

SUCCESS STORY

Allegheny Power's Harrison Station



Kennametal's Conformal Clad™ tungsten carbide claddings have been cited by the Electric Power Research Institute as the most resistant of approximately 30 materials evaluated in fly ash erosion tests.

6 easy steps to avoid unplanned outages and extend time between outages

- Your phone call.
- On-site measurement.
- Design of components.
- Fabrication.
- Coating process.
- Ready for installation.

Advantages

- Metallurgical bond.
- High carbide loading.
- No check cracks or porosity.
- Resists chipping and spalling.
- Insurance against catastrophic failures.
- Complex geometry components.
- Reduced weight.
- Geometry control and flexibility.

THE CHALLENGE

Allegheny Power's Harrison Station was suffering from repeated erosion problems with its ID fans. The liners being used were unpredictably failing, causing a loss in power generation and significant damage to the fan.

THE RESULT

There was no question about Conformal Clad's ability to withstand the erosive effects of an aggressive fly ash environment, because our tungsten carbide cladding is metallurgically bonded to a steel substrate, and is porous free. However, in previous applications, the cladding was applied to separate nose and center plate liners. This meant that the highly vulnerable junction seam was protected by inferior weld overlay.

In response, Kennametal developed a one-piece liner that completely eliminated the weak point of the weld seam. Our cladded liners were installed on two ID fans, and they operated for over 3 years before being replaced. The best performance this utility has received from liners using alternative materials was 3 months.

In another innovative move, Kennametal tackled the problem of the weight of wear-resistant liners. Even though our cladding weighs barely 7% of that of equivalent amounts of erosion resistance in chrome carbide weld overlay, the traditional substrate material adds significantly to the weight of the liner. So, we developed a revolutionary "thin wall" design that addresses the critical need for maximum protection at reduced weight. Using the same proven cladding on thinner substrate material, Kennametal provides the same protection as previous liners, but reduces the overall weight of the protective plates by up to 50%.

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