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ISO 14001:2015 Environmental Management System Design Guidance and Timeline

for use by members in the North Carolina Environmental Stewardship Initiative

Version 2.2
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Division of Environmental Assistance and Customer Service
N.C. Department of Environmental Quality
1639 Mail Service Center
Raleigh, NC 27699-1639
1-877-623-6748

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The North Carolina Department of Environmental Quality's Environmental Stewardship Initiative is a voluntary program designed to promote and encourage superior environmental performance by North Carolina's business, industrial, and government community. This program provides recognition, training and networking opportunities to stimulate and support environmental stewardship. One of the main criteria for progressing in the ESI is implementation of an environmental management system. An EMS provides a systematic approach to managing and continually improving environmental performance and can serve as a foundation and mechanism to guide organizations to stewardship.

The Division of Environmental Assistance and Customer Service (DEACS) developed the following EMS guidance materials and timeline to provide ESI participants with an organized approach to EMS development. The tool covers the majority of EMS elements but may not address every requirement in ISO 14001:2015. An organization should use ISO 14001:2015 as its main reference document for EMS design and implementation. This guidance and timeline have been organized in order to assist facilities to:

1. Develop an understanding of the organization's current environmental management program and build on these existing efforts.
2. Design the core elements that require the greatest input from the EMS team in the beginning of the process.
3. Allow the EMS team to develop an understanding of the link between the core elements of the EMS before establishing document guidance and control requirements.

The EMS team is comprised of individuals from a cross-section of the organization with broad knowledge of facility operations. The Environmental Management Representative serves as the EMS "champion" and may work alone or with one or two other individuals to set meetings, complete unassigned tasks and keep the process moving between team meetings.

In addition, six modules have been developed to provide training on specific EMS elements. Modules align with steps outlined in this guide and are designed to be used in conjunction with it. The six modules are:

Module 1 EMS 101: Introduction to EMS and ISO 14001:2015, Context & Scope
Module 2 Aspect and Impact Identification and Ranking
Module 3 Operational Control and Monitoring & Measurement
Module 4 Establishing Objectives, Document Control, & Training
Module 5 Corrective Action, EMS Auditing, & Management Review
Module 6 EMS Internal Auditor Training

Contact DEACS, 1-877-623-6748 or esi@ncdenr.gov for more information on module training classes.

Suggested Steps for EMS Design and Timeline

EMS Elements	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
Management Review Board Meetings												**
EMS Team Meetings												
Step 1: Management support, Context, Scope, Roles & Responsibilities	*											
Step 2: Initial Environmental Review, Identify Compliance Obligations (6.1.3) and Evaluation of Compliance (9.1.2)												
Step 3: Policy, Environmental Aspects and Impacts Analysis (5.2, 6.1.2)												
Step 4: Operational Control and Emergency Preparedness and Response (8.1 & 8.2)												
Step 5: Monitoring and Measurement (9.1.1)												
Step 6: Environmental Objectives (6.2.1)												
Step 7: Documentation and Document Control (7.5)												
Step 8: Competence and Awareness (7.2 and 7.3)												
Step 9: Nonconformity and Corrective Action (10.2)												
Step 10: Communication, Management Review and Improvement (7.4, 9.3, 10.1, 10.3)												
Step 11: Internal Auditing (9.2.2)												

* Management meeting to determine context, etc

** First MRB meeting covering all requirements of ISO 14001:2015

Example forms and procedures for all elements can be found here:

https://deq.nc.gov/about/divisions/environmental-assistance-customer-service/environmental-stewardship-initiative/environmental-management-systems

Summary of EMS Team Meetings by Week

Module	Week	Mgmt Meeting	Team Meeting	Activities
1	1	1		Complete the Commitment and Context
1	3	2		Complete the Interested Parties and Scope
1	5	3		Complete the EMS Resources, Organizational Structure and Roles and Responsibilities, Training Needs
2	8		1	Collect information for initial environmental review,compliance obligations. EMR develops process for evaluation of compliance obligations. Meet in 3 weeks.
2	11		2	Draft policy. Develop aspect and impact list. Meet in 3 weeks.
2	14		3	Develop ranking criteria and rank aspects. Meet in 3 weeks.
2	17		4	Determine significance. Meet in 1 week.
3	18		5	Begin operational control and emergency response planning. Meet in 3 weeks.
3	21		6	Develop monitoring and measurement program. Meet in 3 weeks.
4	24		7	Set objectives. Meet in 2 weeks.
4	26		8	Develop plans for objectives. Meet in 2 weeks.
4	28		9	Begin document control. Complete gap analysis. Meet in 3 weeks.
4	31		10	Review training and competence process. Meet in 4 weeks.
5	35		11	Develop corrective action process. Meet in 3 weeks.

Module	Week	Mgmt Meeting	Team Meeting	Activities
5	38		12	Develop communication process. Determine Management Review Process. Establish next meeting based on ongoing EMS implementation needs.
5 and 6	40		13	Develop internal audit program.
	45			EMS "live."

Leadership Commitment, Context, Interested Parties, Scope, Roles, Responsibilities & Resources, Initial Training (4.1, 4.2, 4.3, 4.4, 5.1, 5.3, 7.2)

In this the initial step of developing your EMS we will cover a number of topics and develop EMS procedures and records that will lay the groundwork for the other elements described in the later steps in this guidance. Step 1 is scheduled as three separate management meetings to complete all work and kick off your EMS implementation. You are welcome to adjust this schedule as it relates to your organization.

Scheduling:
Management Meeting 1 - Complete the Commitment and Context portions of Step 1 (Items I and II)
Management Meeting 2 - Complete the Interested Parties and Scope portions of Step 1 (Items III and IV)
Management Meeting 3 - Complete the EMS Resources, Organizational Structure and Roles and Responsibilities, Training Needs portions of Step 1 (Items V to VII)

Allow two to three weeks between the three noted meetings; adjust schedule as needed

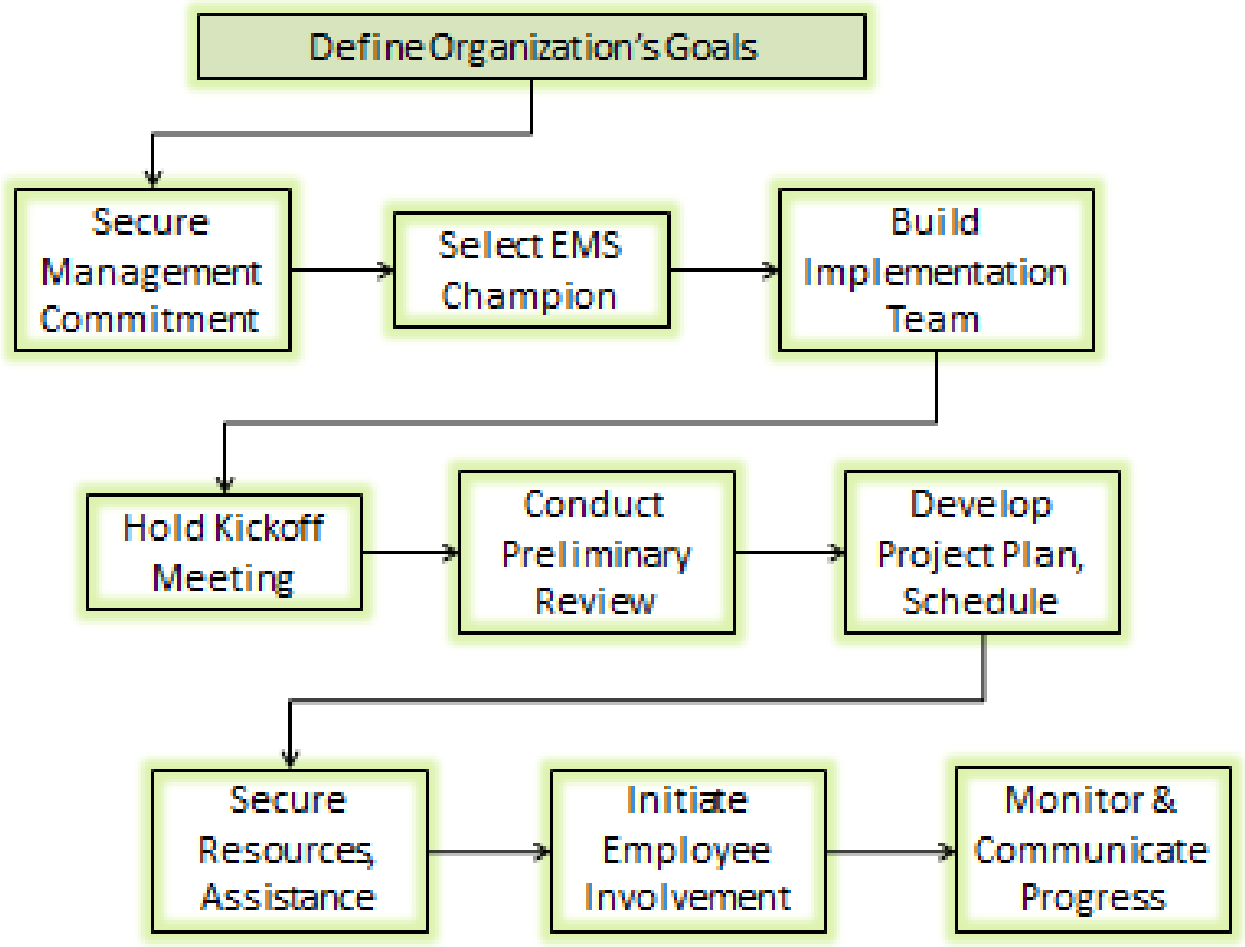
You may want to schedule the EMS kickoff meeting in conjunction with the final meeting; tailor this rollout to your needs.

Management Meeting 1 - complete items I and II

EMS Development Schematic

The following graphic describes the general steps to successfully develop and implement an environmental management system.

The "Getting Started" flow chart is based on a similar chart from *Environmental Management Systems: An Implementation Guide for Small and Medium Sized Organizations*, NSF International, 2001



I) Ensure Top Management Leadership and Commitment (5.1)

A successful organization has the commitment of top management in its environmental management program including the establishment, ongoing implementation and continual improvement of an environmental management system (EMS). This sentiment has been formalized in the 2015 standard by the addition of Section 5.1 noting requirements for top management's leadership and commitment to the EMS.

Leadership and commitment are demonstrated by:
- taking accountability for the effectiveness of the EMS
- establishing an environmental policy and environmental objectives and ensuring they are compatible with the strategic direction and the context of the organization (defined below)
- integrating the EMS requirements into the organization's business processes
- ensuring the resources needed for the EMS are provided
- communicating the importance of effective environmental management and of conforming to the EMS's requirements
- ensuring the EMS achieves its intended outcomes
- directing and supporting staff to contribute to the effectiveness of the EMS
- promoting continual improvement
- supporting fellow management in demonstrating their leadership as it applies to their area of responsibility

Therefore, top management and those assigned to implement the EMS should review how they can demonstrate the organization and its leaders have met these requirements.

Initial steps may include a kick-off meeting with EMS team members and top management as this demonstrates commitment, support, and interest in EMS efforts. The meeting could review all items noted in Step 1 of this design guidance. A letter to EMS team members from top management may also show support for EMS efforts.

What are other ways for leadership to demonstrate support in your organization?

II) Understand the Context of the Organization (4.1)

No organization operates within a bubble so in a holistic approach the organization is tasked with understanding the issues that can affect its ability to achieve the intended outcomes desired by implementing an EMS.

<u>Items to be considered:</u>
- Determine the environmental conditions that can either affect or be affected by the organization
- Determine external issues that may affect the organization’s ability to improve (e.g. legal, economic, social, or political)
- Determine internal characteristics and their role in the organization's context such as work force, knowledge, processes, systems, finances, corporate requirements, etc.

Please be aware that the 2015 standard requires that you consider the context of the organization when developing the scope of the EMS (Step 1) and that the environmental policy (Step 3) and objectives (Step 6) be compatible with the context of the organization. It also requires that you consider your organizational context when planning for the EMS and identifying risks and opportunities to the organization and the EMS.

Here is an example loosely based on a blog discussion from the 14001 Academy on organizational context to wrap our minds around this concept.

Let's say our organization is a food manufacturer for a popular snack product, so what could we consider when developing our organizational context? One of our key production components is our supply of wheat.

<u>Environmental considerations:</u>
- Transportation issues associated with wheat delivery
- Air quality issues with wheat storage
- Water issues (runoff contamination) from wheat storage and processing
- Effects of climate change on wheat supply
- Adverse environmental impacts from wheat production in agricultural communities
- Can you think of any other environmental issues?

<u>External considerations:</u>
- Negative publicity from environmental issues may lead to a drop in share price
- Opportunities may arise from sourcing wheat from another area of the world
- The perceived issue of gluten sensitivity may affect sales
- Congress may pass new labeling requirement legislation for different genetic strains of wheat
- Can you think of any other external issues?

<u>Internal considerations:</u>
- Employee language barriers may affect adherence to procedures and environmental compliance
- Corporate finance requires a 10% budget reduction in wheat purchases
- Needed equipment replacement may reduce production
- Can you think of any other internal issues?

