Nitrocision®
The world leader in liquid nitrogen-based cutting and cleaning technology.

Case Study

Nitrocision® Technology Reduces Downtime

Large power provider improves employee safety and the bottom line with liquid nitrogen cleaning technology

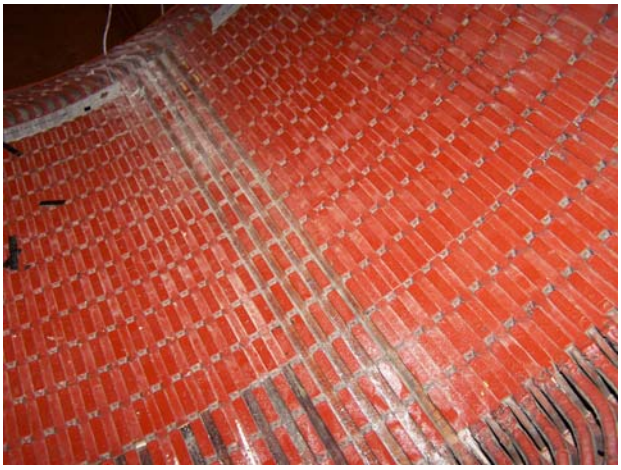
Preparing a large motor for rewinding can be a time-consuming task. Historically, manual methods, such as a hammer and chisel, are used to remove the wedges and windings from the motor stator. This method was time consuming and often caused damage to the motor. The removal process also took weeks to complete, resulting in huge costs in downtime and maintenance labor.

Nitrocision, LLC was asked to demonstrate the use of its ultra high-pressure liquid nitrogen cleaning system on the removal of motor windings from a large motor stator that failed at a power plant in Tennessee.

The windings inside the 2,000 horsepower cooling motor had shorted and needed to be replaced. The stator contained over 200 winding slots that needed to be cleaned out. Past removal methods took approximately 15 minutes per wedge and up to three weeks to complete.

Using the NitroJet, Nitrocision employees were able to reduce the removal time to 15 seconds per wedge. The winding were prepared for removal from the entire stator in approximately three hours.

By using the liquid nitrogen under extreme pressure, 45,000 psi, the wedge and winding coatings were removed in two passes. The first pass removed the wedge, a fiberglass material used to hold the winding in place. The second pass removed the winding insulation and coating enabling the technicians to simply slide the winding from the stator slots. A third pass simply cleaned the residual coatings from the exterior of the laminations. Testing on the stator showed the NitroJet left a cleaner surface in less time compared to traditional methods. No laminate damage was detected during post process testing of the stator.



Stator prior to motor winding being removed.

Stator after removal of motor windings.

For more information on the NitroJet technology, visit our web page at www.nitrocision.com

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