8 Objectives, Targets and Environmental Management Programs

8.1 INTRODUCTION

This section will combine two elements of ISO 14001: 4.3.3, *Objectives and Targets*, and 4.3.4, *Environmental Management Programs*. The reason for this is the progression evidenced from one element to another and, for both of them, a natural progression from Element 4.3.1, *Environmental Aspects*:

Aspects Æ Objectives Æ Targets Æ Programs

8.2 ISO 14001 REQUIREMENTS

The requirements for establishing objectives and targets and programs (projects) are listed here, but I would like to point out the particular attention you must give to the things that must be "considered":

Element 4.3.3 states: The organization shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organization. When establishing and reviewing its objectives, an organization shall *consider* the legal and other requirements, its significant environmental aspects, its technological options and its financial, operational and business requirements, and the views of interested parties. The objectives and targets shall be consistent with the environmental policy, including the commitment to prevention of pollution.

Element 4.3.4 states: The organization shall establish and maintain a program(s) for achieving its objectives and targets. It shall include (a) designation of responsibility for achieving objectives and targets at each relevant function and level of the organization; (b) the means and time-frame by which they are to be achieved. If a project relates to new developments and new or modified activities, products or services, program(s) shall be amended where relevant to ensure that environmental management applies to such projects."

Before we continue I would like to take this time to briefly define what is meant by a "program" under the ISO 14001 Standards. The authors of the standards have defined it as that part of the environmental management system that addresses the scheduling, resources, and responsibilities for achieving the objectives and targets. It identifies the specific activities dealing with individual processes, projects, products, services, sites or facilities within a site (see ISO 14004, *General Guidelines on Principles, Systems, and Supporting Techniques*).

TABLE 8.1
Correlation of "Objectives, Targets, and Programs" Requirements

ISO 9001 Section	Description
4.1.1	Quality Policy
4.1.3	Management Review
4.2.3(b)	Quality Planning
4.14.3(b)(c)	Preventive Action

The reason we are taking the time to define it is because of the potential confusion that may be encountered with an auditor. In many circles, the ISO 14001 definition of "program" is more closely compared to a "project" which is considered to have a definitive start and end — when the target is achieved, the project is closed out. If you have this context in mind, then "program" is more definitive of a subsystem or subelement of the entire environmental management system — it is *nonspecific*. Under ISO 14001, however, a "program" is meant to be a "project" — it is *specific*. It is very important that you define this term with your auditors up front to avoid major confusion.

You can see the correlation between ISO 9001 and ISO 14001 listed in Table 8.1.

8.3 ISO 9001 REQUIREMENTS

Although ISO 14001 is much more explicit in requiring objectives, targets, and programs, there is enough information available in the ISO 9001 structure to allow the use of the quality structure to define your environmental requirements. Let's look at what the various ISO 9001 elements say:

Element 4.1.3 states: The supplier's management with executive responsibility shall review the quality system at defined intervals sufficient to ensure its continuing suitability and effectiveness in satisfying the requirements of this International Standard and the supplier's stated quality policy and objectives …"

Element 4.1.1 states: The supplier's management with executive responsibility shall define and document its policy for quality, including objectives for quality and its commitment to quality…"

Element 4.2.3(b) states: The supplier shall give consideration to the following activities, as appropriate, in meeting the specified requirements for products, projects or contracts: (a) the preparation of quality plans; (b) the identification and acquisition of any controls, processes, equipment (including inspection and test equipment), fixtures, resources and skills that may be needed to achieve the required quality; …"

Element 4.14.3 states: The procedures for preventive action shall include: … (b) determination of the steps needed to deal with any problems requiring preventive action; (c) initiation of preventive action and application of controls to ensure that it is effective; … "

8.4 SCENARIO

For the rest of this section, I am going to use a manufacturing process scenario as an approach to show how the environmental and quality requirements can be integrated. The manufacturing process will have quality problems, environmental aspects, and environmental legal concerns. The intent is to show the process of identifying an objective and a target and then establishing a project team that has the responsibility for solving the issues being presented. The project team will have to identify specific action items to be taken, when they will be initiated, and responsibility for completing those corrective actions. First, let's look at the scenario:

> XYZ Co. manufactures a widget used in the automotive industry as part of an electronic sensor system. Due to tight automotive specifications and difficulties in manufacturing, XYZ Co. is only yielding 50% through final inspection. Some of the process loss comes from a metal part used in the widget manufactured by a subcontractor. This part is made using a degreasing operation utilizing an ozone-depleting solvent. At XYZ Co. they manufacture the widget using various volatile organic chemicals that are vented right to the atmosphere and a cleaning operation using a slightly corrosive cleaning solution. The process also generates a liquid hazardous waste, a solid hazardous waste, and solid nonhazardous waste.

Let's list the various quality and environmental aspects in Table 8.2. So what we have now as a management team are six aspects which must be addressed in order to improve the yield (i.e., minimize the impact on quality) and reduce other waste (i.e., minimize the impact on the environment). As you can see from the table, some of the objectives have more than one target and, as a result, may have a very diverse project list (shown by project numbers). I have deliberately left out the details of the project list and, instead, have been presented in Table 8.3 with the details of the various projects.

