Environmental Management Programs

Background and Exhibits

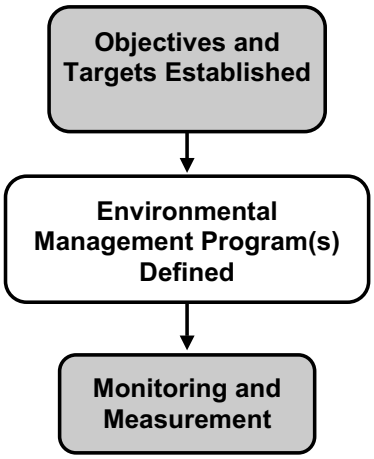
You ensure the success of your EMS by developing effective support mechanisms to meet your environmental policy commitments. This module addresses planning for and setting up Environmental Management Programs (EMPs), the action plans you will follow to achieve your objectives and targets.

Environmental Management Programs

EMPs are the action plans that you will need to follow to achieve environmental objectives and targets and translate your policy commitments into concrete actions.

To ensure its effectiveness, each EMP should define:

- The responsibilities for achieving objectives (who will do it?);
- The means for achieving objectives (how will they do it?); and
- The time frame for achieving those objectives (when?).



Keep in mind that your EMPs should be dynamic. For example, consider modifying an EMP when:

- Objectives and targets are modified or added;
- Relevant legal requirements are introduced or changed;
- Substantial progress in achieving your objectives and targets has been made (or has not been made); and
- Your activities, products, services, processes, or facilities change or other issues arise.

EMPs should not be developed in a vacuum-they should be coordinated or integrated with other organizational plans, strategies, and budgets. For example, if you are planning for a major expansion in one of your service operations, then it may make sense to look at the possible environmental issues associated with this operational expansion at the same time.

Here are some things to think about to expedite the planning for and implementation of your facility's EMP:

- Build on the plans and programs you have now for compliance, health and safety, or quality management;
- Involve your employees early in establishing and carrying out the program;
- Clearly communicate the expectations and responsibilities defined in the EMP to those who need to know;
- Re-evaluate your EMP when you are considering changes to your activities, products, services, processes, facilities, or materials. Make this re-evaluation part of your change management process; and
- Keep EMPs simple and focus on continual improvement over time.

In some cases, an EMP may encompass a number of existing operating procedures or work instructions for particular operations or activities. In other cases, new operating procedures or work instructions might be required to implement the program. Coordinating your EMP(s) with your overall plans and strategies may position your organization to exploit some significant cost-saving opportunities.

Environmental Review for **New Products**, **Processes**, and **Activities**

Change is an important part of business survival for most companies. Products, technologies, and ways of doing things are updated regularly.

To avoid creating new "significant environmental aspects" that must be addressed later, it is helpful to integrate new processes, products, and activities into the environmental efforts that you are developing for the rest of your facility. You can do so by setting up a procedure for reviewing new processes, products, or activities while they are in the planning stage. The procedure should include a form to circulate among the people responsible for, or affected by, the new process or product, including those responsible for the area of the facility where the new process or activity will be implemented. This form should then be signed by the appropriate parties to indicate that the environmental review has been completed in accordance with your procedure.

Use your answers to the questions provided in ***Exhibit 7-1: Element Review Questions*** to begin the process of planning for and implementing your EMP.

An example of a form you can use to document your action plans is provided in ***Exhibit 7-2: Environmental Management Program(s) Form (EF-003.02)***. The documented procedure for establishing EMPs is included as a section of ***Exhibit 5-5: Procedure for Environmental Aspects, Objectives and Targets, and Programs (EP-003)***.

A procedure for environmental reviews and an example of a checklist your facility can use for new purchase, process, and product reviews is provided in ***Exhibit 7-3, Procedure for Environmental Review for New Purchases, Processes, and Products (EP-010)*** and its supporting form, Project Environmental Checklist (EF-010.01).

