

The successful maintenance of large-scale slaughter floors

Maintenance within the meat industry

Much has been written about maintenance in many industries and unfortunately its organisation and control is a necessary evil. However, the meat industry is somewhat unique; a typical slaughter floor is washed down with high pressure hoses on a continual basis. The product being processed is rarely uniform — sizes and weights vary considerably between animals and the product being processed often does not stay still. Blood is extremely corrosive and exerts much stress on the surfaces of mechanical systems. Lastly slaughter lines are typically labour intensive and the personnel working on them are often low paid. This coupled with a con-

frontational union-management relationship will mean that equipment is typically not treated well.

What is the cost of downtime?

There are three main costs associated with downtime. The first is attributed to the cost of paying for your labour to do nothing whilst essential equipment is repaired. This is known as the “waiting time” and can be easily quantified.

The second is the cost of “loss of revenue” to the business due to full production not being achieved. This cost will vary between plants and in large networks these losses can be enormous. Given that you are paying for your overheads, direct and indirect labour costs,

regardless of whether you achieve the day’s kill, the business will therefore lose the revenue associated with the sale of the wholesale meat less livestock cost for that particular day.

The last cost associated with downtime relates to the “psychological cost” to both employees and the management alike of the continual disruption. Failing to achieve target kills, having regularly to work overtime, having constantly to reschedule livestock and the general lack of continuity will all wear heavily on a workforce. The cost of this final part is impossible to quantify.

Types of Maintenance

As with downtime, the maintenance procedures available can best be separated into three categories:

- Breakdown Maintenance — here there are no schedules for overhauling or replacing equipment and items are repaired only once they have broken. This is the worst type of maintenance and any well-implemented maintenance regime will minimise such work.

- Preventative Maintenance — in this instance a schedule of overhaul is formulated for key pieces of equipment and these items are overhauled or replaced prior to breakdown.

- Corrective Maintenance — this involves the re-design of badly constructed equipment or systems, which are prone to continual breakdown due to the item being deficient for its purpose.

Best Practice Maintenance Procedures

Setting up a successful maintenance regime is a difficult and time-consuming operation and requires the full support of all levels of management. Each system will be different and there are no hard and fast rules of what must be done. However, the following eight items represent the main procedures, which must be adhered to in order to achieve a reliable slaughter floor.

1. Monitoring and Reporting:

All breakdowns and stoppages of the slaughter chain must be logged with the downtime and the exact cause of failure. Following production, the day’s results must be discussed in detail and failures must be individually assessed and all problems must be addressed to ensure that the same problem could not reoccur.

2. Critical Process Equipment/Services:

All slaughter floor equipment and each task and process must be reviewed to determine which items are critical to continued production. The most common way of achieving this is by duplicating items (e.g. two brisket saws, two



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PLANT AND EQUIPMENT MAINTENANCE

carcase hoists etc.) Where duplication is not possible (or economical), critical spare parts such as electrical contactors or bearings for gear boxes must be kept in stock.

3. Daily Checks and Greasing:

Pre-shift checks of all main components, limit trip switches and equipment must be performed, including the running of all the chains. A component that operated during the previous shift might well have failed due to the previous evening's washdown regime. Routine oiling and greasing of components is of paramount importance on a daily basis. In the meat industry, oil and grease can easily be washed off exposed components and the lack of lubrication will drastically reduce the life of a component.

4. Equipment Register:

Each piece of equipment on site must be identified and logged. Details of bearing types, oil types, manufacturing dates and service history are invaluable. Once a system is in place, the early rumblings of a failing bearing in a gear box will mean a quick check of the database,

which will enable the bearing type and numbers to be identified, ordered and delivered to site before production even finishes.

5. Employee Relations:

A slaughter floor can employ up to 100 people per shift. Cooperation of employees can greatly assist the smooth running of equipment. A destructive employee might actually damage equipment on purpose, whilst a disgruntled employee might stop work for the most minor equipment faults, when he might otherwise have worked through to the break. On the engineering side, it is now relatively inexpensive for a slaughter chain to be linked to a PLC so that each and every chain stoppage is logged and attributed to an individual. At the end of a day (or week), it can be quite easily seen who are the worst offenders.

6. Multi-Skilling:

A highly skilled and motivated engineering team are crucial to the success of a good maintenance programme. Demarcation between trades groups is detrimental and will increase both maintenance costs and downtime costs. Any

meat works must have maintenance engineers, who are just as competent at resolving issues with the slaughter floor grading computer as they are with overhauling a stun gun or a gearbox.

7. Dry Electrics:

Electrical switchboxes pose continuous problems for maintenance. Even the best of the switchboards or switches will at times fail to keep water out. Relocate switchboards to dry areas where possible. This can include the supervisor's office or even the roof void. Where this is not possible, seal all switchboxes with not only the manufacturer's seals but added sealant.

8. Standardisation of components:

The fewer the different makes of component that you have on your site, the less spares you will require and the easier it will be to replace parts.

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