SCHULZ ELECTRIC
POWER SYSTEMS BY TIMKEN

Schulz Electric™ Refurbishes Critical Circulating Water Pump Motor in Only Four Days

The Primary Challenge

Schulz Electric™ was contacted by a nuclear power plant in the New England region that serves a community of over 2 million homes. After five years of service, a 1500 HP, 4 kV, 24-pole circulating water pump motor (measuring approximately 7' wide, 8' tall, and weighing several tons) needed refurbishing while the plant was still online. To add to their concern, the power plant is located close to the ocean. The aging motor was not only approaching the end of its serviceable life, but was highly susceptible to moisture intrusion and the salt-laden air, which can build up in air passages within the motor. These environmental conditions can lead to elevated operating temperatures and corrosion developing on the rotor, stator, and shaft components. These factors combined, placed the plant at an increased risk of downtime that could have potentially led to a significant loss of revenue if they were forced into a shutdown event.

Classified as a "Balance of Plant" motor, continued operation of equipment of this type is deemed as vital to ensure continuous power output to the grid. Power plants cannot run without these critical motors, and downtime cost estimates can be upwards of $1 million per day. These costs prompted the customer to request the refurbishment to be completed within a five-day time frame, well short of the six to eight weeks it usually takes for a refurbishment project of this scope.

The customer came to Schulz Electric with this challenge because of their reputation for excellence in expedited repair and their advantageous proximity to the plant. With industry leading technical expertise and a facility large enough to handle the challenge, Schulz accelerated the electric motor refurbishment and was able to complete the project, ahead of schedule, in only FOUR DAYS from the time the motor shipped to when it arrived back at the plant.

The Process

A thorough analysis of the motor was conducted immediately upon receiving it by a team of six core technical experts, a quality assurance technician, and a three-person technical and administrative review team.

The scope of the refurbishment project included:

- A battery of electrical and mechanical tests to determine the health of the motor
- Inspections to find discrepancies
- Performing CO2 dry ice cleaning (in place of a walnut shell or silicon bead process) for greater efficiency and mitigating the risk of foreign materials while removing salt, corrosion, and other contaminants
- Placing the motor in a 24/7 work schedule queue
- Replacing and upgrading components and restoring the motor to a like-new condition
- In-shop balancing, final quality checks, and no-load operational testing

Schulz Electric's nuclear group specializes in nuclear motor repair. We offer a variety of nuclear services including environmentally qualified form and random wound insulation, contaminated electric motor repair with RCP electric motor overhaul and rewind, safety-related repairs, electric motor testing capabilities, high-quality, cost-effective solutions for MOV dilemmas, all from our nuclear motor repair facility and in-house decontamination facility.

Key Results

"This refurbishment was one of the fastest Schulz ever completed," said Whit Ward, a field support engineer for Schulz Electric. "Not only were we able to aid in mitigating risk by finishing it in only four days, but our team delivered improved motor performance through the better balancing we were able to achieve."

While a detailed refurbishing project is not typically done for speed, Schulz Electric was able to be flexible and create a result with no compromise to quality in the process. The project's success was a key milestone for Schulz, as it led to more business and becoming a trusted advisor to the plant for their future electric motor repair needs.

About Schulz Electric Nuclear Group

Leading Experts for Safety-Related Electric Motor Repair

Schulz Electric is one of the leading electric motor repair facilities in the New England region that specializes in services for the Nuclear Industry. Our portfolio of capabilities includes all of the following:

- Superior design in environmentally qualified (EQ) electric motor insulation systems
- Safety-related electric motor repair
- EQ harsh environment expertise
- Contaminated electric motor repair
- Electric motor storage and maintenance services
- EDG services and expertise
- Electric motor dedication
- MOV motor repair
- In-house motor decontamination facility
- Full motor rewind and repair capabilities