edgeSV

NTEK SYSTEM

USE CASE

Environmental Auxiliary Equipment

SV500 by NTEK SYSTEM | ESA-Based Motor & VFD Predictive Maintenance

OVERVIEW

Desulfurization slurry pumps, dust-collector and baghouse fans, and denitrification auxiliaries run continuously with the main plant. SV500 uses electrical signature analysis (ESA) to track current and load per pump or fan and screen for clogging, wear and aging.

PROBLEM

Environmental auxiliaries are tied to the main plant and easily become monitoring blind spots.

Key challenges:

- **Linked to main plant** — Desulfurization, dust-collection and denitrification auxiliaries are linked to the main plant, so faults can affect operation.
- **Monitoring blind spots** — Auxiliaries are easily left out of condition monitoring, so changes and events need continuous recording.

EXPECTED OUTCOMES

Screening auxiliary fault candidates early lets crews inspect them first in planned outages.

Expected benefits:

- **Keeps availability up** — Screens inspection targets before equipment stops.
- **Unified with main plant** — Side-by-side views help decide crew deployment.
- **Data-driven priorities** — Compares health grades on one basis to set inspection order.

TARGET EQUIPMENT

Slurry pumps | Dust collector fans | Denitrification motors | VFDs

SOLUTION

SV500 measures current and load separately for each pump, fan and motor.

How SV500 diagnoses:

- **Slurry pump load** — Compares current and power for similar slurry concentration and flow. Load rises with concentration, so process data is needed to separate it from wear.
- **Dust collector fan** — Compares fan motor current at the same speed and differential pressure. Baghouse clogging shows with rising pressure, so check the gauge too.
- **Auxiliary motor aging** — Normal load differs by unit, so SV500 keeps a separate baseline for each rather than one shared standard.
- **Adaptive thresholds** — Machine learning learns each asset's normal condition and judges its status with load-dependent adaptive thresholds, rather than fixed limits.
- **Web dashboard and integration** — Check diagnostic status in real time on the device's built-in web dashboard without a site visit, and connect to higher-level systems such as BMS or SCADA over Modbus TCP/RTU. Additional interfaces such as MQTT depend on the project configuration.

SUMMARY

SV500 meters slurry pumps, dust-collector fans and denitrification motors separately against per-unit baselines. Emissions, reagent state, filter pressure drop and slurry properties must be judged with process measurements.

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