

Developing Supply Chain Strategy for the Success in the Implementation of Maintenance and Preventive Repair at the Kavir Steel Complex

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Abstract- An important issue in preventive maintenance is maintaining the readiness and operational maintenance of equipment, machinery and facilities by using supply chain management strategy. Utilizing the maintenance planning system, while creating the most desirable repair services and adopting the best practices for continuing industry work with maximum efficiency and reducing costs, will increase investment in the industry, in the absence of restrictions on resources and raw materials. To use this system, it is necessary to identify some important and influential factors in its implementation, in order to obtain useful results in its implementation, which is always associated with costs. In this research, it is attempted to investigate some of these important factors in the Kavir Steel Complex Company. In this regard, through the question, a set of views of managers and relevant experts will be examined, and finally, the most important success factors in the implementation of preventive maintenance in the industry will be sought.

Key words- Maintenance and repair, supply chain management, preventive maintenance, Kavir Steel Complex.

1. Introduction

The cost of maintenance and repairs, the bulk of the costs of production are involved. According to the

type of industry surveyed, this cost covers about 15 to 60 percent of the cost of the product produced. Research has shown that about 33 cents per \$ 1 are spent on maintenance and repairs. Related to unnecessary activities in the field of maintenance. Meanwhile, the American industry spends about \$ 200 million annually on maintenance costs for its devices. This means that the proper management of the maintenance process and parsing will save \$ 60 million annually in this area. The Japanese understood the special importance of managing the maintenance process in manufacturing systems. They began designing various maintenance and repair systems, including TPM, and introduced it as one of the world's triple production systems. (1). The note is an abbreviation for maintenance and repair, and in general it can be said that the set of programs and measures to keep equipment at an acceptable level from the point of view of operation (maintenance) or the return of defective equipment to the use and recycling cycle, and the expected result These measures will include preparation, maintenance, operational continuity and continuity of equipment for specified conditions. (2)

Table1. Evolutionary maintenance and repairs

Repair in case of failure	first stage of evolution	1950
Preventive maintenance	second stage of evolution	1960
Scheduled maintenance	Third stage of evolution	1970
Scheduled maintenance Maintenance and productivity improvements Maintenance and utilization of generic productivity Maintenance and utilization based on conditions	Additional stage	1980

Currently, most engineers and managers have a lot of interest in utilizing engineering maintenance knowledge. Nowadays, the maintenance engineering department in industrial units has increasingly used the methods of statistics and mathematics in its planning and has taken the form of knowledge.

Preventive maintenance management system will be able to take on the role of reducing emergency and unplanned maintenance using periodic inspection, scheduling services, providing lubrication and lubrication programs and other preventive inspections. The processing of information resulting from the deployment of this system informs users against the causes of duplicate failures, as disruptions and failures can have the following consequences:

- A. Reduce or stop production
- B. Unemployment of manpower directly or indirectly
- C. Delay or stop other production issues in a production line
- D. Make additional costs
- E. Dissatisfaction and destruction of the morale of technical staff and operation

With regard to the issues mentioned, the significance of this research can be summed up as follows:

- Teaching and providing solutions to executives from executive issues and challenges to the implementation of the system
- Considering important issues affecting the implementation of the system such as culture, structure, human resources, education and ...
- Provide new insights for company growth and development, instead of traditional approaches to facilities and equipment
- Provide appropriate information flow in the maintenance department in order to apply this system
- Create an interest in implementing this system for senior management and review its organization chart in the maintenance department

- Attention to maintenance and repairs when designing and constructing equipment

The existence of a well-equipped and planned maintenance and maintenance system is therefore necessary to ensure continuous control and full knowledge of the conditions and manner of operation of the production unit, building, machinery, etc., and thus provide the most desirable services. Repairing and adopting the best practices to keep industry up to date with maximum efficiency and lower costs. On the other hand, increasing investment in industries and limiting the resources and raw materials required has increased the efficiency and effectiveness of existing facilities with industry owners and managers in the industry. This goal becomes more and more important when it comes to the discussion of the intense industrial competition on the domestic and global markets. Considering the importance of preventative maintenance activities in this project, it has been attempted to find success factors in the process of maintenance and repairs at the factory of the Kavall Steel Complex. For this purpose, the present study seeks to answer the following questions:

1. How much management value is important in the success of maintenance and preventive maintenance?
2. What is the significance of the effectiveness index to the success of preventive maintenance?
3. What is the quality indicator in the success of the implementation of maintenance and preventive maintenance?
4. How energy saving indicator is important in the success of preventive maintenance?
5. How important is maintenance and repair index in the success of preventive maintenance?
6. What training indicator is important in the success of preventive maintenance?
7. What is the health, safety and environmental indicator of how successful is the implementation of preventive maintenance?

