

## TURNKEY FAN REPAIR & INSTALLATION

### PROJECT OVERVIEW

A coal-fired power generating station located in the Midwest provides its member communities with reliable, cost-effective electric service. However, to reach and maintain full capacity, the facility's equipment must be fully operational – and extremely reliable.

The power plant recently experienced a major equipment failure. When the motor bearings seized on the induced draft (ID) fan for the facility's boiler, the resulting fan rotor inertia destroyed the ID fan's shaft and bearings, and damaged the impeller and dampers.

The power plant turned to Clarage for a solution. Field crews were dispatched immediately. They extracted the rotor and shipped it to the Clarage facility for repair. Clarage repaired the impeller and dampers, and supplied new bearings, which the field crew quickly installed.

### QUICK FACTS

**CUSTOMER:** Coal-Fired Power Plant

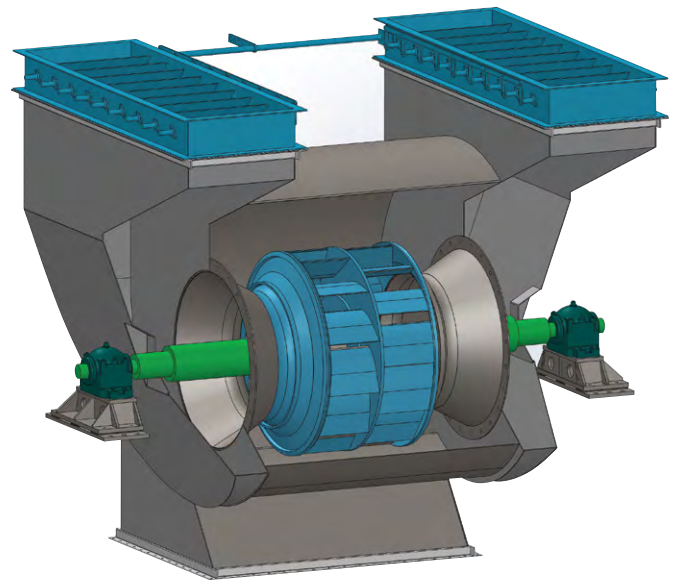
**LOCATION:** U.S. Midwest

**INDUSTRY:** Power Generation

**APPLICATION**  
Induced Draft Fan

**CHALLENGE**  
Swiftly repair impeller, supply new shaft and bearings, fabricate inlet dampers and install repaired equipment

**SOLUTION**  
Turnkey extraction, fabrication, repair and installation of induced draft fan

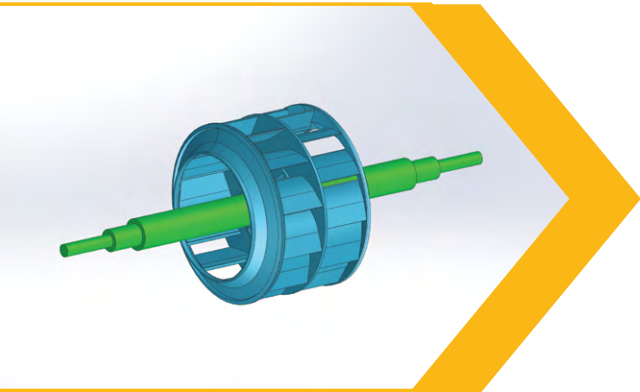




BENT SHAFT & ROTOR  
(FAN LOCATION 120 FEET ABOVE GROUND)



DESTROYED MOTOR & BEARINGS  
(EXISTING FAN)



3D MODEL OF THE NEW  
ROTOR ASSEMBLY & IMPELLER

**CHALLENGE:**

The boiler could not operate without the ID fan, and consequently, could not generate power. The fan repairs had to be done quickly and reinstalled as soon as possible. To complicate matters, the ID fan was located 120 feet above the ground, which required the use of cranes as well as rigging expertise.

**THE CLARAGE SOLUTION:**

While the damaged impeller was in transit to the Clarage facility, the Clarage team machined a new shaft from stock shaft material. Clarage takes great pride in maintaining a large inventory of shaft materials, bearings, and many other critical fan components – all in a wide range of sizes. For this repair, Clarage used Dodge 4.4375-inch RTL SLEEVOIL bearings, which were available in inventory. Because of Clarage's extensive inventory, lead time for the shaft and bearings was reduced from months to days.

Clarage finished machining the shaft as the equipment arrived at the plant. The team removed the old shaft, placed the new shaft in the impeller, and balanced and painted the rotor. Clarage also fabricated two heavy-duty inlet dampers – in only three days – and shipped the repaired equipment back to the power plant.

**RESULTS:**

The power plant was back online within a week instead of months – a turnkey victory for the power plant and for Clarage. By responding quickly to the equipment failure, having the necessary materials and components in stock, and coordinating closely with power plant, the Clarage team had the ID fan back online – in record time.

>> **CUSTOM IS OUR STANDARD**