

TIER I – ENVIRONMENTAL MASTER

Getting Started

Building an EMS might sound like an overwhelming task, but it need not be. Since time and other resources are limited in any organization, it is important that a facility use its resources wisely. One way to do this is by preparing and following a simple, effective plan. A facility may want to start by building on the experiences of other organizations that have already implemented an EMS. Also, strive to keep plans at a level that the facility is capable of executing during initial implementation and build an EMS that the facility has the resources to sustain over the long term. It is easier to add more detail to the facility's EMS as a part of continuous improvement than it is to remove detail once in place. The importance of careful planning cannot be overemphasized. Taking the time to figure out what needs to be done, how it will be done, and who must be involved will pay big dividends down the road.

Experience shows that using a team approach to planning and building an EMS is an excellent way to promote commitment and ensure that objectives, procedures, and other system elements are realistic, achievable, and cost-effective. Ideas for using a team and involving employees are discussed throughout this document.

A few hints to keep in mind in building the facility's EMS:

- Help is available - don't hesitate to use it. (See Appendix A for information on some available resources). There are many resources, tools, and templates available to help the facility develop its own customized EMS.
- Set a reasonable pace. Move quickly enough that employees stay interested and engaged, but not so fast that those involved are overloaded, or that the effort becomes superficial.
- Don't re-invent the wheel - existing management practices should help the facility to meet EMS requirements. In the Meat Processing Sector use and adapt whatever parts can be from existing Hazardous Analysis and Critical Control Point (HACCP) systems.
- Consultants and assistance providers can help evaluate the facility's existing EMS components and suggest approaches used successfully elsewhere.

Building a Business Case

A first step in EMS planning is to decide why to pursue the development of an EMS. Is it to improve the facility's environmental performance (for example, compliance with regulations or prevent pollution)? Developing a "business case" – a plan or rationalization as to why the facility should pursue an EMS - can help to frame the purposes for which the facility is developing the EMS. The following will assist in developing a business case for a facility.

Add Value Though EMS

The benefits a facility can gain by implementing an EMS - including improved business operations, enhanced customer confidence, and increased employee and community support - can far outweigh the initial start-up costs. By implementing an EMS, a facility will be seen as a leader in environmental compliance and pollution prevention, and the working relationship among the facility, federal and state regulators will be improved.

The overall benefit of an EMS is greater efficiency and effectiveness resulting from a system for environmental management. More specifically, these benefits may include: savings related to better use of energy, water, and materials; reduced occupational safety and health costs; facilitated compliance; and less waste to treat or dispose. Additionally, EMS's compatibility with HACCP systems ensures a valuable combination of environmental protection and food safety. In fact, a facility can expand EMS management to collectively address safety, quality, maintenance, public relations, and other facets of business into one consolidated plan.

Evidence exists from meat processors that have already implemented environmental management systems, that EMS benefits are quickly realized. For example after only a few months of EMS implementation the following benefits were achieved:

- Enhanced public image;
- Minimized labor turnover;
- Improved environmental performance such as;
 - Improved compliance with a diverse array of environmental regulations;
 - and
 - Reduced operating costs.

An EMS Will Deliver a Return on The Investment

An EMS will require some investment and continuing costs over time for its maintenance and documentation. But an EMS need not break the bank. And as already noted, EMS costs can be outweighed by a variety of savings and cost avoidance. For some facilities, an EMS will produce savings by reducing non-compliance costs. Moreover, major savings are likely from reduced quantities of waste to be managed and disposed, less use of hazardous materials, and savings from energy and water conservation.

An EMS can help to identify opportunities for upgrades and other environmental improvements within the business strategy and will weigh associated costs and benefits to provide the information needed to make a knowledgeable decision.

Boost Public Image

As communities expand and local zoning and development become more challenging, trust and credibility will become even more significant to the success of a business. Within the last few years the meat processing industry has received a great deal of negative press including several damaging articles in the national newspapers. An EMS can help in establishing a dialogue with the community, suppliers, financial

investors, and customers and will demonstrate the facility's commitment to the environment to those directly impacted by the facility's operations. By sharing environmental performance progress, the facility will build credibility and trust within the community.