2. Research literature

Applying a specific maintenance system to an organization can play a huge role in lowering the finished product cost, but these effects are not limited to the cost and the speed of product delivery across the supply chain, product quality, reliability, agility. The organization and the factors of this kind will also have their own effects, each of which will be of great interest. Hence, one can play an important and influential role in its own strategy, each one of which will be local. Therefore, the important and influential role of different maintenance strategies can be realized on the business of an enterprise. The following is how the interactions between maintenance strategies and business strategies will be addressed. All firms compete with each other in order to compete in the market based on certain priorities related to their capabilities. Maintenance is the integral part of production that can affect these competitive priorities and thus affect the business strategies positively or negatively. For a better understanding of this relationship, first, a short definition of the words of the strategy is mentioned, followed by a business strategy, maintenance and maintenance, and ultimately the interactions between them will be examined. The strategy of a coherent model unifies and unifies decisions and reveals and defines organizational goals. Selects the activities the company should focus on, and it strives to gain a long-term, sustainable advantage in each of its activities. It decides all the hierarchical levels of the company and defines the nature of the non-economic economic partners involved. Therefore, the business strategy is the same as the coherent pattern described above. The focus of all topics will be the business of the organization, which Porter introduces three general and general choices in business-level strategies, including leadership in cost, differentiation and focus. The term maintenance strategy is usually interpreted as a set of policies and maintenance concepts, but in the more restrictive view, these maintenance policies and concepts form one of the main components of maintenance strategy. Other structural components in the definition of maintenance strategy are maintenance and repair capacity, maintenance and repair facilities, maintenance technology and horizontal integration. In the literature of this area, maintenance strategy is

introduced as a coherent and integral model of decision-making in the elements of different strategies in the convergence with production, enterprise, and business-level strategies. Maintenance strategy reveals the goals of the organization and defines the nature of the economic and non-economic functions that it intends to do to the organization in an integrated manner. With these interpretations, the relationship between business and maintenance strategies is grouped into the framework of all tasks performed by an enterprise by five initial activities and four support activities. Initial activities include the determination of internal logistics, processes, external logistics, marketing, sales and services. Support activities include logistics, technology, human resources management and infrastructure of the organization. Subsequently, some authors change the above categories based on new understanding and analysis. For example, in the past, it was often used for maintenance and repair as a production overhead. In the value chain, there was no place for it. However, considering it as a process in the value chain, management can imagine the effects of maintenance and its various strategies on the value chain and business strategy. However, the maintenance and repair process has a critical role in determining the level of competitiveness of an organization. In sum, various analyzes on this process can be considered in four areas of cost, quality, flexibility and delivery capability. Accordingly, some authors have been considered to provide decision-making models for choosing different maintenance strategies or choosing a combination of them. (1)

In this section, the characteristics of a maintenance and repair system (net) in an organization are discussed in the following list. This list can also be used as a checklist for internal system audits and understanding the difference between a privileged web system (3-5).

1- Life cycle cost:

The decision to purchase equipment must be based on two factors of purchase price, plus the cost imposed by the equipment during its economic lifetime, and not on the basis of the purchase price of the equipment, which means that the maintenance and repair specialists in the organization should be able to perform analyzes , Reliability and reliability

of technical systems and their components in the process of purchasing equipment. Also, when shopping, there are factors such as having a complete list of help components, how to use and accurate maps according to the written standards used in the organization, and so on.

2- Focusing on the overall goals of the organization:

In an organization, all operational, engineering, maintenance and repairing factors must move towards the goals of the organization. In a privileged organization, whose most important goal is to compete in terms of reliability and manufacturing costs, these goals should be highlighted in other departments, including the note, in priority to objectives such as reducing maintenance costs and reducing the time spent on net operations. Are located. The result of this approach is a continuous increase in the overall effectiveness of the equipment and, consequently, a reduction in the overall cost of construction.

