



# FARRAR'S PREDICTIVE ANALYTICS HELP ELIMINATE \$300 MILLION IN ANNUAL DRUG LOSS

**FARRAR**<sup>™</sup> | **TRANE**  
TECHNOLOGIES

## SITUATION

When a major pharmaceutical manufacturer encountered technical issues on their built-in ultra-low temperature storage freezers, engineers at FARRAR<sup>™</sup>, powered by Trane Technologies, were able to go in and fix the problem – even though they weren't the original freezer equipment manufacturers. Resolving the issue was critical given the \$1 billion value of the new drugs being stored. In just 72 hours, the immediate problem was solved giving facility operators a sense of temporary relief.

It was clear, however, that further challenges still existed. Worse, there was no system in place to better predict those system challenges so they could be resolved before they became big issues and potentially impacted the quality of the drugs.

## SOLUTION

The newly commercialized drug product, a major development for the drug manufacturer, required consistent storage at -40°C. After thoroughly evaluating the current cold storage system, FARRAR engineers made some recommendations. This included adding analytic instrumentation of the existing system to help manage pressure, amperage, cycle time, defrost time, superheat, oil pressure and other critical parameters.

They also recommended a key monitoring-strategy shift. The engineers proposed that the drug manufacturer implement a process to continually evaluate freezer performance. Historically, drug companies have focused on meeting requirements as determined by the FDA which requires only that the drug product, not the storage conditions, meet specific criteria.



Manufacturers typically determine whether drugs are properly stored by evaluating the quality of the drug product rather than freezer performance. If the final drug doesn't meet quality specifications, it needs to be disposed of.

FARRAR proposed adding its proprietary Predictive Analytics to the freezers, an approach which would allow the drug manufacturer to monitor freezer performance. These predictive analytics function much like those used in automobiles today. In vehicles, similar systems indicate when fluids are low, or the vehicle's engine needs to be checked. This Predictive Analytics system programmed specifically for freezers would check in multiple times a minute to assess key parameters and alert if anything needs attention.

The drug manufacturer agreed that the recommended monitoring solution added value and helped to provide an additional layer of drug quality protection. FARRAR engineers installed Predictive Analytics, providing the customer with ongoing monitoring and regular reports regarding storage performance.

The Predictive Analytics system regularly monitors temperature, oil pressure, (air) pressure and air flow, uploading the data to the cloud 24/7 for review by FARRAR engineers.

"We're actually measuring the operation of the equipment itself," said Scott Farrar, Chief Technology Officer.

The data is reviewed daily by FARRAR engineers, who alert the customer if it is not trending properly. This process helps the customer plan for drug product relocation if necessary to mitigate loss.

## RESULTS

After installing FARRAR's Predictive Analytics, the customer gained 24/7 direct feedback to help ensure consistent cold storage and better protection of its valuable drug investment.

The monitoring system shifted the checkpoint from the final drug product to the storage system – giving the manufacturer the opportunity to resolve potential issues before they impact final drug quality.

In this case, thanks to the ability to resolve issues before they impact drug quality, the manufacturer prevented an estimated potential drug loss of \$300 million, while also gaining priceless peace of mind.

## LEARN MORE

about FARRAR's Predictive Analytics and other Conditional Preventive Maintenance components and offerings.

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