

# #10. HACCP PREREQUISITES FOR CONTINUOUS QUALITY IMPROVEMENT

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In this article, we will discuss the final three HACCP prerequisite programs that are necessary to complete your HACCP plan. These are: 1) HACCP-TQM employee training program and record, 2) Self-inspection, continuous quality improvement (QA / QC), and 3) Food safety program verification and certification (third-party audit).

## **HACCP-TQM Employee Training Program and Record**

In the Organization section of your policy manual, you identified and wrote down all of your organization's personnel and organized them according to their duties. Training will follow the department organization, which normally constitutes the cleaning personnel, warehouse and packaged food handlers, the food production personnel, and the service personnel. The reason for organizing your personnel into these groups for training is that it is unnecessary to train people in topics that do not apply to their positions. Employees only need to know the hazards in the tasks that they perform and then, how to perform and monitor the controls. For example, teaching the cleaning crew about the outgrowth of spores and pasteurization of food has no bearing on their major responsibility, which is to reduce bacteria on food and non-food contact surfaces to a safe level. They need to know the chemistry of cleaning and sanitizing and how to monitor with ATP or microbiological tests. Grouping people by their job responsibilities allows you to specialize your training so that each group is given in-depth instructions pertinent to the group's specific hazard control task responsibilities.

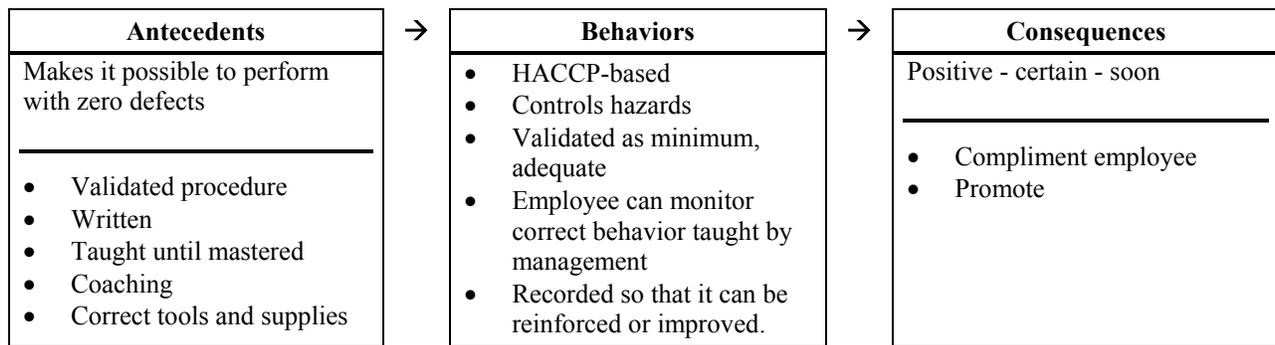
These groups also correspond closely to the organization of the policy manual. The cleaning crew is taught the material in the cleaning and sanitation section of the manual. The warehouse / packaged food handlers are taught the material in the supplies / suppliers section, since they are mainly responsible for the receiving, storing, and shipping of packaged foods. The food handlers are taught the pasteurization and stabilization of food. Finally, the service personnel are taught about delivery temperatures of food and answering consumer questions regarding allergens in food, food safety, etc. In food markets, the service / sales personnel are also taught to teach consumers how to use a thermometer to monitor the pasteurization of food.

Training is actually employee behavioral management. It starts by writing task performance statements for the various employee groups. A task performance statement includes 1) what must be done and to what standard, 2) where, 3) why, 4) who will do it, 5) when it is done (i.e., when a given situation exists), and 6) how to perform it and check it.

### TASK PERFORMANCE STATEMENT

What must be done to what standard	Where	Why	Who will do it	When what situation exists	How to do it and check it

The purpose of training is to turn hazard control behaviors into habits of the employee. There are three components to behavioral management: 1) antecedents, 2) behaviors, and 3) consequences.



Fundamentally, the antecedents make it possible for employees to perform hazard controls with zero defects. The consequences provide positive, certain, and immediate (soon) feedback so that the employees know whether or not they did a hazard control task correctly. In the middle are the behaviors, which, in the case of food safety, are HACCP based, are minimal yet adequate to control the hazards, can be monitored by employees, and are recorded so that process stability can be measured and improved.

There are five steps to the employee training process.