Life Cycle Perspective:

One concept introduced in ISO 14001:2015 is the life cycle perspective, and it may be helpful for you to review this cradle to grave thought process regarding products and services before developing your "context of the organization".

The life cycle stages are noted in section 3.3.3 as acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal. Taking this holistic view of the organization and its processes may help you develop a robust context of your organization. As noted above it will be used in developing other sections of your EMS.

Action:

Step 1a contains a summary of items to consider when trying to identify the context of your organization. You may want to review it and have it handy when completing the worksheet in Step 1b to develop the context of your organization.

Management Meeting 2 - complete Items III and IV

III) Understand the Needs and Expectations of Interested Parties (4.2)

The standard requires the organization to understand the needs of its stakeholders. Specifically the organization shall

- determine who are interested parties relevant to the EMS
- identify the stakeholders' requirements, needs, and expectations
- determine the needs and expectations that will be addressed in the EMS as compliance obligations

Section 3.1.6 defines an interested party as a person or organization that can affect, be affected by, or perceive itself to be affected by a decision or activity (must be made known to the organization). Stakeholder review can be a high-level review of internal and external parties.

Examples of stakeholders can include: customers, suppliers, contractors, regulators, civic organizations, environmental advocates, investors, neighbors that abut a facility, local municipalities, local communities, politicians, trade organizations, educational institutions, unions and employees.

Section 3.2.9 defines a compliance obligation as
- legal requirements that an organization has to comply with
- other requirements that an organization has or chooses to comply with

Examples of other requirements that become compliance obligations include industry standards, contractual relationships, codes of practice and agreements with community groups or non-governmental organizations.

As a member of the DEQ Environmental Stewardship Initiative there are compliance obligations related to annual reporting that should be included in your EMS.

Action:
Complete the worksheet in Step 1c to determine the interested parties for your organization and its EMS. You should review your organization's context to help identify interested parties and also gather any external complaints that have been received. There is space allotted on the worksheet to note which interested parties have compliance obligations linked to them. This review will give you a basis for identifying compliance obligations completed under Step 2 of the guidance.

IV) Determine the Scope of the EMS (4.3)

The organization must determine the "scope" of the EMS. The scope defines what part of the facility or organization will be covered by the EMS and what will not (clarifies any physical and organizational boundaries). For example, are you including all functional groups or just a subset.

In developing the scope the organization needs to consider:
- the internal and external issues identified by your organization's context
- your compliance obligations identified by reviewing your interested parties' needs and expectations
- its organizational units, functions, and physical boundaries
  - its activities, products, and services - using a life cycle perspective
  - its authority and ability to exercise control and influence over them

All activities, products and services within the scope should be included in the EMS. You cannot exclude activities, products, services or facilities that have potential significant environmental aspects or use your scope to evade compliance obligations.

The organization must maintain the scope as documented information (see Step 7) and supply it to interested parties (Step 10).

Although the EMS scope is determined during this initial step, an organization may continue to revise it later in the EMS development or over time through continual improvement. Please remember that the scope influences every other part of the EMS as it defines what's included within it.

Action:

Write a description of the EMS scope for your organization. Can you think of any areas that should not be included?

Management Meeting 3 - Complete Items V to VII. You may want to schedule facility EMS kick-off meeting to coincide with this meeting or directly following it. EMR to complete Step VIII if needed in parallel to other tasks in Step 1.

V) Environmental Management System and Resources (4.4 and 7.1)

- To help achieve the intended outcomes of the EMS and to enhance its environmental performance the organization shall establish, implement, maintain and continually improve an environmental management system including the processes needed and their interactions in accordance with the requirements of the International Standard.

' - The organization shall use the information gained in developing its organizational context and identifying its interested parties when establishing and maintaining its EMS.

- The organization is required to determine and provide the resources needed for the establishment, implementation, maintenance and continual improvement of the EMS.

- Therefore, the organization may want to develop a draft budget for the EMS. Costs related to the EMS could include development, implementation (signage/postings), external training, travel, consultants, software, external auditors, and registration.

VI) Review organizational structure and select initial roles and responsibilities (5.3)

For an ISO 14001 EMS top management must ensure that key roles and responsibilities are assigned and communicated within the organization.

Specifically top management must assign:
- responsibility and authority for ensuring the EMS conforms to the ISO 14001 standard
- reporting on its performance is completed including to top management

Please Note: In previous versions of this standard these responsibilities were assigned to a staff member known as the EMR (Environmental Management Representative). This terminology will continue to be used in the design guide.

Action:

Use the worksheet in Step 1d to develop the roles and responsibilities for the organization's EMS.

The EMR or person(s) within the organization that has been assigned these responsibilities should:
- Determine if the organization will use an EMS software program or consultant
- Organize an EMS team who will assist in the design and implementation of the EMS. This team should include representatives from a cross-section of the organization that are knowledgeable of facility operations. The team needs to represent all key areas and be comprised of decision-makers for each area to facilitate timely EMS implementation.
- Set team meetings and track team progress
- Plan for integration with a quality management system or health and safety management system such as ISO 9001, 50001, or OHSAS 18000.

- Develop an implementation schedule including reports to top management on progress of EMS design and implementation. Set a target date for certification or self-certification and work backwards from the date.
- Develop a kick-off meeting or memo to all staff regarding the implementation project.
- Upon implementation of the EMS, assure the ongoing scheduling and reporting on the EMS at management review meetings; ensure the corrective and preventive action process is functioning; assure completion of internal and external EMS audits and internal compliance audits; and arrange ongoing training of all employees about the EMS policy and EMS awareness.

Suggested actions:

The organization may want to consider assigning a management representative for each organizational unit (i.e. sections, departments, etc.) who will:

- Participate as a member of the EMS team
- Assure the EMS is maintained and resources allocated
- Report to top management or top management representative on the performance of the EMS at defined intervals once the EMS is implemented (9.3 Management Review)

Another useful designation to make early is a document/record controller(s) who will:

- Ensure that all controlled documents and environmental records are maintained according to the EMS documented information control requirements (7.5 Documented Information) once these procedures are established internally. Often, the document/record controller and the EMR are the same person.

VII) Identify external training needs for key personnel (7.2)

The organization will be required to identify the necessary competence needs and training requirements related to the EMS as noted in Section 7.2 of the standard. This requirement will be covered by Step 8 of the Design Guide but it is useful at this step to identify training and competence needs for top management and staff assigned to implement the EMS. As decisions are made regarding competence of this personnel ensure that you document it using the tools you develop in Step 8 of the Design Guidance.

- Lead auditor training, internal auditing training, or at minimum an introductory ISO 14001 course is strongly recommended for the EMR. Even if this person is not involved in auditing, the training provides an understanding of the process and audit reports.
- Identify mentor organizations whose EMR can provide guidance during design and implementation. ESI staff can connect you with an appropriate organization within the program that can serve as a resource.
- The top management representative within the organization (e.g. plant manager) should attend training on the intent and structure of the ISO 14001 standard and environmental management systems or have discussions with top management of mentor organization(s) on the EMS process and the resources needed for successful implementation, maintenance, continual improvement.
- EMR and key personnel should consider attending an internal or third-party EMS audit of a mentor organization.
- The ESI program provides EMS training based on member organization interest. You can view training options and upcoming training on the ESI website at http://deq.nc.gov/about/divisions/environmental-assistance-customer-service/environmental-stewardship-initiative/training. You are also welcome to contact one of the ESI program managers by sending an e-mail to esi@ncdenr.gov to discuss your particular needs.

VIII) Schedule registration audit

- If registration to ISO 14001 is planned, schedule the EMS development project with this end date in mind. Coordination between the facility and chosen registrar auditor's schedule may require advance notice.

- Consider registrar attributes prior to selection of a registrar. This may include experience, fees, surveillance schedule, what they expect to see for documented procedures, how non-compliance is handled, etc. Step 1e contains information to consider when choosing a registrar.

- A pre-registration audit or readiness review is highly recommended to identify any key issues prior to the actual registration assessment.

Context of the Organization - Food for Thought

The following sections contain some ideas to consider when developing your organizational context. By no means is it meant to be all inclusive as only you can analyze and develop the context for your organization.

Environmental Considerations:

Examples can include climate (change), air quality, water quality, land use, existing contamination, natural resource availability and biodiversity that can affect the organization's mission, be affected by its environmental aspects, or can play a role in the life cycle of the organization's products and services.

Climate:

-Do large scale climate fluctuations/changes have an effect on your operations, raw materials, disposal options?
-Does local weather have an impact on production, services, facility equipment (e.g. temperature, humidity)? Is the local area susceptible to drought, flooding, tornadoes, hurricanes?
-Is the facility located in a floodplain or within a noted FEMA flood zone? Consult http://www.ncfloodmaps.com/ if needed.
-Does climate change pose an increased risk for insect infestations that would affect your operations.

Air Quality:

-Does the facility have process air emissions that are subject to regulation? Is a permit required, is registration required, or are emissions exempted?
-Is facility located in a non-attainment area for a priority pollutant? Does this affect expansion?
-Are there power generation facilities on site? Are they regulated? Is permitting required?
-Is a Risk Management Plan required for use of extremely hazardous substances as noted under Section 112(r) of the CAA?
-Could local ozone action days affect facility employees and required job functions? Is your organization located in a non-attainment area?
-Is there equipment on site with Freon or other refrigerants that require special handling?

Water Quality/Use:

-Do local pretreatment/sewer use ordinances affect production/expansion?
-Will drought conditions necessitate installation of supply wells or require new wells be drilled?
-Do NPDES direct discharge permit limits affect production/expansion?
-Do you own sewer lines/pump stations on site? Are you aware of reporting requirements for sewer overflows or inspection requirements for industrial pump stations?
-Is an industrial stormwater permit required and how does this affect operations?
-Are there any other local or state stormwater requirements (post-construction, HQW, ORW, coastal counties, nutrient sensitive waters)?
-Is cooling water needed? Is the direct discharge to surface waters permitted?
-Would facility/organization be affected by salt-water intrusion (groundwater supply) or tidal issues?
-Could water availability/flow affect your operations?
-Does your region have a Riverkeeper or other active organization?
-Does your organization have common permits with other entities?
-Does saltwater intrusion pose a risk to your operations?

Land Use:
-Where is the facility located? Who are your neighbors; other industry, residential areas, schools, open space?
-Is the facility required to report under EPCRA for the storage or release of chemicals?
-How long has the facility existed? Is there residual contamination that needs to be managed?
-Are there underground storage tanks that need to be managed/regulated?
-Are there aboveground storage tanks or outdoor storage of totes and drums that fall under local fire codes or under secondary containment requirements under industrial stormwater or SPCC requirements.
-Are TSCA regulated chemicals stored near drinking water sources (2016 update)?
-Does the facility's activities create noise, truck traffic, or other issues that may draw complaints?
-Are there transformers on site? Who owns them? What type of oil do they contain? Do they contain PCBs?
-Do insects or other pest infestations affect your production?
-Is part of your facility set aside for wildlife or wetland protection?
-Do you have any tenants onsite? How could their operations affect you and vise versa?

Natural Resources/Biodiversity:
-What natural resources are needed as raw materials?
-Is biodiversity/wildlife affected by material usage or final disposal?
-Are ample supplies of potable water and wastewater available? How do operations affect these supplies?
-What types of energy/fuel is used? Have you explored options to reduce energy usage?
-Do invasive species threaten your raw materials?

Transportation:
-What types of transportation are used in supplying raw materials, shipping finished products, or transporting wastes off site?
-Is transportation supplied by the organization or is it contracted?
-How does transportation fit into our emergency management procedures/processes?
-What types of transportation are used to move intermediary/finished products within our facility?

Waste Generation:
-What types of wastes are produced?
-How are wastes disposed (landfill, incineration, land applied, beneficial reuse, etc.)?
-What is currently being recycled or reused?
-Are there corporate or other mandates for zero waste to landfill or waste minimization?

External Considerations:

Examples can include the cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive circumstances that can be international, national, regional, or local in nature.

Legal:
-Do we have any legal requirements from legacy contamination?
-Do we have any legal requirements from historic/current waste disposal (e.g. Superfund)?
-Do we have any active litigation due to environmental considerations?
-Have we identified our legal obligations from emergency situations?

Regulatory:
-What the regulatory requirements associated with facility operations (air, water, waste, land)?
-What are the applicable federal, state, and local regulatory requirements from land or chemical use?
-Are we meeting our obligations? What is the cause of noncompliance?
-How do we stay up to date on regulations?
-Are there any issues with proximitiy to neighbors/community (noise, oder, dust, etc.)?

Financial:
-What are the financial constraints to implementing our EMS?
-How is our industry performing? Shrinking or expanding?
-How are the national and global markets performing?

Social:
-What is the public perception of our products/services?
-Can we improve our environmental reputation?
-What is our involvement in the community?

Economic:
-What is our competition doing?
-Is EMS being driven by a customer?
-Are our suppliers on board with meeting our requirements?
-Have we sourced additional suppliers/vendors based on cost?

