



Digitally transforming preventative maintenance operations to increase productivity, reduce costs

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How the Largest Nuclear-Generating Site in the U.S. Saved Millions of Dollars by Improving Asset Performance and Lowering Maintenance Costs — without Compromising Safety

OVERVIEW

Palo Verde, the largest nuclear-generating site in the U.S., digitally transformed its operations by implementing cost-effective maintenance strategies. Uptake's Compass application helped reduce the number of annual working hours spent on preventive and corrective maintenance by 37% while improving overall capacity factor, resulting in \$10 million of annual cost savings.

CHALLENGE

MACRO VIEW

The wholesale power industry is in a fight for its life. All generation sources today face competitive markets that demand lower and lower prices, even for regulated utilities. They are challenged with needing to run more economical operations and realize new efficiencies to boost productivity. In the nuclear space, where the capacity factor is already at a record high, the industry is forced to produce energy at a lower cost without sacrificing safety.

MICRO VIEW

Palo Verde faced the challenge of reducing its overall maintenance overhead while keeping equipment failures at minimal levels across its three-unit facility. To achieve these outcomes, the nuclear power plant needed to easily monitor the effectiveness of its preventive maintenance program by measuring labor, cost changes and equipment degradation over time.

SOLUTION

Previously, Palo Verde's approach to setting and managing its preventive maintenance schedules was based on standard recommendations provided by Original Equipment Manufacturers (OEMs) for the nuclear industry. This strategy was limiting and problematic because it relied on blanket maintenance guidance and was not cost-effective.



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Running the largest nuclear-generating station in the U.S. can be challenging from a maintenance perspective, no other product I've ever seen in the industry can even come close to Uptake.

JOHN LANGSKOV

Section Leader of PM Programs
Palo Verde

Palo Verde selected Uptake's Compass application for its ability to inform and financially optimize maintenance strategies. Powered by Uptake's Asset Strategy Library® — the world's largest database of industrial equipment types, failure modes and maintenance tasks — Uptake Compass provides data-backed recommendations on how to optimize maintenance programs to increase the effectiveness of repairs, decrease maintenance costs, and improve the uptime and reliability of assets based on their specific conditions.

Using Uptake Compass, Palo Verde implemented maintenance strategies that increased operational safety, improved power production and generated significant cost savings. Uptake Compass facilitated this by either eliminating or extending the frequency of non cost-effective preventive maintenance tasks or implementing new tasks that reduced the overall cost, resulting in increases in production and operational safety. These strategies ensured the nuclear power plant delivered the required amount of equipment reliability at the minimum cost. Uptake Compass enabled Palo Verde to evaluate:

- Specific equipment failure modes
- Maintenance that can be applied to address those failure modes
- Risk in performing or not performing specified maintenance
- Maintenance effectiveness in terms of cost and expected equipment reliability, measured by expected economic value

OUTCOME & RESULTS

37%

reduction of the number of annual working hours spent on preventive and corrective maintenance.

Uptake Compass empowered Palo Verde to digitally transform its operations by implementing a financially optimized maintenance strategy. The plant was able to:

- Use worker hours more efficiently and effectively by identifying and prioritizing high-reliability-impact maintenance decisions
- Increase equipment availability and reliability, decrease the risk of failure and ensure safety
- Execute cost-effective maintenance decisions — and eliminate unnecessary maintenance activities — to support continuous, reliable power production

\$10M

realized in annual cost savings, representing a 20% cost reduction

Uptake Compass delivered actionable insights and recommendations that enabled Palo Verde to achieve measurable business results. Specifically, the application led to:

- Reduce the number of annual working hours spent on preventive and corrective maintenance by 37%
- Realize \$10 million in annual cost savings, representing a 20% cost reduction
- Improve its overall capacity factor and set a new record for power production