



## PHASE IV: CHECK & ACT

Phase IV is considered the "Check & Act" stage of EMS implementation. This phase is where you define how your organization will monitor and measure the progress toward achieving better environmental performance in relation to your organization's defined Objectives and Targets and how you will respond, or "Act," to ensure your organization's commitment to continuous improvement. It is important to remember, throughout this phase and the entire EMS implementation process, that an EMS establishes the foundation of a continuous program that should assist your organization in meeting current goals and legal requirements as well as assist in adapting to a variety of changes, including legal, process, and initiative driven.

To accomplish this, you will need to define a series of performance indicators in order to establish baselines for continuous measurement. Many of these indicators will be fairly obvious, for instance environmental regulations, whereas others, especially those involving your organization's unique objectives and targets, may be a little more challenging to appropriately define. As with many of the EMS elements, it is important to keep it simple initially, and only monitor and measure those things identified as important through your regulatory analyses and your Objectives and Targets process. By establishing a baseline of performance indicators, you will be able to systematically evaluate your compliance with regulations and assess your achievement of objectives and targets on a periodic basis.

The second part of this phase involves defining the procedure for how your organization will "Act" in terms of corrective and preventative action. The key here is to keep it positive, and remember that an EMS is supposed to reveal observations and non-conformities. Such "findings" may be revealed through formal auditing procedures or through a variety of daily operating procedures; however, they should all be dealt with in a systematic and "correcting" manner. The basic approach will involve finding, classifying, documenting, and correcting.

### **Activities of Phase IV include (6 months):**

- Monitoring and measuring key characteristics of the management system.
- Determining the organization's compliance status.
- Ensuring that instruments used for monitoring and measuring are calibrated.
- Developing and implementing procedures for handling EMS nonconformance.
- Conduct an internal EMS Audit.
- Initiating a Management Review cycle.



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*Elements in this phase of EMS activity include some very specific measurement components: compliance status checks, EMS audits, verifying calibration and maintenance schedules of equipment, and progress toward objectives and targets.*

*Everyone who implements an EMS monitors and measures these and they are relatively easy to quantify using traditional measurement tools. Cities also monitor and quantify other organizational benefits that the EMS brings, like efficiency savings, reduced landfill costs from recycling efforts, and accidents/fines avoided. But what about issues that are not so easy to quantify, for example better odor management in wastewater treatment plants, improved public image; improved relationship with stakeholders, and better sustainable development to name just a few. It takes some rather creative indicators" to quantify these improvements and there are several excellent examples of "out-of-the-box" indicators on the PEER Center Website ([www.peercenter.net](http://www.peercenter.net)). The overriding suggestion from cities is that public sector organizations benefit greatly from asking themselves some important questions with regard to what they will measure:*

- ♦ *What measurements might be useful beyond what the EMS requires?*
- ♦ *How shall we measure, what indicators are appropriate, who will have responsibility for measuring?*
- ♦ *What shall we do with the information?*
- ♦ *What barriers to measurement might we encounter?*

## MONITORING AND MEASURING PERFORMANCE

Measuring, monitoring and evaluating are the activities that allow a local government to determine whether it is making progress toward achieving its environmental Objectives and Targets. Organizations make policy commitments to compliance, prevention of pollution and continual improvement, therefore getting feedback on how well their planned activities are working and what modifications are still needed is an important part of the EMS process.

Assessing your compliance helps evaluate your commitment to compliance. Certain equipment that you use to monitor or measure may require calibration so it is very important that this equipment is calibrated on a regular basis, otherwise you may be relying on inaccurate information.

### INFORMATION TO EVALUATE

Top management needs data and information as part of the management review process to determine if the organization is achieving its environmental goals. Information collected through the monitoring and measuring portion of an EMS can help make this determination and answer the following questions: Is the EMS being carried out as planned? Is our organization achieving its policy commitments and its objectives and targets?

### ASSESS YOUR EXISTING EFFORTS

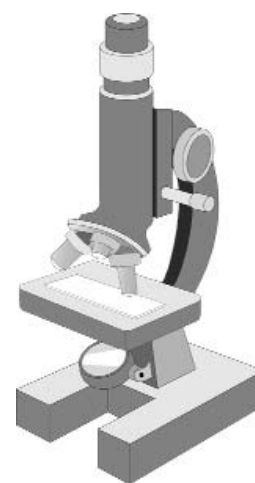
Examine your activities to identify what you may already be monitoring and measuring. Your environmental regulatory requirements is a good place to start. These requirements often have associated monitoring and measuring requirements and a subsequent reporting requirement. Once you have compiled this information it will identify what remaining areas need to be monitored and measured. Performance Indicators - have they been specified?

