Record Keeping and Performance Measurement

Best Practices for Achieving Environmentally Sound Management (ESM)

At Facilities that

Refurbish and Recycle

Used and End-of-Life Electronic Products in North America

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Commission for Environmental Cooperation

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Commission for Environmental Cooperation

Best Practices for Achieving Environmentally Sound Management at Facilities that Refurbish and Recycle Used and End-of-life Electronic Products in North America

Module 6
Record Keeping and Performance Measurement for Managers, Supervisors and Workers

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6 Module 6: Record Keeping and Performance Measurement – For Managers, Supervisors and Workers

6.1 Learning Objectives

By the end of this module you will be able to:

- identify specific best practices to implement, improve, and demonstrate record keeping and performance measurement at your facility;
- assess whether your facility follows best practices relating to record keeping and performance measurement, and how improvement can be made;
- define and distinguish record keeping, performance measurement, corrective action, transparency and verification, and outline how they support one another; and
- determine what processes your facility should have in place to demonstrate continual improvement.

Notes

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6.2 Pre-questionnaire

1. Are you involved in record keeping at your facility? If so, what is your role?

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2. Are you involved in any performance measurement activities at your facility—for example, activities that measure how well the facility adheres to health and safety procedures, or how successful the facility is at protecting the environment?

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3. What are some indicators that your facility uses to measure its performance?

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4. What would you like to learn about record keeping and performance measurement?

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6.3 Check-in on Topics Previously Covered in Modules 1-5

Module 1 (Introduction to ESM)

In Module 1 you learned about:

- the importance and benefits of environmentally sound management (ESM), including elements deemed necessary to achieve ESM at the facility-level;
- potential environmental, health and safety issues associated with refurbishing and recycling electronic products;
- worker health and environmental benefits of implementing ESM at your facility;
- economic benefits of implementing ESM at your facility;
- the benefits of participating in ESM validation and certification programs and how this can increase your client base, your inventory volumes, and potential profits; and
- the waste management hierarchy and how it applies to activities undertaken at electronics refurbishing and recycling facilities.

Module 2 (Top Management Commitment to ESM) *For Managers Only*

In Module 2 you learned about:

- specific best practices for how top management commitment to a systematic approach could be implemented, improved, and/or demonstrated at your facility;
- how to assess whether your facility follows best practices to demonstrate top management commitment to the environment, health and safety and how improvement can be made;
- important elements of an environment, health and safety policy;
- important elements of an environmental, health and safety management system; and
- important procedures to document at your facility, including those relating to communications and training.

Module 3 (Risk Assessment)

In Module 3 you learned about:

- specific best practices to implement, improve, and demonstrate risk assessment at your facility;
- how to assess whether your facility follows best practices for risk assessment and how improvement can be made;
- hazards and risks to worker health and safety and the environment;
- how to apply the risk assessment process to your facility's operations; and
- how to determine if existing control measures to address identified risks at your facility are adequate or if more should be done.

Module 4 (Risk Prevention and Minimization)

In Module 4 you learned about:

- the benefits of risk prevention and minimization in used, discarded and end-of-life electronics recycling and refurbishment operations;
- the various types of controls that are recommended as best practices to eliminate, prevent and minimize risks, including engineering controls, administrative controls, and personal protective equipment controls; and
- the tools, resources and knowledge to allow you—as a manager—to give assurance that your facility operates in a manner that supports ESM.

Module 5 (Legal Compliance) *For Managers Only*

In Module 5 you learned about:

- how your facility can go about ensuring that it is compliant with national, state/provincial/territorial, and local legal requirements in the jurisdiction in which it operates, and those jurisdictions it exports or transports materials to; and
- important considerations regarding your legal compliance with respect to occupational health and safety at your facility, environmental approvals that might be needed to operate your facility, and legal compliance that might be necessary if transportation and transboundary movement of hazardous waste are part of your facility operations.

6.4 Introduction and Overview of this Module

What Is Record Keeping? What Is Performance Measurement?

