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The Graying Workforce -- Are You Prepared?

Now is the time to capture MRO expertise before it walks out the door.

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By

Your long term maintenance and operations managers are already planning for their retirement -- are you? When they walk out your door, are you prepared to absorb the increased costs of inefficient repairs and operations? The value of twenty five years of experience will become obvious in its absence, and the survival of U.S. manufacturing will be dependent on how this is managed. Downtime is a hidden profit-killer and you only have a very short time to transfer knowledge while the experts are still on your team.

In 2011, the first of the Baby Boomers will turn 65, beginning a wave of retirements that will continue for the next 19 years. As a result, American business faces the prospect of workers exiting at a rate that has never been dealt with before. And when the Boomers leave, they will take a great deal of accumulated knowledge with them. This knowledge exodus will be especially critical on the plant floor where veteran workers have amassed a great deal of expertise about equipment maintenance, repair and operations -- knowledge not contained in books or training manuals.

In many plants, the exodus has already begun because early retirements and buyouts are depleting the maintenance workforce. Replacement workers often do not have the same level of vocational education as the workers they are replacing because most high schools no longer teach courses in the basic trades. As a result, they may be harder to train and require more time to train.

If equipment breaks down before the replacements are up to speed, companies face enormous downtime costs. One estimate places these costs at \$20,000 to \$30,000 per minute. While the older worker could make the repairs quickly -- and do them right -- the replacement typically takes longer, and might not do the repair as well. An interim fix would be to hire retired workers on a part time basis to supplement their retirement income, but this is not a viable solution for the long-term.

This article describes how to facilitate the smooth exchange of knowledge from one generation of maintenance worker to another. The success of this knowledge transfer can be achieved with a comprehensive skills training program that has both internal and external components.

- **Internal:** Establish a culture on the shop floor that encourages apprenticeships, mentoring, and knowledge transfer among employees.
- **External:** Institute a highly-customized training program that is specifically designed for the unique equipment and operations of your facilities.

Capturing & Transferring Knowledge

Today's manufacturing plants are very complex organisms, highly computerized and filled with high tech equipment that controls and runs the production lines. Veteran workers grew up with that plant and learned new skills and knowledge as the plant evolved. Now, they need to pass those skills and knowledge to a new workforce.

To avert a maintenance crisis, organizations face a significant challenge in capturing the accumulated maintenance, repair and operational knowledge of workers before they retire. Companies that capture this knowledge successfully will have a significant competitive advantage in the marketplace.

Two key elements form the backbone of the effort to retain knowledge accumulated by veteran employees. One is setting up skills sharing programs that empower older workers to pass their expertise on to their replacements in a cooperative, non-threatening atmosphere. Second, and of equal importance, is a comprehensive training program to ensure that a competent workforce will be available to keep equipment operating reliably into the future.

While many programs are available to train maintenance and repair workers, the most effective program is one customized around the individual equipment within a facility. It starts by mapping the maintenance requirements of the plant, and then determines what skill sets need to be taught. It amounts to creating a customized needs-based training curriculum.

A critical factor in creating an effective jobs skills training program is to document key roles and activities within an organization by performing a resource assessment. This analysis can evaluate tasks, skills or training needs, but the result should be a detailed matrix that captures the skills, knowledge and abilities required to complete a task or job successfully. Goals of the analysis are:

- Document job roles and responsibilities
- Define skills, knowledge and abilities needed for specific jobs
- Project skills needed for the future
- Develop a plan to close the gaps

Documenting roles and responsibilities in this way provides the basis for selecting and recruiting training candidates and future employees. It can also be the foundation for career progression planning and is best achieved with a cooperative effort between plant managers and human resources managers.

