

Reference letter

Concerning:

Reference Letter – Maintenance Optimization at Mead Johnson

Nijmegen (NL), October 7, 2019.

In the name of Mead Johnson Nutrition, I state that PDM has successfully completed the assignment to optimize our Maintenance department at Nijmegen in 2018-2019.

During this assignment, PDM executed a related project to support us in our efforts to drastically reduce the number of overdue work orders.

The project description is attached to this certificate.

We wish PDM success with their future projects.

Sincerely,



Hector Fajardo
Plant Manager
Mead Johnson Nutrition

Case: Mead Johnson

Backlog Improvement in a Maintenance Organization

Since 2017, infant formula manufacturer Mead Johnson Nutrition is a division of Reckitt Benckiser Group plc, the world's leading consumer health and hygiene company. The company operates in North America, Latin America, Europe, and Asia-Pacific. The Maintenance department of Mead Johnson at Nijmegen is responsible for the infant nutrition plant, with one 'liquid' processing unit and three parallel packaging lines in continuous operation.

BACKGROUND

In 2018, the Maintenance department consisted of team leads, reliability engineers, work planners, and five shifts of mechanics, in total about 30 FTEs. An internal investigation, in the first half of that year, had indicated that more alignment between planning (work planners) and execution (mechanics) was needed, while the team leads would greatly benefit from more coaching. New work processes were defined.

ASSIGNMENT

Mead Johnson asked PDM to support the implementation of these new work processes, since this effort would come on top of the ongoing maintenance activities.

PROJECT APPROACH

In August 2018, PDM started the assignment to implement the new work processes on behalf of Mead Johnson. Since the existing team leads had left for

various reasons, the PDM project manager acted as team lead from the start. In that position he was responsible for managing the department, removing barriers for change, and implementing several improvements.

The most notable improvement was related to the notifications. Following procedure, operators in Production registered malfunctions in the ERP system. Infant nutrition is a delicate product, which means that maintenance often involves additional research into the causes and consequences of production disruptions; to resolve notifications can take quite some time. However, it was too often left to the mechanics to follow up on the notifications. They tended to focus only on the urgent issues and the quick wins. As a result, too many notifications were left untreated.

According to the improved work process, all notifications are now assessed by the work planners, resulting in concrete work orders for the mechanics, which are consistently followed up.

Technical leads

PDM quickly observed that there were communication issues between Production (five shifts) and Maintenance (day shift). Too often additional information was required about the notifications. This information was hard to obtain from the operators working in shifts, which caused delays and uncertainties.

Case: Mead Johnson

PDM proposed to appoint technical leads in the Production department, one per business unit, responsible for the technical condition of the line and for the coordination with the Maintenance department. This person acts as a liaison between the operators and the work planners. PDM supported the recruitment of these technical leads; in the beginning, PDM consultants were deployed in this position.

In the current workflow, a notification remains open in the ERP system until the technical lead has entered the missing information. Employees in Production and Maintenance were explicitly instructed about this way of working.

