

REDUCING OPERATING COST AND IMPROVING SAFETY

BACKGROUND

Operating and maintaining a safe nuclear power plant starts with documenting all incidents. The hazard from a spilled cup of coffee, a pump or valve starting to leak, a gauge not registering properly, catastrophic equipment failure or leaking radiation are all part of the mix. The respective operators within all areas of the plant use the Corrective Action Program report (CAP) to render the information. Given the high number of events covered in this report, tens of thousands of CAP reports are generated every year by each nuclear power plant.

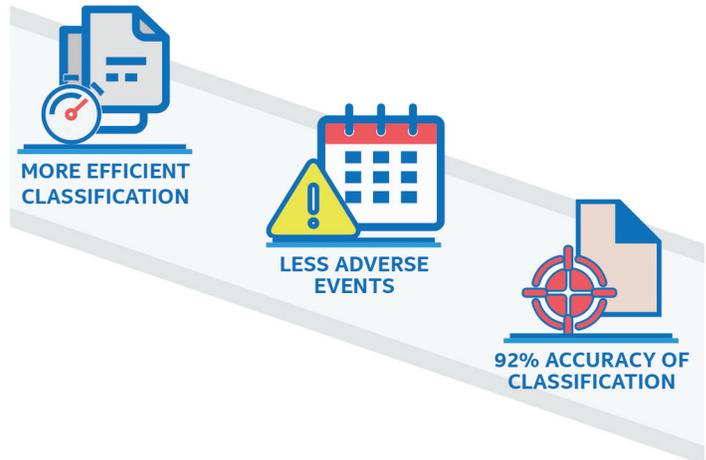
CHALLENGE

To ensure safe operation of the nuclear plant, the Institute of Nuclear Power Operations sets the performance objectives and defines the criteria (PO&C) to meet those objectives. The plant personnel manually compare each line item in the CAP report against the PO&C to evaluate the seriousness of the event. A spilled cup of coffee in the wrong place might not be too serious, while a critical pump leaking that has the potential to shut down the plant is another matter entirely. This manual process of classifying the seriousness of each item in a CAP report lies at the heart of the continuous effort to improve the safety and operation of the nuclear power plant, but requires significant time and resources.

A service company managing U.S. plant operations needed a way to automate the classification process to increase its efficiency and to extract information from years of reported events to better understand their causes and anticipate possible adverse events.

SOLUTION

As operators create each CAP report, Intel® Saffron Memory Base™ automatically applies the attributes of all PO&C objectives to each line item within the CAP report and then suggests an appropriate classification.



An experienced operator reviews each Intel® Saffron™ Cognitive Solution recommendation to confirm the recommendation or to change it. The validated report then becomes part of Saffron Memory Base. These reports provide input to the Saffron Memory Base to continuously improve and remember which variables impacted each classification decision. Not only does the Saffron Cognitive Solution continuously learn from new CAP reports, it also implements this learning to prior CAP report classifications to ensure that the most advanced knowledge is applied retrospectively.

RESULT

The Saffron Cognitive Solution automatically classified 18,000 CAP items (sample dataset). Out of

the box, the solution had a 92% accuracy rate with only 18 false positives and 15 false negatives against this data set. The solution also immediately corrected previously misclassified data records.

In addition to drastically improving the efficiency of the classification process, the Saffron Cognitive Solution allowed plant operators to see relationships between events and their root causes, as well as have immediate access to converging, trending or repeating patterns. As a result, operators can now easily identify and eliminate causes of adverse events and improve the safety of plant operations.

WHY SAFFRON COGNITIVE SOLUTIONS



Unprecedented Accuracy

Provides customers with the highest degree of data accuracy—the proof is in our results.



Speed-to-insight

Provides customers faster speed-to-insight to quickly see the actionable knowledge in their data.



Full Transparency

Gives customers the explanation and reasoning behind the results of their data.



Model-free and rule-free

Dynamic and not constrained by rules and models—incrementally learns and adapts in real-time from incoming data and human



Learns on Sparse Data

Learns on sparse data so customers don't need volumes of data to get started.



High ROI

Proven track record of high ROI for leading enterprises across industries and use cases.



Time-to-value

Customers can rapidly unlock value in their data (i.e., weeks rather than months).

LEARN MORE

To find more information about Intel Saffron Cognitive Solutions, go to www.saffrontech.com.