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WASTE MANAGEMENT AND PLANNING IN SELECTED MANUFACTURING COMPANIES IN INDIA

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ABSTRACT

Waste represents discarded substances having no value or very little value or some time negative value. Resources are consumed but no economic benefit is obtained. Input loss may be either physical or economical. A physical loss suggests the disappearance of materials, either prior to production (loss or evaporation during storage) or during the production process (i.e. shrinkage or destruction during processing). An economic loss suggests that although the material or some residual may physically remain, its value has disappeared (damaged materials). The idea of economic loss also applies to the input of labour or overhead resources without a resultant output.

KEYWORDS*: Waste Management, Economics Loss, Damaged Materials, Overhead Resources, VAT.*

Introduction

The term 'waste' is also used to signify the presence of worthless input residuals such as gases, dust, toxic residues and so forth. The cost of waste is generally the cost of the inputs, that have been lost plus, if appropriate, disposal costs. Disposal costs for industrial wastes may be significant. Nuclear wastes, for example, require careful and costly disposal. Wastage may be visible (fragments or remnants of basic raw materials) or invisible (disappearance of basic raw material through evaporation, smoke, dust etc.). It may be due to the following reasons:

- Evaporation of oil, paints, etc.
- Absorption of moisture as in the case of line, etc.
- Natural deterioration, i.e., dusting.
- Losses inherent to breaking bulk as in the case of coal.

Loss on normal wastage is usually charged to production by inflating the unit price of material used in such a way that total cost is recovered out of the smaller quantity actually used. For example, 100 kg of material is purchased at a price of Rs. 2 per kg. Normal wastage is 10%. The actual quantity available will be 90 kg. In this case issued price of material will be taken as Rs. 2.22 per kg. i.e. (200 ÷ 90).

Abnormal waste is the excess of material losses over the normal losses. Abnormal waste may be caused by (a) pilferage' (b) defective storage; (c) careless handling; (d) defective workmanship; or (e) obsolescence due to irregular issues, i.e., issues of fresh purchases earlier than the old items. Abnormal waste should be transferred to costing profit and loss account avoids any fluctuations in the cost of production.

Often, waste does not have any value and in certain cases, expenditure may have to be incurred for its disposal. Sometimes, there may develop demand for waste in neighboring industries. In these cases, it is necessary to assign a value to the waste for accounting purposes.

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Control of Waste

It is the duty of management of bearing manufacturing company to take necessary steps of minimizes abnormal wastage. In most of the industrial units, waster report is periodically submitted by the foreman or production in charge.

There are various ways in which a bearing manufacturing company could categorize waste. However, the generally accepted classification is given below:

- Classification on the basis of resources, i.e., how much of a particular resource has been wasted.
- Classification on the basis of property i.e. whether the materials that have been wasted are hazardous to life and environment or whether they fall in the category of non-hazardous.
- Classification on the basis of origin of waste i.e., whether it is commercial waster or industrial waste, residential waster or office waste and construction waster agricultural waste.

Causes of wastes in Selected Bearing Manufacturing Companies

The chief causes of wastes in selected bearing manufacturing companies are as follows:

- Technological obsolescence.
- Hazardous practices.
- Faulty working method.
- Faulty planning.
- Defective organizational structure.
- Practically no accountability measures.
- Improper control of inventory items.
- Inadequate safety and maintenance practices.
- Extremely poor motivation leading to worsening individual relations.
- Not much emphasis on profit planning and control.
- Lack of awareness about production, productivity and cost effectiveness.
- Poor quality of factor inputs.
- Inadequate storage & issued of materials.
- Inefficient transformation process.
- Breakdown of effective communication between various levels of production activity within company.
- Myopic view of the objectives, which the company is seeking to achieve.
- Dysfunctional selection procedure of the work force leading to a state of high inefficiency

Types of Waste in Selected Manufacturing Companies

Waste management is a multi-faceted approach and borders on areas as diverse as geographic, social, economic and technological environment. The waste exists in selected bearing manufacturing companies in simple as well as complex forms. Examples are given below:

- Machine downtime is one of the most important wastes of scarce human resource, often not considered significant enough by a naive management.
- Non-conformance to standards.
- Scare inventory.
- Excess stock-in-trade.
- Recycle wastes.
- Bio-degradable wastes.
- Non-degradable wastes such as various forms of plastics and poly vinyl compounds used extensively across.