3- Identify a reliable policy and policy:

A privileged organization has a specific policy that includes three to five year plans for advancement in the reliability and performance of the net. This policy, with all its specifications, including the essential reliability and reliability parameters, their functional and key characteristics, the reasons for their importance, the way of identifying employees from moving to goals, etc., should be communicated and understood throughout the organization. As a result, prioritization of the work will be based on the expediency and policy of the organization.

4- Skilled staff of maintenance and repair:

If the net staffs are highly skilled, there is no need for supervisors and technical managers to spend a lot of time teaching them, and they will be able to devote their time to planning and scheduling tasks, identifying training needs and analyzing the causes of failures. . As a result, the organization becomes a think tank and a problem-solving organization from a passive and reactive organization, and 10 to 30 percent of the operating time of the net will be spent on problem solving and corrective action.

5- Determine the scope of maintenance and repair personnel:

In a privileged organization, the net worker's scope is determined by their type of skill and not by the various production lines, in which case a mechanical technician should be able to perform all mechanical tasks, and an electronic technician also has the result of applying this The approach is to create satisfaction in net staff and flexibility in the work. However, in a given context, considering the type of work, specialization should be considered.

6- High level of planning and scheduling:

Programming and scheduling is one of the most important factors in reducing net costs at each functional level of the Net Organization. For the proper planning and scheduling, consider the following factors:

- Planning must be done before scheduling.
- Everything should be done by scheduling and scheduling.
- After scheduling, allocate staff to carry out activities.
- When executing a scheduled work, they should not be employed to carry out any other work.
- There is no need to take any action until it is clearly stated and reason for doing so.
- Identify the cause of the problem after the end of the work.

7- Prioritization of the works:

In order to prioritize the right things, you must have the ability to consider the consequences of the timely deployment of each net operation. These consequences may include environmental wastes, life-threatening injuries, high costs of reducing production, or damage to equipment. In a factory with different production lines; determining the most important product line in terms of product delivery to the customer and determining the value added of each product can help to prioritize the correct operation of the sheet. Proper and appropriate

prioritization will result in the full and timely implementation of scheduled and scheduled tasks.

8- Understanding the precautionary maintenance and repairs:

In order to provide an accurate understanding of the preventive programs and essential care and the status of the organization in the organization, these programs should be based on the prevention of failure and failure. Also, these types of programs are acceptable if the cost of the failure is far greater than the cost of implementing preventive programs.

Also, accurate and accurate methods should be identified and used for basic inspections and equipment status assessments. It is better to use these types of programs in the state of the equipment's brightness, and the timing of the implementation of these programs will be based on failures and distributions. They should also be fully operational and enforceable.

9- 100% implementation of the program:

If you are able to create an appropriate platform for preventive and critical care programs and technical status checking, you should not have any reason to stop doing these 100%. In the case of a 100% implementation of these programs, the probability of accidental breakdowns will be negligible and the overall effectiveness of the equipment will increase.

10- Timely preparation of materials and spare parts:

If scheduling and planning are done correctly, spare parts warehouse will be able to efficiently and efficiently deliver the spare parts to the place where the note operates. In this case, a significant part of the time of the net operation and the energy of human resources that will be spent on the process of sending the piece request and receiving the piece of the warehouse will be reduced.

11- timely service:

The low level of service for spare parts may not only increase the operating time of the note and the production costs, but also psychologically create the idea among net staff and production that spare parts depot can not provide the right parts at the right time.

In this way, in many factories we see the creation of virtual spare and hidden spare parts warehouses in different units to launch the production process. Of course, in determining the level of service, things like maintenance costs and criticality of a piece should be taken into consideration. But about critical parts of the service level of 97% is essential.

12- Full information about technical archive:

In the case of technical archives in a privileged organization, it must be ensured that at least 95% of the information extracted is correct and complete. Also, technical archives should always be reviewed to keep up-to-date information.

13- Organize and perform the essential basic maintenance and repair operations:

The most important difference between a privileged organization and other network organizations is that the premium organization provides the simple and useful items that other organizations only talk about. If you want to have a privileged organization, you need to continuously work on the basic operation of the note and review and modify your method of doing so. Some of these operations include: the exact cleaning of the equipment; (cleaning itself is a kind of inspection); lubrication; anchoring; fine adjusting and balancing; hydraulic fluid filtration of lubrication systems; sealing and sealing of various parts.