Minimize Labor Turnover by Retaining Valuable, Trained Employees

In the long term, an EMS will enhance a facility's environmental, health, and safety performance while boosting employees' sense of security and connection to their workplace and community. An improved work environment can translate into increased morale, overall job satisfaction and into a facility's ability to retain current employees and attract new ones. Lowering labor turnover will reduce the costs associated with training new staff.

Improve Environmental Performance, Even With Limited Resources

An EMS will uncover the hidden costs of environmental practices and help in development of a plan to maximize performance by efficiently reallocating resources. Through an EMS, a company can improve environmental performance to levels, which may obviate the need to apply for permits in certain instances. This will save money in permit fees, monitoring, and reporting costs.

Meet The Legal Obligation to Comply with a Diverse Array of Environmental Regulations

The thousands of processing facility's nationwide are subject to many federal, state, and local environmental requirements. Multi-state, multi-facility companies are often challenged with the variability between state regulatory programs. By implementing an EMS, the facility will:

- Be better able to stay in compliance with the wide range of ever-changing regulations;
- Avoid violations and fines that can damage public image as well as corporate accounts;
- Manage environmental issues that vary by region;
- Make facility management aware of proactive measures that can improve the facility's position if new regulations take effect;

See Appendix B for a checklist of regulations from which to start.

EMS Scope

Building a business case is also a good time to define the Scope of the EMS. Much of an EMS is based on common sense and intuitive business decisions. Start by taking small, do-able steps and build momentum from there. To be effective, proactive involvement and approval from top management as well as input from line workers and supervisors throughout the facility is needed. Keep the big picture in mind, but define reasonable expectations, set goals and time frames in line with expectations, then monitor progress, making corrections where necessary. In fact, the facility probably

already has many elements of an EMS in place, but it may not be integrated into a management system. Capitalize on these existing elements in advancing to the next level in environmental management.

The scope of the EMS should be defined by:

- Identifying what it is the facility actually does (does it operate offices, a waste water treatment facility, are there trucks, shipping and receiving, how many buildings, and how much property is there to operate and maintain?);
- Drawing boundaries around the facility and its components; and
- Considering practical constraints and timing.

Defining the scope helps to set the tone for the entire EMS. When defining the scope, include those areas that the management can control and over which it can be expected to have an influence. This is often called management control and includes:

- Authority to determine how the environmental policy is implemented;
- Authority to allocate appropriate resources;
- Clearly defined boundaries for inputs to and outputs of the facility's activities;
- Interfaces with services not completely within the scope of the EMS (e.g. a common effluent treatment facility); and
- The scope of environmental licenses, permits or approvals.

As part of defining the scope of the EMS, the facility should draw boundary conditions defining what it controls. The boundary conditions can be simple and include the facility and associated activities, products and services or they can be more complex and include such things as:

- Transportation to and from the site;
- Post consumer disposal;
- Purchasing of resources; and
- The life cycle of the product.

Temporary sites such as construction sites should be covered in the EMS if the facility has management control over it. A facility should not omit from its scope activities that it has management control over.

Some facilities find that for the initial development of their EMS it is most effective to limit the scope to any activities that occur within their physical property limits or that occur as a direct result of those operations on adjacent sites. In subsequent EMS cycles facilities can consider expanding their scope to include their supply chain (e.g., contract farmers), product lifecycle, and other key associated organizations such as rendering facilities and the local POTW.

Get Top Management Commitment

With this in mind, it is essential for the facility to have top management support and endorsement of both development and implementation of the EMS. Applying TQM / QMS principles to the environmental area and providing adequate resources are the job of top management. In addition, the EMS approach and an organization's culture should be compatible. For some organizations, this involves a choice: 1) tailoring the EMS to the culture, or 2) changing the culture to be compatible with the EMS approach. Remember that changing an organization's culture can be a long-term process. Keeping this compatibility issue in mind will help ensure that the EMS meets the facility's needs.

To initiate and sustain the EMS effort, top management must communicate to all employees the importance of:

- Making the environment an organizational priority;
- Integrating environmental management throughout the organization; and
- Looking at problems as opportunities.

In gaining commitment from management, they must first understand the benefits of an EMS and what it will take to put an EMS in place. Explain to top management the strengths and limitations of the facility's current approach and how those limitations can affect the facility's financial and other performance. These items should have been outlined in the business case. Management also has a role in ensuring that the goals for the EMS are clear and consistent with other organizational goals. Management's commitment should be communicated across the organization.

