ENVIRONMENTAL MANAGEMENT SYSTEM PLANNING GUIDANCE

UNDER THE TOXICS USE REDUCTION ACT (TURA)

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I. INTRODUCTION

The Toxics Use Reduction Act (TURA, MGL c.21I) and its regulations at 310 CMR 50.00 establish toxics use reduction as a central component in the Commonwealth's efforts to protect public health and the environment and to promote the competitive advantage of Massachusetts businesses through efficient materials use and management. Established in 1989, TURA requires certain facilities that manufacture, process, or otherwise use listed toxic materials in their operations above specific thresholds to file annual reports detailing their management of toxics, and to undergo a planning process to identify opportunities for toxics use reduction. The outcome of the planning process is a toxics use reduction plan (TUR plan). Please see the *Toxics Use Reduction Planning and Plan Update Guidance* at https://www.mass.gov/media/914706 for information on when TUR Planning is required.

A primary goal established by TURA – to reduce toxic byproducts by 50% – was met several years ago. Amendments to the statute in 2006 allowed TURA facilities that have completed a TUR plan and at least two plan updates to choose alternative planning options. They can either develop a Resource Conservation plan every other planning cycle; or implement an Environmental Management System (EMS) that integrates toxics use reduction planning in lieu of continuing TUR plan updates. The second option allows companies that have established an EMS to integrate TUR planning into this system without having to continue to prepare separate TUR plan updates.

This guidance document is designed to help companies determine the specific modifications to their EMS that may be necessary to satisfy the requirements of a TURA EMS, making the EMS eligible for use as an alternative to bi-annual

This guidance document focuses on **TURA Environmental Management Systems**. Its purpose is to help TURA facilities understand the requirements of the TURA EMS alternative to TUR planning, review the required elements of a TURA EMS (see 310 CMR 50.80), and provide direction on locating additional resources. For information on implementing a Resource Conservation plan, please see MassDEP's guidance "Resource Conservation Planning Guidance under the Toxics Use Reduction Act (TURA)".

A. What is an Environmental Management System?

An Environmental Management System (EMS) is a systematic approach to effectively integrate environmental considerations into an organization's day-to-day operations and management culture. The EMS structure recognizes that environmental and economic performance are directly linked. Many of the economic and environmental benefits from implementing an EMS can be derived from taking a proactive approach of toxics use reduction. Toxics Use Reduction strategies help reduce or eliminate environmental concerns at the source, resulting in less waste, more efficient use of inputs, reduced risk and liability that may be reflected in lower insurance premiums and avoided contingency expenses, and many other environmental, health, safety, and financial benefits. Toxics Use Reduction can also enhance an organization's public image internationally and locally, eliminate trade barriers, and create a greater awareness of environmental performance across all departments of the organization. An EMS offers the opportunity for a facility to integrate its chemical and product quality management and planning efforts, so that the focus is not just on hazardous chemicals or waste, but on the prudent use of all materials and resources by the organization.

Companies have been using EMSs to manage their impact on the environment for decades. Several organizations, including governments, independent standards developers, and trade organizations, have developed frameworks that companies can use to assure quality environmental performance. Common frameworks that companies have used to create their EMSs include ISO 14001, EPA National Performance Track, and Responsible Care®. These frameworks share required elements of an EMS that are designed to assure that the company or organization using the system will be able to consistently manage and minimize the impact its operations may have on the environment.

Table 1 summarizes the elements required in the three major EMS frameworks listed above. While the different frameworks all share these common elements, how they are managed may be slightly different between frameworks.

Table 1. Elements Required by Major EMS Frameworks

Element	Description of Element Goals	ISO 14001	Performance Track	Responsible Care®
Environmental Policy	Develop a statement of the organization's commitment to the environment	✓	✓	✓
Environmental Aspects and Impacts	Identify environmental attributes of products, activities and services and their effects on the environment	✓	✓	✓
Legal and Other Requirements	Identify and ensure access to relevant laws and regulations	✓	✓	✓
Objectives & Targets	Set environmental goals for the organization	✓	✓	✓
Environmental Management Programs	Plan actions to achieve objectives and targets	✓	✓	✓
Structure and Responsibility	Establish roles and responsibilities within the organization	✓	✓	✓
Training, Awareness and Competence	Ensure that employees are aware and capable of their environmental responsibilities	✓	✓	✓
Communication	Develop processes for internal and external communication on environmental management issues	✓	✓	✓
EMS Documentation	Maintain information about the EMS and related documents	✓	✓	✓
Document Control	Ensure effective management of procedures and other documents	✓	✓	✓
Operational Control	Identify, plan and manage the organization's operations and activities in line with the policy, objectives and targets, and significant aspects	✓	✓	✓
Emergency Preparedness and Response	Develop procedures for preventing and responding to potential emergencies	✓	✓	✓

-continued- Table 1. Elements Required by Major EMS Frameworks				
Element	**Description of Element Goals**	**ISO 14001**	**Performance Track**	**Responsible Care®**
Monitoring and Measurement	Monitor key activities and track performance including periodic compliance evaluation	✓	✓	✓
Nonconformance and Corrective and Preventative Action	Identify and correct problems and prevent recurrences	✓	✓	✓
Records	Keep adequate records of EMS performance	✓	✓	✓
EMS Audit	Periodically verify that the EMS is effective and achieving objectives and targets	✓	✓	✓
Management Review	Review the EMS	✓	✓	✓

Each of the elements listed in Table 1 have common definitions to the elements. Table 2 below describes some of the other common elements found in major EMS frameworks that vary somewhat across the different frameworks.