14 - High level of safety standards:

There is a very strong relationship between good and proper operation and increasing the level of safety in an organization. A comprehensive review of the tools and tools used by the security staff for safety issues, before performing net operations and determining the necessary security conditions for any net operations in the form of net instructions and checklist preparation, can help reduce the risk level of the net operation.

15- Accurate training needs assessment for maintenance and repair personnel:

In the case of a precise training needs assessment for Net staff, specific staff training will be identified for each staff member and staff will only attend their specific training classes. In this case, the prevention

of public classes for all employees that is time consuming and can not meet the educational needs completely and do not have the necessary effectiveness. It should be noted that the skill level indicators should be used to determine the effectiveness of the training, and considering the index of the number of hours of training can not be appropriate.

16- Analysis of the main causes of failure:

In a global network organization, there are groups to identify and track the causes of failures. In small organizations, the tasks of these groups are handled by the Net staff among the commonly used note programs. However, in large organizations due to the involvement of equipment, operations, human resources and other factors in the problems encountered, there are reliability groups that use the method of investigating the causes of failure and failures, identify and track the failures and their causes. They do. (6-9).

3. Research plan

The statistical population of this research is all employees in the maintenance department of the Kavir Steel Complex, which has 9 experts selected from among them. The data gathering tool in this research was a questionnaire. The questionnaire was designed based on the Likot spectrum and 34 agents were questioned in 8 groups of management, human resources, planning, quality, energy saving, effectiveness, maintenance and repair, and health and safety and environmental issues (10). Relationships between the variables of the research were tested using the spss software.

3.1. Analysis of research variables

The following factors have been gained through library studies.

Table2. Extracted variables based on library studies

1. Decision making
2. Leadership style
3. Training
4. Participation
5. Motivation
6. Organizational culture
7. Organizational structure
8. Skill
9. Technical knowledge
10. Job position
11. Salaries and benefits
12. Forecasting materials and parts
13. Design of processes
14. Periodic Activities
15. Instructions for the note
16. Failure rate of processes
17. Cost of failure processes
18. The number of defective products entered into the next step
19. Number of requests for warranty after purchase
20. Value of warranty claims after purchase
21. Power consumption
22. Water intake
23. Fuel consumption
24. Availability
25. Degradation Device Devices
26. Number of bugs in the process
27. Reliability
28. Repair performance
29. Number of individual incidents
30. Number of hazardous points identified
31. Number of improvements in hazardous work
32. Number of foreign complaints about puddles
33. Noise level
34. Untreated wastewater

The above factors are located in the following 8 groups

1. Management; 2. Human resources; 3. Planning; 4. Quality; 5. Energy saving 6. Effectiveness; 7. Maintenance and repair; 8. Health and safety and the environment

1. Management

In Net Management, the feedback agent in repair planning can turn the net from static to dynamic. In this way, the operating system always refines past weaknesses by giving feedback on its results. It is understood from the above definition that the failure of any device or system is a random variable that can predict its occurrence and predict its readiness to repair it.

2. Human resources

Today, human resources are considered as the most important strategic factor in the field of organizations; the reason for this is changes that occur at the level of the accelerated environment. In such a very important situation, human resources are more and more visible as designers, processors, operational systems and other resources of the organization. Its quality and management system is the key factor in the growth and improvement of the level of performance of the organizations. Human resources are a strategic resource that achieves the strategic goals of the organization.

3. Planning

If planning is done accurately, only repairs will happen. In the past, repairs indicated that after repairs (emergency repairs), or fire management, but today, the industry is moving forward with more automation of production seeking to eliminate the human factor in the production lines, if The human factor can not be deleted from the notebook.

4. Quality

Quality problems in the process of production and re-workings are the losses and damage caused by the unhealthy functioning of the manufacturing machines on the factory. Generally, accidental and irregular disadvantages in product quality are easily and easily

corrected by fixing machine defects and restoring them to normal conditions. Such disadvantages include a sudden and unexpected rise in the percentage of product losses with other harmful events. On the other hand, achievement due to the occurrence of incidental disadvantages in product quality is complex. Accidental actions to solve the problem are often not a result and the actual conditions that cause the product to malfunction may not be considered or neglected. Those deficiencies on zinc products that need to be reworked should also be considered as a quality waste.

