

12 ways to find time for maintenance

Even in a 24/7 process, look for opportunities to identify openings

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As a maintenance planning and scheduling professional, I am often asked how to schedule maintenance activities when production is 24/7 or 24/6. An important question is whether the 24/7 operation is driven in part by a lack of reliability or if the organization is proactive and actually capacity constrained. In either case, the challenge is finding windows for work with the equipment stopped or shutdown.

What I often find are the following opportunities:

1. Failure to identify smaller windows for work such as product flavor or size changes. In these cases, the sections of process are shut down for allergen cleaning, clean-in-place processes, or physical product size change as examples. These

are often difficult to schedule since operations is running a lot size or specific amount of production. Depending on how they run, they may shorten or extend beyond the anticipated time of the downtime window.

2. Give work to operators: Following on the item above, when flavor changes or cleaning occur, we find maintenance technicians performing operations tasks that should be performed by trained operators. This in turn frees up the maintenance personnel to do maintenance during those windows. This item and the one above are reflections of the item below.

3. Lack of partnership between the operations and maintenance group. I like to say that operations should own the equipment and maintenance owns the capacity of the equipment. If operations expects to meet their requirements with

any level of reliability, then maintenance must be allowed time to ensure that capacity. In a true partnership, operations should do everything possible to meet their production schedule downtime windows so that maintenance can do the work. Operations personnel also have to operate the equipment properly based on standardized work practices.

4. Get the work done right: The maintenance function has the responsibility to ensure the work they do is to a specification or with precision. Shame on us if we work on an asset and once returned to operations, it fails shortly after being placed back into service because of a behavior. We also have the responsibility to do the work in the most efficient and effective manner possible which means properly planned and scheduled, with realistic durations, parts kitted, and the resources standing there at the machine to do the work when it goes down.

5. Make resources available: In the case of a 24/6 window, I often find that ample maintenance resources are not available for scheduling on the down day simply due to shift schedules. It's not unusual to see maintenance working 10-hour shifts Monday thru Thursday and then have overtime required to get them in for work on Saturday and Sunday. While I realize that everyone wants to be home on Saturday and Sunday with the family when they are not in school and so on, unfortunately the maintenance job really requires a different schedule. The challenge for the organization is to provide for the business needs and maintain a work/life balance for the employees.

6. The right focus on preventive maintenance (PM). In addition, maintenance has the obligation to ensure that we don't take down the equipment unnecessarily for PM work. More than 40% of the PM tasks performed add no value and fail to address any likely failure modes of the assets. The majority of PM tasks should be inspections, looking to find the equipment in the act of failing, not failed.

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7. Identify failure: Everyone—engineering, maintenance, operations, and quality—has the responsibility to identify what indicates failure. In many cases, we are shutting down equipment to look for potential failures (the P on the P-F Curve) or failures (the F), when other techniques could determine the potential for failure without shutting the asset down. In addition to predictive technologies such as vibration and infrared analysis, include SCADA system parameters like flow, pressure, temperature, and statistical process charts from the Quality group. Don't forget about the human senses either. There are many more people qualified to use those senses than people qualified to do vibration analysis.

8. Act, don't react: In a number of cases where the operation is 24/7, we find high levels of reactivity driven by the need to make production targets which in turn drives lack of access for maintenance. In those situations, we find the maintenance personnel literally waiting on the next reactive failure. If that is the case, shame on us. There are so many opportunities for improvement (defect elimination, PM optimization, parts kitting, CMMS Bill of Material improvement, and lower priority maintenance work such as rebuilds). The challenge we have is to use all of the labor effectively and that means everyone gets scheduled work.

9. Don't defer PM tasks: When a downtime window appears, there is often temptation to schedule corrective and project work, while deferring proactive PM tasks. While you may get away with this for a short period, it will come back to bite you in the rear end. It's the PM tasks that prevent the reactive cycle of chaos. This is assuming that we are doing the right work from a PM perspective, referring back to Items 6 and 7 above.

10. Failure to take advantage of unplanned downtime for proactive work: When a line or process suddenly stops, there should be schedule ready work (planned, parts kitted, only waiting for downtime and the resources to do the work). It should be the responsibility of the maintenance Supervisor to have a schedule ready job listing literally in their back pocket. When downtime

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appears, send a couple of responders if required, and then, focus the rest of the group on those schedule ready jobs of less or equal duration.

11. Manage the backlog: With a very limited opportunity to perform maintenance work, there has to be a laser focus on the actual work to be planned and scheduled. Therefore, trim the backlog of non-essential “nice to haves” that may end up diverting the resources into less important activities given the critical nature of the downtime windows.

12. Lack of effective coordination between the crafts: Rather than maintenance planning and scheduling, people should view it as maintenance planning, scheduling, and coordination. With short windows to work, it's critical that the

work be well coordinated to ensure effective execution. Think about scaffolding, insulation, mechanical, electrical, painting, and so on.

These 12 items are some of the most common opportunities that I see in planning, scheduling, and coordinating organizations that operate on a 24/7 or 24/6 schedule. Mahatma Gandhi said “The future depends on what you do today.” In the end, the challenge is look beyond the normal approaches for the opportunity to optimize and perform maintenance work. What can you anticipate? $\frac{1}{2}$

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