Internal Considerations:

Examples include internal characteristics or conditions of the organization such as its activities, products and services, strategic direction, culture and capabilities (i.e. people , knowledge, processes, systems).

Work Force:
-Are there language barriers that could affect our environmental performance?
-What are our training requirements and who will provide it?
-Will our culture support implementation of an EMS?

Corporate:
-What are the corporate requirements for environmental performance?
-Is there support for environmental initiatives?
-Are requirements being applied to sister sites that can assist with EMS?
-Are any new strategic initiatives on the horizon?

Knowledge:
-Is knowledge of operations broad-based or localized to a few key individuals?
-Is cross-training of staff needed for key job functions?
-Have processes been formally documented?

Context of the Organization

Use the space below to identify items you believe have an affect on or could be affected by your organization and the EMS you are developing/have developed. Use the Risk and Opportunity columns to identify the positive and negative impacts of each item.

Environmental, External and Internal Factors	Risk and/or Opportunity (R, O, or R/O)

Identifying Interested Parties

Use the space below to identify those persons or organizations that have expressed an interest or may have an interest in your environmental performance and your EMS. Use the Compliance Obligation column to help identify those interested parties tied to the compliance obligations you will include in your EMS.

Identity of Interested Party	Description of Needs, Expectations or Requirements	Compliance Obligation (Yes or No)

Assigning EMS Roles and Responsibilities

Use the space below to identify those staff members that will have leading roles in developing, implementing, updating, and continually improving the organization's EMS. The first row provides an example that can be deleted if using this template.

EMS Title and Abbreviation	Summary of Responsibilities	Employee Name or Position Title
Environmental Management Representative (EMR)	EMS Implementation Team Lead	ES&H Manager
	Responsible for all EMS reporting to top management	
	Ensures all ISO 14001 requirements are established, implemented and maintained	
	Manager of the EMS audit program and lead auditor	
	Primary liaison with NSF registrar	

Developed by Doug Stimson, Waste Reduction Partners

The following questions may be helpful to consider when selecting a registrar. Consider interviewing a number of registrars to gain an understanding of the differences between them.

When choosing a registrar, you are starting a relationship that will last many years. You must make careful decisions to lay the groundwork for a smooth and lasting relationship.

While all of the questions are important, the most important factor to consider is how well a registrar can work with you. This includes how well they know your industry, experience with similar organizations and how well they communicate with you (and your employees during an audit).

It is less expensive to use a local registrar that can drive rather than fly to your facility. However, do not select a registrar on cost alone. Registration is an ongoing journey and your "comfort level" of working with the registrar over time is most important.

You may want to inquiry with other ESI members and who their registrar is and what insight they may have in choosing a registrar.

Initial Questions for the Registrar Representative:

- What accreditations do you have?
- In which countries are you licensed?
- Do you use the same lead auditor/auditors each time?
- Where would the auditors of this project come from?
- How many auditors would you use on this project?
- Can we meet the auditors you are proposing to use on this project?
- If we have questions and call in, can we talk to our auditor or do we talk to a different representative?
- What relevant industry experience do you have?
- How many and which similar facilities have you registered?
- How many auditors do you have in our SIC/NAICS code?
- What experience do you have with the new ISO 14001 2015 standard?

Technical Questions for the Registrar Representative:

- What is your methodology in interpreting the standard?
- Do we have access to your interpretation?
- How do you handle pre-assessment audits?
    - Do you recommend them?
    - Are they mandatory?

Technical Questions for the Registrar Representative:

- Do you have a checklist we can use to assess our own system?
- What method do you use to do a full system audit?
- What is the frequency of surveillance audits?
- What is covered at each surveillance audit?
- Is there advance notice of surveillance audit?
- Do you do a full system audit every three years?
- How do you determine how much time to spend on a full system/surveillance audit?
- Describe how you determine major and minor nonconformances.
- In what area of the standard do you find the most nonconformances?
- How do you handle a major nonconformance?
- How long do we have to respond?
- Will you return to audit that section? If so, will you look at any other areas?
- How do you handle a minor nonconformance? How long do we have to respond?
- What experience does each of the auditors who are assigned to us have?
- Request to review bios of lead and other auditors including education, experience, companies
- audited, references.
- What method do you follow when there is a need to change auditors?
- How do we contact the auditors?

Questions for the auditor:

Approachability

-How do you make yourself available to people in the plant that have questions during the audit?
-What do you do when someone is too nervous to answer your questions?
-How do you set boundaries so everyone's time is used effectively?

Composure

-Describe a situation where you had to convey a point to a hostile or unreceptive audience.
-How do you make difficult decisions?
-How do you handle the unexpected?

Conflict Management

-Describe a conflict you handled well, and one you didn't handle well.
-Describe a time when you had to deliver bad news, and the receiver didn't take it well.

Ethics and Values

-Have you ever had to represent a position you didn't completely agree with?
-Have you ever had to give feedback that was more negative than the requester was expecting?
-What did you do?
-How do you handle confidential information a requester knows you have, but you can't or won't disclose?

Organizing

-Have you worked with union and non-union facilities?
-What are the differences?
-How many major projects have you managed at the same time?
-How have you managed projects with team members from other offices, locations, practices?
-How do you keep organized during an assessment/audit?

Written Communications

-What type of written communications will we receive?

Initial Environmental Review, Identify Compliance Obligations (6.1.3) and Evaluation of Compliance (9.1.2)

EMS Team Meeting 1 Objective: To assign responsibilities for collecting information for the initial environmental review, which serves to identify the parts of an EMS already in place as well as collect information for use in later steps. This information will be useful in addressing a number of EMS elements. A more comprehensive job done now will ease work later. Develop process for periodic evaluation of compliance.

Scheduling: EMS Team meet in three weeks

I) Initial Environmental Review; collect the following information/data:

- If available, a flow chart or diagram of facility processes.
- List facility history of violations for the past five years, any ongoing site remediation/monitoring activities and any previous major violations.
- Collect data on the amount and type of waste produced or discharged including frequency and hazardous characteristics.
- Collect billing information on raw material purchasing, energy cost/usage, water cost/usage, etc.
- Identify any environmental training currently conducted
- Identify control equipment and any related operating manuals, calibration requirements, etc.
- Identify existing work instructions or standard operating procedures related to controlling or preventing generation of waste streams and pollution including those developed for contractors.
- Obtain copies of existing emergency response procedures. (8.2)
- Collect information on emergencies, accidents or spills that had or could have an environmental impact.
- Identify relevant internal and external communication
- Identify any past emergency drills or practice events and results.
- Identify available resources such as personnel and budget (established in Step 1).
- Data from context and interested parties (Step 1)

Use the Initial Environmental Review Table in Step 2a to assign responsibilities for collecting information.

II) Identify Compliance Obligations (6.1.3):

- List federal, state and local environmental regulatory requirements. In addition to permits, consider requirements for possible local landfill bans (i.e. cardboard, plastic bottles, etc.), medical waste (such as from nursing stations), septage and proper electronics disposal.
- Identify other programs the facility has committed to participate in that have environment requirements. This may include membership in voluntary programs such as DEQ's ESI; business programs such as Responsible Care; international standards such as ISO 14001; corporate or supplier requirements, etc. Also, refer the requirements listed in Step 1c that you deemed as compliance obligations.
- For both legal and other requirements, determine the following and document this information (use Step 2b):
    - regulating body or the driver for the compliance obligation;
    - location of guidance documents and resources related to each requirement;
    - monitoring requirements related to requirements;
    - date due and frequency of reporting;
    - documents required to be maintained and location;
    - records required to be maintained and location;
    - current schedules and tracking of training related to environmental requirements (what it covers, when training occurs, who is trained, who trains, where are records); and
    - who is responsible for maintaining records.
- Include work performed by contractors at your facility requiring environmental certification or permitting. (ex. Hazardous waste transportation; equipment calibration; heating, ventilation and air conditioning repair; pesticide application; construction; etc.)

Complete the Compliance Obligation Review Table in Step 2b. See example in Step 2c.

III) Determine how the organization will keep current with changing or new regulations and compliance obligations.

- There are many ways to do this including but not limited to:
    - subscribing to a service,
    - getting updates from industrial trade groups,
    - attending trainings,
    - checking regulatory websites,
    - joining regulatory list serve,
    - contacting a DEACS environmental assistance coordinator,
    - hiring a consultant,
    - contacting NCSU IES or
    - referring to corporate legal team.

IV) Develop procedure for periodically evaluating compliance with compliance obligations (9.1.2)

- Develop instructions and responsibilities for evaluating compliance with compliance obligations including frequency.
- Consider an independent review. For larger organizations, this may be a corporate audit.
- Results and information from assessments must be documented, retained, and included in management review (see Step 10 for more information about management review).

Write the procedure for determining compliance obligations and evaluation, see example procedure EP-02 Compliance Obligation and Evaluation. This procedure must be maintained as documented information.

Link to N.C. DEQ permit requirements:
https://deq.nc.gov/permits-regulations/permit-guidance/permit-handbook

Initial Environmental Review

Information	Responsible Party(ies)	Notes
Flow chart or facility process diagrams		
Facility history of violations for last 5 years		
Ongoing site remediation/monitoring activities		
Previous major environmental violations		
Amount and type of waste produced or discharged		
Raw material costs and usage		
Energy costs and usage		
Water costs and usage		
Environmental training		
Op. manuals, calibration req, for control equipment		
Work instructions/SOPs preventing waste/pollution		
Internal and external communication		
Emergency response procedures		
Environmental emergencies, accidents, or spills		
Past emergency drills		
Budget/Context/Interested Parties (Step 1)		

Compliance Obligation Review

	Compliance Obligation	Reg. Agency / Driver	Citation & Link	General Description of Compliance Obligation	Applicability Trigger	Environmental Aspects (Do NOT fill out, this column will prepopulate from the info in Step 3)	Summary of Controls (SOPs, Plans, Permits, etc.)	Location of Guidance Documents & Resources	Monitoring Requirements	Date Due and Frequency of Reporting	Documents & Records Required to be Maintained
1						0					
2						0					
3						0					
4						0					
5						0					
6						0					
7						0					
8						0					
9						0					
10						0					
11						0					
12						0					
13						0					
14						0					
15						0					
16						0					
17						0					
18						0					
19						0					
20						0					

Example Compliance Obligation Review

Compliance Obligation Title	Reg. Agency / Driver	Citation & Link	General Description of Compliance Obligation	Applicability Trigger	Environmental Aspects	Summary of Controls (SOPs, Plans, Permits, etc.)	Location of Guidance Documents & Resources	Monitoring Requirements	Date Due and Frequency of Reporting	Documents & Records Required to be Maintained
Stormwater Permit	NC DEQ DWR	40 CFR 122.26	SDO (Storm water outfall discharge) monitoring, SW Pollution Prevention Plan, Maintain Storm water BMP (Best Management Practices)	Permit required if facility: is manufacturing SIC, has a point source discharge, stores or processes materials outside (exposed to storm water)	Stormwater runoff	NPDES Industrial Stormwater Permit, SOP of Visual Inspections, SOP of How to Sample Stormwater, Non-Stormwater Discharge Certification	SOPs and guidance documents located in main office	Qualitative monitoring, Non stormwater discharge certification, Sampling	Qualitative monitoring: twice a year, Non stormwater discharge cert: once a year, Sampling: twice a year unless above benchmarks then once a month	Keep Qualitative Monitoring records, Non-SW Discharge Certs, SW Pollution Prevention Plan, Copies of Sampling Results, Calibration and maintenance records for five years. Submit sampling results within 30 days
EMS	Customer Driver	ISO 14001:2015	Develop and Implement and EMS which meets requirements for ISO 14001 certification	Environmental Aspects	All Environmental Aspects	Internal and External Auditing of the EMS, all SOPs associated with the EMS	SOPs and guidance documents located in main office	All monitoring requirements associated with Environmental Aspects	Recertification every three years, Internal audits every year.	All records associated with the EMS
ESI Member	N/A	www.ncesi.org	Submit Annual Report, Partner Rising Steward or Steward level requirements	Voluntary program	N/A	N/A	N/A	Monitor progress towards goals (where applicable)	Annual report due June 1 each year	N/A

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Policy, Environmental Aspects and Impacts Analysis (5.2, 6.1.2)

Team Meeting 2: Review environmental information to develop team's knowledge and awareness of issues. Draft environmental policy. Assign responsibilities for the identification of activities, products and services within the EMS scope and associated aspects and impacts and meet in three weeks.

I) Draft environmental policy (5.2)

Environmental policy helps guide setting significance criteria and setting objectives and targets. Some facilities choose to begin EMS design with creating a policy statement. Top management must establish, implement, and maintain an environmental policy that:

- Must include the three major commitments:
    1) continual improvement,
    2) protection of the environment including prevention of pollution, and
    3) to fulfill its compliance obligations.

- Must be documented, available to interested parties, and communicated to all employees and to those working on behalf of the organization.

The environmental team may draft this policy and as appropriate, circulate for input and feedback as long as top management is fully invested in the product.

