

## Keeping the Gloss on Maintenance at Johnson Polymer

Written by David J. Wenzell, Johnson Polymer  
Saturday, 01 July 2000 20:14

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### **Plant keeps tight rein on spare parts inventory with EAM/CMMS. Equipment history reports help keep reliability and maintenance operations efficient.**

In enterprise asset management or computerized maintenance management system (EAM/CMMS) is fundamental to running a reliability and maintenance organization in a businesslike manner. Such a system has been keeping us on track since the late 1980s.

Our five facilities in Sturtevant, WI, produce the base polymers used by the SC Johnson family of companies. You'll find them in everything from floor coatings to, very likely, the ink and coating on the article you're reading now. We have 138 operators and staff supported by 10 maintenance technicians who, in turn, can be supplemented with staff from SC Johnson central maintenance.

As an ISO 9000 certified facility and member of the Chemical Manufacturers Association, we always desired to account for our maintenance operation. We had started our own stockroom to provide needed special parts and wanted to track work orders, parts, and other aspects of maintenance. We knew a computerized system would help us more efficiently meet and support our objectives and the regulatory requirements for maintenance integrity.

In the late 1980s, we selected Mainsaver as our EAM/CMMS and, from the get-go, employed the full system, including inventory control, purchasing, work order system, and predictive maintenance. We saved over \$200,000 that first year through consolidating our purchasing power. We were able to demand better pricing and obtain shorter delivery times. In addition, we received savings from the efficiencies such an EAM/CMMS provides.

We have been able to maintain spares at a level that is both sufficient and cost-effective. Reports are generated and requisitions issued whenever quantities drop below a predetermined level. Sufficient stock is available for scheduled projects.

The purchasing module generates purchase orders (PO) for both stocked and nonstocked items, special orders, and services. It tracks open POs and generates a list of those that are past due. When we create a PO, our Finance Department pulls through the information for the accounts payable system, later matching up the PO with the

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vendor invoice.

Our system receives maintenance input, creates work orders, and tracks work in process. It provides a variety of reports, including work status and equipment availability, as well as cost and repair history. This is especially important for creating a maintenance program that's predictive and proactive.

Today we're tracking and performing predictive maintenance on 1300 various reactors, tanks, valves, pumps, and controllers. Each of these is identified in the system with its own equipment number. We track the history on each piece of equipment and can write work orders against all of them. We average 62 work orders a day.

In addition, each of these listed equipment products has many spare parts. In fact, we stock over 4000 unique items in our stockroom and turn this stock 1.3 times per year.

### How our system works

It doesn't happen very often, but let's assume an equipment asset, such as a valve, breaks. First, a work order is written to repair Valve No. 1234. The appropriate spare parts, designated on the spares list, are checked from the stockroom and installed. We know when the failure occurred, what parts were issued, who repaired the valve, and when the problem was corrected.

In addition, we also will determine if the valve is to be disposed of or repaired. If repairable, a new work order is written. The valve is provided the spare parts it needs, as written on that work order, and rebuilt. It then is issued back to stock. Again, we can determine the materials and labor expense of fixing that valve.

Histories are analyzed and used to update the predictive maintenance needs of that valve application and whether it is economical to repair or dispose of such valves. More importantly, though, because of having the right spare parts on hand, when we have a breakdown, we can respond and repair more quickly to keep that line flowing.

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Never having breakdowns or downtime is even better. That's where predictive maintenance comes in, and we count heavily on the EAM/CMMS to assist us. In addition to knowing the history of our equipment, we know the number of hours Valve No. 1234 should operate. We know its efficiencies from our automated processing system. That valve should be able to handle 100 gpm. If its efficiency slacks to 99 gpm, we need to keep an eye on it. Let's assume the line is scheduled to run for another 4 hr. We'll nurse it to avoid a breakdown or slowdown. The second the line stops, we're there to replace or repair that valve.

Our lines run 24/7 and can be in continuous operation for a month or two at a time. That's a maintenance nightmare. On the other hand, we do know when the plant is scheduled for a shutdown. So does the EAM/CMMS and, using it, we know what equipment needs to be updated during that shutdown, based on the tracking and histories of that equipment. We also know what parts are needed so, ahead of time, we order those we don't have and assure all required parts are in stock by shutdown.

For scheduled shutdowns, we quite often will hire two or three people from central maintenance to help our 10 staffers. Again, we know what the workload will be, based on histories of both equipment and labor time. Once that plant stops, we get to work, refurbish the plant in the limited time allotted, and assure that the facility is ready to go when production wants to turn on the switch.

### Reports are vital

It's one thing to collect all the data. It's something else to get it into information that helps us manage. We can track our individual maintenance technician hours, even when nonmaintenance functions such as training or company meetings are attended. We break out that time so it's not allocated to actual maintenance work. We need to know the exact time spent on specific jobs. Knowing how long it takes to replace the typical Valve No. 1234, we know how much time to schedule for replacing 15 of these valves when we have a plant shutdown. We don't want to hire too many or not enough central maintenance help plus we can better schedule our own people.

### A shiny future

We're not standing pat. During the second half of this year, we plan to switch our system from an IBM AS/400 computing platform to one using Microsoft Windows, which is no problem with Mainsaver EAM/CMMS. We're also looking at the web-enabled benefits. For instance, we have a sister plant in Delaware that's now on its own. With enterprise visibility, especially on key, expensive parts, we could increase our stocking power,

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minimizing the redundancy of stocking seldom used parts. We could make both plant maintenance operations more efficient by having even better histories on parts and suppliers.

The slogan of Johnson Polymer is "where solutions surface." We in maintenance also like to think of it as our own for our plants and, in turn, for our customers. **MT**

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