SmartSights

CASE STUDY | MANUFACTURING

Next-Generation Andon Success Story

COOK MEDICAL

LOCATION
Vandergrift, Pennsylvania

INDUSTRY
Manufacturing

WEBSITE
cookmedical.com

CHAMPION
Jay P. Roling

Cook Medical is an international medical device manufacturing company. The Vandergrift site manufactures three product lines including Doppler Monitor, Pipettes, and Lead Extraction lines. The Doppler Monitor and Lead Extraction manufacturing lines are batch processed; however, the Pipette assembly was converted from batch to continuous flow processing in 2021.

The Business Situation

Batch processing for Pipettes requires redundant equipment to perform duplicate actions simultaneously. Whenever either batch process line has an issue, they are quickly moved to another piece of equipment or line.

Moving the Pipettes from batch processing to continuous processing met the need for quick reaction to unplanned downtime without redundant equipment or lines to move to when unexpected outages occurred. The maintenance team was not initially positioned for the kind of response times that were needed for continuous processing.

Challenges

- Getting Alerts on Equipment Issues, Response Time, and Resolution Time

Solution

- Peer and ABLE

Within four months, it was recognized that whenever a Pipette line went down, it stopped completely, or severely degraded performance leaving operator personnel waiting for repairs. The existing notification system was not designed to enable expeditious response times.

The notification system was a computer system-derived work order and sent an email to the maintenance department, so if the maintenance personnel weren't at a computer, it delayed response and repair. With the old method of notification, assumptions were made that maintenance personnel were aware and had begun working on resolving the issue only to find out later that the issue had not yet been addressed, and the line was still down. Focus then, was on measuring Uptime, Response Time, and Resolution Time.

Uptime
Uptime for the Pipette lines was an issue because of its continuous flow processing, since if one piece of equipment went down, the entire line went down along with wasted personnel time. The Pipette line quickly became the prime candidate for an Andon system.

Response Time
When response time couldn't be seen, it was difficult to know if anything was being done to resolve the issue. It required additional management.

Resolution Time
How long did it take to get it back up and running?

Cook Medical needed to find a solution that offered an array of capabilities including visual notification of an Andon alert with wireless Andon lights, along with real-time displays throughout the facility so that when there was an Andon alert, there was a visible display anywhere within the facility (including all buildings).

The chosen system needed to produce meaningful metrics such as ticket time created, response time, repair time, closure by the repair person and a second closure by the original person who reported it to agree that everything was up and running. Furthermore, it needed to track repairs by asset number, so maintenance personnel would know exactly which piece of equipment they were there to repair in a room full of equipment that looks alike.

The systems had to be smart device-enabled, configurable by someone other than an IT expert, and scalable from the Pipette line to the other lines as they transform to continuous flow processing as well. The solution must be able to be integrated into an Enterprise Resource Planning (ERP) system, CMMS and MES system. In the end, what they were looking for was a solution provider with vision that could handle any future production changes and growth, and SmartSights Peer and ABLE solutions definitely met their robust requirements.

Benefits & ROI

- 75% reduction in Response Time from 19 minutes to 5 minutes, within four months
- Allows employees and management to see equipment condition at-a-glance

"SmartSights is a very powerful system... [and] is going to offset whatever costs you are going to incur... I'd venture to say it's probably one of the easiest implementations I've been part of."

Jay P. Roling
Engineering Manager – Doppler Products, CVI at Cook Vandergrift, Inc.

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> *"SmartSights is a very powerful system, depending upon how you want to implement it, is going to offset whatever costs you are going to incur, but the configurability of it, the support, and their commitment to do everything they could to get it right, those things make SmartSights stand out from other software companies I've dealt with. I'd venture to say it's probably one of the easiest implementations I've been part of."*
>
> ***Jay P. Roling***
> *Engineering Manager – Doppler Products, CVI at Cook Vandergrift, Inc.*

The SmartSights Solution

SmartSights next-gen Andon system, Peer, was configured so that whenever the Pipette line ticket comes up today, so does a visual Andon stack light on the production line and with ABLE the maintenance team can see the exact piece of equipment and location.

"Peer provides both a visual and an audible alert to everyone that a ticket has been created, and a separate sound and separate Andon condition indicates that it is now being responded to and the operator and manager all know it's going to get serviced and when," stated Jay P. Roling, engineering manager – Doppler Products, CVI at Cook Vandergrift, Inc.

"We received the Peer software in June 2022, and we were live the beginning of September 2022 with at panel displays throughout the facility and all enabled smart devices fully configured," recalled Roling. "It wasn't that hard to achieve, and we have a lot of configurations in there. We were running in three months even without the stack lights, but we would have been running with them if they'd been available then. The cost point and cost of ownership is manageable and it's all cloud-hosted so our IT has no direct engagement with the system at all."

"By day two, we started to realize the benefit of implementing Peer. As soon as we were seeing the tickets on the at-panel TVs and hearing the audible alerts, we were realizing the benefit of Peer, the Andon System from SmartSights," said Roling.

"We were already relying on the at-panels and the audibles before the Andon Stack Lights arrived. The smart devices, that's what really triggers action. The fact that the light goes off is really for the operator at that production line to alert them a ticket has been created and that someone from maintenance is going to be coming. It's really for them to know that help is on the way," continued Roling. "In the ABLE view you can see the pictorial view of the stack lights and the production line so if the lights and displays are all green—the floor is clean. If the light did go off then, the piece of equipment would be lit up on the pictorial view in ABLE view."

The Business Impact

Estimating the ROI for the Pipette Andon project and how long that was going to be, they targeted Response Time in the ROI analysis. Response time over a one-year period had been recorded averaging around 24 minutes. The Cook Medical team was hopeful that metric could get to somewhere closer to 10 minutes. When reported at project close-out, they were in the 5-minute response range. That's a 19-minute improvement, which is a 75% reduction in response time. When multiplied by the number of tickets and the downtime of equipment not producing product and the eight employees who are waiting for repair, it added up quickly. When compared to the cost of implementation, ROI was less than four months.

"The biggest change, but perhaps with less tangible benefit was the mindset change to a 'manufacturing first with a sense of urgency'," said Roling. "It's positively influenced the repair times because a lot of the repairs are somewhat staged and ready now with the proper equipment and tools to repair."

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What's Next

Cook Medical is undergoing a building renovation and the Doppler Monitor product line will move away from batch processing to continuous flow process where they will implement a full Andon system with lights, equipment locations and names, as well as asset numbers in the system. This production line will go live in January 2024. The Lead Extraction area will be ready in Spring of 2024, and have Peer, Andon Stack Lights, and ABLE installed.

> *"I have very high regard for SmartSights. The entire transaction activity through implementation and hyper-care on our 'go-live' period of a couple of weeks was incredible. We have no issues here at Cook Medical. It's now become a part of our culture here. It's been a huge shift for us."*

Jay P. Roling

Engineering Manager – Doppler Products,
CVI at Cook Vandergrift, Inc.

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