

ENVIRONMENTAL MANAGEMENT PROGRAMS

Background and Exhibits

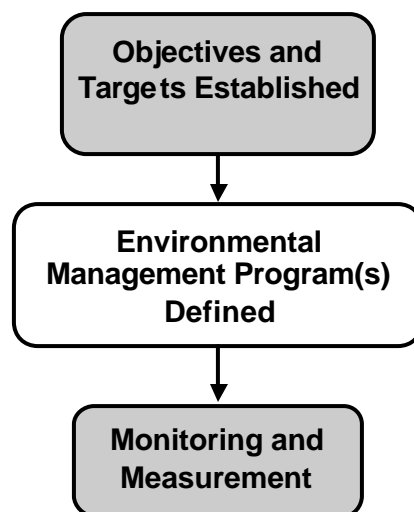
This module addresses establishing Environmental Management Programs (EMPs), the action plans you will follow to achieve your objectives and targets and translate your policy commitments into concrete actions.

To be effective, 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. You should establish an EMP when:

- Objectives and targets are modified or added;
- 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
- Coordinate your EMP(s) with overall plans and strategies. This should increase the likelihood of taking advantage of 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.

Refer to *Exhibit 7-1: Summary Checklist* for a set of steps that can help you 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-003.03)*. The documented procedure for establishing EMPs is included as a section of *Exhibit 5-6: 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 purchases, processes, 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: Summary Checklist

ENVIRONMENTAL MANAGEMENT PROGRAMS

- Step 1: Develop an environmental management program (EMP) for each objective and target that is of the “improve” or “study” type. Each EMP should include information about “who is going to do what by when” and “what are they going to produce to prove it?” Document this information using *Exhibit 7-2: Environmental Management Program(s) Form (EF-003.03)*. See *Example 7-5: Environmental Management Program for PCB Elimination*.
- Step 2: Capture the approach used to establish EMPs in the written procedure that you developed in *Modules 5 and 6*. *Exhibit 5-6: Procedure for Environmental Aspects, Objectives and targets, and Programs (EP-003)* provides a template. Include this customized procedure in your EMS manual (see *Exhibit 10-3: EMS Manual*).
- Step 3: Your EMS should have a method for identifying and evaluating environmental issues of new projects. Capture the approach your facility uses in the written procedure. *Exhibit 7-3: Procedure for Environmental Review for New Purchases, Processes, and Products (EP-010)* and its supporting Form EF-010.01, Project Environmental Checklist may be useful in creating this document. Include the customized procedure in your EMS manual (see *Exhibit 10-3: EMS Manual*).

Exhibit 7-2: Environmental Management Program(s) Form (EF-003.03)

Area/Department(s):

Process:

Significant Environmental Aspect:

Objective: Target: Category : <input type="checkbox"/> Control/Maintain <input type="checkbox"/> Improve <input type="checkbox"/> Study or Investigate
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Task/Action Items	Responsible Party	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.
- 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 Description:

Project Number:

AIR EMISSIONS

- 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?

Yes	No

WATER DISCHARGES

- 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?

Yes	No

STORAGE TANKS

- Will underground storage tanks be installed?
- Will tanks be installed to store hazardous waste or materials, petroleum products, or propane?

Yes	No

WASTE GENERATION

- 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?

Yes	No

ENERGY USAGE

- Will the project/process change effect facility energy usage?

Yes	No

OTHER CONSIDERATIONS

- 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?

Yes	No

Does the project/process change impact the surrounding community (e.g., odor,

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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 Energy and Water Use Reductions through *Example 7-5: EMP for PCB Elimination* provide completed examples of *Exhibit 7-2: Environmental Management Program(s) Form (EF-003.03)* for significant environmental aspects identified in earlier modules.

Example 7-1: EMP for Energy and Water Use Reductions

Area/Department(s): Total Facility

Process: All

Significant Environmental Aspect: Energy and water use

Objective: Reduce energy and water use
 Target: (1) Energy – 10% per 100 man-hours from 2002 levels by January 2006
 (2) Water – 5% per 100 man-hours from 2002 levels by January 2005

Category : Control/Maintain Improve Study or Investigate

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Monitor energy use	Energy Reduction Team		1/2004	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	Engineering Department		1/2004	3/2004	D – Report monthly progress to Energy Reduction Team
Monitor compressed air leaks in relevant departments	Department Managers		3/2004	Ongoing	D – Departments submit monthly report of leaks to Energy Reduction Team.
Prepare and implement leak repair maintenance program based on monitoring results	Central Maintenance Area Manager		3/2004	Ongoing	D – Central Maintenance submits monthly summaries of maintenance activities to Energy Reduction Team
Study feasibility of energy reduction by redesigning ventilation systems	Engineering Department		6/2004	10/2004	D – Submit findings to Energy Reduction Team by 10/15/04