1. The instructor masters the task to be taught.
2. The instructor prepares the employee for instruction.
3. The instructor presents the task.
4. The instructor allows for a practice period.
5. The instructor tests the employee for mastery and provides feedback on performance.

### Self-inspection, Continuous Quality Improvement

This section of the HACCP manual provides instructions for the Quality Assurance / Quality Control (QA / QC) process. Each department monitors its own performance and keeps records on times and temperatures of food, cleaning chemicals used, etc. The job of the QA / QC department is to gather overall operation data primarily to 1) establish new processes or 2) improve processes.

First, QA / QC will be responsible for the calibration of all of the instruments used by the operation's employees. This includes thermometers, pH meters, ATP luminescent meters, fat analyzers, etc. It is important that employees on the line have calibrated monitoring instruments for immediate knowledge as to whether or not their process is in control. The job of QA / QC is to oversee that those controls are accurately monitored.

The next major responsibility is verifying supplier performance. It is common for QA / QC personnel to sample supplier ingredients and verify microbiological quality, fat, moisture, proteins, etc. This department may be responsible for supplier HACCP audits. Therefore, they are in the best position to audit suppliers.

QA / QC is also an "arm" of the HACCP team and does research that the HACCP team requests on processes. In a similar way, QA / QC has the responsibility of using the reports of the various

departments to find out where there are unstable processes and doing R&D to find ways to better stabilize them and reduce the deviations in process operations.

This department is also responsible for developing new processes at the request of management or operations. QA / QC would know the energy efficiency of the facility and of the various pieces of equipment, and could work toward improving energy efficiency without affecting process safety. Likewise, QA / QC personnel would work on process points where there was an unnecessary waste of food product due to trimming and cutting, for example. They would be responsible for recommending product shelf lives to management. They would set up the testing procedure, do the tests, and let sensory panels determine when a product is no longer acceptable.

Finally QA / QC would help revise the HACCP manual as they determine improvement in cleaning and maintenance procedures, food handling procedures, etc.

### **Food Safety Program Verification and Certification**

The final section of the manual deals with the HACCP prerequisite for an independent, periodic third-party audit of the facility. This is not a quality audit, but is like ISO 9000 in that it determines conformance of operations to policies, procedures, and standards.

The audit team can come from corporate headquarters or an independent company. The audit starts with a review by the team of what the facility produces, how the products are produced, and how the facility is maintained. The team becomes familiar with the HACCP manual.

With an understanding of what the operation does, the team compares performance in each department (receiving, production, sanitation, maintenance, etc.) to the requirements written in the operation's policies, procedures, and standards manual. The team's job is to verify to what degree the operation is doing what it says it will do in its manual. For example, cleaning is not really measured, because one can see that the cleaning procedure for a particular piece of equipment was validated that when cleaned as specified in the manual, an acceptable level of bacteria level was achieved on the food contact surfaces. It is not a challenge of the adequacy of the procedure—because that was already established in the manual—but a challenge in terms of employee performance. Are employees doing what they are required to do, based on the manual, in order to produce food items with a given management-desired quality?

### **Summary**

This series of articles has shown that it is possible to organize the National Advisory Committee on Microbiological Criteria for Foods (NACMCF) HACCP and application guidelines into a twelve-section manual, as follows.

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| 1. Food safety policy and procedures                 | 8. Maintenance schedule and instructions               |
| 2. Organization for HACCP-based TQM                  | 9. Pest control schedule and instructions              |
| 3. System description                                | 10. HACCP-TQM employee training program and record     |
| 4. Reserved for special uses (e.g., GMPs)            | 11. Self-inspection, continuous quality improvement    |
| 5. Supplier HACCP                                    | 12. Food safety program verification and certification |
| 6. Recipe HACCP                                      |  |
| 7. Cleaning and sanitizing schedule and instructions |  |

All of the above sections, except for Section 6, the recipe HACCP section, are HACCP prerequisite programs in order to assure that the food can be produced safely.

It has been emphasized that HACCP is not a static program, but rather, a continuous quality improvement program whereby the QA / QC department is constantly reviewing every operating step in the facility, and designing and validating new procedures in order to improve performance. The responsibility of the HACCP team is to look at the production records and quality control records, and to manage the long-range program for quality improvement within the unit.

HACCP is not a plan to please the government. HACCP is a plan to assure the stable operation of each process and then, a controlled improvement program to assure that the hazards in a food item are at an acceptable level.