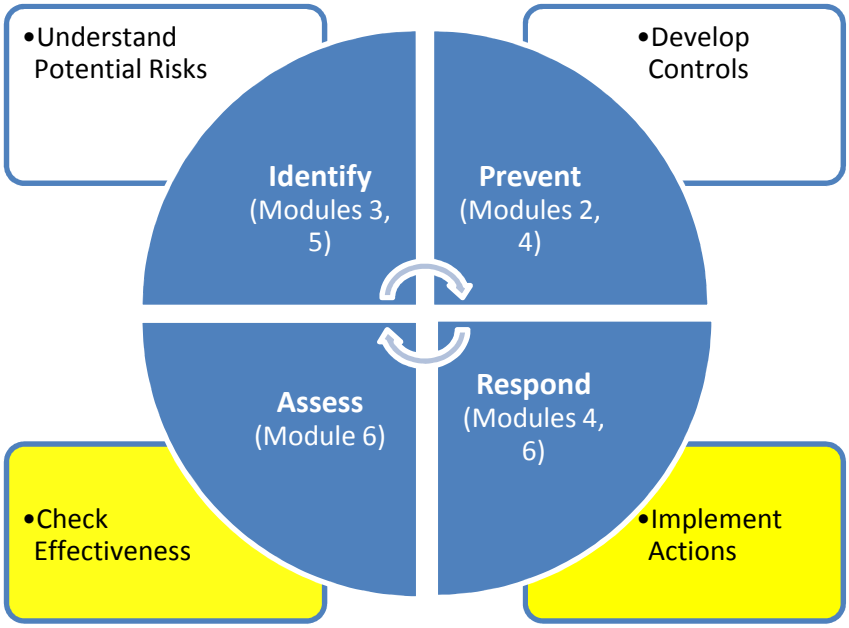
This module will answer these questions and provide you with:

- an explanation of what record keeping is and how it is integrated with performance measurement, verification, transparency, and corrective action,
- an overview of the benefits of record keeping and performance measurement in electronics recycling and refurbishment operations,
- identified best practices to monitor and measure performance, and
- identified best practices for continual improvement and corrective action.

Exhibit 1 shows how responsibilities fit within the framework of environmentally sound management (ESM), and where these responsibilities will be covered in the training material. Many of the concepts presented in Module 6 were previously introduced in Module 2 (for Managers).

- **Module 2** described the managerial commitments that are important to supporting ESM and how to develop appropriate procedures and policies to support those commitments.
- **Module 6** describes two elements: **1.** The importance of record keeping in implementing the procedures developed (*Respond—Implement Actions for ESM*) and **2.** How to check the effectiveness of the commitments and procedures put in place (*Assess—Check Effectiveness*).

Exhibit 1: Key Responsibilities within the Framework of Environmentally Sound Management



6.5 What Are Record Keeping and Performance Measurement and Why Are They Important?

REMINDER: ESM Criterion #6

Record Keeping and Performance Measurement:
Maintain records, monitor, track and evaluate facility performance in achieving ESM.

