FINANCIALLY OPTIMIZED MAINTENANCE STRATEGIES TO MAXIMIZE EQUIPMENT RELIABILITY, MINIMIZE COSTS

How a Major Nuclear Plant Saved Half a Million Dollars in Annual Maintenance Costs by Increasing Asset Reliability and Reducing Labor Needs — without Putting Safety at Risk

OVERVIEW

$553,900

In annual cost savings as a result of an implementation of a Value Based Maintenance program.

One of the 25 largest nuclear power plants in the U.S. faced the challenge of performing critical maintenance when demand at its facility exceeded available resources. Uptake's Asset IO application not only solved the shortage problem, it also helped the plant implement an innovative maintenance strategy that resulted in $553,900 of total annualized cost savings.

CHALLENGE

MACRO VIEW

The dynamics of the wholesale power generation industry are changing at an unprecedented rate. Today's generation sources are struggling to survive in a fiercely competitive market where the ability to deliver energy at the lowest price is a matter of survival.

In the nuclear sector, where capacity factor is at a record high, plants are being forced to produce energy at ever-lower costs without compromising safety.

MICRO VIEW

A major nuclear plant needed to solve a critical shortage at one of its facilities where demand for maintenance exceeded available resources. The plant was in search of a way to effectively solve this challenge by reducing resource demand while simultaneously ensuring the safety and reliability of its operations.

SOLUTION

The nuclear plant's previous approach was to tackle single preventive maintenance tasks at a time — reviewing upcoming refueling outages, and then planning and scheduling its work execution.

The plant selected Uptake's Asset IO application for its ability to inform and implement innovative financially optimized maintenance strategies. Powered by Uptake's Asset Strategy Library™ — the world's largest database of industrial equipment types, failure modes and maintenance tasks — Asset IO provided 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 Asset IO the nuclear plant established a more holistic, data-driven strategy by implementing a financially optimized maintenance program that delivered the required amount of equipment reliability at the minimum cost.

By applying this methodology, Asset IO surfaced trends in the plant's overall asset data and identified three key component types as being top candidates for realizing labor and cost reductions:

- **Low voltage breakers.**
- **Electro-pneumatic relays.**
- **Air-operated valve actuators.**

OUTCOMES & RESULTS

Asset IO provided the nuclear plant with data-backed insights that yielded measurable business outcomes. The application reviewed and analyzed strategies for more than 600 component types and developed alternative maintenance strategies to maintain or improve existing reliability — all while reducing labor demand and costs.

In terms of business impact and quantifiable results, Asset IO delivered the following annualized savings for the nuclear plant:

1660
Worker hour savings

$187K
of material cost savings

$313K
of production losses avoided

$553K
in total annualized cost savings