Example:

Mecklenburg County's Solid Waste Division is entrusted with providing high quality solid waste disposal services for the citizens of Mecklenburg County. We are dedicated to carrying out this responsibility in a manner that demonstrates true leadership in environmental management while continuing to provide the highest level of service. By implementing and maintaining an Environmental Management System, we are committed to an ongoing effort of promoting environmental responsibility as an organization as well as emphasizing a heightened environmental awareness to all interested parties and stakeholders.

We will demonstrate our commitment to this policy through:

- Regulatory Compliance – We will comply with legal and regulatory requirements applicable to the Division as well as other solid waste industry standards to which we subscribe;
- Prevention of Pollution – We will identify and prevent or minimize pollution in all areas attributed to our operations, wherever feasible, and minimize waste and

impacts to natural resources;

- Continual Improvement – We will continue to seek out ways to improve our environmental performance using this policy as the basis upon which we set our objectives and targets.
- Communicating this policy to all Solid Waste Division staff, our consultants and contractors and make it available to regulatory agencies, the public, or other interested parties upon request.
- Developing work practices to support the efforts of environmental sustainability.

Draft a policy for your organization:

II) Establish a process to address risks and opportunities (aspects) (6.1.1 & 6.1.2)

The standard requires that an organization establish, implement, and maintain a process for determining and addressing its environmental risks and opportunities related to its environmental aspects, compliance obligations, and other issues and requirements identified during its review of context, needs and expectations of interested parties, and definition of scope. This review is addressed in Step 1 of this guidance. See worksheet Step 1b.

An environmental **aspect** is related to an organization's activities, products, and services and can interact with the environment. Aspects may or may not be regulated. An environmental **impact** is any change to the environment, whether adverse or beneficial, wholly or partially resulting from an aspect. When determining aspects, the organization must:

1) consider a life cycle perspective.
2) take into account change (planned construction, new or modified processes, products, services, etc).
3) take into account abnormal conditions and reasonably forseeable emergencies.

Documentation is required for the risks and opportunities that need to be addressed and the processes necessary to make sure they are making progress as planned. As you develop your aspect and impact list also document the risks and/or opportunities for each aspect or impact listed. These are potential adverse effects (aka threats) and beneficial effects (opportunities). An example of risk would be failure to comply which can have the effect of legal action and/or damage to reputation in addition to any environmental impact. Similarly, an example opportunity of going beyond compliance would enhance the organization's reputation.

Aspect and impact lists may be developed through EMS team brainstorming or team members might collect information with input from other personnel. Be sure to include all areas covered by the EMS scope.

- **List activities, products and services within the EMS scope over which the organization has control or influence. Refer to existing flow charts or process flow diagrams. Refer to the Initial Environmental Review performed in Step 2.**

- List associated actual and potential aspects and impacts for each activity, product and service. You might use the form in Step 3a to capture this information. An aspect may have more than one environmental impact. Make sure to list positive environmental impacts as well as the negative. Consider listing any observations, such as related management controls, along with each aspect to assist with later review.

- Include aspects and impacts from normal and abnormal operating conditions including start-up, clean-up, maintenance, planned shutdowns, emergency situations and foul weather.

- Include aspects and impacts from planned or new developments, new or modified activities (i.e. construction), products and services.

Example Environmental Aspect Categories

(This list is not all inclusive)

Chemical / Fuel Storage / Spillage	Noise
Chemical Use	Hazardous Waste
Air Emissions	Odors
Air Emissions- Indoor	Waste Water Generation
Solid Waste - NonRecyclable	Storm Water Discharge
Solid Waste - Recyclable Metals	Used Oil Waste
Solid Waste - Recyclable Plastics	Universal Waste (Lamps, Batteries
Solid Waste - Scrap Product / Intermedia	Water Consumption
Energy Use	Material Consumption
	Pesticide Use

Example Environmental Impact Categories

(This list is not all inclusive)

Negative Impacts	Positive Impacts
Water Pollution	
Waste Water Treatment Plant Loading	
Air Pollution	
Indoor Air Quality Degredation	
Global Warming/Climate Change	
Ozone Layer Destruction	
Soil/Groundwater Contamination	
Landfill Space Depletion	LandFill Space Conservation
Fossil Fuel Resource Depletion	Fossil Fuel Resource Conservation
Metal Resource Depletion	Metal Resource Conservation
Timber Resource Depletion	Timber Resource Conservation
Employees Exposure	
Community Hazards	
Water Resource Depletion	Water Resource Conservation
Community Degradation	Community Enhancement

Team Meeting 3: Review listing of aspects and impacts. Develop ranking criteria and rank each aspect and related impact to determine significance. Meet in three weeks to finalize ranking list.

III) Develop a ranking system, rank aspects and determine significance

- Review listing of aspects and impacts. Consider grouping similar aspects. However, an organization may keep aspects listed separately that have different impact levels. For example "water use" may be an aspect across the facility or listed as separate aspects in specific departments to account for greater use in certain areas.
- Write process summary to identify aspects and impacts.
- Determine whether to use quantitative or qualitative ranking criteria (or a combination) and develop associated definitions. Facility may consider weighting specific criteria relative to others. The 2015 version of the standard leans heavily toward the use of a qualitative ranking system as the criteria for ranking is required to be documented.
- Consider using a limited number of criteria to gain experience and confidence without being overly complex. Consider using a limited scoring range, at least initially, for easier use and understanding. Make sure aspects with positive impacts can be determined significant.
- Develop definitions for each criteria used to determine significance. For instance, in a category of "probability" define high, medium and low.
- Apply criteria to rank aspects. Assess need for any modifications. Ranking system should be repeatable for future aspect listings.

Only a facility's staff can determine how to assess significance. It is imperative that the process is documented and replicable.

- Below are some examples of criteria and ranking that may be used or modified. Upon deciding on the criteria that will be used be sure to document this. You may use the table in Step 3b to capture this.

Example: Criteria and Ranking Definitions for Determining Significant Aspects

SCALE	DESCRIPTION
Regulatory Visibility	Identifies whether an impact is associated with government requirements and how "volatile" the issue may be
5	Regulated - mandated by a federal, state, or local government agency. Issue will be on the "regulatory radar screen (will be reviewed). Examples are Air, Water and Hazardous Waste Issues (Permitted Issues). ALSO some OSHA issues are very visible
4	Regulated - mandated by a federal, state, or local government agency. But issue is not really on the "regulatory radar screen (will not be reviewed unless community or employee reports them (whistle blower). Things like SPCC plans, TSCA issues, EPCRA, Ozone Depletion, etc.)
3	Regulated Indirectly or with very few requirements. Examples of this would be Solid Waste requirements (have a container and use licensed landfill)
2	Unregulated presently, but maybe regulated in the future
1	Unregulated - no guidance.
Severity	The degree to which surroundings (including air, water, land, natural resources, flora, fauna, and humans) are affected by an impact. This criteria incorporates toxicity of the pollutant and size or scale of release.
5	Severe/catastrophic - very harmful or potentially fatal; great effort to correct and recover.
4	Serious - harmful but not potentially fatal, difficult to correct but recoverable.
3	Moderate - somewhat harmful, correctable.
2	Mild - little potential for harm, easily correctable.
1	Harmless - no potential for harm, correctable.
Probability	An indicator of probability. Attempts to rate impacts on the probability of their occurrence.
5	Very likely - high probability (90% or more) that an aspect will result in a detectable impact.
4	Likely - strong probability (68% to 89%) that an aspect will result in a detectable impact.
3	Moderate - reasonable probability (34% to 67%) that an aspect will result in a detectable impact.
2	Low - low probability (11% to 33%) that an aspect will result in a detectable impact.
1	Remote - very unlikely (10% or less) that an aspect will result in a detectable impact.

Frequency	
How often an impact could occur. If it is very likely that an impact will occur, how often is it likely to happen - daily, monthly, or once a year?	
5	Continuous - occurs three times per week (on average) or more often.
4	Repeated - occurs one to two times per week (on average).
3	Regular - occurs monthly (on average).
2	Intermittent - occurs quarterly (on average).
1	Seldom - occurs two times per year (on average) or less often.
Boundaries	
Geographic boundaries that reflect the physical area in which the impact occurs.	
5	Global - impact migrates outside the region in which is located.
4	Regional - impact migrates outside local community in which is located.
3	Local - impact migrates off-site into surrounding community.
2	Confined - impact migrates off-site, but is contained in small, adjacent area.
1	Isolated - impact is contained on ' site with no migration.
Magnitude	
Relative size of the impact. Incorporates frequency, duration, and load.	
5	Very Large release of pollutants, resources used, etc.
4	Large release of pollutants, resources used, etc
3	Moderate release of pollutants, resources used, etc
2	Small release of pollutants, resources used, etc
1	Little or no release of pollutants, resources used, etc
Controllability	
A key concept because ISO 14001 refers explicitly to the environmental aspects of a company's activities that it can control and influence.	
5	Directly controllable - controls processes and materials, no requirements imposed by customers.
4	Indirectly controllable - controls supplier contract, mandates use of materials and/or processes.
3	Influenceable - processes and materials controlled by customer or supplier.
2	Indirectly influenceable - processes and materials controlled by independent third party.
1	Uncontrollable - process and materials are not controlled.
Employee's Concerns	
How important is this impact - to the employees	
5	Primary concern to all/most employees
4	Primary concern to a few/one employees
3	Secondary concern to all/most employees
2	Secondary concern to a few/one employees
1	Little/no concern to employees
Reportability	
This refers to any governing bodies that must be notified about the impact in question. May be more applicable to impacts that result from abnormal operating conditions or emergency incidents.	
5	Government authorities - reporting to federal, state, or local authorities.

4	Corporate management - reporting outside the facility responsible for impact and its immediate company to the corporate owner.
3	Company management - reporting outside the facility responsible for the impact, but with the immediate company.
2	Facility management - reporting within the facility responsible for the impact.
1	Not reportable - no reporting required beyond documented procedure for monitoring and measuring key characteristics.
Stakeholder Concerns Reflects how external interested parties, typically defined in terms of customers, regulators, residents in proximity to , and special interest groups, perceive an environmental impact.	
5	Primary concern to all/most interested parties.
4	Primary concern to a few/one interested parties.
3	Secondary concern to all/most interested parties.
2	Secondary concern to a few/one interested parties.
1	Little/no concern to interested parties.
Duration Pertains to the length of time that the environmental impact will be felt by affected parties.	
5	Irreversible - controllable but not correctable.
4	Three years or more - great effort to correct and recover.
3	One to three years - difficult to correct but recoverable.
2	Three to twelve months - correctable.
1	Short-term - impact can be corrected in three months or less.
Business If this impact has a high opportunity for improvement without high costs and without other business disrupting considerations	
5	High OFI, Low Costs
4	High OFI, High Costs
3	Low OFI, Low Costs
2	Low OFI, High Costs
1	No OFI

Regulated Identifies whether an impact is associated with government requirements. Also includes self-imposed requirements and any requirements described as "other" in ISO 14001 sections 4.2 and 4.3.2.	
5	Regulated - mandated by a federal, state, or local government agency.
4	Regulated in future - not currently mandated by a government agency, but has a potential to become regulated.
3	Company policy - industry standard, code of practice, or other initiative adopted and formalized in company-wide policy.
2	Company practice - industry standard, code of practice, or other initiative that guides established practice, but not formally codified.
1	Unregulated - no guidance.

IV) Review aspects for Life Cycle Perspective

- Evaluate all Aspects identified across the entire life cycle of the product. Also, consider each stage of the life cycle that the organization has any influence or control and determine if additional aspects need to be added. Step 3d gives some ideas to consider when determining additional aspects for each stage of the life cycle. To demonstrate that life cycle perspectived has been considered, documentation in meeting minutes or the use of a table similar to the below or within Step 3c can be used.

Depending on your specific process/product, Life cycle stages may include:

Design	Transportation/Delivery
Acquisition of raw materials	Use
	End-of-life treatment
Production	Final Disposal

Life Cycle Evaluation

- For LCP enter for Controllable or NC for Not Controllable or NA if Not Applicable								
		Life Cycle Stage (C or NC)						
	Aspect	**Design**	**Acquisition of raw materials**	**Production**	**Transportation/Delivery**	**Use**	**End-of-life treatment**	**Final Disposal**
1								
2								
3								

4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								

Team Meeting 4: Review and finalize ranking of aspects and impacts. Determine significant aspects. Set next meeting date for following week.

- The results of using the ranking system should reflect the facility's greatest environmental concerns.
- Review prioritized list for a "reality check" and finalize ranking. Determine which aspects are significant such as where the "cut-off" point will be or if an aspect scores high in any one category, it is deemed significant.
- Determine significant aspects. The list of significant aspects will be used in:
  * setting objectives and targets;
  * developing operating procedures related to activities that have the potential to result in significant environmental impacts and those related to identified significant aspects;
  * assuring proper training and competence of appropriate individuals; and
  * development of key monitoring and measuring characteristics related to these actual or potential impacts.

Combine all data from Step 3 into a single Aspects and Impacts document similar to the form provided in Step 3c.

Write procedure for determining aspects and impacts and significance ranking. See example procedure EP-01. This procedure must be maintained as documented information.

Significant Aspects must be communicated to all appropriate employees. See Step 10 for Communications.