Backlog team

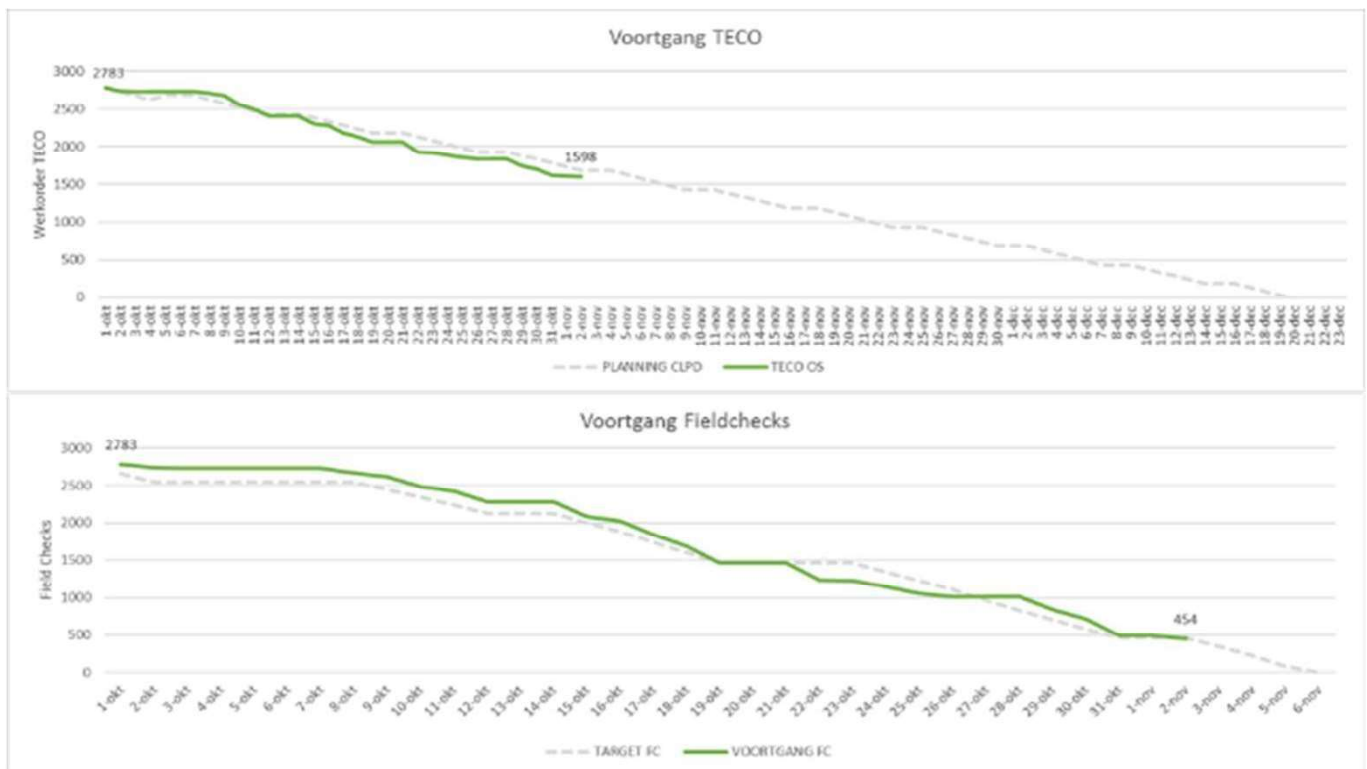
In September 2018, an investigation was carried out into the work orders in the ERP system. It turned out

that a considerable number of 4,000 orders were overdue. To prevent the Maintenance department from being loaded with the effort to complete these orders, PDM set up a backlog team. This 'shadow maintenance department' consisted of five PDM consultants, two engineers, and a work planner, supported by contractors. Each overdue order was assessed and was dealt with immediately or after necessary preparation.

By early January 2019, the number of overdue orders had drastically been reduced (by now, this number has been reduced even further).

Turnaround planning

Another improvement concerned the semi-annual one-week turnarounds for the complete production line. It was observed that these turnarounds were inefficient.



Case: Mead Johnson

Instead, PDM proposed monthly one-day maintenance stops, in turn for each packaging line. For the 'liquid' processing unit there are now bi-monthly two-day maintenance stops. As a result, two packaging lines always remain in operation and it is easier to manage the stops.

Reality is a bit more complex, because sometimes an additional shutdown is required to make structural adjustments in the production facility. As much as possible these stops are combined with planned maintenance, or the stops are extended by a few days, or the work is done during regular cleaning activities – anyway, managing the stops is much easier now than it was before.

Additional measures

Several additional measures were taken to further improve the workflows in the Maintenance department. For instance, a workspace was created in the food-grade zone, where most maintenance tasks are performed, in addition to the one outside this protected area. This saves lots of time spend on hygiene. In addition, the 5S methodology was implemented, PDM provided coaching and training courses for the employees, and the department was equipped with additional computers.

More measures were implemented to improve the maintenance performance, the contractor management, and the installation optimization. An additional (day) shift of mechanics was set up, two new team lead were appointed, and a new work planner was recruited.

PROJECT RESULTS

The measures have resulted in an improved Operational Equipment Efficiency: from 25% to 35%. Initially, the majority of the notifications from Production were explained by technical failures. However, after the OEE had improved, technical failures were no longer the most frequent causes. Instead, logistic issues explained most of the notifications. Apparently low technical availability had overshadowed other causes for the low OEE.

The OEE is still relatively low, which can partly be explained by the delicate product that is produced and by complexities in the packaging (various sizes and closures). Still, there is potential for further OEE improvement. That's why PDM has offered its services to support Mead Johnson.

The measures have resulted in a more stable production line with lower risk of malfunctions. Currently, maintenance work has become more efficient, thanks to clear workflows and relevant KPIs. During the assignment, PDM has showed that it can take prompt action by extending the team virtually overnight, especially by setting up the backlog team.

The impact of our work

“PDM took up the assignment on very short notice, easily scaling up to the required level. The PDM employees who analyzed the problem, came up with appropriate solutions. They played an important role in our organization to implement these solutions. The challenges within our operation were thoroughly addressed and with the necessary maturity. Moreover, they introduced the right ideas at the right time. This helped us to improve our plant results.”

Fred Wammes – Maintenance Manager – Mead Johnson Nutrition