

ATS Predictive Maintenance Testing Reveals Imminent Transformer Failure, Saving Manufacturer +\$40K

Customer Challenge

For nearly 90 years, Thermal Ceramics has been making high temperature insulation products at its manufacturing plant in Augusta, Georgia. This 110-acre, 1 million square-foot facility, a part of UK-based Morgan Advanced Materials, makes insulating firebricks and monolithics, dense refractory shapes, insulating fiber blankets, and converted fiber products that withstand temperatures reaching a blistering 3250°F.

Thermal Ceramics understands heat—and yet its punishing conditions can also take a high toll on fabrication equipment. For this reason, the company retains Advanced Technology Services (ATS) to handle its equipment maintenance needs. ATS' team of technicians are highly trained in predictive maintenance—an advanced form of maintenance that uses instruments to measure the impact of vibration, heat, moisture, dust, leaks, oil breakdown, and other operating threats. By detecting changes in conditions, impending part failures can be addressed before they affect production.

ATS reliability engineers routinely measure every piece of equipment to ensure it's running within performance norms. It's not unusual, however, for these professionals to take the initiative to monitor equipment outside the maintenance contract—which is how, one day last year, ATS engineer Julius Deguit discovered a troubling situation.

ATS Solution

"I was using Infrared Thermography to inspect high-voltage transformers on several of the production lines," explained Deguit. "The transformers are inside metal cages and can't be touched directly. As I pointed the IT instrument, most were releasing a normal amount of heat—about 116°F. One, however, was radiating over 200°F."

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—Brad Fogle, Regional Operations Manager,
Morgan Advanced Materials

AT A GLANCE

- Silica-based insulation products manufacturer
- Large, multi-line production facility
- Heavy environmental/manufacturing conditions
- ATS predictive maintenance services deployed
- Voluntary infrared thermography reveals weakness
- Major downtime/\$43k in equipment cost avoided

The outlying transformer powered an entire blown fiber production line. Electricity for a furnace, furnace deck, motors, conveyor systems, and drive lines all flowed through this one component. "The high heat signature was a giveaway that something was wrong," Deguit stated. "If that transformer failed, a whole portion of the factory would have come to a standstill."

Despite the fact that the transformer was a third-party responsibility, ATS immediately informed factory management of the situation. The facility's electrical equipment vendor was called.

Bottom-Line Success

Subsequent inspection showed that the transformer had suffered a loss in its mineral oil cooling system. Due to the lack of oil, the transformer windings had degraded to the point of meltdown. Catastrophic failure would have shut down the line for at least twelve hours.

Based on later cost avoidance analysis, proactive replacement of the transformer saved Thermal Ceramics an estimated \$43,000. The work was done during a scheduled maintenance break and resulted in no material loss for the company.

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To learn how ATS can impact your bottom line visit
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