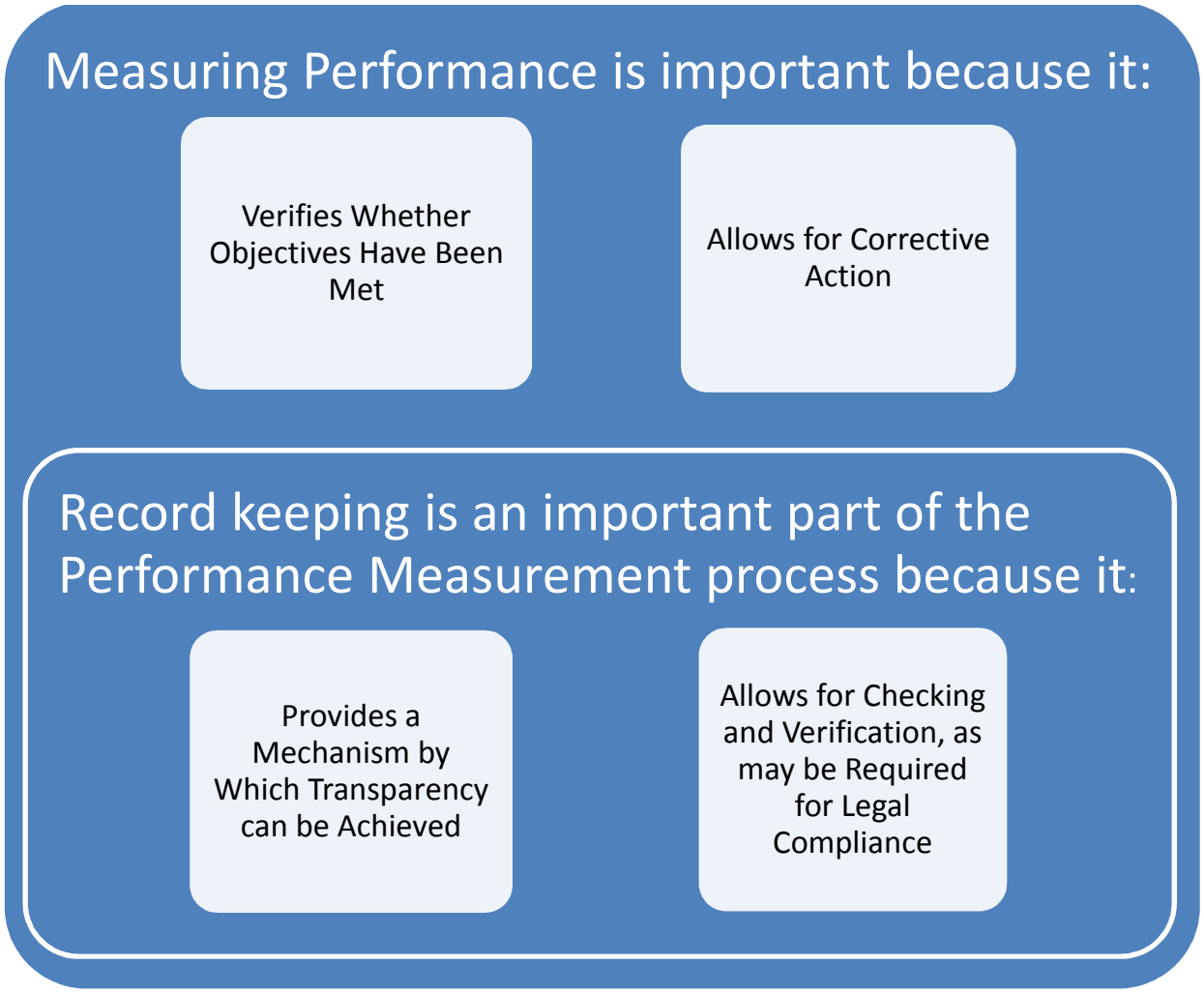
REMINDER: ESM Criterion #7
Corrective Action:
Take appropriate action to address significant actual and/or potential risks to public and worker health and safety, and the environment and correct identified deficiencies in achieving ESM.

REMINDER: ESM Criterion #8
Transparency and Verification:
Provisions to support transparency and verification can help facilities to provide public assurances that operations and activities are compatible with ESM. Such provisions may include participating in third-party audits and inspections.

6.5.1 Definitions

What is Record keeping?	The practice of creating written documents to support effective decision making, facilitate ongoing operations, allow for checking effectiveness, and that may be required to meet legal compliance in some situations.
What is Performance measurement?	A process of identifying goals or objectives, measuring progress relative to these goals, and identifying necessary interventions to improve future performance against these goals (corrective action).
What is Corrective Action?	Improving an organization's business processes that do not conform to desired practices or objectives.
What is Transparency?	Providing publicly available information on an organization's commitments, activities and performance in support of achieving ESM.
What is Verification?	The practice of evaluating results against set standards or objectives. Often, verification requires evidence—this can be attained through reviewing records, auditing or inspections.

6.5.2 Why Are Record keeping and Performance Measurement Important to My Company?



Record keeping and performance measurement:

"Record keeping and performance measurement document the ESM and actual results that will enable an organization to make informed decisions regarding whether programs or investments are achieving desired results or if it is necessary to implement corrective actions. In some cases, record keeping and performance measurement may be identified as a legal obligation and/or used to demonstrate facility compliance with legal requirements."

UNEP. Basel Convention. 2011. *Environmentally Sound Management (ESM) Criteria Recommendations*. Partnership for Action on Computing Equipment (PACE).

6.5.3 *How Do Record Keeping and Performance Measurement Allow a Company to "Check" Performance?*

Answer: Record keeping and performance measurement fit into the good business management plan-do-check-act model previously presented in Module 1. The plan-do-check-act model is often used by business management systems, most frequently environment, health and safety (EHS) management systems. Exhibit 2 demonstrates the cycle of performance measurement using the model and how this cycle connects with other ESM criteria.

Exhibit 2: The Cycle of Performance Measurement and How It Fits into a Plan-Do-Check-Act Model

6.5.4 What Are the Benefits of Record Keeping and Performance Measurement for My Company?

Answer: Effective record keeping enables an organization to:

- manage its ongoing operations more effectively with data ("you can not manage what you do not measure," i.e., you can not manage for improvement if you do not measure to see what is getting better and what is not);
- demonstrate accountability to regulators, certification or insurance bodies by having appropriate documentation in place and being able to make it available in a timely manner when requested to do so;
- be organized, by having records and documentation to demonstrate procedures, systems, etc., to workers and authorities as needed;
- facilitate both internal and external compliance audits undertaken by certification or regulatory bodies;
- demonstrate a commitment to transparency and verification**;**
- identify or confirm if a problem exists, and allow for early corrective action; and
- measure and monitor effectiveness of corrective measures introduced to address problems by comparing with baseline data accumulated over time.

