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A Terrible Truth About the True Cost of Failure on Your Company

(or 'What it really costs you when the plant goes down.')

Let a Plant Wellness Way EAM System-of-Reliability End Your Business Risks Forever

If your operation works around the clock and it can sell everything that it can make at good prices, the last thing you want happening is for your plant to go down. Every minute lost producing mean profit is lost. Once the minutes tick by the production that should have been is gone forever, and with it goes the profit that it would have provided.

If the lost time grows into hours, then you have a serious impact on monthly financial performance. No operations manager wants to explain to head office that production was below budget because the equipment failed. Worst still would be if there was more than one major failure or stoppage to report.

Equipment failure that leads to total production loss is obviously a disaster. The costs can be horrendous. Not only are all profits lost but you must pay for everything standing there doing nothing. You still must pay for labour, the staff, employees, casuals, and contractors. You still must pay for the rentals, the leases, the agreements and the hired items. You may have penalty clauses in contracts invoked. You will have to pay for energy losses and inefficiencies on shutdown and start-up. You may lose future contracts when customers hear about the failure. On top of that you still must pay for the repair, whatever that finally costs.

A complete plant shutdown is going to cost you the lost profits plus the total wasted cost of running your operation, plus stop-start loses, plus consequential costs, plus opportunity costs plus the final repair cost. It's clear that you don't ever want a total failure or stoppage in your operation. But what if you have minor failures instead? They do not take you out, but they cut the production rate. How costly are those to your operation?

It is surprising how much even a minor plant failure costs the operation. There is the lost profit from the lost production capacity. To that add the cost of your labour having to do what it was not meant to do. The operators, managers, engineers, and supervisors get involved and lose time at meetings and in discussions that could have been better used elsewhere. There could be waste from product spills to clean-up, that is more time and resources spent doing what they should not have had to do. There will be energy and equipment efficiency losses on shutdown and start-up. There will be time losses stopping, starting and handing-over plant. Administration and finance must process unwanted reports, there will be added purchase orders to handle, there is likely to be added payroll workload, and to all this you still need to add the final cost of the repair.

What the minor failure does is drawn your resources away from what they are paid to do. Now you are paying them to fix things instead of making product that you can sell. The more minor failures and stoppages that you have, the more that your people are drawn away from value-adding or profit-making activities and into work that keeps the place running but does not make any money. In this way you can have a busy operation that doesn't make much profit.

The true cost of failure to your business is far bigger that simply the time, resources and money that goes into the repair. If you have too many failures or downtime incidents you will become

unprofitable. Failures and stoppages are the number one enemy in running a profitable operation. They seem so small, and are so easily dealt with, that you don't notice their cumulative impact on the operation's performance. You need to do everything humanly possible to never have a failure.

A sound way to reduce failure is by doing more preventative maintenance. The definition of maintenance is 'to keep in a fit-for-service condition'. Preventative maintenance stops failures. It is a proactive, failure-reducing activity. Maintenance of the preventative kind is cheap. It is maintenance of the repair kind that is expensive.

Another strategy to reduce the number of failures is to increase training so you make your operators and maintainers more expert. Experts make a lot less errors than do amateurs. Expert golfers go around a golf course in sub 72 par rounds. Amateurs can go around the same course at plus 100. The same logic applies to your workforce – the more expert they are, the more on-par and better-than-par results they will deliver.

Lastly use reliability strategies that reduce failures. Such as design-out, where you identify the root cause of a failure and engineer it out forever. Another strategy to adopt is Failure Mode Effects Analysis (FMEA) during project design. The methodology intentionally asks, "How can this piece of plant fail?" Then it asks, "How can I prevent the failure?" The latest development in the use of FMEA is to include the net present value of the total cost of future failures when making design choices.

While on the drawing board the equipment used in the project is analysed for its total cost of failure. As mentioned above, it is the lost profits, plus the total wasted cost of operation, plus stop-start loses, plus consequential costs, plus lost opportunity costs plus the final repair cost. The questions now become, "If this piece of plant fails what will it cost the business?" along with "How many times can we afford for it to fail and still make a good profit?" Then the question is asked "How do I minimise the total failure costs to the business?"

Known as Design and Operations Cost Totally Optimised Risk it turns FMEA into a true-life cycle profit (LCP) methodology. With a full understanding of the total costs of future equipment failures on the operation, the designer can choose the most reliable equipment, or the equipment with the least total cost-of-failure, and so set you up for many years of successful production performance and profitable operation.

Though your plant is busy, is it making the money that it should be making? The true cost of failure concept explains where much of the profit goes in an operation. What happens when the next industry downturn comes – will you be one of the first to shut-up-shop because your production costs are high? If you want to be more profitable for longer, then adopt the practices and strategies that stop the problems which cause your plant and equipment to fail.

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