Table 2. Other Common Elements Found in Major EMS Frameworks			
Element	**ISO 14001**	**Performance Track**	**Responsible Care®**
Independent Audits	Independence can be demonstrated by the freedom from responsibility for the activity being audited	EPA defines an "Independent Party" as someone who is neither directly employed by a facility nor has played a substantive role in developing the facility's EMS	RC membership requires certification by an independent RC-accredited auditor. Under RC, companies also can choose to certify as RC14001, which combines RC and ISO 14001 certification
Continual Improvement in Environmental Performance	Environmental performance is defined as "measurable results of an company's management of its environmental aspects"	Continuous improvement in environmental performance for regulated and unregulated activities is required	Policy Statement includes commitment to continuous improvement
Pollution Prevention	ISO requires a commitment to prevention of pollution, which can include end-of-pipe treatment and remediation techniques, which do not constitute source reduction.	Performance Track requires that the policy commit the facility to pollution prevention at its source.	No element in the RC framework relates directly to pollution prevention; however, pollution prevention is implicit throughout the elements

Element	ISO 14001	Performance Track	Responsible Care®
Sharing information on environmental performance with community	The ISO 14001 model does not require an EMS to include public reporting; however, inquiries made by the public of a facility's operations must be addressed in its communications programs	Performance Track requires that the facility make a commitment to sharing information on environmental performance with the community in the Policy Statement	As part of the guiding principles of an RC EMS, the EMS must include a commitment to public input in products and operations and periodic reporting on performance.

B. What is a TURA EMS?

A TURA EMS shares the basic elements of the major EMS frameworks described in Table 1, with specific additions designed to ensure that the goals of toxics use reduction are incorporated into and implemented through the EMS. As defined in the regulations (310 CMR 50.81), an EMS is considered suitable if it was developed in conformance with the standards of ISO 14001, US EPA's Performance Track Program, Responsible Care®, or other EMS standard adopted by a trade association or other standard-setting organization, provided that the EMS:

- Contains the TUR elements specified in 310 CMR 50.82 (see Section II below)
- Covers all the production units identified in the most recent toxics use report
- Considers toxics use reduction when identifying significant aspects and establishing associated objectives and targets
- Emphasizes source reduction (toxics use reduction) as the means of achieving objectives and targets

AND

- Has been in place for at least one full EMS cycle (i.e., plan-do-check-act) and has undergone an independent EMS audit.

A TURA EMS considers reportable toxics to be significant aspects.

An effective and continually improving TURA EMS will allow a company the flexibility needed to efficiently combine its TUR planning activities with its overall environmental management activities. This provides a degree of planning, implementing, checking and correction of its toxics use reduction actions that is at least as rigorous as what is accomplished in the TUR planning process.

C. TURA EMS Schedule

In order for a company to be eligible to use the TURA EMS option in lieu of completing further TUR plan updates, the company must:

- Have completed its initial TUR planning process and at least two TUR plan updates

and

- Have a fully implemented and independently audited EMS in place in accordance with its audit procedures for at least one complete EMS cycle (plan-do-check-act).

Once these conditions have been met, the company may choose to use the planning cycle (i.e., January 1through June 30 of the even-numbered years) to modify the EMS to ensure that the EMS contains all of the required elements (see Table 3), and that these elements integrate toxics use reduction (see Section III below). Companies using the TURA EMS alternative must submit an EMS progress report to MassDEP on or before July 1 of each TURA Planning Year (even-numbered years) with their annual TURA report for the prior calendar year. The EMS Progress Report summarizes the current status of EMS implementation with respect to the TURA requirements, as of the time of submittal. Submittal of the TURA EMS progress report takes the place of submittal of a TUR plan summary (see section IV.C for additional information on the EMS progress report).

II. TURA EMS REQUIREMENTS

In order to satisfy the requirements in the regulations (310 CMR 50.80), a TURA EMS must meet the standards listed in Section B, "What is a TURA EMS?" above.

The requirements are described in detail below. Section III describes specific actions you may consider to ensure that all of the elements for a TURA EMS (outlined in Table 3) adequately address toxics use reduction.

A. Required Elements of a TURA EMS

The regulations establish 14 required elements that an EMS must include to qualify as an alternative to continued TUR plans. These required elements are generally similar to the common national frameworks described in Table 1, but emphasize integrating toxics use reduction planning into the EMS. The TURA EMS requirements must be integrated into the existing EMS, rather than being established as a separate section. The TURA EMS required elements are described in Table 3. Section III describes specific modifications a facility may need to make to the elements of its EMS to ensure that these elements appropriately address toxics use reduction.