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Environmental Aspects & Impacts

	Step 1. Identify Activities, Products, & Services Step 2. Identify Site Aspects Step 3. Identify Impacts of Aspects Step 4. Identify Risks and Opportunities					
	Compliance Obligation	**Activity, Product or Service**	**Aspect**	**Impact**	**Risk**	**Opportunity**
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Aspect Ranking Criteria		
Criteria	**Scale**	**Definiton**

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Environmental Aspects & Impacts

Step 1. Identify Plant Aspects
- For LCA enter for Controllable or NC for Not Controllable.
- For Location. Enter an "X" in the area(s) that are applicable

No.	Aspect	Life Cycle Stage (C or NC)							Area or Department					
		Design	Acquisition of raw materials	Production	Transportation/ Delivery	Use	End-of-life treatment	Final Disposal						
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														

Step 2. Determine Impact	Step 3. For Selected Criteria - Assess Each Impact					Step 4. Calculate			Step 5. Consider Risks & Opportunities	
Impact or Potential Impact	Ranking					TOTAL	Adequacy of Current Controls	Significant (S)	Risks & Opportunities	General Comments

Life Cycle Perspective - Food for Thought

The following sections contain some ideas to consider when developing your aspects and impacts. You'll notice as you go through this process that these stages overlap each other and are not necessarily a linear process. By no means is this document meant to be all inclusive as only you can analyze and develop the impact of your organization.

Design Considerations:

During the design phase, aspects can be affected through advanced planning. Some things that might be considered at this stage are:

What raw materials are needed?
- Can renewable resources be used?
- Can the design reduce the need for Hazardous Materials by using 'green chemistry'?
- Can you use recycled content materials or increase the amount of recycled content?
- Can materials be sourced from local suppliers?

What environmental efficiencies can be designed into the manufacturing process?
- Is the process additive or subtractive (ex. 3D printing vs Material removal)?
- If it is subtractive, is it optimized to remove the minimum amount of material (ie. reducing material consumption)?
- Is the equipment needed designed to have lower energy requirements? Can energy monitoring equipment be integrated?
- Is the process designed to reduce water needs?
- Can parts of the equipment be refurbished versus needing full replacement over time?
- Can excess materials be reduced through eliminating runners, optimizing layout cutsheets, etc?
- Can lubricants, solvents, etc be filtered or otherwise reclaimed in-line with the process?

Can environmental impacts from the use of the produce be reduced?
- Energy use?
- Water use?
- Waste materials?

Can you ease the of end-of-life treatment of the product or equipment?
- Can materials of different types be easily separated?
- Can the product be re-used (in whole or in part) by another process?
- Can the product be recycled/composted?

Can you design the packaging to reduce waste?
- Does the product need packaging for protection?
- What is the minimum amount of packaging that can be used?
- If packaging is necessary, can it be made from easy to recycle/compost materials?
- If product is not a consumer product, can returnable dunnage be implemented?

Raw Material Acquisition Considerations:

Are there less toxic materials that could be substituted?
Could you receive items in bulk vs small packages?
Is the packaging used on the raw materials returnable, refillable, or at least recyclable?
Does a material require a higher energy demand than a substitute?
Does a material require a higher water demand than a substitute?
Does the usage of a material require additional treatment (ex. wastewater pre-treatment)
Can a material be filtered/treated and reused?
Can raw materials be obtained from local sources?

Production Considerations:

What products are made?
What materials are used?
What types of wastes and discharges are generated?
What type contractors, vendors, suppliers are on site?
What do you do off-site (deliveries, servicing?)
Where are you located?
What permits/regulations do you have?
What fuels or other energy sources are used? How much?
How is water used in the process? And how much?
What about wastewater?

Transportation/Delivery Considerations:

What do you ship or receive? Look at products, raw materials, & wastes
Take into account air emissions including GHGs.
Take into account fuel usage and other maintenance needs.
How can you prepare for traffic accidents (Hazardous waste spills, parts damage, etc)?
How do you prepare for fluid leaks on your property (oil, hydraulics, etc.)?
How do you protect parts from damage due to shifting, poor packaging, corrosion, etc?
Include fork trucks and other internal transportation (emissions, damage from forks, fuel use, batteries, etc.)

Use Considerations:

How is the product used? Are there environmental impacts from the use?

- Energy use?
- Water use?
- Waste materials?
- Packaging?

End-of-Life Treatment & Disposal Considerations:

Can the design of the product be changed to make recycling easier (reduce composite materials, etc.)?

Do you have a take-back program?

Does the product inherently break down into compostable, recyclable, reusable pieces?

Operational Control, Life Cycle Perspective and Emergency Preparedness and Response (6.1.1, 8.1 & 8.2)

EMS Team Meeting 5 Objective: To establish, implement, control and maintain the processes needed to meet the EMS requirements and needed to implement the actions identified in Steps 2 and 3. To establish controls for planned changes and response protocol for unplanned changes. To establish controls for outsourced processes. To determine the organization's environmental requirements and establish controls for the life cycle of the product or service, as appropriate. To consider the need to provide information about potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment, and final disposal of the organizations products and services. To establish, implement and maintain processes needed to prepare for and respond to potential emergency situations.

Scheduling: EMS Team meet in three weeks.

Using the table in Step 4a,
I) Identify and document operations and processes needed to meet the environmental management system requirements and ensure they are carried out under specified operating conditions

- Identify operations or processes associated with significant aspects (Step 3) and/or compliance obligations (Step 2) where absence of operational control(s) could lead to deviation from the policy or objectives (objectives will be discussed in Step 6).
- The type and extent of operational control(s) depends on the nature of the operations, the risks and opportunities, significant environmental aspects and compliance obligations. For each process identified above, determine the method(s) of operational control. Examples of operational controls methods include:
    - Designing a process in such a way as to prevent errors and ensure consistent results
    - Using technology to control a process
    - Using trained, competent personnel
    - Performing a process in a specific way (i.e. a work instruction, standard operating procedure or operating criteria)
    - Monitoring and measuring a process to check results (see Step 5 for more details)
    - Determining the use and amount of documented information necessary.
- For those operations needing a documented procedure, or operating criteria, review work instructions collected during initial environmental review and update if lacking operating criteria.
- Determine additional work instructions needed and prepare accordingly.
- Include operating criteria in procedures for both normal and abnormal conditions. This should include "what to do" and "how to do it." Procedures should be a part of employee training as they provide information on how to do the job and the importance of following procedures. Employee training is covered in Step 9.
- Determine how to notify suppliers and contractors of proper operating procedures.
- Consider including in the work instruction actual or potential environmental impacts associated with the work and environmental consequences of departure from the procedure.

- Assign responsibility for the development of operating critera/work instructions. Set time frame for completing work instructions and procedures depending on volume.
- Determine how to ensure the implementation of the control process(es). It is not enough to have an operating criteria, the organization must ensure that the control processes is being implemented in accordence with the operating criteria.
- Determine what, if any, documentation is needed to have confidence that the control process(es) has been carried out as planned.

See example "Operational Controls" table below

Significant Aspect / Compliance Obligation	Operational Controls / Work Instructions / Operating Criteria	Operational Control Document Description / Format	Operational Control Records (if any)	Affected Employees (1)	Indicator for Implementation (and Documentation)	Affected Contractors & Suppliers (2)
Waste Water Discharge	Dye Formulas	Formulas in Computer	Completed dye orders	Lab Technician	Competency Indicator of Lab Technicians and Supervisor Checks	chemical suppliers
	Finishing Formulas	Procedure A	Procedure A	Washline Operator	Supervisor Checks / Log Book	chemical suppliers
	General Wastewater Prohibitions	Sewer Use Ordinance	Training Record	All Employees	Competency Indicator of Employees	IH Consultant
	Affected Equipment Maintenance	Relevant Perventive Maintenance	Relevant PMs Records	Engineering	Competency Indicator of Engineer	Wastewater Contractor
Air Emissions - Dryer	Topical Finishing Formulas	Approved formula attached to the tanks	None	Operator	Supervisor Sign Off	chemical suppliers (dyes, etc)
	Backsize Formulas	Procedure B	Procedure B	Operator	Supervisor Sign Off	chemical suppliers (dyes, etc)
	Air Permit	Air Permit	Permit Required Records	Engineering	OJT/Supervisor Signoff	None
	Affected Equipment Maintenance	Relevant PM's	Relevant PM's Records	Engineering	End of Year Performance Evaluation	None

II) Identify existing and needed forms and checklists associated with work instructions

- Forms and checklists must be included in the document control system. This is discussed in Step 7.

III) Determine how to deal with changes

- Identify any planned changes to the organization, processes, etc. These changes must be controlled to mitigate adverse effects.
- The New Projects Checklist in Step 4b can be used to help plan for and control changes made within the organization.
- Review the consequences of unplanned changes and take action to mitigate any adverse effects, as necessary.

Using the table in Step 4c,
IV) Identify outsourced processes and determine the type and extent of control or influence to be applied to those processes.

- An Outsourced Process is one that fulfills all of the following:

- it is within the scope of the environmental management system
- it is integral to the organization's functioning
- it is needed for the environmental management system to achieve its intended outcome
- liability for conforming to requirements is retained by the organization
- the organization and the external provider have a relationship where the process is perceived by interested parties as being carried out by the organization.

- Identify processes that are outsourced and/or providers of products or services.
- Define the type and extent of control or influence over those processes, products or services. Examples of control or influence include procurement processes, contracts etc.
- When determining type and extent of controls related to external providers, consider factors such as: environmental aspects and impacts, risks and opportunities associated with the manufacturing of products or services and the organization's compliance obligations.
- Establish controls, as appropriate, to ensure that the organization's environmental requirement(s) are being addressed (see below for more information on environmental requirements).

Example: A Company X purchases paint from their supplier to paint Company X's product. After reviewing the criteria, Company X decides this does qualify as an outsourced process. Company X determines that the type and extent of control is a contract renewed annually in which they can specify the contents of the paint. Company X will review the materials used in the making of the paint to determine if they are inline with Company X's environmental requirements

V) Determine the organization's Environmental Requirements consistent with a life cycle perspective

- Environmental Requirements are the organization's environmentally-related needs and expectations that it establishes for and communicates to its interested parties (refer to Step 1c for a list of interested parties).
- Determine the environmental requirement(s) for the procurement of products and services, as appropriate.
- Establish controls to ensure environmental requirements are addressed in the design and develoment process for the product or service, considering each life cycle stage.
- Communicate relevant environmental requirement(s) to external providers, including contractors.

Example: Company X determines it has an environmental requirement to avoid hazardous substances in the making of its products. Unfortunately the supplier of their paint uses a hazardous substance to make the paint. Company X communicates its environmental requirement to the supplier and alters their contract so that the supplier retools its formula for the paint to contains no hazardous substances.

Use the table in Step 4d to document the organization's environmental requirements and to whom they need to be communicated.

VI) Consider the need to provide information about potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of the organizations products and services.

- Some of the organization's significant environmental impacts can occur during the transportation, deliver, use, end-of-life treatment or final disposal of its products or services. By providing information, the organization can potentially prevent or mitigate adverse environmental impacts during these life cycle stages.

Example: Company Y, an oil refinery, determines that the transportation and delivery of its product has potential significant environmental impacts. Company Y determines it needs to provide information to its transporters on the BMP to avoid potential significant impacts.

Example 2: Company Z makes electronic equipment that could contaminate groundwater if it ended up in a landfill. Company Z determines it needs to communicate the potential hazard to the customer and therefore displays information about the need to recycle the product on the label. It also decides that any items replaced by the company will include a free-of-charge return shipping lable so that the company can recycle the broken product.

In the space below, consider the potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of the organization's products and services. What information is needed? To whom should the organization provide that information?

Write the procedure for operational controls, see example procedure EP-08 Operational Controls. This procedure must be maintained as documented information.

Using the table in Step 4e,
VII) Identify existing and needed emergency preparedness and response processes (8.2 and 6.1.1)

- Identify all possible emergency situations that could occur at the facility. Identify the environmental impact(s) associated with these emergency situations, if applicable.

- Review emergency preparedness and response processes collected during initial environmental review to identify any deficiencies and any situations that lack procedures.
- Update or write processes that include the proper preparatory, preventative, mitigative and response actions to minimize adverse environmental impacts associated with emergency situations, appropriate to the magnitude of the emergency and potential environmental impact.
- Ensure that actions are being taken to prevent and mitigate the consequences of emergency situations.
- Set schedule to test response procedures where practicable. The testing of procedures allows the organization and persons doing work under the control of the organization to prepare for emergencies and evaluate the effectiveness of the procedures.
- Set schedule to periodically review and revise the processes and planned response actions, in particular after the occurrence of emergency situations or tests. The management review (see Step 10 for more about management review) might be a good time to conduct a review of the process
- Ensure suppliers and contractors can access emergency contact information and procedures if appropriate.
- Document emergency preparedness and response training requirements, completion of training, testing and results.

See example "Emergency Preparedness and Response" table below.