Objectives of Waste Management in Manufacturing Companies

The chief objectives of waste management in selected bearing manufacturing companies are follows:

- Minimization of overall waste in any operating system under scrutiny.
- Maximization of previous resources, so that these are not frittered away and the opportunity cost is bare minimum.
- To cut down on all the unnecessary activities which do not add value to the system? All such activities fall within the broad destination of waste.
- To increase the profitability of the operation followed by different.
- To inculcate a sense of cost-effectiveness, which could trigger of bearing manufacturing companies the prudent practices of Total Cost Management (TCM)?
- To follow the ethics and the principles of Total Quality Management (TQM).
- To aspire for international recognition. Vital to face the completion prevailing in the current global as well as the domestic market.

Measurement of Waste in Selected Manufacturing Companies

In selected bearing manufacturing companies waste could be effectively measured in the ratio form, i.e. by comparing the various pertinent and inter-related factors. The important waste management ratios used by selected fertilizer companies are given below:

- Measure of efficiency: The efficiency-ratio can be represented in the form of inputs and outputs.

  Efficiency $= \frac{Output}{Input} x100$ (in percentage)

  $= \frac{Output}{Input}$ (in numbers)

- Measure of effectiveness: This is a more critical ratio, which indicates the long-term profitability of the fertilizer companies.
- Measure of waste: There are various measures of wastes or ratios of waste management in vogue. The important ones are presented as under:
  - Element of waste activity: It is a pure measure of wastes in relation to input consumed:

    Waste activity $= \frac{WasteGenerated}{InputConsumed}$ (in fraction)

    $= \frac{WasteGenerated}{InputConsumed} x100$ (in percent)

  - Element of gross waste activity: Gross means the total value. The ratio is written as:

    Waste activity $= \frac{TotalWaste}{TotalInput}$ (in fraction)

    $= \frac{TotalWaste}{TotalInput} x100$ (in percentage)

  - Calculation for net waste: Net waste takes into consideration the amount of waste, which has been recycled within the operating system. It can easily be represented by the following formulae:

    Net Waste = Waste from Process 1
    (+) Waste from Process 2
    (+) Waste from Process 3
    (+) Waste from Process n
    (-) Waste from Process 1 being recycled
    (-) Waste from Process 2 being recycled
    (-) Waste from Process 3 being recycled
    (-) Waste from Process n being recycled

Hence, in its pure and simple form, the net waste, as expressed mathematically above can easily be expressed in the form of the required ratio in the following manner:

Net Waste = Total waste (Less) Recycled waste

Element of Net waste activity: Net waste activity is linked to the total quantity of factor inputs consumed in the production process under the management consideration. Being a ratio of net waste and total input like the above ratios, it can also be expressed in two distinct ways, as listed below:

$$\text{Net waste activity} = \frac{NetWaste}{TotalInput} \text{ (in fraction)}$$

$$= \frac{NetWaste}{TotalInput} x100 \text{ (in percentage)}$$

Systematic Approach to Waste Management

A systematic and well-planned approach to waste management proves to be of immense help in fertilizer industry. The steps involved in waste elimination in fertilizer companies are:

- Identify the operating system.
- Identify waste of each process.
- Find out the total waste of each process.
- Arrive at the total waste of the system.
- Identify the waste generating strategy.
- Priorities these stages, i.e. remove them in order of predetermined criterion, such as:
  - Acceptable, within limits.
  - Not acceptable, too high a value.
  - Polluting.
  - Non-polluting.
  - Hazardous.
  - Non-hazardous.
  - Subject to govt. regulation.
  - Laws yet to be laid down.
  - Finally the ethics of the fertilizer company.
- Frame proper program.
- Ensure the participation of the relevant line manager.
- Implement the program.
- Provide feedback.
- Take corrective action.
- Ensure proper and absolute compliance.
- Continuously check for redundancy of the program.
- Alter, dump, modify-if deemed fit.
- Make the employees aware-by providing the necessary training etc.

Attributes of effective waste collection system

An efficient waste collection system serves the fertilizer companies in more ways than one. It may be extremely costly to install and operate, but once handled properly, decreasing substantial savings to the bearing manufacturing company by providing the operating costs and other overheads. The structure of an effective waste collection system in bearing manufacturing industry depends on the following important factors:

- Identify the waste.
- Waste-separation at source.