Table 3. TURA EMS Required Elements

#	Element	Description
1.	Environmental Policy	A written environmental policy that expresses management support for, and makes a commitment to: compliance with legal requirements; pollution prevention through source reduction; and continual improvement of the EMS and environmental performance.
2.	Aspects and Impacts	A process for identifying significant environmental aspects and impacts from current and future activities at the facility**.** All covered toxics shall be identified as significant environmental aspects.
3.	Legal Requirements	Identification of environmental legal requirements, including a system for tracking compliance and learning about and integrating changes to legal requirements into the EMS.
4.	Objectives and Targets	A process for establishing measurable objectives and targets that address significant environmental aspects and other EMS commitments and that emphasize preventing pollution at its source.
5.	Environmental Management Programs	Environmental management programs designed to monitor progress toward documented objectives, targets, and commitments in the EMS, including the means and time-frames for their completion.
6.	Roles and Responsibilities	Established roles and responsibilities of the facility's staff and management, on-site service providers, and contractors for meeting objectives and targets, and complying with legal requirements, including a senior management representative with authority and responsibility for the EMS.
7.	Training	Environmental and compliance training for those whose jobs and responsibilities involve activities directly related to significant aspects, achieving objectives and targets and compliance with legal requirements, and initiation training for new personnel.

- continued - Table 3. TURA EMS Required Elements		
8.	Communication	Procedures for communicating environmental and EMS information throughout the facility, including EMS awareness programs for all employees.
9.	Operations Controls	Operational controls to ensure that equipment and other operations comply with legal requirements and address significant environmental aspects.
10.	Documentation and Document Control	Documentation of key EMS elements and procedures for document control and records management.
11.	Emergency Preparedness and Response	Emergency preparedness and response procedures.
12.	Monitoring and Measuring	Procedures for monitoring and measuring key operations and activities to assess environmental performance.
13.	Audits and Corrective Action	Procedures for preventing and detecting non-conformance with legal and other requirements of the EMS, including an established compliance audit program and an EMS audit program, and procedures for corrective actions to ensure timely compliance and commitment to continual improvement. The EMS audit program shall require independent auditing on at least a two-year cycle, and senior management review of audit results.
14.	Management Review	Documented management review of performance against established objectives and targets, and the effectiveness of the EMS in meeting policy commitments.

B. Production Units

Developing a TURA EMS should not require a significant amount of modification of your existing EMS.

The TURA EMS must include all production units that are identified on the TURA Form Ss included in the annual toxics use report submitted in the planning year within its scope. The common scope of an EMS, however, includes all significant activities that could include aspects that might impact the environment. Therefore it is unlikely that any EMS would require any modification to its scope to incorporate all production units. Facilities must review the TURA EMS scope to assure that all production units are covered, and are advised to include specific language within the TURA EMS to require that these production units remain within the scope of the EMS for at least as long as it will be used in lieu of TUR planning.

C. Significant Aspects Identification

The TURA EMS requires that all covered toxics be identified as significant environmental aspects. This means that companies with existing EMSs will need to modify their significance determination procedure to make all reportable toxic chemicals automatically classified as significant. For the purposes of the TURA EMS, any toxic that is subject to the TUR planning requirement for the first year the company uses a TURA EMS, (that is, was used above the reporting threshold in the two calendar years prior to the Planning year) must be classified as significant. In addition for subsequent Planning Years, any TURA listed

chemical ("covered toxic") reportable the during the two-year period between EMS progress report submittals must be classified as significant.

D. Existing EMS and EMS Audit

For a facility to be eligible to choose the TURA EMS option, it needs to have an existing EMS in place for at least one EMS cycle (plan-do-check-act) and have undergone at least one independent audit. Most companies with an EMS have already had independent audits of their EMS and meet this criterion. If an EMS has not been audited, an independent audit must occur by July 1 of the Planning Year. Future audits (required at least once during the two-year period between plans) must include evaluations of the TURA EMS criteria.

III. INTEGRATING TUR INTO THE EMS

Integrating toxics use reduction into an existing EMS should not require a significant amount of modification. If the facility has an EMS in place that satisfies a major EMS framework, only certain key modifications to the EMS may be required to bring it into alignment with the requirements of the TURA EMS. This section provides guidance on which elements of an EMS may need to be modified to satisfy the requirements and intent of the TURA EMS.

A. Elements of an EMS that Likely Require No or Minimal Modification

If an existing EMS contains the 14 elements required for a TURA EMS, it is likely that eight of those elements will need only minor modification, if any, to meet the requirements of a TURA EMS. However, this may not hold true for all EMSs, or may not match the needs of the individual EMS, so companies must review their existing EMSs carefully. These eight elements and potential modifications are discussed below.

1. Legal Requirements (TURA EMS Element #3)

A TURA EMS requires companies to have a process to identify their environmental legal requirements. The TURA EMS requires that the system include processes for tracking the company's environmental compliance and for discovering and integrating any changes to their legal requirements into the EMS. An EMS at a facility already subject to TURA should cite legal obligations under TURA. If facilities have not done so already, they should take this opportunity to explicitly cite their legal obligations under the Toxics Use Reduction Act (310 CMR 50.00) to provide an important reminder to EMS auditors and certifiers that this is a Massachusetts-specific requirement that must be met.

2. Environmental Management Programs (TURA EMS Element #5)

Environmental Management Programs (EMPs) are the specific work actions and standard operating procedures that a facility develops to ensure that the EMS is implemented effectively, including a good faith effort to achieve the identified objectives and targets. The TURA EMS framework requires EMPs, but does not prescribe exactly what needs to be incorporated into the EMPs, giving a facility flexibility to develop site-specific actions and procedures that address its unique operating conditions. Facilities must consider EMPs that incorporate toxics use reduction planning activities.

3. Roles and Responsibilities (TURA EMS Element # 6)

Establishing specific roles and responsibilities for facility staff and management is an essential component of ensuring the long-term stability of a company's EMS. The TURA EMS requires that roles and responsibilities be assigned not only for facility staff and management, but also for on-site service providers and contractors. The responsibilities of each person in the facility include activities that must be accomplished so that the EMS can meet its objectives and targets and the facility can comply with its legal requirements. These activities must include source reduction. One specific role that must be assigned includes a senior management representative who has authority

and responsibility for the effective implementation and continual improvement of the EMS. Facilities must ensure that their TURA EMS adequately establishes roles and responsibilities.

4. Communication (TURA EMS Element #8)

The TURA EMS requires that procedures for communicating environmental and EMS information throughout the facility, including EMS awareness programs, be provided for all employees. Most common EMS frameworks require at least that level of communication. The ISO 14001 standard requires that appropriate communication procedures be created not only for communication with facility personnel, but also with external stakeholders, as appropriate. It is NOT the intention of the TURA EMS to undermine the importance of external communication, and companies with existing EMSs should maintain procedures for communication both internally and externally. However, if the EMS does not currently include procedures for external communication, then no specific modifications would be needed to satisfy the TURA EMS requirements.

5. Documentation/Document Control (TURA EMS Element #10)

All EMS frameworks, including the TURA EMS, require that facilities maintain and control access to documents and records associated with all elements of their EMS. These procedures would likely not need to be modified if the current EMS satisfies the requirements of a common EMS framework.

6. Emergency Preparedness and Response Procedures (TURA EMS Element #11)

Procedures to address emergencies and emergency response are required elements of most EMS frameworks, including the TURA EMS. These procedures would likely not need to be modified if the current EMS satisfies the requirements of a common EMS framework.

7. Monitoring and Measuring (TURA EMS Element #12)

Procedures for monitoring and measuring key operations and activities at the facility are a common, and necessary, element of an effective EMS. The TURA EMS requires that monitoring and measuring activities enable a company to assess its environmental performance. The connection to environmental performance, rather than solely to conformance with the EMS, may not be explicitly included in monitoring and measuring procedures. It is recommended that those procedures be reviewed to ensure that they do explicitly link to the company's environmental performance. However, it is likely that any modifications would be minimal.

8. Management Review (TURA EMS Element #14)

Completion and documentation of a review by upper management of the company EMS performance with respect to its established objectives and targets, and the effectiveness of the EMS in meeting policy commitments is required by most EMS frameworks. This process assures that there is a top-level commitment to understanding the EMS, as well as a commitment to the effective implementation of the EMS. For the TURA EMS, the management review process must be linked to the bi-annual EMS progress report submittal, which requires that a senior management official certify that the EMS satisfies the requirements of the TURA EMS, and that it has been implemented and audited appropriately. Therefore, the Management Review element of the company's EMS may

need to be slightly modified to include mention of the EMS progress report and the senior management official certification requirement.
The senior management official must certify that:

- he/she is familiar with the EMS;
- the TURA EMS meets the requirements established in 310 CMR 50.82;
- the EMS is actively addressing environmental compliance issues;
- the person certifying the EMS as a TURA EMS Professional has provided the company with documentation that he/she meets eligibility requirements for certifying the EMS;
- the EMS has been implemented in good faith; and
- he/she is aware of the potential consequences of providing false information.

B. Elements of an EMS that Likely Require Some Modification

Six of the 14 elements of the TURA EMS are likely to require some modification in order to comply with the requirements of 310 CMR 50.80. In general, these modifications are linked to the distinguishing characteristics of a TURA EMS. Specifically, a TURA EMS requires that all covered toxic chemicals (i.e., all toxic chemicals for which the company is obligated to file a toxics use report to MassDEP on an annual basis) must be considered significant aspects, and requires that companies emphasize the use of source reduction as they consider appropriate objectives and targets for these significant aspects.

1. Policy (TURA EMS Element #1)

Each of the common EMS frameworks requires a written environmental policy that expresses management support for and makes a commitment to implementation of the EMS. The distinctions between the TURA EMS policy requirements and those of other EMS frameworks are mostly associated with the TURA EMS requirement to commit to pollution prevention through source reduction, and continual improvement not only of the EMS as a system, but of the company's environmental performance.

The focus on pollution prevention through source reduction of TURA listed chemicals and other toxics is a pivotal component of the TURA EMS as an alternative to TUR planning. With the presence of this commitment in the TURA EMS policy statement, the company is acknowledging that reducing its use of toxic chemicals is preferable to other forms of pollution management such as recycling, or "end-of-pipe" control methods such as treatment. Auditors of the EMS will be alerted to the company's commitment to source reduction, and will know to check on the effectiveness of the EMS in achieving that goal. This, in turn, allows the EMS to continually improve in its efforts to reduce the use of toxic chemicals as much as possible.

Example Environmental Policy
Our Environmental Policy demonstrates our commitment to the protection and enhancement of the environment in which we all live. Core elements of our Policy are: ***Pollution Prevention****: We are committed to conducting our operation in a manner that prevents pollution at the source and conserves resources. This commitment supports our overall mission to create value for our customers, local communities and our employees.* ***Continual Improvement****: We will strive for the continual improvement of our environmental performance by reducing the impact of our environmental aspects and by improving our Environmental Management System, itself.* ***Legal Compliance****: We will work with government and non-government organizations, including suppliers, customers, and the local community to ensure compliance with all federal, state, and local community regulations.* ***Communication****: This policy shall be communicated to all of our employees to help foster environmental responsibility. This policy is available to the public.*

ISO 14001 requires that the EMS policy statement be available to the public and that the objectives and targets are appropriate in nature and scale to the company's operation. Although not required in the TURA EMS, if present in the policy statement already, these commitments augment the EMS's appropriateness as an alternative to TUR planning in that they capture the essence of TUR planning that includes facility notification about activities and identifying technically and/or economically feasible goals for reducing the use of toxic chemicals.

2. Aspects and Impacts (TURA EMS Element #2)

A process for identifying significant environmental aspects and impacts from current and future activities at the facility is a common and essential requirement of all EMS frameworks**.** This is the process where companies evaluate various activities and operations, identifying those that based on the company's own rating system, warrant classification as significant. How a company makes this decision is intended to be left to the company, using criteria that are most valid for its specific circumstances. In all cases, however, a clear procedure and process needs to be created to systematically assess the various aspects of the company's activities and operations, so that appropriate actions can be considered to minimize the potential for negative impacts on the environment.

For a TURA EMS, all TURA reportable toxic substances must be identified as significant aspects. The aspects and impacts assessment process must describe how the EMS will monitor use of all potentially reportable toxics to ensure that any covered toxics will indeed be classified as significant. The existing TUR planning team must be included in the aspects and impacts assessment process, as they have the most familiarity with the use of toxic chemicals and the potential for toxics exceeding reporting thresholds from year to year. If a chemical is reported on the TURA Form S during the two-year period, it must be included as a significant aspect in the TURA EMS.

Often, the significance of a potential impact, or actions to reduce or eliminate it, can be overlooked. An effective TURA EMS must produce a comprehensive picture that can

assist management in perceiving the value of managing the impact. Example 1 below shows how a fuller picture of total costs can provide a more accurate assessment of the real value of an alternative that would otherwise have been overlooked because of a higher purchase cost. Example 2 shows how an EMS can bring together the lessons learned from emergency planning and pollution prevention planning, which are often conducted independently.

Aspect and Impact Assessment Example 1: Total Cost Accounting
The L *Company was experimenting with aqueous alternatives to TCE but had not located a reasonably priced substitute. After looking at hidden costs such as liability, worker safety, and opportunities for increased productivity,* L *Company found that ten percent of one employee's time was spent monitoring the TCE degreasers and manifesting the used TCE that was sent to a recycler. A week's worth of labor was dedicated to EPCRA reporting for TCE, and 40 percent of the time spent on Right-to-Know training was strictly for TCE. The degreasers were also old and would require increased maintenance and replacement in the near future. The analysis of hidden costs showed that it was worthwhile to invest resources in eliminating TCE instead of keeping and maintaining the old degreasers.*

Aspect and Impact Assessment Example 2: Integrated Planning
The E Company had identified a method of regenerating spent acid, but management had not invested in it, as waste disposal costs were low. However, after conducting a thorough emergency planning effort, which identified the acid storage area as a potential cause of neighborhood evacuation, staff included the regeneration option in the emergency plan as a method of reducing accident risk. Management now perceived the double benefit of investing in acid regeneration - reductions of waste disposal costs and the potential costs of activating an emergency plan.

3. Objectives and Targets (TURA EMS Element #4)

The TURA EMS, like other common EMS frameworks, requires that there be a process for establishing measurable objectives and targets that address significant environmental aspects. In addition, the TURA EMS requires that those objectives and targets emphasize preventing pollution at its source (i.e., toxics use reduction). The objectives and targets need to be measurable and must focus on source reduction as the primary mechanism when evaluating means of reducing the use of toxic chemicals. Organizations need to develop a system for continual improvement goals and reporting as part of their objectives and targets.

A TURA EMS requires that objectives and targets emphasize preventing pollution at its source (i.e., toxics use reduction).

Examples of appropriate objectives that emphasize source reduction include:

- Minimize chemical use by doing such things as:
  - Using a conductivity meter to assess when chemical concentrations need to be adjusted
  - Decreasing the temperature of a wet process to reduce evaporation

- Altering the method of material application to increase transfer efficiency
- Improving quality control in raw material intake procedures to reduce reject rates
- Implementing precise chemical input measurements to reduce excessive use

- Reduce spray volume by installing high-efficiency nozzles
- Improve the efficiency of chemical reactions by increasing the temperature of a wet process.

Objectives and Targets Example: Product Reformulation
Company P *established objectives and targets for its use of a covered toxic chemical. Specifically, it set a goal of 10% reduction in use through product reformulation with a target for achievement within two years. In this example, the measurement is the percent reduction and the source reduction is accomplished by changing a specific process step that uses the toxic chemical.*

Other appropriate objectives can be related to resource conservation, which is another important focus of TURA. Specifically, resource conservation planning focuses on reducing the environmental impacts associated with the following assets (310 CMR 50.92):

- Water use
- Energy use
- Materials found in solid waste
- TURA listed substances used below reporting thresholds
- Chemical substances that are exempt under TURA.

Incorporating objectives and targets that address these assets further strengthens the ability of the TURA EMS to minimize the impact on the environment from the company's activities, while at the same time emphasizing source reduction and toxic use reduction.

If the company has already examined and implemented options for chemical input substitutes, and no feasible alternatives have been found, then it is not reasonable to set targets for reduction. An appropriate objective, consistent with TURA's requirements, is to continue efforts to be aware of any new options that arise for chemical input substitutes, and to check if any positive changes have occurred regarding the feasibility of potential substitutes. Similarly, if feasible options for improving the efficiency of chemical use have already been implemented, an appropriate objective for that chemical is to continuously assess whether those actions are being fully implemented, and whether new options have arisen from advances in technology or practice.

4. Training (TURA EMS Element # 7)

Common EMS frameworks require that training be provided to appropriate facility staff about the EMS itself as well as about environmental and compliance activities, and that

initiation training about the EMS be provided for all new personnel. The TURA EMS also requires training, and given the emphasis on toxics use reduction in the EMS, a facility must consider training opportunities to help facility staff, contractors and on-site service providers understand how to recognize TUR opportunities. See Section IV for specific training and continuing education requirements for TUR Planners and EMS professionals who intend to certify TURA EMSs. The TURA program encourages companies to take advantage of TUR and EMS training opportunities provided by the program, which are listed on the Toxics Use Reduction Institute's website at www.turi.org.

5. Operational Controls (TURA EMS Element #9)

As part of a TURA EMS, specific provisions for operational control of all activities associated with the use of covered toxic chemicals need to be addressed, and facilities need to consider source reduction opportunities in the evaluation of operational controls. Operational controls of equipment and other operations must function appropriately to ensure compliance with legal requirements.

Source reduction is about minimizing the risk of environmental impacts by using processes that 1) are inherently safe or safer than other options; and 2) prevent waste from occurring in the first place. In the TUR planning process, source reduction consists of six techniques, all of which, if used, are impacted by the proper implementation of operational controls:

- Input Substitution: replacing a toxic or hazardous substance or raw material with a non-toxic or less toxic substance.
- Product Reformulation: substituting an existing end product with one that is non-toxic or less toxic (or resource intensive) upon use, release, or disposal.
- Process Redesign or Modification: Developing and using processes of a different design than those currently used.
- Process Modernization: upgrading or replacing existing process equipment and methods with other equipment and methods based on the same process line.
- Improved Operation and Maintenance: improved housekeeping practices, system adjustments, product and process inspections, or process control equipment or methods.
- Integral Recycling, Reuse, or Extended Use of Chemicals or Resources: Use of equipment that is integral to the process, such as hard-piped filtration or closed-loop recycling.

6. Auditing (TURA EMS Element # 13)

The TURA EMS requires EMS auditing on at least a two-year cycle by an independent auditor, and that senior management reviews the audit results. The audit program must include procedures for preventing and detecting non-conformance with legal and other requirements of the EMS, and procedures for implementing corrective actions to ensure timely compliance and commitment to continual improvement. To ensure that the company's independent EMS auditor is familiar with the particular TURA aspects of the EMS (e.g., emphasis on source reduction, continual improvement in environmental

performance), the company needs to review its EMS audit procedures to ensure that the auditors consider the TUR elements of the EMS. Table 4 summarizes the EMS audit procedures that may need to be modified.

The TURA regulations define an independent auditor as "a person qualified by experience and/or training to audit an EMS. This person may be a third-party auditor or an employee of a facility, provided that the employee is not the person who has responsibility for implementing the EMS". The independent auditor is responsible for assessing:

- How well the TURA EMS conforms to the EMS's various elements
- How effective it is in achieving its goals as stated in the environmental policy

and

- Whether the TURA EMS demonstrates an emphasis on source reduction in its approach towards minimizing environmental impacts, especially for covered toxics.

The company's independent EMS auditor must be familiar with source reduction and continual improvement in environmental performance. The independent auditor does not have to be (although could be) the same person who certifies that the TURA EMS meets the requirements of 310 CMR 50.80.

Senior management review of the audit results is essential for committing to necessary corrective and/or preventive actions, to ensure continual improvement of the TURA EMS and environmental performance.

Table 4. Elements of Audit Procedures and Modifications that May be Necessary

#	Audit Procedure Element	Modifications
1	Purpose and scope	Mention the goals of assessing continual improvement of the EMS and environmental performance, and whether source reduction is considered in establishing and meeting objectives and targets.
2	Responsibilities	An additional person who may be included in the audit, or referred to during the audit, is the EMS Professional who certifies the EMS progress report. Defined responsibilities in the audit procedure must make the distinction between auditor and certifying EMS Professional clear.
3	Definitions	Include definitions of: • Significant aspects (i.e., including covered toxic chemicals) and • Source reduction [i.e., any change in the design, manufacture, purchase, or use of materials, products, or energy to reduce their amount or toxicity before they become a waste (i.e., before recycling, treatment, release or disposal). Source reduction includes toxics use reduction.]
4	TURA EMS work documents to be reviewed	This must include work instructions related to the audit as well as the EMS progress report.