5. Energy saving

Providing advisory and executive services for energy efficiency optimization and energy auditing with the aim of reducing the consumption of energy carriers (electricity, fuel and water) in a large industrial complex and small industries. Controlling the plans of the facility before the project is implemented, and controlling and Monitor the energy consumption of existing buildings and provide economically-justifiable solutions to reduce energy consumption, manage energy consumption, and have a more healthy environment.

6. Effectiveness

The overall efficiency of the equipment is a measurement and improvement tool. Efficiency is defined as the product of the three components of access rate, performance rate, and quality rate.

The efficiency factor is known as one of the main components of the net performance system. Therefore, this indicator helps to achieve the goals of the net.

7. Maintenance and repair

Due to incomplete and non-scientific interpretations that govern the minds of many managers and even experts and practitioners in maintenance, the importance of this definition becomes more intense and more sensitive. Although the scope of preventive maintenance is one of the most important methods used in this branch of science, it can not be conceived only in this area. Some also restrict the concept of maintenance in a way or in the manner in which one or more specific and basic operations, such as

lubrication, are carried out, sometimes also mean maintenance and repair as a quick reaction in a critical condition for the repair of machines. ; Although speed is one of the important indicators on this land, but it is certainly not the only indicator. Maintenance is an art, because before the occurrence of a problem, as well as when it occurs, there is the ability to choose different approaches and activities. Therefore, managers, supervisors, and repair and maintenance experts will have a more prominent role than any other parameters, even the "nature of the problem created".

According to the meaning of lexical maintenance in Dekhoda's dictionary, the closest and most appropriate phrase for the word maintenance is MAINTENANCE. The maintenance word covers conceptually all operations and activities that are carried out in order to keep and maintain equipment (whether machine or non-machine).

8. Health and safety and environment

This system, which protects and maintains the health of the workforce, is one of the most valuable assets of

any organization. Therefore, implementing and implementing a comprehensive system of safety engineering and industrial hygiene has an effective role in the health of the working community and in increasing the production and reducing the time Wasted and resulting in value added in the organization. In implementing this plan it is necessary:

- Safety and Health Policy - Health and Safety Performance Review
- Analysis of the failures and agents of the warrant
- Planning objectives
- Required training

And other effective means to control and monitor the roles and responsibilities of the system to determine the extent of impact and human intervention.

4. Data analysis

The information received from the questionnaire is as follows:

Table3.Questionnaire information table

num	Sex
7	Male
2	Female
7	(Years) Average work experience of the company's employees

Managing factor with 30.03% and human resource factor with 17.06% and planning factor with 15.35%

have the highest scores among all factors. The percentage of the above factors is as follows:

Table4. Detail percentage index table

precent	Components	Indicator
13/63	Decision making	Managerial
12/5	method of leadership	
17/04	Education	
14/77	taking part	
17/4	Motivation	
13/63	Organizational Culture	Manpower
12/5	Organizational Structure	
28/84	Skill	
28/84	Technical knowledge	
21/15	Job position	
21/15	salary and benefits	planning
26/6	Forecasting materials and parts	
11/11	Process design	
28/8	Periodic activities	

33/3	Notebook instructions	Quality
28/94	Failure rate of processes	
23/68	Cost of process failures	
21/06	The number of defective products entered into the next step	
13/15	Number of requests for warranty after purchase	
13/15	Value of warranty claims after purchase	
45/45	Power consumption	Energy saving
36/36	Fuel consumption	
18/18	Water consumption	
38/46	accessibility	effectivity level
30/76	Number of device failures	
30/76	Number of bugs in the process	
46/42	Reliability	
53/57	Performance of repairs	Maintenance and repair
20	Number of individual events	
6/66	Number of identified hazard points	Health, Safety and Environment
33/33	The number of improvements given in dangerous tasks	
6/66	Number of foreign complaints about contamination	
13/33	Noise level	
20	Untreated sewage	

5. Conclusion

In this research, using the background of research and interviewing experts, success factors in the maintenance of preventive maintenance of the Kavar Steel Complex were investigated. A total of 34 agents were selected. By setting up a questionnaire, 34 factors were evaluated by experts. The 8 factors above The most important success factors in preventive maintenance were identified. Based on the results, an effective solution to improve the net system is presented.