Exhibit 7-1: **Element Review Questions**

Questions	Your Answers
Do we have an **existing process** for establishing environmental management programs? If yes, does that process need to be revised? In what way?	
What environmental management programs do we have **in place now**?	
What is the **basis** for our environmental management programs (for example, do they consider our environmental objectives, our environmental policy commitments, and other organizational priorities)?	
Who needs to be involved in the design and implementation of these programs within our facility?	
When is the **best time** for us to establish and review such programs? Can this effort be **linked** to an existing facility process (such as our budget, planning, or auditing cycles?)	
How do we ensure that **changes to products, processes, equipment, and infrastructure** are considered in our programs?	
How will we otherwise keep our programs **up-to-date**?	
Our next step on environmental management programs is to...	

Exhibit 7-2: **Environmental Management Program(s) Form** (EF-003.02)

Process:
Significant Environmental Aspect:

Objective:
Target:

Category : ☐ Control/Maintain ☐ Improve ☐ Study or Investigate

Action Plan:

Task/Action Items	Responsible Party	Responsibilities	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables

Exhibit 7-3: **Procedure** for **Environmental Review** for **New Purchases, Processes,** and **Products** (EP-010)

1.0 Purpose/Scope

This procedure defines the method for identifying and evaluating the environmental issues of new projects at the **[Facility's Name]**to:

a) Ensure that appropriate consideration is given to environmental issues prior to project approval and funding;

b) Ensure that new environmental aspects generated by projects are identified and their significance evaluated; and

c) Provide a mechanism for the amendment of environmental management system elements and programs, where relevant, to ensure that the environmental management system applies to such projects.

2.0 Activities Affected

All areas and departments

3.0 Forms Used

Project Environmental Checklist (EF-010.01)

4.0 References

Procedure for Environmental Aspects, Objectives and Targets, and Programs (EP-003)

5.0 Definitions

None

6.0 Exclusions

None

7.0 Procedure

7.1 Areas/departments initiate Project Appropriation Requests when the need for project funding becomes apparent.

7.2 The initiating activity or designee shall identify and evaluate environmental issues associated with the project. A summary of this evaluation shall be documented on the Project Environmental Checklist (EF-010.01) and added to the Appropriation Request. This process may be undertaken in liaison with the EMS Coordinator (or other competent individual) at the discretion of the initiating activity, and shall include an identification of environmental aspects and requirements for obtaining approvals from environmental regulatory agencies.

7.3 The initiating activity shall submit the Appropriation Request and completed Project Environmental Checklist for review to the Environmental Management Representative (EMR).

7.4 The EMR, or designee, shall review the proposed project to ensure that all relevant environmental issues have been identified, and, if incomplete, shall return the Appropriation Request and Project Environmental Checklist to the initiating activity for alteration.

7.5 The EMR, or designee, shall review the environmental aspects of the project, considering their significance.

Exhibit 7-3: Procedure for Environmental Review for New Purchases, Processes, and Products (EP-010) (continued)

7.6 Following appropriate review, the EMR, or designee, may approve the project by returning the Appropriation Request to the initiating activity for further processing. If a project is not acceptable, the initiating activity will coordinate any necessary actions to satisfy concerns identified. The initiating activity in conjunction with the EMR, or designee, will coordinate any necessary prevention, mitigation, or control activities associated with the project.

7.7 Environmental aspects associated with projects shall be evaluated for significance by the Cross Functional Team per the Procedure for Environmental Aspects, Objectives and Targets, and Programs.

7.8 Changes to the EMS resulting from an environmental review of a project will be approved by top management.

8.0 Frequency

Ongoing

9.0 Records

Records shall be retained consistent with your Procedure for Environmental Records (EP-005).

Record of Revisions

Revision Date	Description	Sections Affected

Project Environmental Checklist (EF-010.01)

Project Environmental Checklist (EF-010.01)

Project Description:
Project Number:

AIR EMISSIONS	Yes	No
Will this project/process change produce air emissions?		
Will this project/process change require an air permit or permit modification?		
Does the change require air pollution controls?		
Does the project/process change require the use or purchase of ozone depleting substances?		

WATER DISCHARGES	Yes	No
Does the project/process change result in wastewater, sanitary, or storm water discharges?		
Will the project/process change result in changes to water discharge flow rates?		
Will the discharge require a permit modification?		
Will new or additional pretreatment be required?		
Are facility discharges to a common sewer altered?		