Performance indicators are what you will need to measure your performance. In the case of environmental regulations they may already be spelled out. However, when it comes to your objectives and targets you will need to identify appropriate indicators. Some local governments have reported using performance indicators for their EMS to assess how well it is performing (e.g. types and levels of nonconformance). Make sure what you monitor or measure adds value.

Do not go out of your way to monitor and measure everything. Start with what is required by law and then examine your objectives and targets. You do not want to burden personnel with collecting information that isn't needed.

### ASSESSING COMPLIANCE

Stated in your organization's environmental policy is a commitment to comply with environmental regulatory requirements that apply to your organization's operations and activities. In Phase II you identified your environmental aspects and impacts and analyzed them for applicable environmental regulatory requirements. Once these requirements are known, you then put programs in place and/or controls to ensure that you can meet them. The next step in this process, under monitoring and measuring, requires that you periodically evaluate your compliance with these regulations.





You should have a documented process for assessing your compliance status on a regular basis. There are several resources available that can help you in this effort should you decide to conduct this activity in-house:

### Normalization

*In order to determine facility performance changes over time, attributed to actual environmental performance changes rather than changes in production, customer demand, or other non-environmentally related changes, it is encouraged to establish normalization factors.*

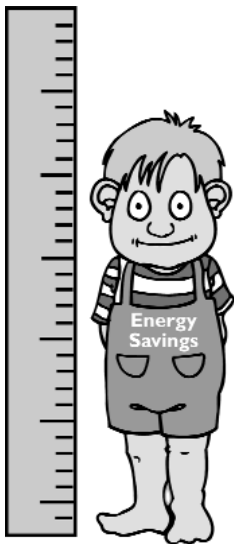
Examples:

- ♦ Absolute Terms: "mean gallons of effluent per day"
- ♦ Normalized Terms: "gallons of effluent per day per unit of wastewater processed"

- ♦ The U.S. EPA Office of Compliance has numerous tools available through its National Compliance Assistance Clearinghouse that can be found at the following web address: <http://cfpub.epa.gov/clearinghouse/>
- ♦ Local Government Environmental Assistance Network - The Local Government Environmental

Assistance Network (LGEAN) is a "first-stop shop" providing environmental management, planning, funding, and regulatory information for local government elected and appointed officials, managers and staff. [www.lgean.org](http://www.lgean.org)

You may find that your internal resources are stretched too thin or that you may not have the in-house expertise to conduct the assessment. Some local governments have reported the need to hire a consultant to conduct the compliance assessment.



### CALIBRATION

Calibration falls under the activity of monitoring and measuring performance. The equipment you use to monitor and measure may require calibration. Examples include equipment used for monitoring water quality or measuring air emissions. Identify the equipment you use. Make sure a regular schedule is in place to calibrate the equipment and by all means make sure you retain the records. Some equipment may be calibrated off-site so make sure the vendor supplies you a copy of the records.

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- ♦ *What might measurement make possible for us: e.g., impact on insurance or bond ratings, improved relationship with stakeholders, internal employee recognition and motivation, better find and fix activities, better labor/management relationships, etc.*

### CALIBRATION

*Don't ignore the maintenance manuals that come with your equipment. In EMS terms, these are documents that should be accessible to those who need them. You may already have a schedule to calibrate and maintain your equipment. Perhaps these tasks have been or could be assigned to the appropriate staff, or perhaps maintenance and calibration are already part of a service contract that came with your initial purchase.*



# NON-CONFORMANCE AND CORRECTIVE AND PREVENTATIVE ACTION

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### FIND AND FIX

*You will want to document nonconformance with supporting objective evidence and make sure designated personnel follow-up and correct it. However, some organizations choose to follow a "find and fix" approach for the smaller issues rather than go through the documentation exercise. If you're unsure which approach to follow you can start off documenting every finding and corrective action request (CAR) and scale back at a later date.*

As part of the audit process the organization takes action on any "findings" (concerns or deviations from its planned activities) to make sure nonconformance is examined for its root causes, corrected, and prevented from reoccurring. Identifying and correcting non-conformances is an activity that allows an organization to improve and strengthen the EMS. It's an opportunity to realize the organization's commitment to continual improvement and should not be looked upon negatively.