1. Change in beliefs and techniques:

In order to get the best of experience from manufacturing organizations as well as maintenance and repair departments, significant changes need to be made in organizational beliefs and work techniques, through which organizational units are driven towards profitable business. If organizational and technical changes occur at a particular time, the cycle of change may not be well advanced, and in this way the organization will return to its old trend without going through the maintenance experience in the maintenance sector.

2. Understanding changes:

Many people are afraid of change and therefore resist it. The important thing is that all people are justified in making the change necessary, and only if they help the organization achieve the real success of the change. If an organization decides to bring its production or sales organization to a world-class level, it is necessary to create an excellent discipline and discipline as well as a permanent work plan; it is also necessary that the work plan is reviewed and agreed. Top managers of the organization. When this mutual understanding is created, then the production managers and the note should make every effort to implement the appropriate changes to the speed of the program.

3. Teamwork:

All production and support personnel must be prepared to make changes to the program and provide the necessary information within the time frame and individually. Organizations need to be involved in reengineering processes and carry out part of their work with their responsibilities. Personnel who understand the process and agree with it, it is much easier to collaborate with and less difficult to create. That is why the realization of group work in the process of organizational change is a critical step towards achieving success.

4. Training:

Special educational programs should be provided at all stages of the organizational transformation program to reach the world class level. Work progress monitoring sessions and training discussions are critical to creating new ideas. It is necessary to explain the methodological principles of work for the personnel to understand it, and the curricula are limited to one hour per day, but they are implemented at all stages; workshops can also be organized to examine common day-to-day problems. .

On the other hand, problem solving methods need to be trained to investigate and resolve the problems of the organization and continue until the new standard is fully in place. Company personnel must learn scientific methods and problem solving skills in order to systematically and systematically analyze existing information. It is important to be careful that the method used to solve the problem is uniform throughout the organization, and to form an analysis of the information and problems that require more advanced studies, an organization system in which different skills are involved. Also, problem-solving teams composed of diverse people can, if needed, have a facilitator to help them learn new training and processes.

5. Asset Management:

All equipment and devices must be arranged in the form of large equipment structures or asset centers. An asset center consists of a group of machines designed to produce a particular product or a set of products. Each of these asset centers will have a cost center to calculate all staff costs and equipment costs with the center. These cost centers should be monitored in terms of cost utilization and process control; in this case, for all work performed, the note will be kept in the form of a job order, type, and amount of costs for subsequent reviews at the center of the cost.

6. Inventory and inventory control:

One of the important changes in the organization's experience is the review and optimization of the warehouse. Maintenance of spare parts and tools in suitable environments is one of the main concerns of

maintenance personnel personnel. Spare parts for emergency situations and emergency breakdowns or program overlays are very important in the performance of the system. It should be noted that the size of the spare parts should be kept to a level that is neither excessive nor less than that. The storage of spare parts should also include scientific and systematic warehousing rules and tips such as easy access to parts and rapid identification of them. The spare parts should be recorded in an information system as well as their relationship with the cost centers; it is also advisable to create a variety of records for the records of the use of each piece of equipment, so that the unit can achieve more favorable results by analyzing this information. Ultimately, creating a proper warehouse for the note is essential, and procedures for receiving parts, storage, census, distribution, and waste should be fully written and made available to personnel through simple and easy instructions.

7. Corrective maintenance:

After defining the equipment and assets, it is possible to define the corrective net and preventive maintenance activities. At this stage, the definition of work and the recording of information must be defined in such a way as to be relevant to the cost centers. The calculation of spent time spent, consumables and consumables, ordering parts and other cost cycles are done through this information. For each sheet of work, it is necessary to ask what, whom, where, when, and why. In order to collect this information, it is necessary to enter the correct data entry records to keep all records and details about them, as well as to review the submission. In many cases, accurate and detailed records of daily activities such as lubrication and minor adjustments are necessary. In the system of issuing a warrant, planning is an element of the system; the planner must be able to allocate time, materials and manpower to equipment. The planning unit must carry out a work plan that performs the work within the specified time frame and meet the requirements of the production and maintenance system and the same repairs.