STORAGE TANKS	Yes	No
Will underground storage tanks be installed?		
Will tanks be installed to store hazardous waste or materials, petroleum products, or propane?		

WASTE GENERATION	Yes	No
Will the project/process change produce a waste or recyclable material?		
Will the waste be classified as special or hazardous?		
Will off-site disposal be required?		
Are special handling, abatement, or disposal measures required?		

ENERGY USAGE	Yes	No
Will the project/process change effect facility energy usage?		

OTHER CONSIDERATIONS	Yes	No
Do recycling options and costs need to be considered?		
Does the project/process change require use of toxic, hazardous, or carcinogenic materials?		
Do project/process materials require special handling or storage?		
Does the project cause land disturbances?		
Do pollution prevention issues need to be addressed?		

Project Environmental Checklist (EF-010.01) (continued)

Does the project/process change impact the surrounding community (e.g., odor, noise)?		
Are there any wildlife or land use issues?		
Does the project/process change alter or add to current facility aspects?		
Does the project/process change require a change to Emergency Response methods?		

_____ _____

Initiating Activity Manager Date

_____ _____

Environmental Management Representative Date

Examples

Examples 7-1: EMP for Reduction of Fugitive VOC, HAP, and Particulate Emissions through ***7-6: Environmental Management Program for Solid Waste Reduction from the Unmasking Activity*** provide completed examples of ***Exhibit 7-2: Environmental Management Program(s) Form (EF-003.02)*** for significant environmental aspects identified in earlier modules.

Example 7-1: **EMP** for **Reduction** of **Fugitive VOC**, **HAP**, and **Particulate Emissions**

Note: This example continues drydock evaluation from ***Example 5-1: Flow Diagram and Aspects Form for Drydock Painting*** and ***Example 6-2: Identification of Objectives and Targets for Drydock Painting***.

Area/Department(s): Construction and Repair - Painting
Process: Drydock Painting.
Significant Environmental Aspect: Fugitive VOCs, HAPs, and particulates

Objective: Reduce Fugitive VOC, HAP, and particulate emissions
Target: 10% Reduction by January 2004 (relative to year 2000 baseline)

Category:	[X] Control/Maintain	[X] Improve	[ ] Study or Investigate

Example 7-1: EMP for Reduction of Fugitive VOC, HAP, and Particulate Emissions (continued)

No. 1 Action Plan: Substitution of Raw Materials

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments (C)/Deliverables (D)
Identify list of suitable vendors that supply low VOCs paint	John Smith, EMS Coordinator	MSDS Paint Mfg. Assoc.	3/1/2002	4/1/2002	D – List of potential vendors of low-VOC paint
Develop evaluation of technical feasibility and cost effectiveness of select paint products	Cross Functional Team	Testing by paint personnel and customer approval	5/1/ 2002	7/1/2002	D – Comparative cost analysis of select low-VOC paint application D – Technical feasibility analysis of select low-VOC paint application

No. 2 Action Plan: Process Modification

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments (C)/Deliverables (D)
Identify process modification that can be done to reduce emissions of VOCs, HAPs, and particulates	John Smith, EMS Coordinator	Eng. Dept, vendor proposals	8/1/2002	8/31/2002	D – List of potential process modifications
Develop preliminary evaluation of technical feasibility and cost effectiveness of process modification alternatives	John Smith, EMS Coordinator	Vendor quotes, est. of reductions from sup. agency	9/1/2002	9/30/2002	D – Technical feasibility report of process modification alternatives D – Comparative cost analysis of process modification alternatives
Conduct pilot test of the preferred alternative of process modification	Kim Weinstein, Environmental Department	Process and eng. dept.	10/1/2002	1/1/2003	D – Workplan of the pilot test D – Weekly progress report of the pilot test D – Final report and recommendation
Full scale implementation	John Smith and Will Gibson (Paint Department)	Training by vendor, testing	2/2003		D – Quarterly progress and performance report

Example 7-2: **Environmental Management Program** for **Process Optimization**

Area/Department(s): Total Facility
Process: General
Significant Environmental Aspect: Solid waste