### WHAT IS AN EMS AUDIT FINDING?

A failure or weakness in the EMS, a finding is an indication that some element of the EMS is not in conformance with the design or expectations of the organization. Not all findings are equal. Some are more serious than others and need to be treated as such. Findings typically fall into two categories:

**Nonconformance** - A deficiency or failure that could adversely affect the EMS

OR

**Observation** - A practice, while not in strict violation of EMS requirements, may constitute a poor practice that can lead to a nonconformance

### WHAT IS A NONCONFORMANCE?

In general, a nonconformance is the non-fulfillment of a specified requirement. In regards to EMS implementation, a non-conformance can include one or more EMS requirements either having not been addressed or having not been implemented within an organization's defined EMS fence line. In addition, several smaller non-conformities may exist that, taken together, could lead an auditor to conclude that one or more EMS requirements have not been addressed or implemented.

### CORRECTING NONCONFORMANCE

Once the finding is classified and documented it then needs to be corrected. This is called a corrective action request or CAR. Many local governments suggest that the management of the area in which the finding occurred be designated as the one responsible for responding to the CAR. They are responsible for identifying the root cause of the finding and documenting what steps will be taken to address the finding. Once the finding is addressed the Audit Manager or other will need to verify that the corrective action was taken.

### IDENTIFYING NONCONFORMANCE OUTSIDE OF AN AUDIT

Nonconformance can also be identified outside of an audit. Anyone in the organization can identify and report findings.

### EXAMPLES OF NON-CONFORMANCE

- ♦ *A single infraction that can cause a system failure*
- ♦ *Procedure exists but not implemented*
- ♦ *Employees permitted to disregard WIs/SOPs*
- ♦ *An isolated incident or small number of instances of failure to conform to requirements*
- ♦ *Failure in a few cases to follow documented procedures*
- ♦ *Documented procedure requires clarification*

### EXAMPLES OF AN OBSERVATION

*A practice that can make conformance difficult or provide opportunities for error*

- ♦ *Procedures that are long and difficult to follow*
- ♦ *Poor housekeeping*
- ♦ *General awareness of environmental issues is excellent. However, personnel confuse environmental policy with safety-related issues*

# AUDITING THE EMS



An internal EMS audit is a management tool that a local government will use periodically to identify any flaws and/or weaknesses in the EMS. This information can help you assess how well your EMS is functioning. It is a systematic, objective and documented evaluation of whether your organization is doing what it said it would do to manage its environmental issues and whether it is doing so effectively. The extent and frequency of internal audits depends on the environmental importance of the activities concerned and on the results of previous EMS audits.

## WHAT IS AN INTERNAL EMS AUDIT?

The internal EMS audit is a snapshot in time. It evaluates the adequacy of documents, procedures, programs, and records and reviews the implementation, integration, and consistency of procedures and programs at that moment. It looks at the organization's planned activities for meeting its objectives and targets, its control of significant aspects, and pollution prevention accomplishments. It looks for evidence of management's commitment to the environmental policy and the EMS, and awareness and competency among employees. Finally the internal audit has a look at how the organization is fulfilling its commitment to continual improvement. Results of internal audits are part of, not a substitute for, the management review process.



Audit activities include: discussions with site personnel; observation and inspection of operating conditions and equipment; and, review of records and relevant documentation. The audit process emphasizes objective evidence and discourages simple "yes" or "no" responses. The audit process is intended to be con-

structive and helpful to the organization managers and employees. An auditor can explain what is wrong regarding unacceptable items and why, but should not criticize the staff. The system is being audited, not the employees. Finally the EMS audit team is actively on the lookout for conformance to EMS requirements. It is as important to identify areas where arrangements are working well as it is to identify areas where improvements are required.

## INTERNAL EMS AUDITORS

You need to pull together a pool of internal EMS auditors. EMS auditors need training to understand, practice, and carry out their responsibilities. Some local governments report designating a few personnel to take the ISO 14001 Lead Auditor Course. It is important that an auditor has no direct responsibility for the area being audited. If a fleet mechanic is an internal auditor he/she should not be auditing fleet operations.