Identify and Track Resource Requirements

The term "resource" is most often used to imply human or financial resources, but there are many types of resources, which may include equipment, materials, specialized skills, and facilities. Ensuring adequate resources for an EMS involves three general steps:

1. Identifying resource needs. To identify EMS resource requirements, assess the level of effort the facility's current environmental tasks require, the effect of other plans the facility may have on the EMS, and resources the new pieces resulting from implementation will require.
2. Preparing a budget that addresses the resource needs. Most companies formulate resource budgets covering a one- to five-year period. An EMS budget should include all labor, capital expenses, and other items (such as specialized consultants) required to implement the EMS.
3. Tracking EMS costs on an ongoing basis to ensure that resources continue to reflect current needs.

By evaluating such information, a clear understanding of the time and resources required for tasks within the EMS can be developed. Be sure to identify resource requirements and track resources using existing systems in the facility. Look at how other project resources get assigned and use the existing processes as a starting point. More detail may be needed in order to help management understand what resources are required or how they have been used.

Identifying an EMS Team

Core Team

An EMS is too large a system for any one individual to carry out on his or her own. The most effective approach is to identify a team of employees from a broad range of backgrounds throughout the company. Start putting together the core team. The number of individuals on this team will grow as the EMS grows. The core team should include representatives from key management functions, such as engineering, finance, human resources, production and/or service. As the EMS advances and becomes more developed, consider including contractors, suppliers or other external parties as part of the core team, where appropriate. Also consider those employees who have shown an interest in environmental performance and/or those employees who have time to learn and act. A cross-functional team can help to ensure that procedures are practical and effective, and can build commitment to and “ownership” of the EMS.

The team’s purpose is to define the scope of the EMS and ensure that all major internal interests are considered in the EMS development process. The core Team should also provide greater access to management in each functional area as the project progresses and act as a sounding board for ideas as the project progresses.

Environmental Policy Statement

An environmental policy is the declaration of commitment to the environment. This policy provides a unifying vision of environmental principles that will guide the actions of employees and management. Through it, top management should communicate goals such as preventing pollution and minimizing risk to workers and the environment. This policy statement serves as the framework for setting environmental objectives and targets, and will be brought to life in the plans and business activities. Major environmental concerns can be addressed in the facility’s environmental policy statement.

The policy statement should:

- Be a written statement of intent and values;
- Identify the main environmental issues and indicate how they will be managed;
- Present strategic objectives to attain the company’s long-term environmental position;

- Highlight how the facility will monitor and improve environmental performance;
- Reflect the scope of the EMS; and
- Be a commitment to:
 - Compliance with legal requirements and voluntary commitments,
 - Pollution prevention,
 - Continuous effort to improve environmental performance, and
 - Share information about environmental performance.

Draft the environmental policy statement in general terms. Address a list of specific issues in general terms in the policy statement. For example, if chemicals in water or air are a concern because they potentially impact the community, express a commitment to review and, where feasible, make changes in the chemicals used by the facility, or make sure the chemicals are being managed appropriately. Or, if solid waste in landfills is a concern, express a commitment to reduce the solid waste the facility produces.

The facility probably has some type of environmental policy now, even if it's not written down. For example, the facility probably is committed to complying with the law and avoiding major environmental problems, at a minimum. Document existing commitments and goals as a starting point.

The policy should relate the products and services, as well as supporting activities. Remember that the statement can be modified as the EMS is developed. In subsequent iterations, consider the results of the gap analysis (Tier II) and the analysis of the environmental aspects (Tier II) of the products, services and activities before finalizing the policy. These two steps can provide insight as to how the facility interacts with the environment and how well it is meeting its challenges. For example, information obtained from completing the gap analysis might help to define specific policy commitments.

The environmental policy should be explicit enough to be audited. If a phrase such as "We are committed to excellence and leadership in protecting the environment" is used, consider how to demonstrate that such a commitment is being met.

The environmental policy can be a stand-alone document or it can be integrated with the health & safety, quality, or other organizational policies.

Make sure that the environmental policy statement is posted in the facility and that the employees understand the policy (See Communications Plan). Options for communicating the policy internally include posting it around work sites (e.g., in lunchrooms), using paycheck stuffers, incorporating the policy into training classes and

materials, and referring to the policy at staff meetings. Test awareness and understanding from time to time by asking employees what the policy means to them and how it affects their work.