Once job roles and responsibilities have been documented, the knowledge should be captured and preserved for future use. Some innovative ways to do this are to:

- Develop "virtual" mentors consisting of video interviews with senior workers combined with other information about job skills. The expertise contained in this knowledge bank can expand over the years to become a valuable resource for generations of workers.
- Establish apprenticeships that enable veteran workers to train replacement workers through a program that includes both formal product training and traditional mentoring.
- Offer part-time consulting positions to retiring workers, giving them the opportunity to share knowledge without the threat of being replaced.

Studies have shown that using former employees as trainers gives current employees greater confidence in the course content, resulting in more effective learning. Shifting some workers to a

skills sharing arrangement before they retire also helps lessen the impact of a large change in the workforce and encourages buy-in to the training program.

Training can take a variety of forms, but the most effective programs include the involvement of an outside training organization. These professionals can perform an in-depth analysis of a company's specific equipment and maintenance requirements, capture essential knowledge, and develop a custom program tailored to meet these unique maintenance needs.

Besides training, organizations need to have a plan in place to protect their investment by retaining their newly trained workforce. This can be costly, but is less expensive than having to replace employees that have just been trained. Finally, employees may be encouraged to put off retirement for a few years in exchange for attractive benefits such as extended vacation and flexible work hours. In the final analysis, companies with a proactive retention program will have a competitive advantage in the marketplace.

Establish a Skills Sharing Culture

Companies have long realized that workers take valuable knowledge and skills with them when they retire. Many professionals agree that skills training tailored to specific jobs and tasks can help bridge the gap as key personnel leave. The challenge is to design and build learning activities to fill these gaps. One of the most effective ways to solve this problem is to establish a skills sharing program that captures key knowledge accumulated by veteran workers and transfers it to new workers.

Mentoring programs were all the rage several years ago but fell out of favor because workers had little incentive to pass on vital information that could jeopardize their job security. With retirement looming, many of these same workers are now more willing to pass on their job skills.

The key to passing on critical skills knowledge is to establish a culture within the organization that creates an acceptance of sharing knowledge and builds-in support mechanisms to ensure success. Reward, don't punish, mature employees for sharing the knowledge they've gained from all their years of experience. To entice Baby Boomers to become supporters of knowledge transfer, organizations should reward and recognize them for their contributions. Most importantly, don't replace these veterans before they retire, or employees will quickly conclude that becoming a trainer is a bad idea.

Operational Excellence Requires Dedicated Training

To make a difference in an organization, skills sharing must be supported with a highly-customized product training program. The very best training programs focus on specific knowledge of equipment operation not necessarily found in textbooks -- knowledge based on experience, such as the sounds a bearing, belt or gear makes before it fails. This kind of formal training process can provide technical training on individual systems, components and equipment.

The goal of a training program is to create a maintenance workforce that is trained and motivated - one that can contribute to the efficiency and productivity of the organization. Training topics can cover maintenance, troubleshooting, component application and failure analysis. Some characteristics of an effective training program include:

- Information on how to safely repair and maintain production equipment
- Product information about the components in use at a facility

- A combination of lecture with hands-on training
- Technical documentation and reference materials
- Highly qualified instructors who are experts in their fields
- Pre- and post-course assessments to evaluate the knowledge gained
- No manufacturer bias

At the minimum, a formal training program should provide a basic understanding of hydraulics, pneumatics, power transmission, machine control and maintenance engineering. Unfortunately, some programs available today emphasize advanced technology to the detriment of these basic principles, which are critical to ongoing plant operations.

To fill the gap, some industrial equipment suppliers have established a training curriculum to help customers train new and existing personnel. For example, Applied Industrial Technologies offers MaintenancePro, a training service that will customize course content to address the specific maintenance requirements of the equipment in a company's plant.

Conclusion

Companies face a serious lack of skilled workers that will only grow worse as Baby Boomers reach retirement age. Establishing a knowledge transfer program, and supporting it with a dedicated skills training curriculum, will preserve valuable expertise while easing the transition to a new workforce. Companies with the foresight to plan for the future will have a leg up on the competition in attracting and retaining highly skilled workers.

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