## CASE STUDY

*We selected and trained an internal audit team consisting of a cross section of fenceline employees so that the experience would be less intimidating and intrusive to those working on the shop floor - the auditors were people they already knew and (hopefully) liked. Jefferson County, AL*

*For additional information, please contact Bill Peters at 205-325-8712 or [petersb@jcc.co.jefferson.al.us](mailto:petersb@jcc.co.jefferson.al.us)*

## TROUBLESHOOTER'S GUIDE

*The EMS audit provides ongoing opportunities to "find and fix" any weak points in your EMS. For that reason, EMS implementers from public entities recommend that you audit each element of your EMS shortly after you implement it. As one Core Team member puts it: "...we have become a little mired in the intricacies of securing 'loose ends' within our documentation. It is hard not to feel overwhelmed by the mountain that seems to grow a bit higher every day. Consequently, it makes a good case to start the audit process early. For example, about a month after your EMS policy is approved and communicated to your workforce, conduct a mock audit: (1) review the document itself for conformance with EMS requirements (commitments to compliance, prevention of pollution and continual improvement; signed by top management; communicated to the public; communicated to employees). Then, (2) go out to the shop floor and ask employees "What does the environmental policy mean to how you do your work here?" While this is not an "official" audit, the mock audit can accomplish several things:*

- 1. It lets you know if the element is being implemented as you want it to be.*
- 2. It gives employees practice in being audited.*
- 3. It gives audit teams a chance to practice their auditing skills*
- 4. It reinforces everyone's involvement and responsibility in the EMS.*
- 5. It provides the opportunity to try out some potential audit team members.*



## TROUBLESHOOTER'S GUIDE

6. *It's a great teaching tool to get folks to understand each element of the EMS.*
7. *It's a find and fix opportunity to identify weaknesses in procedures and work instructions before they become a documented part of your EMS.*

*Audit proficiency, like every other element in the EMS, benefits from continual improvement, so just go out and do it!*

*Other suggestions from the municipalities include:*

*"We've benefited from hiring an outside consultant to train our internal audit team. The outside expert credibility factor worked wonders in a short time."*

*"We partnered up with other public entities in our region and are using each other's audit teams for internal EMS audits. We get a fresh look at our own system, and we learn a lot about how others have implemented and improved their EMS. These are extremely valuable experiences for all of us."*

*"We handed out a manual of all our work to date before our internal audit training; this proved very valuable in showing off the big picture and reinforcing what we had already accomplished so far. These also made the audits that much easier to conduct at each facility."*

*"We selected and trained an internal audit team consisting of a cross-section of fenceline employees so that the experience would be less intimidating and intrusive to those working on the shop floor - the auditors were people they already knew and (hopefully) liked."*

## Auditor Credentials

- ♦ Independent
- ♦ Has an understanding of relevant requirements of laws and regulations
- ♦ Has EMS training
- ♦ Has an understanding of audit process and procedures
- ♦ Good communication skills
- ♦ Can plan and conduct an audit and follow through with post audit activities

## PRACTICE MAKES PERFECT

The audit is a very helpful tool that is used to ensure the EMS functions properly. It should not be perceived by personnel as an us-versus-them conflict. You may encounter some bumps along the road during your first and second audit. It's a learning experience for all involved. It will take some time for the auditors to become comfortable with their roles.

Audit frequently and early in the EMS development process to gain on-the-job experience. Do not wait for the entire system to be developed and implemented before beginning the audit function. Audit teams gain confidence and skills quickly with plenty of on-the-job experience and the audit findings are good lessons in developing subsequent portions of the management system.

## MANAGEMENT AND RESOURCES

Many local governments report that management involvement in the audit is very helpful. Management needs to communicate the importance of this activity and cooperation is key to all personnel. Personnel may be pulled aside and asked questions about their jobs and how they specifically support the EMS. Personnel throughout the municipality may need small amounts of time to participate in the audit process but the audit team will need a bit more. Management needs to allocate resources for the audit team and process. A trainer may need to be pulled in to train the audit team. Plan accordingly.

### AN INTERNAL EMS AUDIT IS A SYSTEMATIC AND DOCUMENTED VERIFICATION PROCESS OF:

- ♦ *Objectively obtaining and evaluating audit evidence*
- ♦ *Determining whether an organization's EMS conforms to the EMS audit criteria*
- ♦ *Communicating the results of this process to Top Management*
- ♦ *Collecting sufficient evidence through interviews, examination of documents and observation of activities and conditions*
- ♦ *Verifying information from interviews through observations, independent sources, records and existing measurements*
- ♦ *Reviewing audit findings with auditee to establish their factual basis*

### AN INTERNAL EMS AUDIT IS NOT:

- ♦ *A compliance audit, so it does not determine whether the organization is in compliance with applicable laws and regulations*
- ♦ *A management review, which is a distinct and separate requirement of the EMS.*
- ♦ *By itself, a performance check*
- ♦ *Pass/fail*



# MANAGEMENT REVIEW

The Management Review is the final element in the EMS cycle. It's an opportunity to fine-tune your established EMS and make course corrections, if needed. Top management determines whether the EMS is functioning properly, where additional resources need to be allocated, and if the environmental policy is appropriate or needs to be revised. It is the responsibility of the EMR to provide top management with sufficient information to make an assessment of the effectiveness of the EMS.