The policy can also be communicated externally (Tier II). Some options for external communications include placing the policy on business cards, in newspaper advertisements and in annual reports, among other options. The policy may be communicated proactively, in response to external requests or both. This decision should be factored into the overall strategy for external communication (Tier II).

It is important to think through which commitments the facility will be capable of addressing. Do not include commitments in the policy that the facility will not be able to carry out. Make sure top management commits to the environmental policy statement. If possible, the company president or facility manager should sign and date it. The final environmental policy statement should be posted or distributed to employees and other interested parties.

Compliance

Every facility will find its own way to express its values. The key points are that the policy / principles / commitments are stated clearly and that management provides direction on how it envisions these statements being put into practice. Actions are important.

Compliance with legal requirements is a critical consideration in EMS development and implementation. EMS implementation requires a facility, among other things, to:

- Develop and communicate an environmental policy that includes a commitment to compliance;
- Develop and implement a procedure to identify, analyze and have access to environmental laws and regulations;
- Set objectives and targets in line with its environmental policy, which includes a commitment to compliance;
- Establish management programs to achieve its objectives;
- Train employees and communicate relevant EMS requirements to them;
- Establish and implement operational control procedures;
- Establish and implement a procedure for periodically evaluating compliance; and
- Establish and implement a procedure to carry out corrective and preventive actions.

While the requirements noted above relate directly to a facility's management of legal requirements, each of the EMS elements can contribute to enhanced compliance

(including communication, documentation and document control, records management, EMS audits, and management review). An EMS that includes these elements will help the facility improve or maintain its compliance performance and facilitate the establishment of objectives and targets that go “beyond compliance.”

Document Management

One of the key types of EMS documentation that the facility will need to generate is procedures that are readily available and accessible. The facility does not have to make a final format selection for EMS documentation at this time unless the facility has a specific format it already uses to document standard practices. However, begin to consider what format would work best for the facility. As you proceed through EMS implementation you will, in some cases, be formalizing practices already in place or, in other cases, developing methods. Trying to write down exactly how a procedure will be accomplished before it is worked out is not always possible or desirable. Therefore, it is acceptable to do a “back of the envelope” or mental only “first cut” at many of the facility’s new or improved processes and then shortly thereafter write it down. The process of “writing it down” in plain language will help to remember what worked and what did not work, and will also guide others in the future.

Electronic or Paper Based Documentation

While a paper-based system for housing the documentation and records is acceptable, some companies find electronic systems more advantageous. Electronic systems vary from just using a common file directory for documents to commercial products that provide a framework to house all EMS documents, records and procedures while providing a structure to organize the elements of an EMS. The larger or more complex the company or facility the more likely an electronic documentation management system will prove to be useful.

Pollution Prevention Plan

EMS design and implementation also should take into account the need for a Pollution Prevention (P2) plan. The idea of pollution prevention (P2) is simple –reduce or eliminate the generation of pollutants or waste before they are created. So why undertake the effort to do this? There can be several benefits for the company:

- Reduction in operating costs
- Increased business efficiency
- Reduced risk of liability
- Reduces impact of the operations on the environment

There are three key things to do when getting started on P2.

- *Commitment* - The first and most important step to P2 is having a company-wide commitment to prevent waste generation. To accomplish this, top management

must back P2 policies to ensure successful implementation of the plan. This should be done through a written commitment from management to P2.

- *Form a Workgroup* - Form a pollution prevention workgroup. This workgroup may be the same group as the core team or may include others. The purpose of this group is to create and oversee the P2 plan and keep efforts focused and moving forward. When forming this workgroup, be sure to involve the individuals who will be most affected by operational changes, including maintenance staff, materials handling personnel and purchasing employees. Broad employee participation is critical to a successful plan. From the group, select a chairperson. The chairperson will coordinate P2 efforts and serve as the point of contact with top management. This group should meet on a regular basis to review the facility P2 status, identify new ways to eliminate waste, and develop new programs.
- *Resources* - Identify resources for assistance. There are several sources of P2 information and help available (Appendix A). These include US Environmental Protection Agency and state regulatory agencies, trade groups (e.g. AMI), and vendors. Don't forget the employees who are often the best source of practical ideas.