Objective: Reduce volume of solid waste
Target: (1) Filter hazardous waste reduction – 5% (wt/wt) hazardous waste from 2002 values by January 2005
(2) Study sludge waste reduction – Complete study by January 2004
(3) Study plastic and foam recycling – Complete study by January 2005
(4) Study plastic drum reduction – Complete study by January 2005

Category : ☐ Control/Maintain ☒ Improve ☐ Study or Investigate

Action Plan:

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Determine which filters are hazardous and non-hazardous	Waste Collection Service		12/2002	5/2003	D - Report all findings to Env. Eng. by 5/15/04. C - All filters are currently treated as hazardous
Implement program for segregating hazardous and non-hazardous filters	Waste Collection Service		5/2003	6/2003	D - Report monthly progress to Env. Eng.
Monitor amounts of hazardous and non-hazardous filters	Waste Collection Service		6/2003	Ongoing	D - Report quarterly amounts to Env. Eng.
Study methods to reduce or substitute materials that cause filters to be hazardous. Also study methods to reduce filter usage	Paint Area Manager		10/2003	4/2004	D – Report findings to Env. Eng. by 4/15/04
Prepare recommendations based on study findings	Paint Area Manager		5/2004	6/2004	D – Report recommendations to Env. Eng. by 6/15/04.
Implement recommendations where feasible	Paint Area Manager		7/2004	12/2004	D – Report monthly progress to Env. Eng.
Monitor amounts of sludge waste generated	Waste Collection Service		4/2003	Ongoing	D – Report quarterly amounts to Env. Eng.

Example 7-2: Environmental Management Program for Process Optimization (continued)

Study methods to reduce sludge waste	Waste Collection Service		4/2003	12/2003	D – Report findings to Env. Eng. by 12/15/03
Identify sources of plastic and foam waste	Final Area Manager		4/2003	4/2003	D – Report findings to Env. Eng. by 12/15/03
Determine feasibility of segregating and recycling waste	Final Area Manager		1/2003	12/2004	D – Report findings to Env. Eng. by 12/15/04
Monitor number of waste plastic drums generated	Waste Collection Service		4/2003	Ongoing	D – Report quarterly numbers to Env. Eng.
Study feasibility of recycling plastic drums	Waste Collection Service		2/2004	12/2004	D – Report findings to Env. Eng. by 12/15/04

Example 7-3: **Environmental Management Program** for **PCB Elimination**

Area/Department(s): Total Facility
Process: General
Significant Environmental Aspect: PCB-containing transformers and ballasts

Objective: Remove PCB-containing transformers and ballasts
Target: (1) Transformers – 100% (no. units/total units) by January 2007
(2) Ballasts - Ongoing

Category :	Control/Maintain	Improve	Study or Investigate
	[ ]	[x]	[ ]

Example 7-3: Environmental Management Program for PCB Elimination (continued)

Action Plan:

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Identify PCB containing transformers located on property	Central Maintenance Area Manager		Complete d	Completed	C – Env. Eng. maintains list
Remove transformers	Environmental Engineer	Schedule for transformer removal	4/2003	12/05	D – Report annual progress to EMR by 1/15 each year
Remove PCB-containing light ballasts	Central Maintenance Area Manager		4/2003	Ongoing	D – Report results quarterly to Env. Eng. C – Ballasts removed when found during normal maintenance activities

Example 7-4: **Environmental Management Program** for **Process Optimization—Energy** and **Water**

Area/Department(s): Total Facility
Process: General
Significant Environmental Aspect: Energy and water

Objective: Reduce energy and water consumption
Target: (1) Energy – 20% (MMBtU/MMBtU) per vehicle from 2000 levels by January 2004
(2) Energy – 6.4% (MMBtU/MMBtU) per vehicle from 1998 levels by January 2006
(3) Water – 5% (vol/vol) from 2001 levels by January 2005

Category : ☐ Control/Maintain ☒ Improve ☐ Study or Investigate

Example 7-4: Environmental Management Program for Process Optimization—Energy and Water (continued)

