

MAINTENANCE CONTROL

(Part 1)



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Introduction

Anyone concerned with the management of a plant will sooner or later ask – How is our maintenance? Are we doing enough? – Too much? Are we doing the job right? How can we do it better? In short, is our maintenance effort under control?

The answers are never easy. Plants differ by type, by geography, by average employee age and skills, and by organizational structure. However, maintenance is inherently difficult to measure particularly as plants become increasingly complex, sophisticated and/or automated.

But there are principles common to any control effort and these can be applied to the management of maintenance. The objective of this article is to examine the fundamentals of maintenance control. After the principles are understood and the control system established, later the article will examine how implementation is achieved to accomplish control of this effort.

Control and Breakthrough

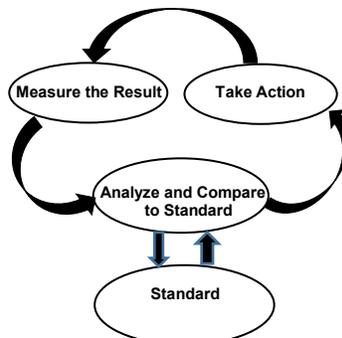
Control is the process of staying on course or adhering to a standard. In a strict sense control is the prevention of change; it can occur only after a goal, standard, or norm has first been achieved. Moreover, control is conceded to be a desirable state and one to be pursued so long as the goal, target, or standard remains satisfactory.

When achieved, the control process combines (1) a measured objective, (2) a standard or set point for that objective, (3) an analytical or interpretive capability and (4) a means for taking the action which moves the system toward the measured objective. A simple and easily recognizable application of the concept is the use of a thermostat in heating a room. The thermostat (control device) measures the temperature, compares the measurement to the set point and if necessary adjusts the rate which fuel is fed to the heater. It then re-measures the temperature and continually repeats the process thus maintaining the desired room temperature.

But control is not limited to the regulation of a chemical or physical activity. Its principles may be applied to the management of any operation of a company. Many control efforts are familiar – Cost Control, Production Control, Quality Control, etc. But the concern here is with Maintenance Control and how it may be achieved.

Before we examine the fundamentals of Maintenance Control, we must recognize an associated concept. Control being the prevention of change always provides the possibility of leading to static conditions. Goals or control points must continually be examined and analyzed for improvement. This process – dynamic and decisive change to move to new higher goals or levels of performance – is termed breakthrough. Breakthrough relates to control in that it is the means of setting the new standards which start the need for control all over again.

The concept of control is most easily understood by diagramming the control loop. Typically, it may be shown as follows:



or Control Point

The next step is to apply the concept of the Control Loop to the management of the maintenance effort.

Maintenance Control

Application of the Control Loop concept requires a means of measurement, a procedure for analysis and an action step which not only moves the system but links the control point to the standard as well. Start by determining what is to be controlled.

Control point selection may vary between plants but the areas which are typically of concern to the Plant Manager will include most of the control points. Nine (9) questions which are usually raised and their sub-divisions (control sub-loops) have been identified in subsequent edition of this article. They provide the starting point.

A new maintenance control system will be in a state of change (under development) for some period of time. This development phase merges into the control activity with the net result that the control process appears more complicated than it truly is.

Combining the maintenance control system with its development phase involves the following steps:

1. Determine what is to be controlled.
2. Develop or select the measuring indicators.
3. Select the units of measurement.
4. Determine the responsibility for measurement and analysis.
5. Select acceptable standards for control.
6. Measure performance.
7. Analyze and compare the data.
8. Take the needed action.

Development Phase
Control Activity (Control Loop)

(End part 1 – to be continued)