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Prepare recommendations based on study findings	Engineering Department		11/2004	12/2004	D - Present recommendations to Energy Reduction Team by 12/15/04
Implement recommendations where feasible	Engineering Department		1/2005	12/2005	D – Report monthly progress to Energy Reduction Team
Study methods to reduce water usage	Environmental Coordinator		1/2004	6/2004	D – Report findings to Energy Reduction Team by 6/15/2004
Prepare recommendations based on study findings	Environmental Coordinator		7/2004	9/2004	D – Present recommendations to Energy Reduction Team by 9/15/2004
Implement recommendations where feasible	Engineering Department		10/2004	12/2004	D – Report monthly progress to Energy Reduction Team

Example 7-2: EMP for Reduction of Permitted Air Emissions

Area/Department(s): All areas with permitted emissions

Process: All

Significant Environmental Aspect: Point Sources and Fugitive Acid Mist, CO, H2S, NH3, NOX, VOC, PBT Chemical, Particulate Matter (PM10), Odiferous Compounds, and Other Nuisance Emissions

Objective: Reduce Permitted Emissions Target: 10% Reduction by January 2005, relative to year 2002 baseline)						
Category:	<input checked="" type="checkbox"/>	Control/Maintain	<input checked="" type="checkbox"/>	Improve	<input type="checkbox"/>	Study or Investigate

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments (C)/Deliverables (D)
Develop preliminary evaluation of technical feasibility and cost effectiveness of dryer and scrubber modification alternatives	Facility Maintenance Coordinator	Vendor quotes, estimate of reductions	2/1/2004	3/01/2004	D – Technical feasibility report of process modification alternatives D – Comparative cost analysis of process modification alternatives
Make scheduled dryer and scrubber modifications to reduce nuisance dust	Facility Maintenance Coordinator	Project funding	4/01/2004	5/01/2004	D – Track emissions reports before and after improvements and design plan for reporting results
Develop preliminary evaluation of technical feasibility and cost effectiveness of evaporator to eliminate impact of bubbler vent emissions with use of a	Facility Maintenance Coordinator	Vendor quotes, estimate of reductions	2/1/2004	3/01/2004	D – Technical feasibility report of process modification alternatives D – Comparative cost analysis of process modification alternatives

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments (C)/Deliverables (D)
closed system					
Make closed system modifications to reduce nuisance dust	Facility Maintenance Coordinator	Project funding	4/01/2004	5/01/2004	D – Track emissions reports before and after improvements and design plan for reporting results
Replace packed agitator on rework tank with mechanical seal to reduce amine emissions	Facility Maintenance Coordinator	Project funding	5/01/2004	6/01/2004	D – Track emissions reports before and after improvements and design plan for reporting results
Install mechanical dust collectors on boiler	Facility Maintenance Coordinator	Project funding	6/01/2004	7/01/2004	D – Track emissions reports before and after improvements and design plan for reporting results
Install boiler water softeners/tube replacement/feed-water pumps	Facility Maintenance Coordinator	Project funding	7/01/2004	8/01/2004	D – Track emissions reports before and after improvements and design plan for reporting results
Install precipitator software controls upgrade	Facility Maintenance Coordinator	Project funding	8/01/2004	9/01/2004	D – Track emissions reports before and after improvements and design plan for reporting results
Compile emission reduction results	Environmental Coordinator	Emissions data	11/1/2002	12/1/2003	D – Prepare report of results and recommendations

Example 7-3: EMP for Process Wastewater Treatment Optimization

Area/Department(s): Wastewater Plant

Process: All

Significant Environmental Aspect: Process Wastewater Discharge

Objective: Optimize wastewater treatment to minimize chemical treatment
 Target: Complete by December 2004

Category : Control/Maintain Improve Study or Investigate

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Monitor wastewater treatment chemical usage	Wastewater Treatment Plant Supervisor		4/2004	Ongoing	D – Report quarterly usage to Environmental Coordinator
Study methods to optimize wastewater treatment processes	Wastewater Treatment Plant Supervisor		4/2004	8/2004	D – Report findings to Environmental Coordinator by 8/15/04
Prepare recommendations based on study findings	Wastewater Treatment Plant Supervisor		9/2004	12/2004	D – Report recommendations to Environmental Coordinator by 12/15/2004
Implement recommendations where feasible	Wastewater Treatment Plant Supervisor		1/2005	11/2005	D – Report monthly progress to Environmental Coordinator