Developing A P2 Plan

To be effective at P2, remember the old adage “Plan your work and work your plan”. For the workgroup to develop this plan, it should go through the steps discussed below.

Status Assessment - Determine the facility's current waste generation situation by conducting a waste stream assessment. This can include all solid wastes, hazardous wastes, wastewater, and air emissions at the site. Determine the source and volume for each waste stream. An important part of this step is to attempt a determination of disposal costs associated with the waste streams.

Strategy - The workgroup will need to develop the parts of its P2 strategy by:

- Identifying and prioritizing wastes to be targeted for P2; A P2 hierarchy (see Figure 3) can be helpful to consider.

Figure 3 – Pollution Prevention Hierarchy

Source: http://resourcesaver.com/file/sectorstar/project_314.pdf



- Brainstorming as a workgroup to generate P2 ideas;
- Considering adopting an incremental approach to reduction to keep the project manageable;
- Evaluate alternatives by considering cost, ease of implementation, payback and benefit to the environment; and
- Identifying in-house resources, such as equipment that might be necessary to implement a pollution prevention program.

Goal Setting - Once a P2 strategy has been established, identify some general P2 activities that apply to a variety of waste types and will go a long way towards meeting the P2 goals. Some things to consider when setting goals:

- Goals should be ambitious, but also realistic. They should allow success so people feel their efforts have paid off, which will provide encouragement to continue P2 efforts.
- Goals should be measurable. To judge the impact of meeting a P2 goal, you should be able to quantify the amount of waste reduced and also the reduction in financial expense that would normally be incurred to handle that waste stream.
- Goals should be set for both the short term (one year) and long term (five years).

P2 Activities - Begin by reducing or eliminating any waste stream that can be at its origin. This could include solid, toxic and hazardous wastes and releases of pollutants to air or water. This reduction or elimination may be accomplished through process modification, operation and management practices, and increasing machinery efficiency or any other process or practice that accomplishes the same end result.

If eliminating waste generation is not an option, recycling or reusing materials is an alternative. This could include using reusable containers or recovering valuable materials.

For many facilities, water use, and the associated amount of wastewater produced, represents an area that has the potential for significant reduction and cost savings. Water usage can be reduced by putting in reduced flow faucets and hose bibs, repairing leaks, shutting off water during breaks, and installing meters to monitor high water usage areas. There are many other P2 activities that you can easily undertake. Some additional areas to consider are:

- Replace disposable materials with reusable and recyclable materials.
- Segregate all waste streams to reduce contamination of recoverable materials.
- Investigate the use of returnable and/or recyclable containers and pallets.
- Investigate waste exchange programs for both solid and hazardous waste.
- Identify specific waste materials that could be recycled either on-site or off-site.
- Establish improved quality assurance/quality control procedures to reduce the generation of rejected products.
- Explore the use of recovery equipment for reducing hazardous, solid and liquid wastes in the form of sludge, solvents, acids, degreasers and other wastes.

- Identify potential production changes that would improve efficiency including process, equipment, piping and layout changes.
- Consider procedural measures, loss prevention, material handling improvements and production scheduling to reduce wastes.
- Investigate opportunities for product or ingredient substitution that would reduce the creation of waste.
- Purchase materials in bulk or larger containers, but purchase only what you need to avoid spoilage or obsolescence.
- Consider additional automation and changes in operational settings to reduce waste. Control inventory to reduce waste; rotate stock, using oldest purchases first.
- Invest in products and equipment that are durable, easily repaired, and/or recyclable.

Implementing And Monitoring The P2 Plan

Once the plan is complete, develop an implementation schedule and monitoring protocol that will meet the goals. An important part of demonstrating that P2 is worthwhile is showing how much money is saved through waste reduction. Develop a cost-benefit analysis that accounts for all costs for waste management. As waste streams are assessed for source reduction potential, develop accounting systems that calculate the true cost of disposal and recognize benefits of pollution prevention. This means going beyond handling, transportation, treatment and disposal costs. Lost revenue of materials that could have been sold as recyclables should be included in accounting systems, as well as the value of the wasted input material. Use a system that identifies waste handling, treatment and disposal expenses as direct costs of producing a product.

Finally, track progress being made. This can be done by developing a regular (at least monthly) report to monitor the success of the program. This report should provide employee feedback and identify problem areas. Share the report with the employees to show that their P2 efforts do make a difference.

