

Powering American Success

Integrated Power Services (IPS) is the USA's leading independent provider of repair and maintenance services for electric motors, generators and mechanical power transmission components. Covering the whole of North America on a 24/7 basis, IPS integrates and supplies repair services, field services and product sales to thousands of customers working in asset-intensive industries. With services that include turbine repairs and emergency and outage support, it is clear that IPS knows exactly what works - and what does not - when it comes to equipment and component maintenance. So it is interesting to note that for over thirty years, IPS has been using the SIFCO plating process to repair and protect critical components such as the bearing fits on shafts, shaft journals and end bell bores.

In doing this, IPS has been able to offer durable and reliable repair options in place of costly replacements, helping customers to save money without having to compromise on performance. Indeed, one of the key advantages of using the SIFCO Process® is that very often, repairs can be carried out in situ, minimizing downtime and thus maintaining revenue flows.

THE CHALLENGES

The equipment and components used in power generation and similar industries have to work very hard. Frequently exposed to high temperatures, heavy current loads and environmental contaminants, they are vulnerable to damage through wear and corrosion. When, inevitably, a certain amount of damage occurs, a choice must often be made between repair and replacement. Sometimes, issues also arise when fit - for example of a bearing housing or shaft journal - is fractionally 'out', and must be trued.

Traditionally, options available in these instances have been machining and welding, sleeving and spray welding. All of these, however, have key disadvantages. As Matt Peterson, Machine Shop Supervisor for IPS explains, "In machining and welding, sleeving or spray welding, we have to remove a considerable amount of surface material to prepare for a repair, which is time consuming and can further damage the integrity of the component, because so much of the original material is taken away. In contrast, when we use the SIFCO Process®, it only requires the removal of minimal surface material, which limits the amount of preparation time and also means that more of the original steel or cast iron structure remains intact, ensuring strength is retained."

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THE CHALLENGES CON'T

The SIFCO ASC approach has safety advantages, too. Matt continues, "When welding or spray welding are used, these generate fumes and arc flash, which are hard to control and may be dangerous. In contrast, there are minimal vapors involved in the SIFCO Process®, and what little vapor exists is easy to manage with local ventilation."

The SIFCO ASC approach has been shown, over decades, to deliver consistent results in plating a wide range of materials and components. Unlike welding, which can deform the surrounding materials and generate extra work in machining, the SIFCO Process® leaves the surrounding area largely untouched and - as long as the surface is correctly prepared for application - adherence is superb. Matt Peterson echoes this: "The hardness value that the finished nickel plating lends to the repaired surface is a bonus as, many times, the plated surface is more wear- and corrosion-resistant than it was in its original state."

At IPS, the SIFCO ASC approach is used to plate to a thickness of up to 0.030" total, or 0.015" on each side of a journal or housing. While it is possible to build thicker layers, this involves stopping and re-starting the process and IPS operatives prefer not to do this. The company uses the SIFCO plating process mainly for small and medium components, but also for some large motor component repairs.

THE ADVANTAGES

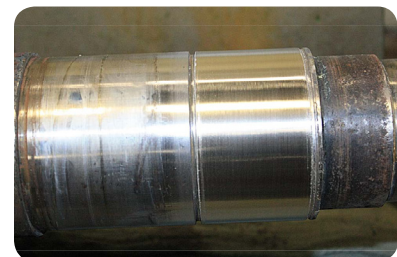
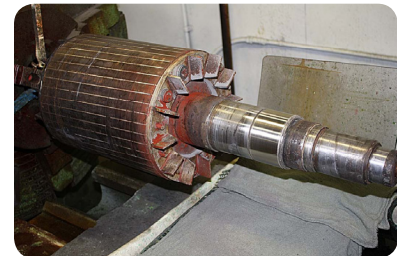
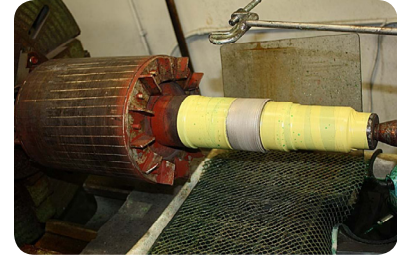
For IPS, the SIFCO Process® offers advantages in terms of both time and money. Matt Peterson is quick to point out that while other methods of repair often require machining, even when the extent of the repair is small, the SIFCO ASSC approach does not. Thus, repairs can be made quickly - which can be crucial to work and revenue flows, for example in power outages due to component damage. Matt continues: "Designating an exact time savings figure would be very difficult, due to the vastly variable nature of the repairs and geometries we encounter, but a conservative estimate of the total time saved by using plating versus other methods would be 25 per cent."

When components are in really bad shape, the plating process can actually save the cost of buying an entirely new unit - a cost that can, in the case of replacement shafts, cost tens of thousands of dollars. That has certainly been the experience at IPS. Matt adds: "Our company has been using SIFCO ASC's plating process for more than 30 years, and it has allowed us to offer our customers repair options on many of their worn or damaged components, which would otherwise have necessitated costly replacement."

THE WAY AHEAD

For IPS, the plating solution identified more than 30 years ago is still serving them well today - and long may it continue to do so. Matt concludes: "SIFCO ASC has been an integral part of the growth of our repair service division over the past three decades. They have expanded our repair capacity with their products and processes, trained many of our operators to improve their skills and offered continued technical advice in unique repair situations and when troubleshooting of an issue was necessary. I would highly recommend them."

For more information on the SIFCO Process®, visit: www.sifcoasc.com.



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