8. Preventive maintenance and repair:

The PM program defined for the organization needs to be reviewed in order to become responsive to demands and effectiveness. The frequency of non-scheduled stops and sequential stopping of equipment indicates that the PM program defined does not perform well. The real goal for PM is to reduce crashes and downtime to acceptable levels of management. The effectiveness of the PM program is to combine its programs with modular notes (CM) and predictive n.t (PdM) modes. It is very essential that there is a full co-ordination between the production and the production manager, and it is best to write the instructions on how to cooperate and describe the exact tasks of each of these units in terms of failures and failures.

9. Predictive Maintenance and repair:

The use of prediction equipment and the prediction of failures and failures is very necessary. One of the demands of managing each organization is to increase the useful life of each device. Note staff can use various methods and tools in the PdM system. The fault patterns of the equipment can provide a good precision in failures and failures. Other methods that can be used without extensive spending on the PdM method include:

Vibration Analysis, Oil Analysis, Temperature Analysis and Supersonic Methods. The logic of the work is that each car shows up sounds and warnings before it crashes. The use of PdM methods and tools helps us to alert you to failures. With the help of this information, a good management system can be created to prevent damage or control its consequences. An analysis of the failure process of a device over a period of time to predict the probability of a downtime in future times provides a breakdown information.

10 - Purchasing & Procurement:

Shopping also plays a major role in modern maintenance organizations. Creating a mechanized system for ordering purchases and maintaining inventory levels is highly recommended. The coordination between planning and the level of assurance of inventory, which is controlled through

the amount of consumption and the purchase order period, can prevent any shortage or excess inventory of goods. The trick presented in this magazine is the trick of using inventory in emergencies. This means that the system can provide everyday parts of its parts from the supplier's centers when needed, and only in the event of an emergency issue a license to use its inventory of inventory. In this way it is best to close the contractor's center, which has the necessary guarantee to supply the parts at the right time and in the right conditions. The establishment of supplier management systems and the creation of competition among them, and the review of supply strategies from a source or several sources at this stage of work, as well as the establishment of written and transparent contracts can prevent many problems.

11. PAM:

An Antispam is an option that includes preventive maintenance (PM) and includes Predictive Networks (PdMs). It is clear that the net managers should have the PM and PdM information and records to be able to extend them to PAM. The PAM will be in the form of a history in the records of the programs of each cost center. To achieve this, a documentation methodology is needed to record the cost of each cost center. The amount of hours of production and the stopping of each cost center, as well as the causes and effects charts of events for each cost center, must be recorded. Equipment records must be kept in such a way as to be effective in PAM applications. The PAM will help managers succeed in reducing stops, as well as increasing the reliability of the equipment and increasing the useful life.

12. Ability to count and measure:

It is very important that each system has the capability of counting and counting. It is essential that the macro and small activities of the development paths and the extent of their impact on measurable key indicators and displays. These indicators help to make the path clearer and more specific, so as to focus more effort if needed. Most people do not have a positive idea of auditing and evaluating their work because they suspect that the results of these measurements will announce their low performance index; in any case, there is a need for a positive and encouraging mechanism to define

and calculate the performance indicators of the net system so that these indicators identify the success or failure of the programs.

Of course, it should be considered in the measurement and measurement of net indicators, more important than what should be calculated, how this measurement and calculation is to be performed. It is also worth mentioning that it is often not necessary to calculate and measure these indicators as a simple process. To succeed, these indicators should be aligned with the goals and strategies of the organization. By building teams of workers, supervisors and engineering layers in different units of the organization, it is possible to rely more on the results of measuring indicators; however, these teams must have the necessary permissions to obtain the required information.

13. Maintenance and repair based on reliability:

The RCM is the last stage of the RCM recast program; RCM creates an integrated, coordinated and measurable structure of PM, PdM, and PAM systems in each of the major manufacturing units. By deploying RCM, each of the equipment allocated to the cost centers can be used at a higher level than the performance level, a higher level of production quality, a higher level of motivation, and ultimately a higher level of profitability. One of the benefits that RCM makes is the same as TIM, a solution to problems and to increase the reliability of equipment. If RCM implementation is successful, all other net systems, such as PM, PdM, and PAM, can also be used in a coordinated and integrated manner.

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