Given what we see, are we on the right course?

## WHAT IS THE MANAGEMENT REVIEW?

The management review is the "Act" of the Plan-Do-Check-Act cycle. It serves as the driver for continual improvement. You will need to schedule the review at appropriate intervals. Management will evaluate the information presented and make a determination if the EMS is effective, adequate and suitable. Management may decide that the policy needs to be revised. Any decision or outcome from the meeting will need to be recorded.

## WHO SHOULD BE AT THE MANAGEMENT REVIEW MEETING?

Make sure you get managers involved that can make key decisions. You identified top management (Phase I) earlier in the implementation process. Are these the same people you will have in the management review meeting?

## INFORMATION TO REVIEW

There is a wide range of information to choose from to report to management (See side box Information to Review). However, it's a fine line between too much information and too little. Decide with your Core Team the appropriate information to communicate. Present the information to management so it's easily understood without overloading them with detail. You may want to get some of the information to management before the meeting.

### CASE STUDY

*Periodically, a status report was presented at the weekly issues meetings conducted by the Commissioners and Directors. These reports occurred generally at major milestones regarding the development of the EMS where operational programs would be changed or significant expenses were anticipated. It also allowed discussion on the costs and the manpower effort for developing the EMS. With this means of involvement, we found few gaps existed and surprises didn't occur when we held the management review."*

*NH Department of Transportation - Traffic Bureau*

*For additional information, please contact Fred Murphy at 603-271-3226 or [fmurphy@dot.state.nh.us](mailto:fmurphy@dot.state.nh.us)*

## AFTER THE MEETING

Ensure that management's decisions are recorded, implemented, and tracked. Progress toward implementing the decisions can be reported back to management in the monthly good news bullets. Emphasize to management the need for them to continue to act as leaders and supporters of the EMS process. You are well on your way to institutionalizing this very important tool!

## TROUBLESHOOTER'S GUIDE

*Here are the top 4 troubleshooter tips from our public entity colleagues who have implemented an EMS:*

*"Top managers need frequent and regular information and one very effective way to accomplish this is to conduct "just-in-time" briefings. For each phase of activity: provide managers with a short one-page summary sheet that contains the schedule for this phase, the goals and tasks you'll be working on, and their role in the process. If there's room, provide 3 bullet points of good news from the previous phase of EMS activity."*

*"Don't wait until Phase IV, the Management Review, to involve management in the EMS. Brief, bulleted monthly reports were our key to success for keeping them involved and interested, especially when we included good news bullets in the reports. They could use these to 'brag' about our accomplishments."*

*"The Executive Director and the Research Productivity and Assessment Director act as a sounding board on a day-to-day basis and keep the entire Executive Team aware of the importance of our development EMS."*

*"Top management was very involved. Middle management on the Core Team helped to facilitate the many minor changes identified through our ongoing internal audits. Even the County Commissioners submitted themselves to a thorough Awareness Training as "Top Management" and therefore, part of our fenceline."*



### **CASE STUDY**

*Management review meeting provided good guidance, a resource for future projects and a strategic direction for future departments' involvement.*

*Tri-County Metropolitan Transportation District -  
Portland, OR*

*For additional information, please contact Kevin  
Considine at 503-962-2471 or [considin@trimet.org](mailto:considin@trimet.org)*

### **Information to Review**

- ♦ Audit results - EMS and Compliance suggestions
- ♦ External communications
- ♦ Progress on achieving objectives and targets
- ♦ Progress or achieving other environmental performance measures
- ♦ Reports of emergencies, spills, other incidents and/or accidents
- ♦ New, modified laws or expected regulations
- ♦ New scientific/technical data on materials and processes used by the organization
- ♦ Status of Corrective Action Requests
- ♦ Results of action items from previous management review meetings

**Sample documentation for Phase IV can be found in Appendix E on page E-1.**