Witnessed Factory Acceptance Testing is available and is provided for the entire system (Controls, Actuation and Hydraulics).

CASE RMC utilizes industry standard, commodity components to ensure long lasting assembly that is also cost effective and easy to maintain. Additionally, we provide electric actuation on many applications to eliminate concerns associated with hydraulic or pneumatic systems. Electric actuation is also used when presence of hydraulic fluid is a flammable or environmental concern.

Specific designs available for GE, WH, Allis Chalmers and many other OEMs. Additionally, CASE RMC provides Superior Documentation and System Training. Proven products from a proven supplier.

**Bottom line, we guarantee results.**

# Experience you can build on since 1981

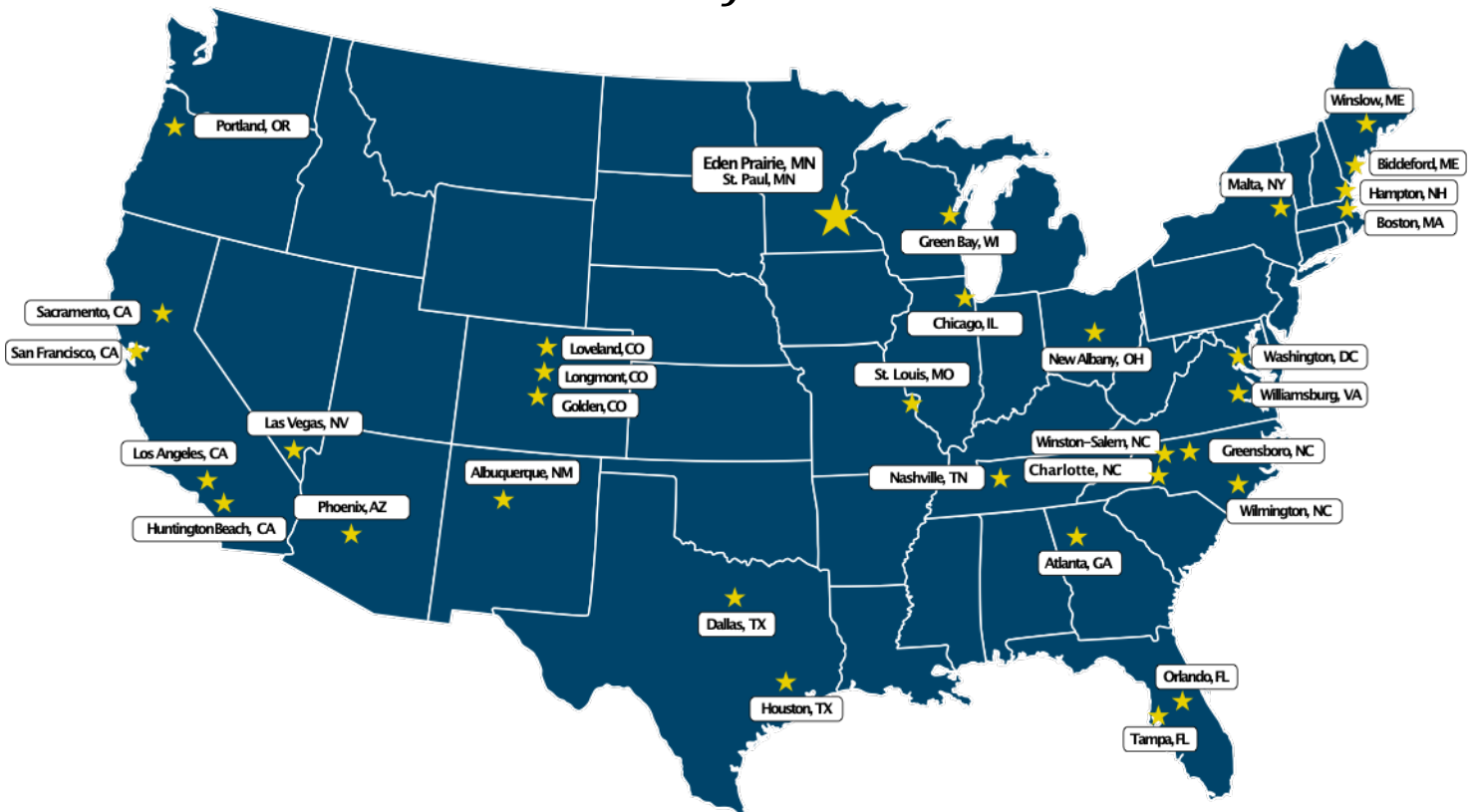
CASE RMC with Wunderlich-Malec offers clients complete control solutions for most power generation and industrial plants with turbines and compressors. By managing a more complete scope clients are freed from coordinating multiple vendors.

As an experienced engineering company with offices throughout the United States, we are uniquely qualified to *deliver value engineering services that lower costs, improve quality and accelerate project schedules.*

With over 450 experienced professionals, our team is one of the largest and most well-established engineering, system integration and process automation providers in North America;

- Architect Design
- Mechanical Design
- Power Electrical Design
- Controls and Automation
- Environmental Compliance
- Realtime Documentation
- System Integration
- Mechanical Fabrication
- Process Skids
- Power Distribution Control
- Modular Control Enclosures
- Plug & Play Construction

## Centers of Excellence



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