

# Missed Opportunities

## Equipment Cleaning/Sanitation and the pillars of TPM

### Missed Opportunity Number 1---Improving the Cleaning/Sanitation Process

Many manufacturing organizations shut down equipment periodically to clean and maintain its productive capacity. In particular, the food producing industry has a mandate from one or more external agencies of the government to sanitize the machinery to insure product safety. When observing this sanitizing process we note a great deal of intense activity occurring in a short time. After all, the unstated goal is to clean it thoroughly and return it to production as fast as possible. The hard working cleaning crew is under great pressure to finish in a timely way. Often these diligent folks perform very well without a script. The result is they seldom do things the same way each time and it is possible they may be working much harder than needed to achieve the desired goal- a clean and sanitized set of equipment. This generates the first opportunity.

How does this relate to TPM?

When examining the primary TPM metric of Overall Equipment Effectiveness (OEE) we see Availability as a component. Equipment availability relates to uptime. If we can minimize the downtime we increase uptime and therefore Availability. The opportunity here is to apply the same thinking and analysis that goes into Set-up Reduction. We need to understand the purpose and function of each step of the sanitizing process. Then we can generate a detailed procedure-sort of a choreography of all that needs to happen during the process of cleaning. With this step by step written procedure in hand we can analyze each step and create opportunities to improve. This is exactly analogous to the Pit Crews seen in automobile racing esp. in NASCAR or Indy cars. Everything they do in the pits is organized and planned in great detail. They work extremely hard but there is no wasted motion. Everyone on the team knows in advance what must be done to put the machine, in this case the car, back into production quickly.

### Missed Opportunity Number 2---Discovering “abnormalities” during the Cleaning/Sanitation Process.

One of the Pillars of TPM is the Elimination of Minor Stoppages. These are the annoying “glitches” or “hiccups” in the routine operation of the equipment. Experienced equipment operators know how to compensate for these abnormalities in machine performance. A little tweak here and a bump there and the process is OK. Often the operators are not aware of these compensating tweaks and do not realize they are playing the machine like a piano. These abnormalities happen because there are some little things wrong. Indeed, these are so small that sometimes the highly trained technicians in the maintenance crew miss them when working on the equipment. These techs are so busy with the major issues in the factory they rarely have time to deal with the minor things. They “don’t sweat the small stuff” because they are often overwhelmed with more complex problems.

Interestingly, the folks who clean and sanitize the equipment see these little things but may not understand what happens when these are not repaired. In many cases they have not been trained to recognize the slight play in the shaft or the tiny misalignment of the bearing pillow blocks. The

cleaning team sees the abnormalities because in the process of cleaning a piece of equipment they get up close and personal with it. Some procedures require the cleaners to touch virtually every part of the machine. What an opportunity! It is similar to what happens when we wash and wax the used car we just bought. During the buying process we examined it for major issues. However, when we wash it we discover the small amount of body rot up under the wheel well or the broken link to the side view mirror. None of these would have been a deal breaker but it would have been nice to know them when negotiating the final price.

The specific opportunity here is to provide the cleaning crew with some knowledge of what to look for and a method to report these issues. At that point a more knowledgeable mechanic can assess the issues and perhaps correct the minor problems during the cleaning cycle before they become major line stoppages.

If we address these missed opportunities properly, we may generate better machine performance, increased quality and additional output. Very often this improved performance translates into increased profits.

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