Emergency Preparedness and Response

	Potential Emergency	Description and Potential Impact	Emergency Preparedness and Response Process/Plan (EPRP)	Schedule for Testing EPRP	Testing Records	Schedule for Reviewing EPRP	Review Records	Training Requirements	Training Records
Ex:	Fire (building, paints, solvents, fuels, people	Air Pollution, Water Pollution from Fire Fighting, Depleting Resources through rebuilding	Emergency Action Plan (as required by OSHA 29 CFR 1910.38)	Twice a Year, Spring and Fall	EF-09B	Twice a Year, after Testing, during Management Review Meeting	Manage-ment Review Meeting Minutes	Annual Emergency Responcse Training	EF-05B

Operational Controls

Significant Aspect / Compliance Obligation	Operational Controls / Work Instructions / Operating Criteria	Operational Control Document Description / Format	Operational Control Forms or Records	Affected Employees	Indicator for Implementation (and Documentation)	Affected Contractors & Suppliers

New Project Checklist

INITIATING ACTIVITY MANAGER REVIEW		
Project description including planned date of installation:		
EMPLOYEE EXPOSURE POTENTIAL - Will this new project	**YES**	**NO**
bring in material that is - considered toxic, hazardous or carcinogenic ?		
bring in material that is - odorous ?		
bring in material that requires - an MSDS to be present for employees?		
bring in material that requires - special handling or storage?		
bring in material that requires - a change to Emergency Response methods?		
AIR EMISSIONS - Will this new project	**YES**	**NO**
produce or change existing - air emissions?		
require - an air permit or permit modification?		
require - air pollution controls?		
require - the use or purchase of ozone depleting substances?		
WATER DISCHARGES - Will this new project	**YES**	**NO**
produce or change existing - wastewater, sanitary or storm water discharges?		
produce or change existing - water discharge flow rates?		
require - a permit modification?		
require - new or additional pretreatment be required?		
STORAGE TANKS - Will this new project	**YES**	**NO**
require - underground storage tanks be installed?		
require - tanks be installed to store hazardous waste or materials or petroleum products?		
WASTE GENERATION - Will this new project	**YES**	**NO**
produce or change existing - solid waste or recyclable material?		
produce - hazardous waste?		
require - off-site disposal?		
require - special handling, abatement or disposal measures?		
ENERGY USAGE - Will this new project	**YES**	**NO**
effect - facility energy usage?		

OTHER CONSIDERATIONS - Will this new project	YES	NO
require - consideration of recycling options and costs?		
require - use of toxic, hazardous or carcinogenic materials?		
require - special handling or storage of materials?		
cause - land disturbances?		
call for - pollution prevention issues to be addressed?		
impact - the surrounding community (i.e., odor, noise etc.)?		
impact - any wildlife or land use issues?		
add any environmental aspects to the EMS?		
require - a change to Emergency Response methods?		

ATTACHMENTS:
Attach further information if any questions above are answered yes. This may include:

Initiating Activity Manager Signature	Date

EMR REVIEW

- ☐ Project is **acceptable** - no new environmental areas are affected, requiring no changes to the EMS.
- ☐ Project is **not acceptable** based on the information provided (provide reasons below)
- ☐ Project is **acceptable** - the following changes to the EMS are required

NEW or AFFECTED EMS ELEMENTS:

Aspects	Impacts	Compliance Obligations	Environmental Objectives	Operational Controls & Monitoring Parameters	Trainings

Additional Description of EMS changes needed - OR - Reasons for project rejection:

EMS CHANGE VERIFICATION

Revised Document Title	Date Revised	Date Impleme	Comments

NEW PRODUCT & SERVICE CHANGE - CONFIRMATION & DATE

Enter date new product and service was installed, and description of deviation (if any) from original plan:

Environmental Management Representative Signature	Date

Control of Outsourced Processes

	Outsourced Process, Product or Service	Define the Type/Extent of Control
Ex:	Janitorial Services	Contract with janitorial company renewed annually.
Ex:	Paint	Purchasing/procurement process, relationship with the manufacturer, agreement/contract with manufacturer
1		
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Organization's Environmental Requirements and Communication

	Environmental Requirement	What Controls are necessary to address the Environmental Requirement	Indicator for Implementation	Communicate to these External Providers
Ex:	No hazardous substances used in the making of our products	Specify "no hazardous substances" in contracts and procurement policy	Yearly audit of contractors	Paint supplier, janitorial services
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Emergency Preparedness and Response

	Potential Emergency	Description and Potential Impact	Emergency Preparedness and Response Process/Plan (EPRP)	Schedule for Testing EPRP	Testing Records	Schedule for Reviewing EPRP	Review Records	Training Requirements	Training Records
1									
2									
3									
4									
5									
6									
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21									

Monitoring, Measurement, Analysis and Evaluation (9.1.1)

The results of monitoring, measurement, analysis and evaluation are used to identify both successes as well as areas needing improvement in the EMS.

EMS Team Meeting 6 Objective: To review progress of completing work instructions and emergency response procedures (Step 4). To establish the criteria for evaluating environmental performance and assign responsibility for identifying the monitoring and measuring equipment, methodologies, time frame and associated calibration requirements. To finalize environmental policy.

Scheduling: EMS Team meet in three weeks.

Using the table in Step 5a,

I) Determine what needs to be monitored, measured, analyzed and evaluated

- Taking into account the organizations significant environmental aspects, compliance obligations and operational controls, determine what needs to be monitored and measured.
- Determine the methods for monitoring, measurement, analysis, and evaluation

II) Establish the criteria for evaluating performance

The criteria for evaluating performance, or monitoring parameters, provide management with information on how the facility is performing related to its significant aspects, operational controls, objectives and goals for continual improvement (objectives are discussed in Step 6). Some new measures may need to be established to effectively report progress on the items listed above. Information gathered may provide guidance on where to set new objectives and targets or other needed system improvements.

- Identify environmental performance criteria and appropriate indicators for each item monitored/measured. In Step 6, the team will establish performance indicators for objectives that will be incorporated into the monitoring and measuring system. Some of these performance indicators for objectives may be the same as those identified in this step and some may be new.
- Measuring equipment related to these criteria should be identified, proper operating procedures applied and if necessary calibration requirements established. Identify and retain associated records. Determine the frequency of monitoring and measurement and determine how often the results will be analyzed and evaluated.

III) Identify existing and needed forms and checklists associated with monitoring and measurement

- This may include calibration schedules and updates to training requirements.
- Forms and checklists must be included in the document control system (Step 7).

Write the procedure for monitoring, measurement, analysis and evaluation, see example procedure EP-10 Monitoring, Measurement, Analysis and Evaluation. This procedure must be maintained as documented information.

IV) Finalize environmental policy (5.2)

- Review draft policy and finalize, write the policy in the space provided below.
- Must be approved by top management.

Monitoring, Measurement, Analysis and Evaluation

	Aspect / Compliance Obligation / Operational Control Being Monitored	Criteria for Evaluating Performance / Operating Criteria / Monitoring Parameter	Performance Indicators / Metrics	Method of Monitoring, Measurement, Analysis and Evaluation (SOP)	Frequency of Monitoring and Measurement	Record Type	Retention Period	Method of Analysis and Evaluation (SOP)	Frequency of Analysis and Evaluation	Calibration Equipment Requirements
1										
2										
3										
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Environmental Objectives (6.2.1)

EMS Team Meeting 7: Review progress of completing work instructions and emergency procedures. Establish objectives with input from the organization's top management. Meet in two weeks.

I) Establish objectives (environmental goals) with input from top management

- Review information collected in the initial environmental review for ideas on where to set improvement goals.
- Consider the facility environmental policy (including commitments to prevention of pollution and compliance with legal and other requirements and continual improvement).
- Consider compliance obligations; significant environmental aspects; technological options; financial, operational and business requirements, views of interested parties, and risks and opportunities.
- Consider establishing initial goals that are achievable and provide the organization with the opportunity to develop an understanding of the objectives planning process.
- Initial goals may be planning or study goals that are used to develop a performance baseline and possible options for improving performance. Goals may address both improvements to performance and the EMS system. A goal may be to maintain a level of performance such as zero spills.
- Consider setting some goals that apply across the facility. This provides a tangible connection to the EMS for employees, spreads responsibility for success across departments, improves buy-in and builds commitment.
- Identify performance indicators that are measurable where practical in relation to objectives and targets. These performance indicators may be added to the criteria for environmental performance of a facility's monitoring and measurement program (Step 5).
- Consider linking achievement of environmental goals to established business goals and rewards.
- Once the EMS is established, look to set measurable goals with targets on leading indicators rather than lagging indicators and on input rather than output areas and goals based on the pollution prevention hierarchy. Consider normalizing goals.
- Try to use SMART goals:
  S - Specific
  M - Measurable
  A - Attainable
  R - Realistic
  T - Time-Bound
- Use the form in 6a to capture all the required information.

Create 3 Goals:

	What do you want to achieve?	By how much? From what baseline?	By when?
EX.	Reduce electricity usage	by 5% from 2014 baseline	by 12/31/2018

Write procedure to develop objectives. See example procedure EP-03. This procedure must be maintained as documented information.

Objectives must be communicated to all appropriate employees.

EMS Team Meeting 8: Review progress of completing work instructions and emergency procedures. Develop programs to accomplish objectives including designating responsibility at relevant levels and functions of the organizations and the means and timeframe to achieve them. Meet in two weeks.

II) Plan actions to achieve objectives (6.2.2)

- Establish the timeframes, resources needed, and responsibilities at relevant levels or function of the organization to ensure objectives are achieved.
- Determine how results will be measured including indicators for monitoring.

Objective		Responsibility		Date Due	
		Employee	Title		
Task #	**Steps to achieve objective**	**Responsibility**		**Resources Needed**	**Date Due**
		Employee	**Title**		
1					
2					
3					
4					
5					

III) Establish how results will be evaluated and communicated

- A facility may not always meet its set objectives due to changing business circumstances or other reasons. The EMS is a living system and can be updated, including its improvement goals.
- Communicate progress toward objectives and targets at all levels across the facility. See Step 10 for Communicaton.

Based on the Objective above, determine what performance indicators/metrics will be used to communicate progress toward the goal.

IV) Consider how actions taken can be integrated into the organization's business processes.

- Consider how each goal can be integrated into all business functions from the planning stage, through production, transportation, and waste disposal.

Example: A facility establishes an energy reduction goal. In order to assist with understanding the energy demands and control of its production equipment, the site puts a requirement into the contracts for all new equipment to include energy reporting devices, variable speed drives (where appropriate), and energy star ratings (where available).

Discuss potential ways this objective can be included in business functions beyond the EHS department:

Environmental Objective

Project Plan Title:			Revision Date:	
Activity/ Product or Service	**Aspect(s)**	**Impact(s)**		**Significant (S) / Compliance (C) / Emergency (E)**

Objective	Responsibility		Date Due	Date Completed
	Employee	Title		

Performance Indicator(s) / Metric(s)	Units of Measurement	When will measurement occur? How often? What schedule?	When will metrics be reviewed & evaluated

Task #	Steps to achieve objective	Responsibility		Resources Needed	Date Due	Date Completed
		Employee	Title			
1						
2						
3						
4						
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Revision History		
Date	**Revision #**	**Description of Change**

Documentation and Document Control (7.5)

The organization must maintain documentation required by the standard and anything determined by the organization as necessary for the effectiveness of the EMS (aids in transparency, accountability, continuity, training, or assists with auditing the EMS).

Prior to Meeting 9: The EMR may want to draft a document control process and a procedure template with assistance from the document controller and management prior to the meeting.

Meeting 9 Objective:
To develop a document control process and apply it to existing procedures. Assign responsibility for integrating the document control process into written procedures; allow two months to complete integration.

Scheduling - Meet in three weeks

I) Establish the document control process

Review existing procedures and decide on the hierarchy used within the document system. Develop the required procedure hierarchy (e.g. Level 1 - environmental policy; Level 2 - implementing procedures, e.g. Identifying Aspects and Impacts; Level 3 - operating procedures and work instructions; and Level 4 - forms and reference material associated with each procedure).

- Determine the media format for each document (hard copy vs. electronic access or a combination).
- Identify and determine how the organization will maintain control of its documented information. Ensure all documents:
  - are approved for adequacy prior to use (e.g. signature of management);
  - are readily identifiable (e.g., numbering system or title);
  - have an established review frequency to confirm continued adequacy;
  - indicate changes and current revision status (i.e. revision number and date);
  - are available at points of use;
  - show linkage to relevant documentation;
  - are controlled to prevent unintended use of obsolete documents;
  - remain legible; and
  - identify and document how to control external reference materials (e.g. environmental permits and equipment manuals) necessary for the procedure.

- Create a template with the required information (see above) for your controlled Level 2 and 3 procedures (e.g. template header and footer). At a minimum, your document control system must include the document title, a revision date, and reference to whom within the organization has approval authority.

- For level 2 and 3 procedures consider incorporating additional information in your template (as noted below) to assist in meeting ISO 14001 document control requirements. You may want to include:
  - the purpose and scope for each procedure;
  - reference to associated documentation and necessary equipment;
  - list of roles and responsibilities;
  - benefits of following the procedure;
  - environmental consequences of not following the procedure; and
  - standardized format for revision language tracked over the life of document.

