

## ***Establishing Basic Equipment Conditions***

**Dominion Salt at Mount Maunganui New Zealand** manufactures large quantities of premium pharmaceutical, food and industrial grade **salt**. It is manufactured to meet both the local demand and also to supply its large export market, shipping the product from the Port of Tauranga, a matter of only a few hundred metres away.

Continuing on their Continuous Improvement journey started back in September 2013 with CTPM, the Operational Teams identified the Vacuum Refinery Robot Palletising stoppages as a major source of Overall Equipment Effectiveness (OEE) losses and Operator frustrations. The salty environment in the Robot Palletising Area is very harsh on the equipment.

To address the issue a Cross-functional Team was established to analyse losses and address some of the root causes. In addition it was recognised that **maintaining Basic Equipment Conditions**:

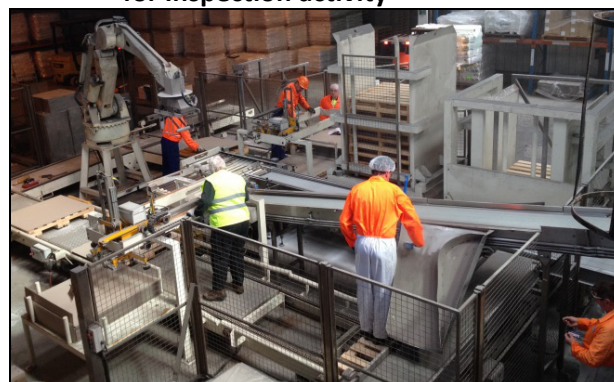
- Contamination free;
- Perfect Lubrication; and
- No Looseness;

was critical for a smooth operation. As a result the Phoenix and Saline Solutions Area Based Teams were charged with implementing **Operator Equipment Management Step 1 (OEM-1)** in the Robot Palletising Area, with the aim to restore equipment to its “ideal” state by establishing Basic Equipment Conditions through regular Clean for Inspection activities to address Equipment Defects.

After the OEM-1 Kick-off workshop earlier in the week, the teams assembled for their initial Clean for Inspection activity. Armed with

cleaning solvents, rags, brushes, scrappers and vacuum cleaners the teams set about cleaning and trying to identify equipment defects.

**Figure 1: The teams undertaking their initial Clean for Inspection activity**



Supported by the Cross-functional Team they were able to clean the equipment, identify and tag some 33 defects, as well as repair the 8 that were identified on the day. They also highlighted many of the difficult to access areas and several operational key questions they wanted further training on to improve their understanding of the operation.

**Figure 2: Operators finding defects and recording them on the defect register**



During the Clean for Inspection the team highlighted the potential Sources of Contamination.

They trialled the **safety behaviour observation checklist** to help them ensure they all followed the correct safe methods and used PPE requirements to minimise the risks they were exposed to during the activities.

The teams are now developing Clean, Inspect and Lubricate checklists and procedures for ongoing daily and weekly inspections, having already followed up with their second Clean for Inspection activity.

**Figure 3: Highly corrosive environment caused by salt dust within the Robot Palletising Area**



The joint attack from both the Cross-functional Team and Area Based Teams (OEM-1) to address robot stoppages is sure to help them both achieve their mandate.

Looking ahead the Cross-functional Team has been charged with tackling the reduction of contamination from faulty bag sealing and bag perforations, while the OEM-1 Team will develop cleaning regimes to reduce stoppages associated with the many sensor faults.

CTPM commend their approach and wish them well in further reducing robot stoppages by eliminating losses and maintaining Basic Equipment Conditions to improve machine reliability and extend component life.

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