P2 Employee Training And Incentives

In order for the pollution prevention plan to be successful, employee awareness and involvement is critical. Inform employees about the company's P2 goals and how those goals will impact daily operations. Be clear regarding what is expected from affected employees.

Employee education and participation is critical to program success. Provide employee training for source reduction and any other P2 activities that will require a change in behavior. Those who must change how they handle materials will appreciate the guidance and training. Provide for continuing education opportunities in the future to anticipate personnel turnover.

Employee involvement can be encouraged through the use of incentives. Establish an incentive program that encourages personnel to suggest changes that would reduce waste. Employees might be offered the opportunity to suggest changes that can result in company savings. A portion of these savings could be passed back to the employee or their department.

P2 Throughout The Supply Chain

In addition to preventing waste in the facility, encourage those companies the facility works with to do the same. This can include:

- Ask vendors to minimize unnecessary packaging, use recycled materials, or use returnable packaging.
- Determine if outdated stock can be returned to suppliers for regeneration.
- Don't accept product samples from sales people if those samples will later become waste.

Preventative Maintenance Plan

Operation and maintenance programs should exist or be developed for equipment and operations related to compliance or significant environmental aspects. This could include management and disposal of wastes, approval of new chemicals, storage and handling of raw materials and chemicals, equipment servicing, wastewater treatment, storm water control, and adherence to permit conditions.

Operation procedures and maintenance schedules of equipment and facilities are integral to organizations. Having those procedures and schedules documented is a critical step in addressing environmental activities. If the facility does not have an operation and maintenance plan or if the plan is in need of an update, the following discussion will guide you through the process of developing such a plan.

An effective operation and maintenance plan is important company wide. A written plan must be prepared, posted, implemented and have the full support of management. The first step in this plan is to get the commitment of top management to back operations and maintenance plan implementation.

Next, select an operations and maintenance plan workgroup. This group is the cornerstone of the plan and will oversee program development, recommend an implementation strategy and monitor the program. This group may be the same group as the core team or may include others. The group should meet on an ongoing basis to modify the plan when needed and identify new programs areas. It is important, when selecting this workgroup, to involve a broad group of employees from different areas of the facility so as not to overlook any process or procedure. A memo soliciting employee participation may be helpful. Select a chairperson from the workgroup participants to coordinate the operations and maintenance plan efforts and serve as a spokesperson to top management. Identify resources for technical assistance.

Developing the Plan

Once the workgroup has been established, development of the plan can proceed. Organize the plan in a way that will make it readily usable. Determine which operations should be covered by documented procedures. Operations related to significant impact and legal requirements should be included. Determine what operations are already documented. If the facility does not have any existing documented procedures, begin by examining the facility's process flow diagrams. Use other documents such as the pollution prevention plan, emergency response plan and HACCP plan to identify different aspects of the facility. Describe the operation to which the procedures pertain (e.g. greasing a piece of equipment; work floor clean up). Discuss what equipment and other materials are involved in the operation. Provide a schedule by which the operation should occur. Identify roles that individuals will need to fill and the individuals that will fill those roles. Make sure that such individuals are identified for each shift.

Implementing and Monitoring the Plan and Employee Training and Incentives

Provide ongoing training to personnel in how to appropriately implement plan. Provide information and procedures to enable the responsible person to fulfill the obligation. Conduct inspections and tests in accordance with written procedures that you have developed. Keep a copy of the emergency response plan posted in visible, accessible locations throughout the facility.

Included in Appendix C are several attachments Identifying possible procedures that food plants would want to develop as part of their EMS program, including a sample list of procedures identified as Basic, Administrative, and Plant that are by no means complete, but is to be used as a guide to get started. Also included are examples of Plant procedures developed to address storm water and air emission at a facility. As you develop your EMS program over time, the list of operational controls and procedures will change and grow, as you identify new opportunities to enhance environmental performance.

A sample operations and maintenance plan can be found in Appendix C.

Emergency Preparedness and Response Plan

Despite a facility's best efforts, the possibility of accidents and the potential for emergency situations still exists. Incidents related to releases of hazardous materials, releases of oil or chemicals, non-standard air emissions, utility loss, fires, and explosions can result in impacts to the environment. A process for identifying the potential for and responding to such incidents is a critical component of any EMS. Effective preparation and response can reduce injuries, prevent or minimize environmental impacts, protect employees and neighbors, reduce damage, and minimize downtime.