Here is an example procedure document header

EP-07	**Document Control**	
	Date: 6-9-2016	**Revision 4**
	Origination Date: 1-10-2002	**Page 1 of 3**

II) Develop a document control procedure that notes how the organization will incorporate the information in Step I.
- Ensure the procedure assigns responsibility for document control and includes records as well as other documents in the system.
- Consider establishing a document control form that tracks the revision history of EMS documents, notes their location, and identifies the retention schedule for all documents (active and obsolete). Step 7a contains an example log.

III) Format each of the organization's existing level 2 and 3 procedures using the document control template and ensure all requirements of the document control procedure are included.

- Review the information gathered by and work products from each of the steps within this design guidance to develop any needed procedures to formalize the organization's requirements within the EMS.

- For Step 1 - **Interested Parties** (4.2), your procedure might include:
  - how the organization identifies interested parties relative to its EMS;
  - how the organization identifies the relevant needs and expectations of interested parties; and
  - how the organization determines which of these needs and expectations become compliance obligations.

- For Step 1 - **Understanding the Organization and Context** (4.1) your procedure might include:
  - process used to identify the environmental conditions affected by or capable of affecting the organization or its EMS;
  - process used to identify external issues relevant to and that can affect the EMS;
  - process used to identify internal issues relevant to and that can affect the EMS;
  - how the risks and opportunities associated with the above are identified; and
  - how these issues are translated into environmental aspects and impacts (if applicable).
- For Step 1 - **Roles, Responsibilities, Authorities and Resources** (5.3 and 7.1), your procedure might include:
  - how the key environmental management roles, responsibilities and authorities are defined and communicated to all persons working for or on behalf of the organization;
  - how the EMR or assigned staff has oversight of EMS establishment, implementation and maintenance including reporting to top management on system performance and recommendations for improvement; and
  - how resources are allocated to the EMS and authority to allocate resources.
- For Step 1 - **Determining the Scope of the EMS** (4.3), your procedure might include a description of how the scope will be developed including:
  - how the organization considered the issues identified by understanding its context when developing the scope;
  - how the organization considered the compliance obligations from its interested parties when developing its scope;
  - if applicable a statement of justification for excluding processes, buildings, or functions from the EMS scope including lack of authority or ability to exercise control and influence;
  - who has responsibility for maintaining and updating the scope; and
  - how the scope will be provided to interested parties.
- For Step 2 - **Compliance Obligations** (6.1.3), your procedure might include:
  - who is responsible for keeping up-to-date on compliance obligations;
  - what information is needed to keep up-to-date on compliance obligations and how access it;
  - the linkage between compliance obligations and an organization's aspects (determining which are applicable to the organization's activities and related aspects);
  - how the organization assessed any risks or opportunities associated with its compliance obligations; and
  - any reference forms used. Forms may list current legal and other requirements, reporting dates, frequency of reporting and other information that assists in maintaining the commitment to compliance.

- For Step 3 - **Environmental Policy** (5.2) your procedure might include:
  - who is involved in developing the policy;
  - how the organization ensures the policy meets the requirements of the standard;
  - how the policy will be documented and communicated to employees and those working on behalf of the organization;
  - how the policy will be made available to interested parties; and
  - how changes will be made and where that authority lies within the organization.

- For Step 3 - **Environmental Aspects** (6.1.2) your procedure might include:
  - how the organization assesses its aspects and impacts;
  - how the organization determines significance;
  - how the organization identifies the aspects and impacts of new or modified activities products or services;
  - how the organization assessed the risks and opportunities associated with its aspects;
  - what frequency is required to assure that aspects and impacts have been kept up-to-date;
  - who has responsibility for these activities;
  - how to show linkage to other key EMS elements such as compliance obligations; risks and opportunities; training needs, operational controls, communication; and objectives; and reference and create associated forms.

- For Step 4 - **Operational Planning and Control** (8.1) your procedure might include:
  - the need to develop operating procedures or work instructions and associated forms related to new and existing significant aspects;
  - the process for communicating requirements to those working on behalf of the organization;
  - a template to be used in the development of any work instruction to assure consistent information; and
  - a link between work instructions and associated significant aspects.

- For Step 4 - **Emergency Preparedness and Response** (8.2) your procedure night include:
  - the process for identifying potential incidents and how it will respond to those that can have adverse impacts on the environment;
  - a periodic review and testing process with subsequent revision to procedures when necessary, particularly after a "real" emergency situation; and
  - those individuals within the organization whom are responsible for ensuring these activities take place.

- For Step 5 - **Monitoring, Measurement, Analysis, and Evaluation** (9.1) your procedure might include:
  - how the organization monitors key characteristics of its operations that can have a significant impact including sources of information, frequency and measurement method;
  - calibration requirements;
  - how it documents monitoring of performance and progress on objectives; and
  - who is responsible for ensuring these activities take place.

- For Step 6 - **Environmental Objectives and Planning** (6.2.1 and 6.2.2) your procedure might include:
  - how the organization establishes objectives;
  - to whom and on what frequency the status of these objectives are reported;
  - who is responsible for ensuring these activities take place and tracks progress;
  - how often the objectives are updated;
  - how the results will be evaluated and integrated into business processes; and
  - references to documents listing the environmental objectives.

- For Step 8 - **Competence and Awareness** (7.2 and 7.3) your procedure might include:
  - how training needs are identified for employees and those working on behalf of the organization;
  - who is responsible for identifying training needs;
  - what process is used to determine competence for employees and those working on behalf of the organization and who is responsible for completing it;
  - how competence and training needs are identified for employees with specialized environmental management functions (e.g. EMR, top mgt.);
  - how training requirements and their completion will be tracked; and
  - what forms will be used to document training completion.
- For Step 9 - **Evaluation of Compliance** (9.1.2) your procedure might include:
  - what process is used to evaluate compliance;
  - who is responsible for the evaluation;
  - how often the evaluation is completed;
  - determination if an independent review (corporate and third party) will be conducted;
  - who will conduct the review and how often the review will occur; and
  - how results from the review are communicated.

- For Step 9 - **Nonconformity and Corrective Action** (10.2) your procedure might include:
  - a description of how nonconformances are documented and what information will be collected;
  - who is responsible for completing the various sections of the form;
  - who is responsible to identifying and implementing corrective actions;
  - how applicability to other areas of the facility/organization are determined and communicated;
  - how changes to written work instructions will be completed and tracked;
  - how preventative actions will be documented and tracked to completion;
  - how the effectiveness of the process is determined;
  - who will make any necessary changes to EMS; and
  - how program information will be communicated to top management.

- For Step 10 - **Communication** (7.4) your procedure might include:
  - how environmental information will be communicated within the organization (both up and down the management chain), how often this occurs, the method of communication, and avenues for feedback;
  - how information will be communicated to suppliers and those working on behalf of the organization including avenues for feedback;
  - how information relevant to the organization's compliance obligations will be communicated externally and by whom;
  - what process will be used to respond to communications on its EMS, how this will documented, and who will communicate; and
  - who will be responsible for internal and external communications;

- For Step 10 - **Management Review** (9.3) your procedure might include:
  - a description of the process used, the information reviewed, responsibility for, and the frequency of meetings;
  - how the review meeting and any decisions made within it will be document; and
  - how changes to the EMS and its associated processes and procedures will be assigned and completion tracked.

- For Step 11 - **Internal Audit** (9.2) your procedure might include:
  - the methodology for conducting audits (criteria, scope, frequency, impartiality of auditors);
  - the responsibilities for the internal auditing program including planning and choice of auditors;
  - how corrective and preventative actions will be handled; and
  - how results from internal audits are communicated.

While this listing is intended to help identify the items to consider when developing processes and procedures related to your environmental management system, it should not be considered all inclusive as each system will have different documentation needs.

EMS Document Control Form

Use the space below to identify EMS documents, revision status, retention location and schedule. The first row provides an example that can be deleted if using this template.

Clause	Doc. #	Procedure/Form Title	Revision		Location	Retention Schedule
			#	Date		
NA	EP-01	EMS Manual	2	6/21/2016	Electronic-EH&S Server Hardcopy (Ref.) with EH&S Mgr.	Active Copy - server backed up nightly Obsolete copies kept for 10 yrs
5.2	EP-02	Environmental Policy	3	5/7/2016	Electronic-EH&S Server Hardcopy (Ref.) with EH&S Mgr.	Active Copy - server backed up nightly Obsolete copies kept for 10 yrs

Document Control Procedure Example

EP-07	**Document Control**	
	Revision Date: March 21, 2015	Revision #4
	Origination Date: August 7, 2009	Page 1 of 4

1.0 Purpose

The purpose of this procedure is to ensure that EMS documents are controlled – so that changes are approved prior to use and personnel requiring access to EMS documents have the most up-to-date document. The distribution of relevent external documents will also be controlled.

2.0 Scope

Includes all EMS procedural documents from creation & revision to the storage & purging.

3.0 Responsibilities

The EMR is responsible for coordinating, developing, issuing and controlling EMS documents.

4.0 Forms Used

EF-07A - EMS Document Matrix and Revision Log

5.0 Procedure

5.1 Overview: There are three (3) levels of documentation:

5.1.1 EMS Manual - Level 1 Document. The EMS Manual describes the core elements of the EMS and provides direction to Level 2 procedures. This document is labeled EP-00.

5.1.2 EMS Manual - Level 2 Procedures. The EMS Level 2 Procedures describe the methods used to accomplish the core elements presented in the EMS Manual. These procedures are labeled EP-01 through EP-20.

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5.1.3 Work Instructions - Level 3 Documents. These are the work Instructions that provide specific details on how to perform a given task. There are two types of work instructions: These documents are labeled with the prefix WI.

5.1.3.1 System Level Work Instructions - are those instructions that are critical to the effective execution of the EMS. These Work Instructions are normally cross functional / cross departmental - in content.

5.1.3.2 Departmental Work Instructions - are those instructions that are internal to a department function. These are still controlled documents but change authority rest with Department Manager or Supervisor.

5.1.4 External Documents - External environmental documents such as MSDSs, environmental permits, correspondence with regulatory agencies, etc. – are considered "Environmental Records" and are managed according to Environmental Records and Retention (EP-12).

5.2 Newly Created & Revised Documents

The EMR will make changes to the EMS documents. Input into this step can originate from any employee – especially the EMS Team.

All newly created procedures and forms will receive a document or form number.

The reasons for any revision to a controlled document will be recorded in the "Revision History" section of the document.

The revision date and revision number will be updated to reflect the current informaiton Document header) as well as on the form EF-07A (EMS Document Matrix and Revision Log).

Documents will be reviewed and updated as necessary taking into account management review meeting decisions, corrective action program findings, and any other facility/operational changes.

5.3 Document Approval

Any documents which have been created or modified will be submitted to <SIGNATORY AUTHORITY> who will review the requested change and will decide whether to approve or reject the change. If the change is approved, < SIGNATORY AUTHORITY > will sign the master hardcopy, indicating approval of the change.

If the < SIGNATORY AUTHORITY > rejects the change, the modified document will not be signed, and notations will be made on the hardcopy as to why the approval was not given. Copies of the rejected document will be filed with the EMR.

5.4 Distribute, Train & Notify Users

The EMR will coordinate the distribution of released documents and notify expected users.

The distribution and notification of controlled external documents will also be controlled by the EMR.

5.5 Document Implementation

After receiving instruction on the new or revised document, it is the responsibility of those affected individuals to accurately and completely implement and follow the document instructions and process.

5.6 Purge Obsolete Documents & Records

Upon receipt of the changed document, it is the responsibility of the individual being notified to purge the obsolete documents.

If obsolete documents are retained for any reason, they should be labeled "OBSOLETE - DO NOT USE".

5.7 The EMR shall maintain a master set of EMS documents. The documents will be saved electronically with hard copies of obsolete versions.

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References

6.0 ISO 14001-2015, Element 7.5

Related Procedures

7.0 EP-013 - Environmental Records

Records

8.0 ER-09A, EMS Document Matrix

9.0 **Revision History**

Revision No.	Change/Revision Description	Page No.	Date
1	Title Changes	1	12/7/2010
2	Updated signature authority sections	All	3/26/2011
3	Minor Changes	All	6/15/2014
4	Updated to 2015 ISO 14001 standard	All	8/21/2015

Competence and Awareness (7.2 and 7.3)

EMR: Prior to Team Meeting 10, work with management to develop a procedure for evaluating competence of those following work instructions and tracking of training. Schedule general awareness training (policy and basic EMS overview) and targeted training related to significant aspects within the next two months.

EMS Team Meeting 10 Objective: Continue work on and complete integration of level 2 and 3 documents and forms. Review the development of reporting and responding to corrective and preventive actions and review plan for meeting training requirements and competence evaluation.

Scheduling: EMS Team meet in four weeks.

