

Case Study:

Protective Relay Maintenance Testing



Scheduled preventive maintenance for this aluminum mill revealed a potentially damaging situation.

Objective

- Perform scheduled preventive maintenance.

Solutions

- Performed cleaning, visual inspection, and electrical testing to ensure proper performance of the protection power equipment.
- Discovered a defective electrical mechanical relay.
- Arranged a time with the customer to return to the site to commission and test the new relay.

Results/Benefits

- The customer prevented a potentially catastrophic failure of their equipment.
- Equipment and operators continue to work in a safe environment.
- Customer gained more appreciation of the need for scheduled preventive maintenance.

Background

The Quad Plus team was called out to this aluminum mill to perform scheduled preventive maintenance of their protection power equipment. The mill purchases mostly recycled materials from various suppliers to produce coils of aluminum alloys that are then sold to their customers who produce automobiles, cans, building materials, and more.

During the execution of the preventive maintenance service, the team discovered a defective electrical mechanical relay on the B-phase of their hot mill stand protection scheme. The relay would not trip the circuit breaker if a fault was on the B-phase. The failure to trip could lead to catastrophic equipment failure or injury to personnel.

Quad Plus Solution

The team concluded that replacing the relay was necessary to ensure proper trip functionality. We made a plan with the customer to return to the site to commission and test the new relay on the B-phase.

This event highlighted the need for scheduled preventive inspections, including protective relay maintenance testing. Without this type of proactive attention, the alternative is to simply wait for a breakdown. The result is almost always unscheduled, disruptive downtime, and serious injuries to operators can result from this type of failure. Safely completing repairs on your own schedule is always the better alternative.



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