Example 7-4: EMP for Hazardous and Non-hazardous Waste Reduction

Area/Department(s): Total Facility

Process: All

Significant Environmental Aspect: Hazardous and Non-hazardous Waste

Objective: Reduce volume of hazardous and non-hazardous waste
 Target: (1) Reduce hazardous chemical use by volume by 10% relative to 2002 values by January, 2005
 (2) Reduce hazardous filter waste by weight by 5% relative to a 2002 baseline by January, 2005
 (3) Reduce process sludge waste by weight by 5% relative to a 2002 baseline by January, 2005
 (4) Reduce plastic and foam waste by weight by 10% relative to a 2002 baseline by January, 2005
 (5) Study plastic drum reduction – Complete study by January 2005

Category : Control/Maintain Improve Study or Investigate

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Determine which hazardous chemicals being used could begin to be phased-out or substituted	Environmental Coordinator		12/2003	2/2004	D – Report findings to CFT by 2/15/04
Initiate process to phase-out or substitute identified hazardous chemicals	Engineering Department		3/2004	Ongoing	D – List steps to be taken to fulfil initiative and responsibilities D - Report monthly progress to Environmental Coordinator
Determine which filters are hazardous and non-hazardous	Waste Handling Vendor		12/2003	2/2004	D – Report findings to Environmental Coordinator by 2/15/04. C - All filters are currently treated as hazardous

SPECIALTY-BATCH CHEMICAL MANUFACTURING INDUSTRY — EMS IMPLEMENTATION GUIDE

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Implement program for segregating hazardous and non-hazardous filters	Waste Handling Vendor		2/2004	Ongoing	D - Report monthly progress to Environmental Coordinator
Monitor amounts of hazardous and non-hazardous filters	Waste Handling Vendor		3/2004	Ongoing	D - Report quarterly amounts to Environmental Coordinator
Study methods to reduce or substitute materials that cause filters to be hazardous. Also study methods to reduce filter usage	Reactor Area Manager		12/2003	4/2004	D – Comparative cost-benefit analysis
Prepare recommendations based on study findings	Reactor Area Manager		5/2004	6/2004	D – Report recommendations to Environmental Coordinator by 6/15/04.
Implement recommendations where feasible	Reactor Area Manager		7/2004	12/2004	D – Report monthly progress to Environmental Coordinator
Monitor amounts of process sludge waste generated	Engineering Department		12/2003	Ongoing	D – Report quarterly amounts to Environmental Coordinator
Study methods to reduce process sludge waste	Engineering Department		12/2003	6/2004	D – List potential technology and vendors that offer the technology D – Prepare comparative cost-benefit analysis and report findings to Environmental Coordinator by 6/15/04
Initiate process to process reduce sludge	Engineering Department		6/2004	12/2004	D – List steps to be taken to fulfil initiative and responsibilities D - Report monthly progress to Environmental Coordinator
Identify sources of plastic and foam waste	Waste Handling Vendor		4/2004	4/2004	D – Report findings to Environmental Coordinator by 4/15/04
Initiate process to reduce plastic and foam waste	Waste Handling Vendor		5/2004	12/2004	D – List steps to be taken to fulfil initiative and responsibilities and report monthly progress to Environmental Coordinator
Monitor number of waste plastic drums generated	Waste Handling Vendor		1/2004	6/2004	D – Report quarterly numbers to Environmental Coordinator
Study feasibility of recycling plastic drums	Waste Handling Vendor		6/2004	8/2004	D – Prepare comparative cost-benefit analysis and report findings to Environmental Coordinator by 9/15/04

Task/Action Items	Responsible Party	Resources Needed	Project Start Date	Project Completion Date	Comments/Deliverables
Initiate process of recycling plastic drums	Waste Handling Vendor		9/2004	12/2004	D – List steps to be taken to fulfil initiative and responsibilities D - Report monthly progress to Environmental Coordinator
Determine feasibility of segregating and recycling waste	Waste Handling Vendor		1/2004	2/2004	D – Prepare comparative cost-benefit analysis and report findings to Environmental Coordinator by 2/15/04

Example 7-5: EMP for PCB Elimination

Area/Department(s): Total Facility

Process: All

Significant Environmental Aspect: PCB-containing transformers and ballasts

<p>Objective: Remove PCB-containing transformers and ballasts Target: (1) Transformers – 100% (numbers of units replaced/total units) by January 2006 (2) Ballasts - Ongoing</p> <p>Category : <input type="checkbox"/> Control/Maintain <input checked="" type="checkbox"/> Improve <input type="checkbox"/> Study or Investigate</p>

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		Completed	Completed	C – Environmental Coordinator maintains list
Remove transformers	Central Maintenance Area Manager	Schedule for transformer removal	4/2004	12/06	D – Report annual progress to Environmental Coordinator by January 15 th of each year
Remove PCB-containing light ballasts	Central Maintenance Area Manager		4/2004	Ongoing	D – Report results quarterly to Environmental Coordinator C – Ballasts removed when found during normal maintenance activities