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## **Reasons To Replace Equipment**

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Determining when a piece of equipment has reached the end of its useful life cycle in the company's overall reliability strategy can often be difficult if not looked at in the proper perspective. This is especially true in today's business environment where the impetus is placed on the reduction of manufacturing cost and improving overall plant reliability. After all, equipment reliability directly relates to profitability and in the end, overall customer satisfaction - the only true indicator for increasing profitability.

Often the main consideration for the modernization of plant equipment is the capital expenditure. In essence, can we afford new equipment or not, with little or no consideration actually given for lowering life-cycle cost or increasing operational effectiveness much less the capabilities of existing equipment? Buying new equipment may be the quick choice but it may not be the right choice.

So how do we know when equipment has actually reached, or is approaching, the end of its useful life cycle. The key is not the age of existing equipment, but its condition. Plant equipment may be old from the standpoint that it was purchased many years ago. However, most equipment has been continually upgraded and maintained in order to keep up with evolving manufacturing and production requirements. Consideration for replacement should not emphasize the capabilities of the equipment when initially specified and purchased, but its capabilities and reliability in its existing current configuration. With all this taken into account there are but a few actual reasons to change or replace equipment.

First and foremost is safety. This is a "no brainer." When the equipment presents an unacceptable safety risk to the plant, plant personnel or the environment - replace it! In a worse case scenario there could be loss of life or an environment incident. This is not only tragic all by itself, but can have even more catastrophic effects on an organization or even an entire industry. The consequences of choosing not to replace equipment for safety issues can represent not only huge financial losses, but even more important the loss of customer and public confidence. However, even considering a worse case situation, consideration must first be given to the possibility of upgrading the equipment in order to achieve an acceptable safety margin.

Another legitimate reason for replacing equipment is that it is no longer cost effective to maintain. This not only includes any changes in the original features of the equipment but also externally imposed changes such as those required by new governmental legislations (stack emission levels, waste disposal requirements, noise levels, etc.) In addition, maintenance cost associated with maintaining an acceptable equipment reliability level may be far too expensive or the cost and or availability of spare parts could become unacceptable from a business standpoint.

Obviously when the equipment can't meet customer specs it is no longer viable to keep producing. Here the question becomes can the customers' specs be changed. It is not unusual for the customer to ask for product produced to a tighter tolerance than actually required for their intended use. This is like an insurance policy to ensure that the product they purchase will meet their specific requirements. There is nothing wrong with approaching the customer to see if something can be worked out to relieve unnecessarily stringent requirements. Many times the customer does not know, nor intends to make production requirements more difficult for the manufacturer. This is especially true with customers and manufacturers that have long profitable working relationships. Each needs the other and both will typically be sympathetic to the concerns of the other.

The final reason for replacing equipment is that it can't meet production requirements. Every organization in the world is looking for ways to reduce manufacturing costs while at the same time increasing production. When the equipment can't meet production requirements in terms of either throughput or manufacturing cost it should be replaced. Here the caution is not to just buy new equipment, but to do a detailed study of the reliability of the new equipment. There should be a life-cycle reliability strategy developed and adhered to at every stage from initial conception to decommissioning.

The term reliability is no longer just a "buzz word" in the manufacturing sector but a way of life. The strategy of replacing old equipment with new more reliable equipment is certainly within the realm of our new reliability life style provided it is well thought out and makes financial sense.

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