- Decide about the quantity to be stored in a particular container.
- Decide about the physical dimensions other important attributes of the container.'
- Collect the waste in these containers.
- Make projections of the rate of waste generation.
- Depending on the above, ensure that the waste collection is timely and proper without any delays or bottlenecks.
- Induce some kind of benefits-whether monetary inducements or otherwise to the employees collecting the waste at source.'
- Motivational and other techniques can be effectively used to achieve the above defined result.
- Make provisions to transport the waste so collected to the salvage industry or the localized unit, as the case may be.
- Collect the available organic wastes.
- Ensure that the inorganic wastes are not left behind.
- Clearly differentiate between the different types of waste.
- Handling each container on the basis of the waste-type stored in these.
- Keep an emergency or contingency plan ready.

Recycling of Wastes

Often the waste generated across the bearing manufacturing companies can be recycled and used again and again. However it is not as simple as it appears to be. Certain appropriate recycling projects have to be created to achieve such results.

Features of waste disposal system: The salient features of an effective waste disposal system in selected bearing manufacturing companies are as follows:

- Easy to install and operate.
- Economical from the cash outflow point of view.
- Convenient and not highly complex.
- Within the budgetary constraints.
- Approved by the legislation and other statutory authorities in force.
- Flexibility and not rigidity in operations.
- Economies of scales.
- Does not require highly skilled labour force for its operation.
- Adaptability in context of the needs and objectives of the fertilizer company.
- Non-pollution or pollution within the authorized machine limits as prescribed.

To achieve the above, it is better for the management of bearing manufacturing company to clearly distinguish between the categories of waste material required to be disposed on the broader basis as discussed below:

- Wastage, which is saleable: Waste materials having scrapped or rather a salvage value are referred to as saleable waste. Common examples are redundant and obsolete items.
- Wastes, which could not be saleable: These fall within the ambit of non-salvable waste. There is no way in which the fertilizer company can get any kind of salvage valued for such waste.

However, often by proper treatment and further processing, the management of bearing manufacturing company if it so desires, can squeeze some salvage value out of such wastes.

Any waste disposal system, before implementation shall be designed and based on the types of wastes generated on a regular or an intermittent basis by the bearing manufacturing company. Such wastes would be of many types i.e.

- Scrap wastes (Residual part)
- Surplus wastes (Additional part)

- Spoilage waste (During operations)
- Breakage wastes (During process)
- Normal wastes (Across various plants)
- Abnormal wastes (Unique)
- Controllable wastes (Management can check it)
- Non-controllable waste (It cannot be controlled)
- Fixed wastes (Which one must incur)
- Variable wastes (Varies with activity level)
- Acceptable wastes (Within the norms)
- Un-acceptable waste (Excessive value)

References

- Abu Jamus, Fawz-Al-Dien; Methods of determined unit's cost and pricing at the Jordanian share holding industrial companies (unpublished dissertation). University of Jordan, Amman-Jordan, 1994.
- Bails, Jack C. and MeNally, Graueme M., Cost and management accounting practices in New Zealand, The International Journal of Accounting, USA, Volume 19, 1983-1984.
- Bhattacharya A, Jain R, Choudhary A. Green Manufacturing: Energy, Products and Processes, The Green manufacturing report by The Boston Consultancy Group for Confederation of Indian Industry, India, March 17- 18, 2011, New Delhi.
- Dhondy, H.B., Cost analysis and control in relation to pricing policy and practices in public enterprises in India today. Chartered Accountant, India, Vol. X, Part XII, June, 1962.
- Intergovernmental Panel on Climate Change, 2007. Climate Change 2007: Synthesis Report. Summary for Policy Makers. IPCC, Geneva. International Journal of Operations and Production Management 20 (2), 148–165.
- Lyong, George C , Fixed characteristics of variable costs, Management Accounting, USA, October, 1973.
- Saksend, Pankaj, Redifining the role of the cost on the accountant through activity-based costing. Management Accountant, Calcutta, India, October, 1997.
- Williams, Bruce, R., Measuring costs: Full absorption cost or direct cost? Management Accounting, USA, January, 1976

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