Using the table in Step 8a,

I) Develop a process to identify and track training needs and evaluate competence (7.2)

- Determine the necessary competence of persons doing work under the organization's control that affect its environmental performance and its ability to fulfil its compliance obligations.
- Determine the training needs associated with the organization's environmental aspects and EMS and identify the employees or persons doing work under its control that need training. Refer to environmental aspects determined in Step 3 and operational control procedures developed in Step 4 and identify any related training needs. Document responsibilities.
- Develop process and responsibilities for evaluating competence of employees or persons doing work under its control whose job activities have the potential to cause significant environmental impacts. Determine the competency indicator the organization will use to ensure the person doing the work is competent. Competency indicators can include: appropriate education, training, or experience; supervisor sign off; quizzes; etc.
- Consider development of experience, competence and training needs for personnel performing specialized environmental management functions.
- Consider developing a standard training sign-in form.

See example Training Matrix below

Department / Job Position's) OR Employee	Training Requirement										
	ISO 14001 Awareness	Evacuation plan	Spill Prevention & Response (EP-16)	SPCC Required Training	Hazardous Waste Management	Hazardous Materials Shipping (DOT)	Glueing Operatinos	Painting Operations	Waste Water Discharges	Air Permit Requirements	Internal Auditing
Top Management	x	x									
Clerical/Admin	x	x									
Production Supervisors	x	x	x	x			x	x	x	x	
Maintenance Supervisor	x	x	x	x	x				x	x	
Quality Management	x	x									
Machining Operators	x	x	x								
Assembly	x	x	x				x	x			
Laboratory	x	x	x				x	x			
Testing	x	x	x				x	x			
Maintenance / Facility	x	x	x	x			x	x	x		
Shipping and Receiving	x	x	x	x	x	x					
EMS Internal Auditors	x	x	x								x
FREQUENCY OF TRAINING	Once	1 / yr	1 / yr	1/3 yr	1 / yr	1 / yr	Once		Once	Once	Once

II) Schedule general awareness training and training for those who can have significant impacts (7.3)

- General awareness training will include policy, significant aspects and related impacts associated with employee's work, contribution to the effectiveness of the EMS, and implications of not conforming to the EMS. Consider including basic emergency response information as well. General training is for all employees, including top management.
- Training for persons whose activities can result in actual or potential significant impacts will require training on proper operating procedures, needs related to compliance obligations, benefits of improved personnel performance and consequences of departure from specific procedures.
- Document attendance at all training and make plans to provide training to absent employees or contractors as appropriate.
- Provide information to contractors and suppliers on EMS awareness, emergency response and work procedures as appropriate. Verify training of contractors if legal requirements apply such as for HVAC repair, pesticide application, etc.

Use table in Step 8b to document training.

Write the procedure for competence and awareness, see example procedure EP-05 Competence and Awareness. This procedure must be maintained as documented information.

Training Needs Matrix

Department / Job Position's) OR Employee	Training Requirement										Additional Competency Requirement
	ISO 14001 Awareness										
FREQUENCY OF TRAINING											

Training Record / Competence Sign-Off Sheet

Employee Name:		Job Position:	
Department:		Date Hired:	

Skills, Equipment or Awareness Areas	Related to Significant Aspect ? (Y or N)	Check Off Applicable Boxes or Provide Dates if requested								
		Level of Competency (1)					Training Records		Training Records	
		Awareness Level	Competent	Assessment Date	Initials of Assessor	Training Needed ?	Training Date	Instructors initials	Training Date	Instructors initials

(1) Competency should be assessed by observation, test results, interview, or other means

NOTE : May want to set up one of these forms specific for each department or job title

Nonconformity and Corrective Action (10.2)

EMR: The EMR may want to draft process for reporting and responding to nonconformities and corrective actions with input from management prior to the meeting.

Team Meeting 11: Review document control process integration and make any adjustments. Develop process for reporting and responding to corrective actions. Meet in three weeks.

I) Develop corrective actions process (10.2)

A non-conformance is a deficiency where implementation is not consistent with the EMS description or the system does not meet the EMS criteria. Corrective action allows for ongoing improvement of the EMS and enhanced environmental performance.

- Establish corrective action form or forms to document:
    * event information (who, when, where);
    * the identification of actual or potential non-conformances;
    * the investigation of root causes;
    * assessment if applicable in other locations;
    * the level of magnitude the findings rise (major, minor, opportunity) to assure appropriate response;
    * corrective actions taken to avoid reoccurrence including schedule;
    * preventive actions taken to avoid occurrence including schedule;
    * that a review of effectiveness of corrective and preventive action took place; and
    * make any necessary changes to the EMS.
- Determine roles and responsibilities related to each section of the forms, how forms will be handled and how changes to written work instructions will be recorded.
- Consider development of a form to summarize actions for reporting to top management.

II) Develop procedure providing guidance on non-conformances and corrective actions

- Document process and responsibilities for handling corrective action reports referring to processes developed in Step 7.
- Define the process for evaluating the need for action(s) to prevent non-conformities and implementing appropriate actions.

Corrective Action Request (CAR)

EF-11A

Area / Department:			
Discovery Date:		**CAR #**	
Auditee(s):		**Auditor(s):**	
Description of NonConformity (or Potential NonConformity):			
Audit Criteria (citation/ procedure):			
Applicable ISO 14001 Element:			
Responsible person for Investigating and Handing NC:			
Intermediate Action:		**Date of Implementation:** **Due Date:** **Actual Completion Date:**	
Root Cause:		**Method Used:** **Team Members:**	
Corrective Action:		**Date of Implementation:** **Due Date:** **Actual Completion Date:**	
Preventive Action: **1) Is there a need for preventive action?** ☐ **Yes** ☐ **No**		**Date of Implementation:** **Due Date:** **Actual Completion Date:**	
2) If so, what is the preventive action or additional areas of implementation of the corrective action?			

Corrective / Preventive Actions - Results Review:						
Effectiveness of Actions:		**Excellent**	**Good**	**Satisfact.**	**Fair**	**Unsatisfact.**
Review Period #1:	Corrective Action					
	Preventive Action					
Date:	**Results of Actions:**					
Review Period #2:	Corrective Action					
	Preventive Action					
Date:	**Results of Actions:**					

Verification:

☐ The corrective actions are _____ effective, _____not effective, _____not applicable.

☐ The preventive actions are _____ effective, _____not effective, _____not applicable.

☐ CAR is closed. ☐ Alternative CAR needs to be issued -CAR #: _____

Auditor Signed: **Date:**

Environmental Corrective Action Request Log

EF-11B

CAR #	Issue Date	Area / Department	NonConformity Summary	Corrective Action Completion Date	Preventative Action Completion Date	Closure Date

Communication, Management Review and Improvement (7.4, 9.3, 10.1, 10.3)

Team Meeting 12:
Objective:
To develop a procedure(s) for internal and external communication and develop a procedure to describe the management review process.

Scheduling - Establish next meeting based on ongoing EMS maintenance needs.

I) Develop an internal and external communication procedure(s) (7.4)

- Establish the methodologies for communicating environmental information within the organization up and down the communication chain and to persons working on behalf of the organization. Procedure should formalize what will be communicated, when to communicate, with whom to communicate, how to communicate and how communication will be documented, taking into account the organization's compliance obligations.
- Develop process for receiving, documenting and responding to relevant communications from external interested parties. Utilize the document control template developed in Step 7.
- Develop process for external communication of information relevant to the EMS as required by the organization's compliance obligations.
- Develop process if not already established elsewhere for feedback on improvement suggestions from persons doing work under the organization's control.
- Stewards in the ESI have committed to have a process for communication with the local community on program activities and progress toward performance goals that goes beyond the requirements of ISO 14001:2015. Examples of external communication by ESI Stewards can be found in Step 10a.

II) Develop management review procedure (9.3)

- Document process for and responsibilities with reporting on the progress of the management system to top management.
- Determine the planned time interval between meetings to review EMS information.
- Information reported to top management should include:
  - status of actions from previous management reviews;
  - changes in:
    - external and internal issues relevant to the EMS
    - needs and expectations of interested parties, including compliance obligations
    - its significant environmental aspects
    - risks and opportunities
  - the extent to which environmental objectives have been met;

- adequacy of resources;
- relevant communications from interested parties, including complaints;
- opportunities for continual improvement; and
- information on the organization's environmental performance, including trends in:
  - nonconformities and corrective actions;
  - monitoring and measurement results;
  - fulfilment of its compliance obligations;
  - audit results;

- Outputs from the review must include:
  - conclusions on the continuing suitability, adequacy and effectiveness of the EMS;
  - decisions related to continual improvement opportunities;
  - decisions related to any need for changes to the EMS, including allocated resources;
  - actions, if needed, when environmental objectives have not been achieved;
  - opportunities to improve integration of the EMS with other business processes, if needed; and
  - any implications for the strategic direction of the organization.
- Determine how the management review shall be documented and its retention schedule.
- Step 10b contains an example management review meeting form.

III) Additional opportunities for improvement

- Section 10.1, new to the 2015 standard notes that the organization shall determine opportunities for improvement. While the standard references Monitoring and Measurement, internal auditing, and management review in these efforts the organization may want to document and formalize through procedure any other actions it is taking to determine opportunities for improvement.
- For example, are there any quality improvement processes implemented by your quality program or ISO 9001 registration that could apply to environmental aspects?

IV) Continual Improvement

- Section 10.3 also new to the 2015 standard notes the organization shall continually improve the suitability, adequacy and effectiveness of the environmental management system to enhance environmental performance.
- Review your objectives and monitoring and measurement programs to ensure you are monitoring all facets of your environmental performance.
  - Do you need to add anything?
  - Are your measuring your environmental performance relevant to your interested parties, customers, suppliers, contractors?

V) For your EMS implementation complete a gap analysis and report to top management on progress

- Compare existing programs and work completed against each element of the standard, element-by-element.
- Summarize progress to date on completing and implementing EMS design requirements.
- Report to top management results of progress.
- ESI staff can perform a Gap Analysis with your assistance or can provide an Excel-based Gap Analysis tool for your use in an internal gap analysis exercise.

Examples of External EMS Communication from ESI Stewards

- Posted facility environmental policy and environmental performance data on website
- Presented to community leaders, neighbors, educational institutions and others
- Hosted an annual contractor meeting to discuss facility environmental goals and illicit feedback
- Used facility resources to sponsor a community recycling center or accept recyclable materials into a company program
- Adopted a portion of a community park or highway or given funds to support these
- Prepared and distributed annual environmental reports to community leaders, neighbors, educational institutions and others
- Participated at environmental events or on groups at the local, state or national level
- Allowed local agencies site access to gain familiarity with emergency response systems and for agency practice drills
- Participated in research studies regarding environmental practices
- Audited external communication during every internal audit cycle
- Benchmarked with local manufacturers
- Sponsored Earth Day events at local schools
- Provided judges for public school Science Fair
- Participated in Engineering Week at local middle school
- Used bill stuffers to educate customers
- Offered facility tours to interested parties
- Investigating opportunity to become a "People to People Ambassador" for the Water Environment Federation

Management Review Minutes

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Date		Time		Location	
Meeting Chairperson					

Attendance Roster

Name	Job Title/Function	EMS Role

	Meeting Inputs	Comments/Action Items
☐	Audit Results	
☐	Compliance Evaluations	
☐	External Communications	
☐	Environmental Performance	
☐	Objectives	
☐	Corrective Actions	
☐	Previous Mgt. Meetings	
☐	Changing Circumstances	
☐	Recommendations for Improvement	

Declaration Statements

1) Is the EMS suitable, adequate and effective?	Yes ☐	No ☐
2) Have opportunities been assessed for improvement?	Yes ☐	No ☐
3) Are changes to the EMS warranted?	Yes ☐	No ☐

Comments:

Next Meeting		Topics	

Internal Auditing (9.2.2)

EMR: Develop a procedure for internal auditing and identify and train auditors (if necessary) and complete readiness audit. Determine management review process.

Information collected assists in determining overall EMS continuing adequacy, effectiveness and suitability. Each individual internal audit does not have to cover every EMS element but may instead cover all elements in time.

I) Develop procedure for internal auditing

- Identify responsibilities and methodologies (criteria, scope, and frequency) for the internal auditing program. Refer to document control template developed in Step 7.
- Establish planned intervals to
    * assure the EMS is in conformance with ISO and has been properly implemented and maintained, and
    * provide information on results of audits to management.
    * Consider creating a matrix of ISO 14001 elements and areas of the organization to make sure all elements are reviewed in all areas.
- Consider the environmental importance of the processes concerned, changes affecting the organization, and results of previous audits in setting an audit plan.
- Select auditors and conduct audits to ensure objectivity and impartiality.
    * Determine whether internal or external auditors will be used. If internal auditors will be used, establish training and competency requirements for auditors.
    * Establish objectivity and impartiality guidelines for the audit process.
- Consider the development of an audit report summary to cover areas and issues identified during audit.
- Consider development of audit findings form to document findings that may require corrective or preventive actions.

II) Complete internal audit and report to top management

Audit Checklist

Checklist for Audit Report No.		Procedure No.	

Section of Procedure	Question	Conforming? Yes/No	Evidence	NCR No.

Nonconformity Report	
Area Audited:	ISO 14001 Element:
Report Date:	Nonconformity Number:
Reference Document(s):	Category: ☐ Major ☐ Minor
Description of Nonconformity:	
Auditor (signature):	Date: