BREAKTHROUGH
Lean Implementation & Training Resource Publication
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TPM (TOTAL PRODUCTIVE MAINTENANCE)

By Harold Chapman

TPM EVENT OUTLINE COMPLETED

In the last issued newsletter, we discussed the first seven steps of the TPM process. In this last issue, we will focus on the final and most crucial step, Continuous Improvement.

THE CRITICAL STEP

The final step in TPM ensures we continually improve our equipment once the event is completed. In this step, we institute the mechanisms to ensure continuous improvement occurs. There are four main outputs from this step; Communication Board, Implementation Plan, Escalation Policy and Downtime Questionnaire.

The Communication Board contains the PM Tracking Sheet, One Point Lessons, Fault Trees, OEE Trend Chart and Completed TPM Task List. This board is located at the equipment for the operators and maintenance personnel to utilize daily.

The Implementation Plan is developed by the team to conduct TPM on "additional or remaining" equipment in the plant. The selection process for the equipment should be based on the Pareto Principle, which is focusing on the 20% of equipment that yields 80% of the problems. The plan should include a timeline for implementation that is strictly adhered to by the plant.

The Escalation Policy is used to ensure the proper focus is given to the equipment in the event downtime occurs. The priority is put on restoring flow as quickly as possible. This policy has strict response time limits that require the team to escalate to the next level. A typical policy will have the Maintenance Technician notified within five minutes and the plant manager within four hours.

Once flow is restored, the Downtime Questionnaire ensures we are "thinking beyond the fix." We find that we are good at repairing problems and moving on to the next fire, but to truly become a world class plant, we must deeply understand what caused the problem to occur and eliminate the cause.

DOWNTIME EVENT QUESTIONS:

- Could this have been caused by incomplete inspection?
- Could this have been caused by dirt or other contamination?
- Could this have been caused by loose fasteners?
- Could this have been caused by improper lubrication?
- Could this have been prevented with a PM?
- Is there a Fault Tree for this issue? Is it needed?
- Can this type of breakdown be predicted and scheduled for replacement prior to breakdown?
- Ask "WHY?" 5 times.

It may not make sense to do a Downtime Questionnaire on every downtime issue in the beginning, so you may decide to set a limit of greater than one hour. However, as those events become less frequent, you should lower your limit until all downtime requires a Downtime Questionnaire.

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VISUAL CONTROLS FOR TPM

As with any Lean implementation effort, we must have a way to check to ensure the process is being followed. The Communication Board developed in Step 8 will serve as our CHECK method. By observing the board, we can tell if the following are being completed:

- TPM Task List: There should be a task list posted for the current date.
- Monthly PM's: The schedule shouldn't be out-of-date, and the items are initialed up to the current date.
- OEE Tracking: The data is current as of the previous day.

If any of these items are lacking, it is a sign of the TPM and PM process not being followed.

TYPICAL TPM RESULTS

We have conducted many TPM events in many different companies with an average of 25% improvement in OEE. It doesn't matter what type of equipment or industry; by engaging the people closest to the equipment in the process of improving the equipment, the gains are substantial.

ADVANCING A TPM CULTURE

By deploying TPM throughout our facility, it opens the door to the next level of maintenance: Reliability Centered Maintenance (RCM). RCM is a more advanced machine-focused approach to increasing the reliability of the equipment. This approach was developed by the airline industry to ensure aircraft were well maintained in their fleets. This approach can only be effective if the machine is already being operated in a TPM environment. Employing RCM prematurely, may give us better Availability, but poor Performance Efficiency will negate the improvement.

Need help with TPM? Learn more about LMSPI's approach to TPM at the all-new LMSPI.com.

Click here to learn more about LMSPI services.

Also, you can see video testimonials from our clients/partners describing their experience with LMSPI in their own words.

Click here to watch video testimonials.

Stay tuned! This is the final issue of the three part series on TPM. Look for special editions coming up addressing a beloved pastime and a modern day parable from a Lean perspective.

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