

Circuit Breaker Maintenance and Repair:

One of the frequent and critical maintenance activities observed was the servicing and repair of circuit breakers. These devices play a vital role in managing electrical power flow, ensuring operational continuity, and providing protection to both equipment and personnel during electrical faults such as short circuits, overloads, or insulation

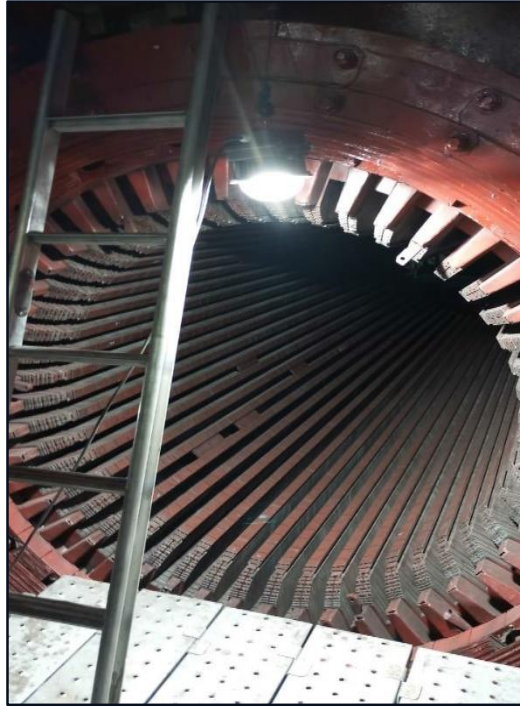
**Coal Mill Maintenance and Decoupling Operation**

Coal mill section of the plant, their important maintenance activity involving the decoupling of the motor from the gearbox unit. The coal mill plays a critical role in pulverizing raw coal into fine powder, which is then fed into the boiler for combustion. To ensure uninterrupted performance, routine maintenance of the drive system—including the motor, gearbox, and coupling—is essential. In this instance, abnormal noise and increased vibration levels were reported from one of the coal mills, indicating a potential misalignment or wear in the gearbox assembly. As a first step, the maintenance team performed a “decoupling” procedure — this involves physically disconnecting the motor shaft from the gearbox input shaft. Decoupling allows independent inspection and testing of each component without any mechanical load transfer.



Generator Overhaul and Stator Rotor Maintenance in Unit 9(Special Case)

The Unit 9 generator is a high-capacity, three-phase, synchronous generator directly coupled to the steam turbine

***Motor Driven Boiler Feed Pump: Unit 6***

This pump is responsible for supplying high-pressure water to the boiler drum, making it an essential part of the feedwater system in a thermal power plant. The maintenance was part of the plant's regular schedule to ensure continued performance, reliability, and to avoid any unplanned downtime. The work began with isolating the BFP from the system and ensuring safety through standard lockout-tagout (LOTO) procedures.

***Circuit Breaker Testing in Switchgear – Unit 5***

SF₆ circuit breakers are commonly used in high-voltage power systems due to their superior arc-quenching and insulation properties. The testing activity was part of the plant's preventive maintenance plan to ensure the reliable operation of the breaker, which plays a critical role in protecting transformers, generators, and busbars from fault conditions.



Air Preheater of Unit 5 and Observation of SAC-Controlled Operation

The Air Preheater is a regenerative heat exchanger designed to recover heat from the boiler flue gas and use it to preheat the incoming combustion air. This significantly improves boiler efficiency, reduces fuel consumption, and minimizes thermal stress on the furnace. The APH in Unit 5 was a rotary-type regenerative air preheater. We observed its construction, which includes rotating baskets filled with heat-absorbing elements. These baskets slowly rotate between two air streams: hot flue gas and cold air. As the baskets rotate, they absorb heat from the outgoing flue gas and transfer it to the incoming air.



Silica Gel Coal Mill – Unit7 (Ball Mill Type)



Conclusion:

Two special cases greatly enhanced our learning: the overhaul of the Boiler Condenser Water Pump (BCWP), where we witnessed insulation testing and mechanical reassembly; and a serious generator fault in Unit 9 caused by stator bar water leakage, leading to a Y-phase and later B-phase earth fault. The extensive repair work in Unit 9 highlighted the importance of timely diagnostics and the consequences of insulation failure in generator systems.

Beyond technical knowledge, the internship taught us the value of teamwork, discipline, and clear communication in an industrial environment. The support and guidance provided by senior engineers, junior engineers, and maintenance staff played a vital role in shaping our understanding and building confidence in applying our engineering knowledge in the field.

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