Implementation Plan for Root Cause Analysis (RCA) & Corrective Action Plan (CAP) in Manufacturing Plant

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Abstract— the root causes analysis and the corrective action plan tools works to breakdown the entire system to include the real cause to correct and prevent potential problems from happening. This recherche includes whole general steps that going to help the quality department in the factory to implement RCA and CAP tools.

INTRODUCTION

The effective team helps to determine and point out the clarity of the root cause to get a better result in developing a corrective action. The way root causes analysis works, is to breakdown the entire system to include the real cause to correct and prevent this from happening in the future. This guide has the steps to follow in order to identify and treat any root cause events in manufacturing plant.

1. RECOGNIZE THE EVENT TO BE INVESTIGATED AND GATHER INITIAL INFORMATION

Events and claims come from different sources (e.g., customer, maintenance department, supply chain department, and/or the safety and health department). That makes quality department at the factory evaluates the initial information and make decision whether they can track the event or not. Once an event is selected for tracking the sources should invited as members of the team (Step2).

2. FORMING THE TEAM LEADER AND MEMBERS

Leadership illustrates the responsibility for all members of team. The coordinator member for the team is Quality Department. The team members are people with personal knowledge of the factory industry selected based on the event sources (Step1). (e.g., if the event recognized from maintenance reports that show initial report of machines failure the team should include the maintenance department as team members). However, the leader can invite the other departments or party they may involve in the event to be investigated.

3. IDENTIFYING THE PROBLEM

In order to fix the problem the team must clearly recognize the event. Point out the actual problem and not the symptom of the problem. To address the problem the team should inform team leaders and members as in step 2 as well as asking question. For example the following questions:

- What is the scope of the problem?
- Is the event representing one problem or more?
- What the problem mine effected?
- What is the impact on the prodact?
- How often does the problem happen?

Those types of questions should assist the team to clearly identify the problem(s). However, the problems must be stated in a clean and simply way.

4. GATHER AND VERIFY DATA

After (Step 3), the teams start data collection and verify the initial data with all necessary information that is needed to root cause analysis. Step 5, the team should cover all the types of data as much as possible for instance:

- Location (workshop, building, department or production line position)
- Equipment (what was operating situation?)
- Training (classroom and online)

5. ROOT CAUSE ANALYSIS

After the problem is identified (Step 3), and initial data has been gathered and verified (Step 4), the analysis in this "Step" is using one of the root cause analysis technique to determine the root course in order to select correction action as solution (Step 6). The following some root causes technique can be used:

- 5 Whys
- Failure mode and effects analysis
- Pareto analysis
- Fault tree analysis
- Bayesian inference
- Fishbone diagram or cause and effect diagram
- Cause Mapping

6. CORRECTIVE ACTION AND IMPLEMENTATION

After the root cause has been determined (Step 5), the team should evaluate and recommend the best way to reduce and prevent the root causes that lead to harmful event by corrective action. These actions in general required creating a new process or making a change to a current process. Furthermore, the team should apply those actions and select the due date also considered in the questioning on how to develop correc-

tive actions such as:

- What the evidence are required to prevent this root cause from happening again?
- What contributing elements may lead this root cause to happen?
- How could changing the process make sure that this root cause never happens?
- When the event like this happened again, how could we stop it?
- Who going to make those actions?
- What is the goal of those actions?
- When the action due?

7. OBSERVE THE RECOMMENDED SOLUTIONS TO ENSURE EFFECTIVENESS

After the corrective action has been recommended by the team in Step 6 implemented, the team will develop success measurement tools by gathering data to monitor the implementation and make sure the corrective action successfully removes or reduces the root cause. The team designs the responsibility of the monitor to the corrective action. However, the ideal corrective action success should meet the following criteria:

- Measures of success were monitored over time.
- The goal was achieved (the goal where made in Step 6).
- The team leadership is confident that the change where implemented is permanent.

CONCLUSUON

Summing up, by following the seven general steps should any quality department in the factory has the ability to implement the Plan for Root Cause Analysis (RCA) & Corrective Action Plan (CAP). A good quality department can do implantation effectively and reach the Plan for Root Cause Analysis (RCA) and Corrective Action Plan (CAP) tools objectives.

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