UptimeAI

CASE STUDY

CUSTOMER PROFILE

Industry
Power Generation

Company
Major APAC Power Company

Initial Asset Focus
BOP ACW Pumps

Total Value
~$300K (initial scope)

MAINTENANCE OPTIMIZATION AGENT IDENTIFIES ~$300K IN COAL POWER PLANT CM & PM COST SAVINGS

AI-powered PM optimization dynamically right-sizes maintenance intervals using real work history and sensor data — replacing static class-level strategies with asset-specific recommendations synced live to the CMMS.

The Challenge: Generic PM Strategies Start and Stay Suboptimal

At one of Asia Pacific's largest coal power plants, the PM program strategy was defined at the equipment class level and rarely revisited. All ACW pumps got a 90-day oil check. All bearings were replaced every two years. When the site did revisit the strategy, it required weeks of reliability and maintenance expert time. They would manually pull work history records, old failure reports, and relevant process data. There was so much activation energy required to initiate a PM strategy re-evaluation project that it was always put on the backburner.

The Solution: Dynamic Optimization, Unique to Every Asset

By automatically evaluating existing strategies against current and historical operations and work history data UptimeAI's Maintenance Optimization Agent eliminated this activation energy. The agent mirrors the asset hierarchy to match the existing work management system, then paretos out the assets with highest potential PM & CM cost savings.

For this customer, ACW Pump-1A proved to be ripe for PM optimization. The agent analyzed the full PM and CM history using statistical methods like Crow-AMSAA and Weibull to determine whether failure patterns were wear-out or infant mortality, then generated a ranked set of specific, implementable recommendations — four distinct types in a single view:

- Increase frequency where the PM-to-CM ratio was out of sync — doing more preventative work to reduce corrective costs that outweigh the PM spend increase.
- Decrease frequency where zero CM events in the window confirmed safe interval extension, recovering maintenance hours without added risk.
- Add new activities where recurring failures had no existing PM to address them — auto-drafting the procedure and checkpoints for direct CMMS import.
- Remove time-based tasks entirely where live sensor data confirmed condition-based monitoring was already available, eliminating redundant calendar-driven work.

Approved recommendations were synched live to their CMMS (SAP), without the need for manual entry. The agent also flagged PMs that were regulatory requirements locking them from the optimization.

