

CONTROL

ASSET MANAGEMENT

CHAMPIONSHIP SEASON

How Potash upgraded its systems, training and instrumentation workforce all at the same time.

by Nancy Bartels

Upgrading a complex system such as a DCS or asset management system is never easy. Even after the corporate approvals, the installation, the dreaded go-live sessions and all the other hassles, there's the problem of training the workforce that is all-too-humanly resistant to change, comfortable with the old systems and, frankly, overwhelmed with all the new technology it's expected to learn more or less on the fly while keeping the plant running efficiently and productively. No wonder many of the best, most exciting innovations found in new systems never are used to their full capability. Who has time to learn all that?

That was the challenge faced by Bob Emery, instrumentation supervisor at Potash Corp.'s Sussex, New Brunswick, Canada, operation. Potash is the world's largest fertilizer company and is responsible for 20% of the global supply of potash.

"In general, our technicians install, configure and maintain equipment, find ways to make it all work better and, in our case, produce the maximum safe tons possible," says Emery. "However, the problem was we had so many technological changes, and they prompted adding so much smart equipment and operating methods that it created a real technological storm for us."

This storm had its roots in Potash's decision to upgrade its old Rosemount R3 distributed control system (DCS) to DeltaV and the Asset Management Suite (AMS) from Emerson Process Management (www.emersonprocess.com). The new systems were part of a \$2.2-billion plant expansion project that left technicians scrambling to keep up with the many new changes.

"The generalist, jack-of-all-trades way we'd organized our technicians in the past wasn't going to work anymore," explained Emery. "In the past, people might learn a few pieces about an application, but no one knew all the tricks, so several technicians might huddle around one problem, and this wasn't very efficient. And no one could master all our new technologies. They might learn some basics, but then they'd forget after not using them for awhile and have to learn again. We wanted to help our guys keep up to speed, and all the new technologies promised a lot, but there was so much coming in that it was very frustrating for many technicians, and our actual installations times and downtime increased. We needed a way to motivate and excite our teams,"

The solution, developed by Emery, came down to two things, specialization and mentoring, which are at the heart of Potash's Champion Concept.

The Doctor Is In

"We looked at each technician's unique strengths with each technology and where their interest lay, and assigned each to learn, know and maintain a specific technology area, so we could learn and find solutions faster overall," explains Emery. "We were going to become like doctors. Some medical cases require the knowledge a specialist can offer. You don't see a general practitioner for a hip replacement."

Take, for example, the ValveLink real-time predictive maintenance software module. "ValveLink was part of the software pack-

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age we purchased with DeltaV, but with the generalist method, no one had the time to learn it. Their time was spent putting out fires,” explains Emery.

Now ValveLink and the whole AMS system have two “champions,” whose job is to know everything there is to know about about them. One of them is instrumentation technician Matt Fenwick. Fenwick also does double-duty as one of two champions for the ValveLink module.

This specialization is crucial because, “We have twice as many valves as we had a few years ago,” explains Emery. “We don’t have time to pull out and service a valve that doesn’t need it. Some can take as long to remove from the line and put back as it would to overhaul them.”

Fenwick adds, “Through AMS ValveLink, we receive messages alerting us to potential issues. The champion’s job is to understand the software and interpret the alert.” Furthermore, when the champion does his weekly valve check, he’s able to pinpoint valves requiring repair that were not scheduled for repair on the old maintenance schedule.

And just how important is that? Emery says, “A failure of those valves would no doubt have taken the plant down. We’re talking about savings of millions of dollars.”

In the summer of 2012 alone, the ValveLink software saved Potash about \$55,000 in valve repairs.

Building Champions

Getting started with the Champion program was not an easy sell, adds Emery. Management had to be convinced to gamble on an unproven, even radical idea. But the technicians themselves were tougher to persuade. They were eager enough to work with the new technology, but they were afraid that if they specialized, they would have problems if they were called out to work with unfamiliar equipment. They also worried that others would get the really interesting, exciting or important tasks, and they would have the leftovers.

“I took the main areas [of responsibility] and divided them between the guys based on who showed particular talent and interest in each type of equipment,” says Emery. “During the first few months, I made adjustments to even out the areas of responsibility and the amount of work each entailed.”

In spite of some bumps and necessary adjustments along the way, “So far, things have been working pretty good,” he explains. “Contrary to what they thought in the beginning, the guys feel better about the job they’re doing. So, when people have enough time to train on and master the new equipment, then they’re able to really take advantage of it and be happy.”

Fenwick adds that under the new system, “You use less time to do each job. You can take more pride in your work, and it gives you a sense of ownership. [There’s a sense of] in-depth ownership. [You’re thinking.] “This is my baby. This is my project.”

Passing It On

The second pillar of the Champion Concept is mentoring. “Men-



HOME OF CHAMPIONS

The Potash Corp. plant in Sussex, New Brunswick, uses the Champion Concept to keep technicians engaged and trained.

toring is crucial. It addressed the concerns the guys had about being called out to work on a piece of equipment for which they were not the champion. It also covers us when the champion is away on vacation or training,” says Emery. “Technicians go out with an area champion on a rotating basis to be mentored in areas in which they are not the champion. They learn the system well enough to handle minor repairs, and everyone understands that the champion is the go-to guy for his area of responsibility.”

Taking Time

The Champion Concept isn’t an overnight success program. Even after the initial training of champions, there’s ongoing learning to keep up with new advances from the vendor.

“Getting the champions lined up was easier than keeping everybody up to snuff with training. There’s the day-to-day training; then there’s the training on new stuff or in-depth training. It’s all about time management,” says Emery. “Be prepared to allow the people time to get into their various disciplines. It’s going to take more time, maybe, than you think. It’s time up front, but it’s time well spent,” he adds.

The Champion Concept has enabled Potash to reap the full benefits of its new systems, not only in valve maintenance, but also in boiler control, DCS management, even in the mundane business of documentation and information access. Emery explains, “We used to have information in binders, in books, in heads and on the floor,” he said. “Now, we have an eRecords management champion, who gathers up all our loop sheets, manuals, calibration records and other information and makes it immediately usable by everyone else through a Microsoft Access database. We can type a tag number into our eRecords and find everything to do with that tag number.”

Emery’s final assessment of the Champion Concept is this: “AMS is a wonderful tool, but combining it with our Champion Concept is what enabled our team to learn and share while achieving efficiency and reducing costs. We are able to consume technology instead of technology consuming us.” ■

Nancy Bartels is Control’s managing editor.