Table 4. Elements of Audit Procedures and Modifications that May be Necessary		
#	**Audit Procedure Element**	**Modifications**
5	Audit procedure	
	• Auditor qualifications and competency	The auditor must be familiar with the requirements of the TURA EMS (310 CMR 50.80). If the auditor will also be certifying the TURA EMS via the EMS progress report, this individual must meet the eligibility requirements in 310 CMR 50.80.
	• Audit schedule	Independent auditing must be accomplished at least once every 2 years.
	• Preparation	Auditors must be instructed to review 310 CMR 50.80 as well as the TURA EMS, associated documentation and EMPs.
	• Conducting the audit	Procedures for conducting the actual audit do not likely require any modifications, although auditors must make a particular effort to observe all activities and operations associated with the use of covered toxic chemicals.
	• Documentation	Documentation must include the significant aspects determination procedure and related information on the company's toxic chemical use reporting obligations, to confirm that all reportable toxic chemicals have been identified as significant.
	• Follow-up	If corrective actions are required and cannot be closed out by the next reporting cycle, they need to be indicated on the EMS progress report.
	• Records	Records indicating the auditor's assessment of continual improvement of environmental performance (as well as the EMS itself), and emphasis on source reduction in objectives and targets must be kept.

IV. CERTIFICATION OF THE TURA ENVIRONMENTAL MANAGEMENT SYSTEM

The TURA EMS must be certified by a trained professional every two years. This certification statement is found in the EMS progress report (see Appendix A) and indicates that the EMS satisfies the requirements established in 310 CMR 50.80. This certification is independent of the requirement for an EMS audit every two years. The certification serves a different purpose than a typical EMS audit in that it focuses on whether the EMS meets the requirements of 310 CMR 50.80, which a typical EMS audit report may not cover. However, the certification can be linked to the audit requirement (i.e., a company may choose to have its EMS auditor certify the TURA EMS progress report).

A. Training and Continuing Education Requirements

The TURA EMS progress report must be signed by a TUR planner who meets the requirements of 310 CMR 50.62 or an EMS professional[1] who meets the requirements of 310 CMR 50.84. Table 5 summarizes the training and continuing education requirements of both TUR planners and EMS professionals who wish to certify TURA EMSs.

Table 5. Eligibility Requirements for Professionals Certifying TURA EMSs

Classification of Individual Certifying TURA EMS	Eligibility Requirements
General TUR Planner	• Accredited or certified under recognized EMS standard **OR** • 16 CE credits in EMS (one time)
Limited TUR Planner	• Accredited or certified under recognized EMS standard **OR** • Two (2) years EMS experience **OR** • 16 CE credits in EMS (one time)
EMS Professional– certify EMS for <u>any</u> facility	• Accredited or certified under recognized EMS standard **AND** • 16 hours of initial TUR training **FOLLOWED BY** • 16 hours of TUR training every six (6) years thereafter

[1] **An EMS Professional is someone who is accredited or certified under a recognized EMS standard (e.g., ISO 14001) or has at least two years of experience in implementing and auditing EMSs.**

Table 5. Eligibility Requirements for Professionals Certifying TURA EMSs	
Classification of Individual Certifying TURA EMS	Eligibility Requirements
EMS Professional - certify EMS only for employer's facility	• Two (2) years EMS experience **AND** • 16 hours of initial TUR training **OR** • 2 years of TUR experience ***NOTE:*** **Documentation of the TUR training or experience MUST be submitted with the first TUR EMS submitted by the planner.** Please refer to *Instructions: General Practice TUR Planner Certification/Recertification* at: https://www.mass.gov/media/1651176**.** **FOLLOWED BY** • 16 hours of TUR training every six (6) years thereafter

Examples of Eligibility:
• *A General Practice TUR Planner also is accredited as an ISO 14001 EMS Lead Auditor. This Planner already would meet the criteria to certify an EMS for any facility.* • *A Limited Practice TUR Planner has been integral in developing and implementing her company's EMS (i.e., has two years experience with the EMS). This Planner already would meet the criteria to certify her company's EMS.* • *An EMS professional (who is not a TUR Planner) has participated on the TUR planning team and helped his company implement toxics use reduction over several years (i.e., has two years TUR experience). This professional could document his TUR experience and certify his company's EMS in 2014. To certify a TURA EMS beyond 2014, this professional would need to take further TUR training in order to obtain 16 credits every 6 years.* • *An accredited EMS professional (who is not a TUR planner) has little TUR experience. This professional would need 16 hours of TUR training to certify an EMS in 2014. If the professional already has taken some TUR training, the professional could document this past TUR training and count it toward the 16 total credits needed. To certify a TURA EMS beyond 2014, this professional would need to take further TUR training in order to obtain 16 credits every 6 years.*

B. Documentation Requirements

The regulations [310 CMR 50.84(2)(d) and 310 CMR 50.62(3), respectively] require an EMS professional or TUR planner to submit to MassDEP documentation that he or she meets the eligibility requirements for certifying an EMS progress report. This documentation must accompany the first EMS progress report that the EMS professional or Planner certifies. In addition, an EMS professional who certifies a TURA EMS progress report must, for a period of three years, maintain documentation of having met the continuing education requirements in 310 CMR 50.84(2)(c). Similarly, a TUR Planner must, for a period of three years, maintain documentation of efforts to stay abreast with current EMS practices and techniques, in accordance with 310 CMR 50.62(4). This documentation must be made available upon request to MassDEP or to any facility for which the EMS professional or planner has certified or intends to certify a TURA EMS.

C. EMS Progress Report and Certification Statements

The EMS progress report form (see Appendix A for the Progress Report Form) includes three main sections:

- Section A. (Significant Aspects – Covered Toxics) requests a listing of covered toxics addressed in the TURA EMS for the planning cycle, descriptions of the objectives and targets established to address the covered toxics, progress in meeting past objectives and targets for covered toxics, and, if applicable, an explanation why anticipated progress was not achieved.