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Monitor energy use	Energy Reduction Team		4/2000	Ongoing	C – Frequency of monitoring to be established by Energy Reduction Team
Purchase and distribute compressed air leak detection equipment to departments using compressed air	John Smith		4/2000	12/2000	D – Report monthly progress to Energy Reduction Team
Monitor compressed air leaks in relevant departments	Department Managers		1/2001	Ongoing	D – Dept submit monthly report of leaks to Energy Reduction Team.
Prepare and implement leak repair maintenance program based on monitoring results	Central Maintenance Area Manager		3/2001	Ongoing	D – Dept submits monthly summaries of maintenance activities to Energy Reduction Team
Study feasibility of energy reduction by redesigning ventilation systems	John Smith		6/2001	10/2001	D – Submit findings to Energy Reduction Team by 10/15/02
Prepare recommendations based on study findings	John Smith		11/2001	12/2001	D - Present recommendations to Energy Reduction Team by 12/15/01

Example 7-4: Environmental Management Program for Process Optimization—Energy and Water (continued)

Action Plan (continued):

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Implement recommendations where feasible	John Smith		1/2002	12/2002	D – Report monthly progress to Energy Reduction Team
Study methods to reduce water usage	Energy Reduction Team		1/2002	6/2002	D – Report findings to Env. Eng. by 6/15/2002
Prepare recommendations based on study findings	Energy Reduction Team		7/2002	9/2002	D – Present recommendations to Env. Eng. by 9/15/2002
Implement recommendations where feasible	Energy Reduction Team		10/2002	12/2003	D – Report monthly progress to Env. Eng.

Example 7-5: **Environmental Management Program** for **Process Optimization—Wastewater Discharge**

Area/Department(s): Total Facility
Process: General
Significant Environmental Aspect: Wastewater discharge

Objective: Optimize wastewater treatment processes to minimize chemical treatment
Target: Complete by December 1999

Category :	Control/Maintain		Improve		Study or Investigate
		X			

Example 7-5: Environmental Management Program for Process Optimization—Wastewater Discharge (continued)

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Monitor wastewater treatment chemical usage	Wastewater Treatment Plant Supervisor		4/2000	Ongoing	D – Report quarterly usage to Env. Eng.
Study methods to optimize wastewater treatment processes	Wastewater Treatment Plant Supervisor		4/2000	8/2000	D – Report findings to Env. Eng. by 8/15/00
Prepare recommendations based on study findings	Wastewater Treatment Plant Supervisor		9/2000	12/2000	D – Report recommendations to Env. Eng. by 12/15/2000
Implement recommendations where feasible	Wastewater Treatment Plant Supervisor		1/2001	11/2001	D – Report monthly progress to Env. Eng.

Example 7-6: **Environmental Management Program** for **Solid Waste Reduction** from the **Unmasking Activity**

Area/Department(s): Painting
Process: Block painting process
Significant Environmental Aspect: Solid waste from the unmasking activity

Objective: Study waste reduction
Target: Complete study by April 2003

Category:		Control/Maintain		Improve	X	Study or Investigate

Example 7-6: Environmental Management Program for Solid Waste Reduction from the Unmasking Activity (continued)

Action Plan: **Study of Potential Waste Reduction**

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments (C)/Deliverables (D)
Identify potential waste reduction initiatives	John Smith, EMS Coordinator	Web sites on pollution prevention	8/1/2001	10/1/2001	D – List of steps to be taken to fulfill initiative and responsibilities
Identify list of suitable technology to achieve volume reduction	Cross Functional Team	Vendors	10/1/2001	10/31/2001	D – List of potential technology
Identify list of suitable vendors to supply technology for volume reduction	Cross Functional Team	Vendors, testing with plant personnel	11/1/2001	11/31/2001	D – List of potential vendors of compactors and waste compaction technology
Develop evaluation on technical feasibility and cost effectiveness of select compacting products (continued)	Cross Functional Team	Acctg. Dept. input, data from env. dept on current masking waste volume	12/1/2001	2/1/2002	D – Comparative cost analysis of compactor technology D – Technical feasibility analysis of select compactor technology
Present recommendation to management for waste reduction	Cross Functional Team	Slide presentation, meeting	3/1/2002	3/31/2002	D – List of evaluations and recommendations for waste reduction