8.5 WHAT AUDITORS WILL LOOK FOR

It is important to understand all of detailed requirements listed in ISO 14001 Element 4.3.3 and ensure that they are considered in fulfilling the requirements for Element 4.3.4. As stated in Element 4.3.3, the identification of your objectives and targets must take into consideration your significant environmental aspects, any applicable legal requirements, all available technological options, and financial implications. Your project list must show evidence that these have been considered. Additionally, when reviewing and determining what steps have been taken to achieve the targets, a veteran auditor may be able to assess whether or not all appropriate groups have been involved.

As an example, if we consider a project to reduce the amount of hydraulic oil waste in a pressing operation, then the project team should include maintenance and the project list include an evaluation of the preventive maintenance schedule for the presses. An action item may be to evaluate the preventive maintenance schedule for replacing the oil — an analysis of the oil for degradation may show that the replacement every six months can be extended to every 12 months (i.e., a 50% reduction).

TABLE 8.2
Objectives and Targets for Widget Production

#	Aspect	Impact	Objective	Target	Project #	Project Leaders
1	Production yields	Financial losses	Improve yields	(a) Improve to 75% by (date)	97-001	Process Engineer QA Manager
2	Subcontractor-made component	Increased scrap due to poor quality	Evaluate quality	(a) Improve to 90% by (date)	97-002	Purchasing Manager Process Engineer QA Manager
3	Subcontractor uses an ODS	ODS phase out; Labeling requirements	Eliminate ODS	(a) Eliminate need to clean, or (b) Replace with non-ODS solvent by (date)	97-003 97-004	Process Engineer Environmental Manager Product Technical Manager
4	Manufactured with a VOC	Air emissions	Eliminate VOC air emissions	(a) Change process, or (b) Use water-based solvent by (date)	97-005 97-006	Process Engineer Environmental Manager Product Technical Manager
5	Manufactured with corrosive cleaner	Toxic liquid waste	Eliminate corrosive cleaner	(a) Replace cleaner with noncorrosive by (date) (b) Eliminate cleaning by (date)	97-007 97-008	Process Engineer Environmental Manager
6	Process generates three solid waste streams	(1) Liquid hazwaste; (2) Solid hazwaste; (3) Solid non-hazwaste	(1) Reduce liquid waste; (2) Reduce solid waste; (3) Recycle	(1) Reduce 25% by (date) (2) Reduce 10% by (date) (3) Recycle 25% by (date)	97-009 97-010 97-011	Process Engineer Environmental Manager

TABLE 8.3
Project List for Widgets

Proj. #	Action Item(s)	Project Members	By When
97-001	(a) Evaluate quality of operating and production supplies and materials (b) Train all personnel on quality and statistical process control (SPC) techniques (c) Organize and train self-managed work teams (d) Evaluate equipment to identify primary issues causing downtime (e) Establish preventive maintenance program	Material Control Maintenance Personnel Quality Assurance Training Department Process Engineer	
97-002	(a) Define required specifications for part (b) Work with subcontractor to improve their process line to meet specifications (c) Identify alternative supplier of part	Quality Assurance Material Control Process Engineer	
97-003	(a) Work with subcontractor improve their process line to eliminate cleaning step with ODS	Process Engineer Material Control Environmental Manager	
97-004	(a) Evaluate non-ODS chemicals (b) Evaluate ODS chemicals which are scheduled for future phase-out (c) Determine changes in “pass through” labeling requirements (d) Determine other potential regulatory requirements for international marketing	Process Engineer Environmental Manager Shipping Department Product Technical Manager	
97-005	(a) Evaluate process to see if alternative manufacturing methods can be employed	Process Engineer	
97-006	(a) Evaluate water-based solvent (b) Qualify change in process per customer contract requirements	Process Engineer Environmental Manager Product Manager	
97-007	(a) Evaluate other cleaners which are noncorrosive (b) Work with Project Team #97-006 (joint effort)	Process Engineer Environmental Manager	
97-008	(a) Evaluate potential process changes to eliminate cleaning process	Process Engineer	

TABLE 8.3 (continued)
Project List for Widgets

Proj. #	Action Item(s)	Project Members	By When
97-009	(a) Evaluate potential process changes to eliminate liquid hazardous waste (b) Establish reduction targets and communicate on a regular basis with personnel (c) Work with Project Team #97-006 (joint effort)	Environmental Manager Process Engineer Department Management Operator work team	
97-010	(a) Evaluate potential process changes to eliminate solid hazardous waste (b) Establish reduction targets and communicate on a regular basis with personnel (c) Work with Project Team #97-006	Environmental Manager Process Engineer Department Management Operator work team	
97-011	(a) Evaluate sources of solid waste with outside analyst (b) Work with recycling vendor establish recycling center(s) (c) Train personnel	Environmental Manager Operator work team Solid Waste Analyst Recycling Vendor	

8.6 CONCLUSION

All of the sub-elements under the Planning requirements of ISO 14001 provide the structure for the continuous improvement process defined in your policy and, in my opinion, are the foundation of your whole program — if you don't do this section well, the rest of the program cannot take shape and becomes a moot point as far as auditing is concerned.

I hope that the information presented in this chapter will provide a good starting point. The major key to successfully integrating these requirements into ISO 9001 lies in the Design Review program. Defining the requirements for ISO 14001 into your Design Review and Purchasing/Contract/Material Control documentation can help streamline the process — but don't forget to write a *procedure* for defining the legal and other requirements.

Once you have made it through 4.3.3 and 4.3.4, the use of tables to summarize your information is much simpler and provides an at-a-glance view for the rest of the planning process. All one has to do is maintain a file for each project number that consolidates all the information (meeting minutes, reports, analyses, etc.) needed for an auditor to review.