- Section B. (Integrating TUR Planning) provides a checklist of "yes/no" questions describing how the company has addressed toxics use reduction through its EMS. The questions have been designed to prompt the company and the certifying professional to consider and report on the integration of toxics use reduction planning within the EMS. It also provides space to describe what corrective actions it has taken or will take if a "no" answer was given.
- Section C. (Certification Statements) provides a written certification statement that must be signed by either an EMS professional who meets the requirements of 310 CMR 50.84(2) or a TUR planner who meets the requirements of 310 CMR 50.62, as described above. It also contains a certification statement that must be signed by a senior management official of the facility.

V. WHO TO CONTACT FOR MORE INFORMATION OR FOR ASSISTANCE

TURA Program Agency Partners:

- **Massachusetts Department of Environmental Protection (MassDEP)**, go to https://www.mass.gov/orgs/massachusetts-department-of-environmental-protection for more information
- **Toxics Use Reduction Institute (TURI)**, go to http://www.turi.org/ for more information
- **Office of Technical Assistance and Technology (OTA)**, go to have is: https://www.mass.gov/orgs/office-of-technical-assistance-and-technology for more information

Appendix A: EMS Progress Report Form

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Toxics Use Reduction Act

Environmental Management System Progress Report

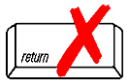
Planning Year

Facility Name

MassDEP Facility ID Number

The TURA Environmental Management System (EMS) must be certified by a toxics use reduction planner or an EMS professional every two years in accordance with 310 CMR 50.84.

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Significant Aspects – Covered Toxics

1. Provide a list of the covered toxics addressed in the TURA EMS for this planning cycle:

2. Provide a brief description of the objectives and targets established by your facility for this planning cycle to address the covered toxics listed above:

3. Provide a brief description of progress made toward meeting objectives and targets established for covered toxics during the previous planning cycle, and, if applicable, why anticipated progress was not achieved:

B. Integrating TUR Planning

1. We have checked if alternatives to our current toxics use have become available and are technically and economically feasible to implement.
   ☐ yes ☐ no
2. We have solicited our employees for ideas about reducing toxics use, the generation of byproduct from toxics use, or releases.
   ☐ yes ☐ no
3. We have continued to promote a policy of toxics use reduction in our activities and are incorporating it into planning and design as well as day-to-day management.
   ☐ yes ☐ no

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Toxics Use Reduction Act

Environmental Management System Progress Report

Planning Year

Facility Name

MassDEP Facility ID Number

4. We have continued to monitor our toxics use in order to ensure that all leaks, spills, releases and byproduct generation are minimized to the extent practicable.
   ☐ yes ☐ no

5. We have identified all regulatory requirements triggered by our use of toxic chemicals.
   ☐ yes ☐ no

6. Our EMS has been audited by a qualified independent auditor at least once during the past two year TURA planning cycle.
   ☐ yes ☐ no

7. We have solicited information from vendors, consultants, government agencies, academic experts, or other resources to better understand our options for implementing TUR activities.
   ☐ yes ☐ no

8. If you answered "no" to any of the above questions, please explain actions that your facility has taken or will take to achieve positive responses.

9. You may provide additional information about your EMS activities:

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Toxics Use Reduction Act

Planning Year

Facility Name

MassDEP Facility ID Number

Environmental Management System Progress Report

C. Certification Statements

1. Based on my independent professional judgment, I certify under penalty of law that the following is true:

(a) I have examined and am familiar with this EMS;
(b) The EMS satisfies the requirements of 310 CMR 50.80; and
(c) The EMS demonstrates a good faith and reasonable effort to integrate toxics use reduction planning into the EMS.

1 Signature of Toxics Use Reduction Planner or EMS Professional

2 Date (mm/dd/yyyy)

3 Print Name of Toxics Use Reduction Planner or EMS Professional

4 E-Mail Address

5 TUR Planner I.D. Number (if applicable)

2. I certify under penalty of law that the following is true:

(a) I have examined and am familiar with this EMS;
(b) The EMS meets the requirements of 310 CMR 50.82 and the elements specified therein are being implemented;
(c) The EMS is actively addressing environmental compliance issues;
(d) The individual who has certified the EMS pursuant to 310 CMR 50.84(3) has provided me with documentation that he or she meets the requirements of 310 CMR 50.84(2).
(e) These statements are based upon answers to queries made by me to individuals who have been designated to implement the EMS, and I have made my best effort to ensure that they are being held accountable for implementing the system in good faith. I understand that by choosing to implement an EMS in lieu of a toxics use reduction plan, I am responsible for maintaining documentation to evidence a good faith effort to implement all elements of the EMS.
(f) I am aware that there are penalties for submitting false information, including possible fines and imprisonment."

1 Signature of Senior Management Official

2 Date (mm/dd/yyyy)

3 Print Name of Senior Management Official

4 E-Mail Address

Massachusetts Department of
Environmental Protection
One Winter Street
Boston, MA 02108-4746

Commonwealth of Massachusetts
Charles D. Baker, Governor

Executive Office of Energy and Environmental Affairs
Matthew A. Beaton, Secretary

Department of Environmental Protection
Martin Suuberg, Commissioner