An emergency preparedness and response program should include provisions for:

- Assessing the potential for accidents and emergencies;

- Preventing incidents and the associated environmental impacts;
- Responding to incidents based on documented plans and procedures;
- Testing of emergency plans and procedures;
- Mitigating impacts associated with these incidents; and
- Reviewing performance after actual incidents to continuously improve plans and procedures.

The facility's EMS Team should first identify the potential accidents and emergency situations that might generate environmental impacts. A list of potential incidents and their causes should be developed similar to Appendix D.

The EMS Team should also review existing facility response plans that may already include or could be modified to include the provisions noted above. A list of environmental regulations and situations that often require response plans is included as Appendix E.

By comparing the list of potential incidents with existing response plans, the EMS Team can determine what plans may require modification or development. In many cases, existing plans and practices can be included or referenced as part of the emergency preparedness and response section of the EMS. This includes existing training, equipment, and drills as well the plan documents themselves.

For each type of incident to be addressed, the EMS Team should begin by developing preventative measures to be included in that plan. Preventative measures might include inspections (for leaks, pressures, condition of seals, liquid levels, etc.), best management practices (proper storage of materials, good housekeeping, preventative maintenance, etc.), and operator training. For each of the preventative measures, individuals should be identified that will address the measures. Consideration should be given for all shifts, as well as weekends and holidays.

Next, identify equipment that might be appropriate to respond to the various potential incidents and mitigate impact. Monitoring and detection equipment may be needed to first determine potential exposure levels. Containments such as berms or dikes may minimize discharge and impact. Absorbent materials, booms, and covers may be suitable. Shovels, scoops, and storage containers may be appropriate to collect spilled materials. Personal protective equipment such as gloves, goggles, protective suits, and even self-contained breathing apparatus (SCBA's) should be included. Be sure that maintenance and regular inspection of response equipment is addressed.

An internal and external communication procedure should be developed to insure that regulatory agencies and response personnel are notified in a timely manner. This would essentially be a list of numbers to call in response to a specific type of incident. Reports should be documented on a pre-prepared form and include as much information as possible including:

- Exact address/location of the facility;

- Date and time of emergency;
- Type and source of emergency;
- Affected areas;
- Potential cause;
- Any damages or injuries;
- Actions being taken to address the emergency; and
- Other agencies/individuals contacted.

A site plan marked to show evacuation routes and areas where evacuees can safely congregate should be provided for incidents that might require evacuation of various plant areas or the entire facility.

Each plan should also include a schedule or frequency for review and testing. Reviews should be utilized to determine if any facility changes have impacted plan requirements. Tests can be tabletop exercises or actual drills. Drills need not adversely impact operations. Partial simulations can be used if activities like a complete facility evacuation are impractical. Each plan should be reviewed and/or tested at least annually.

Reviews and drills should be documented on a form similar to the form found in Appendix F. Plans should always be reviewed subsequent to any actual emergency or incident.

Once the EMS Team has developed plans and requirements, training relative to particular roles and responsibilities is required. In some cases this will involve training in proper operation or maintenance of equipment and may already be part of an existing training program. In other cases, the reviews and testing may serve to meet training requirements. The training program should provide for the training of new hires and transfers as they enter any position included in the response plan. In all cases, the names of the individuals trained and the date training took place should be documented and included with the respective plan file.

Copies of response plans should be kept in areas that are readily accessible to potential responders in case of an accident or emergency.

Internal Communication Plan

This section is meant to be a guide that companies can use in their facilities to assist in communicating information about the facility's environmental policy and activities both within the facility and with the outside community.

In order to most effectively develop, implement and monitor environmental activities at a facility, employee awareness and participation must be accomplished. In addition, there may be parties with an interest in the environmental performance and management efforts outside the facility (Tier II). It is particularly important to communicate with the

community in which you operate. Effective environmental management requires effective communications, both internally and externally (Tier II).

Effective communications will help:

- Motivate the workforce;
- Gain acceptance for the plans and efforts;
- Explain the environmental policy and EMS and how they relate to the overall organizational vision;
- Ensure understanding of roles and expectations;
- Demonstrate management commitment;
- Improve the relationship with the community;
- Monitor and evaluate performance; and
- Identify potential system improvements.

An effective EMS should include procedures/ processes for:

- Communicating internally (between levels and functions within the organization);
- Soliciting, receiving, documenting and responding to external communications (Tier II); and
- Working with stakeholders.

In order to develop effective procedures for internal and external communication, it is useful to have an understanding of what is encompassed by the terms “internal communication” and “external communication” and what the ultimate goal is of such procedures. Internal Communication generally refers to written or electronic correspondence, telephone conversations and oral discussions, or meetings with anyone directly employed by the company. External Communication refers to written or electronic correspondence, complaints or regulatory inquiries about environmental practices. Telephone conversations and oral discussions or meetings (relating to facility environmental practices) with anyone not directly employed by the company (including regulatory agencies, environmental groups, and neighbors). Once there is an understanding of the differences between internal and external communication, begin to create a complete communications plan by developing an internal communications plan.

The first step is to select a communications workgroup. As with other groups discussed, the communications group can be the Core Team and can include others. This group should meet on an ongoing basis to ensure that all information is being communicated throughout the organization and to determine if new communication programs and materials need to be developed. This workgroup may be the already established communications department, however, this department is often charged with communicating information to groups outside the facility. Since it is essential each

department or group throughout the facility to get the information, facilities may want to consider setting up a new communications workgroup involving individuals across the facility specifically for internal communications. Next, select a chairperson from the workgroup participants to coordinate the communication efforts and serve as a spokesperson to top management.

The first task before the communications workgroup is to determine the communication objectives. Decide what is to be achieved in the communication. Setting this goal will help get the right message across without overwhelming people with too much information, spending too much time, or missing the mark. It is helpful to create an EMS communication policy for the facility. The policy should outline what kinds of information will be communicated to external stakeholders, and how the facility will document and respond to communications from these stakeholders. In addition, the procedure should discuss how the facility would report environmental incidents, such as spills, accidents and “near misses”. The procedure should include who reports what, to whom, and when. Small and medium-sized businesses may not need a written procedure for communication.

Communicate regularly and integrate EMS communication

To build support for the EMS, try to communicate on a regular basis. Some simple means of regular communication can usually be accomplished without straining resources – for example, a bulletin board posting, email messages, or articles in the organization newsletter. Don't forget to consider direct word-of-mouth communication, particularly in smaller organizations. Talking directly with key individuals at intervals may be the best mechanism for ensuring good communication. Use existing channels of communication to get the message out on the EMS activities. Examples of methods for communicating both internally and externally are given below.

Internal Methods:

- Newsletters
- Intranet
- Staff meetings
- Employee meetings
- Bulletin boards
- Brown bag lunches
- Training
- Signs

Monitoring and Recording

In Tier I monitor and record water/utility use, wastewater discharge, air emissions, and hazardous/solid waste generation. The purpose of this step is to simply begin the

process of monitoring and measuring activities that may later be identified as aspects. Start with a relatively simple monitoring and measurement process, and then build on it as experience with the EMS is gained.

Most effective environmental measurement systems use a combination of process and outcome measures. Outcome measures look at results of a process or activity, such as the amount of wastes generated or the number of spills that took place. Process measures look at “upstream” factors, such as the amount of packaging material used per unit of product or the number of employees trained on a topic. Select a combination of process and outcome measures that are right for the facility.

Monitoring and measurement will be necessary in order to later identify impacts and aspects (Tier II) and set objectives and targets (Tier III). In general, monitoring and measurement enables an organization to:

- Evaluate environmental performance;
- Analyze causes of problems;
- Assess compliance with legal requirements;
- Identify areas requiring corrective action; and
- Improve performance and increase efficiency.

A template to monitor and record water/utility use, wastewater discharge, air emissions, and hazardous/solid waste generation can be found in Appendix G.

This concludes Tier I – Environmental Master in the Environmental MAPS program. Facilities that have completed Tier I should now have a core EMS team, a commitment from upper management to continual environmental improvement and an environmental policy statement. Tier I facilities should also have working pollution prevention, emergency response, preventative maintenance and internal communications plans. The ongoing monitoring and measuring that Tier I facilities are carrying out will assist facilities in later Tiers. Once a facility is comfortable that they have understood all the components of Tier I, that facility is encouraged to begin work on Tier II – Environmental Achiever.