

SCHEME FOR OBJECTIVE EVALUATION AND COMPARATIVE RATING OF MAINTENANCE CREWS IN TECHNOLOGY ENRICHED INDUSTRIAL UNITS

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Synopsis: In continuous production units, availability of plant & equipment plays a major role. The availability inturn depends upon how well the maintenance practices are evolved and followed. Generally in many of the process industries, the maintenance works are off-loaded to contracting agencies. The effectiveness of the contracting agencies results in more availability for plant and equipment leading to higher productivity. In this paper an attempt has been made to develop a model for the evaluation and rating of such maintenance contract agencies in continuous production units.

1. Introduction:

In continuous production systems, the productivity mainly depends on the capacity utilization of the production unit. The capacity utilization inturn largely depends on the number of “stream days” available for production purposes. Quite often, a number of “stream days” are lost in a production unit due to unforeseen breakdowns of plant & equipment, planned shut-down for preventive maintenance jobs and annual turnaround period during which time major overhauls of the equipments are undertaken. The modern trend in many continuous production units is to off-load the “routine maintenance” jobs to contract agencies. In such a situation, it is imperative that enough care must be exercised in choosing qualified and reputed contracting agencies, in order to minimize the execution time and the associated costs involved. At the same time, care has to be taken to maintain the quality of the work done inorder to prevent frequent failures of the plant & equipment. This objective is achieved by adopting a scientific method of evaluating the contracting agencies before the work order is placed. Therefore in this study an attempt has been made to formulate a scheme for performance evaluation of the contracting agencies that ultimately leads to improvement in productivity of the organization.

2. The Scheme:

The scheme proposed consists of three factors considered critical in the evaluation of contracting agencies. The factors and the weightage points attached to them are presented in the table (1) shown below:

Table 1. Factors and weightage points for evaluation scheme

Sl.No	Factor	Weightage points
1	Time taken for execution of the work	40
2	Actual cost of the work executed	30
3	Quality of the work executed	30
	Total	100

The details in operating the scheme are presented in the subsequent paragraphs of this section.

2.1. Time taken for the work:

Normally, while awarding the work to a contracting agency, the scheduled start date and the scheduled completion date are indicated in the work order. It is expected that the contracting agency should adhere to the schedules. The following are the weightage factors proposed to the scheduled dates.

Starting schedule	-	10 points
Completion schedule	-	<u>30 points</u>
Total		<u>40 points</u>

During the actual execution of the work, if the actual starting date is same as the scheduled starting date (as per the work order), the points scored on this factor will be full i.e 10. For any delay, there will be a negative score. For each day of delay, a negative score of “1” is proposed to be awarded.

Similarly, if the actual completion date of the work executed is same as the scheduled completion date (as per the work order), the contracting agency is proposed to be awarded full points on this factor. In case the completion of the work is delayed, a penalty score of “2” for each day of delay is proposed to be awarded.

However, there are certain exceptions to this principle. The extensions granted, if any, to the contracting agency will be taken into consideration while awarding the score on this factor. In case the extension granted is not on account of the delay from the organization, it will be taken as delay on the part of the contracting agency and a negative score is awarded to the contracting agency. In case, the extension was granted due to the reasons beyond the control of the contracting agency or due to delay from the organization, the same will be ignored and the scheduled completion date will be extended accordingly.

2.2 Actual cost incurred during execution of the work:

The entire work is supposed to be completed by the contracting agency within the work order value. However, there may be reasons due to which the value of the work may go beyond the original work order value. This could be due to

- Increase in scope of the work.
- Increase in cost of materials, labour etc
- Increase in value due to re-work
- Increase in value due to delays from the organization

For evaluation of the performance on this factor, the actual value of the work will be compared with the original work order value. The original value will be revised after taking into account the effect of the above factors which are either statutory or have been caused due to increase in the scope of work by the organization. The revised work order value will be compared with the actual cost incurred after executing the work.

If the actual cost incurred is less than or equal to the work order value, the points scored on this factor will be full. i.e. 30. For every increase in cost by 10% of the work order value, a negative score of “2” is proposed to be awarded.

2.3 Quality of work done:

The quality of work has to be determined with reference to the specifications for carrying out the work as per the technical conditions and engineering standards. The quality of work executed has to be checked by an authorized engineer nominated by the organization. Table (2) shown below depicts the categories proposed to be considered for evaluating the quality parameter.

Table (2). Evaluation of quality parameter

Sl.No	Category	Details	Points awarded
1	Acceptable	The quality of work is nearly confirming to the specifications	18 (60% of the total points)
2	Good	The quality of work is exactly as per the specifications	30 (100% of the total points)
3	Poor	The work has not been done as per the specifications and is not acceptable	NIL

3. Evaluation:

The total points scored under the scheme are the sum of the points obtained for

- a) time taken for the execution of the work
- b) actual cost incurred during execution of the work, and
- c) quality of the work executed.

Based on the total points scored, the ranking of the contracting agency is done as shown in the table – (3).

Table – (3). Ranking of the contracting agencies

Sl.No	Total Points Scored	Ranking
1	Below 70	Unacceptable / Poor
2	70----80	Good
3	80----90	Very Good
4	Above 90	Excellent

It is proposed to evaluate the performance of the contracting agency, after execution of the work awarded. If the agency is ranked “Unacceptable / Poor”, it will be deleted from the list of the contracting agencies registered with the company and it will not be given the opportunity to participate in the tender for subsequent works of the company. If the system proposed is implemented meticulously, it will eliminate the inefficient contracting agencies from getting the work-order awarded and it ultimately leads to improvement in the “stream days” availability and consequently, the productivity of the organization.

4. Conclusions:

In this paper a scheme is developed to evaluate the performance of the contracting agencies that undertake the maintenance jobs in various operating plants of the organization. Proper administration of this scheme will eliminate the inefficient contracting agencies from getting in maintenance jobs awarded and thereby improving the “stream days” availability of the production system for operations, resulting in the enhancement of capacity utilization and hence productivity.

References:

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Biography :



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