CASE STUDY

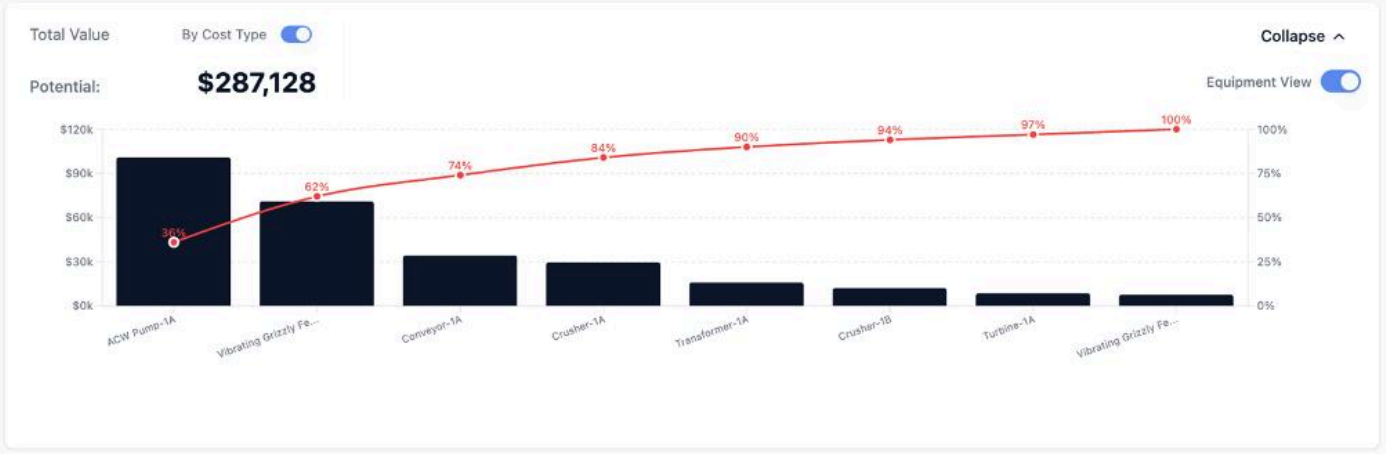
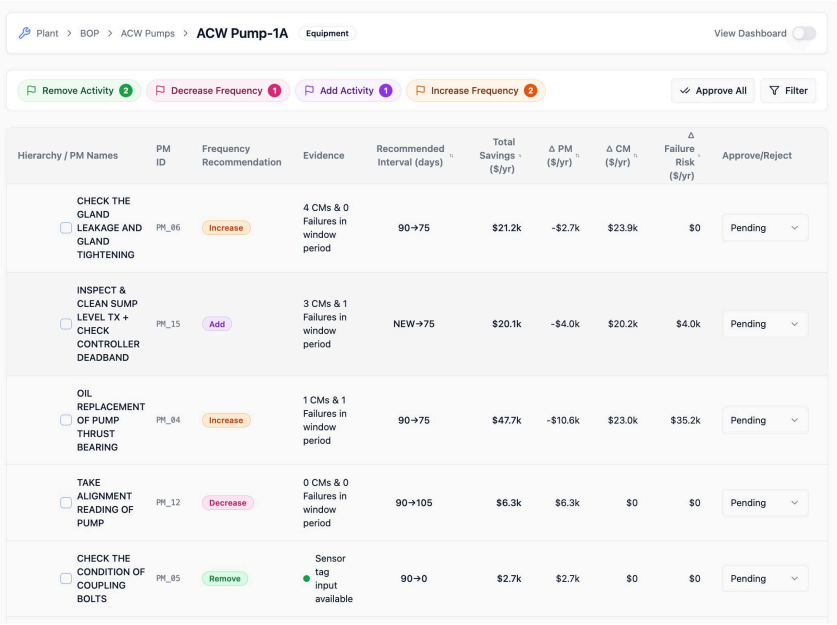


Image: A pareto chart shows the ranked cost savings of the power plant unit operations.

The Impact: From 1 ACW Pump to a Site-wide PM Strategy Optimization

After Maintenance Optimization Agent identified ~$100k in potential savings across a single ACW pump, the site was eager to see where else they could make a dent in their maintenance expenses. The program was further extended identifying cost savings of nearly $300k.



Quantifiable Gains

- $98k+ savings identified on ACW Pump-1A, across 5 PM interval adjustment recommendations
- $48k/yr from a single thrust bearing oil change interval increase (90→75 days)
- $58k/yr safely recovered through PM interval extensions on PMs with little to no failure or CM history in interval duration
- 1 new PM added with auto-drafted procedure and checkpoints, ready for direct CMMS import
- 1 PM removed entirely by shifting coupling checks to condition-based using live sensor data

Transformational Results

- Dynamic, asset-specific intervals replaced static class-level PM strategies that hadn't been revisited in years
- PM-to-CM ratio analysis made accessible to all maintenance & reliability teammates, no statistics degree required
- Condition-based maintenance enabled where data was available, eliminating time-based PMs
- Live CMMS sync approved changes pushed directly to SAP, eliminating manual re-entry
- Regulatory lock-out ensures compliance-required tasks so they are never incorrectly optimized

About UptimeAI

UptimeAI provides AI reasoning agents that help industrial operations teams make goal-oriented, real-time optimal decisions. Our solutions achieve 90%+ pilot-to-production success rates and are trusted by leading companies in cement, oil & gas, power generation, chemicals, and metals industries. Backed by industry leaders including ABB, Yokogawa, and Mitsubishi.

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