Baseline data:

Baseline data refers to measurement results or other information that can be used as a basis of comparison. Baseline data are often used to establish trends over time, identify abnormal operating situations, and gauge the effectiveness or level of improvement that is associated with the introduction of new systems and programs and/or corrective actions.

6.5.5 How Do Baseline Data Contribute to Evaluating the Success of Corrective Actions Implemented at My Facility?

Answer:

The effectiveness of corrective actions at resolving identified problems is often difficult to evaluate without some type of empirical and/or qualitative data that can illustrate what the situation was like before and after a corrective action is introduced. Data are collected through measurement. A series of data points forms baseline data, which can serve as a cue to identify or monitor desirable or undesirable events. Accumulating baseline data prior to implementing corrective actions will facilitate the ability of your organization to determine whether adjustments and corrective actions are the achieving desired outcomes.

Example

Pablo, a manager at a recycling company that shreds electronic products, noticed that workers are frequently becoming ill. He wants to address this issue by improving worker health and safety provisions at his facility.

Pablo is installing new indoor air handling and emission control equipment at his facility, and implementing a new training program about the proper use of personal protective equipment. The air handling and emission control equipment currently in place is considered to be outdated and he believes that there is also room for improvement concerning the regular use of personal protective equipment (PPE).

What does Pablo need to do to gauge the effectiveness of these proposed corrective actions (i.e., installation of air handling and emission control equipment and worker training programs on PPE)?

Pablo needs to:

- ❒ measure conditions before corrective actions are introduced, to establish baseline data;
- ❒ implement corrective actions to remedy problems—in this case engineering controls (new air handling and emission control equipment) and administrative controls (worker PPE training);
- ❒ measure conditions after corrective actions are introduced; and
- ❒ evaluate performance by comparing the results achieved after corrective actions are introduced, to conditions that existed before they were put into place.

Baseline Data Example

Baseline Data Examples	*Management System Component Examples*	*Results*
▪ Conduct indoor air emissions monitoring over a defined period of time (daily for x weeks)	▪ Installation of engineering controls and training on these controls	▪ Lower air emission releases of contaminants
▪ Worker blood tests for contaminants	▪ Increased training on use of personal protective equipment (PPE)	▪ Re-test blood in workers after 6 months of improved use of PPE

Note: In some cases, it may be appropriate to exercise the precautionary principle and introduce corrective actions in the absence of good baseline data. This is particularly true in situations that may lead to tragic or disastrous outcomes if corrective actions are not put into place without delay.

6.5.6 Overview of Best Practices Identified in this Module

Best practices in this module are grouped into two categories:

1. Measuring and Monitoring Performance
2. Continual Improvement and Corrective Action

Best Practice Identified	Measuring and Monitoring Performance	Continual Improvement and Corrective Action
Record Keeping and Document Control	√	
Developing Performance Indicators	√	
Procedures and Systems for Measuring and Monitoring Performance	√	
Audits and Inspections	√	
Compliance Evaluations	√	
Taking Corrective Actions for Continual Improvement		√
Management Reviews		√

Best practices identified for each of these two types of controls are presented in the following sections of this module, in the same order as they are presented above.

Best Practices to Measure and Monitor Performance

6.6 Best Practices to Measure and Monitor Performance

Module 2 described what managerial commitments are important to support ESM and how to develop appropriate procedures and policies to support those ESM commitments. Module 6 describes how to implement these procedures, and how to check the effectiveness of the commitments and procedures. The best practices presented in the following sub-section relate to important elements such as record keeping, using performance indicators, and monitoring and measuring performance.

6.6.1 Record Keeping and Document Control

Record Keeping

Best Practice: Maintain appropriate record keeping practices to support transparency and verification. This will facilitate the ability to measure performance, and demonstrate legal compliance of facility operations and activities.

An illustrative list of records that should be kept is outlined in Exhibit 3. What these records look like will be different for each facility. Your facility may have additional records that are important to keep.

Exhibit 3: Recommended Records to Keep[1]

- Reports and records of complaints from customers and other interested parties, and preventive action taken
- Communications with interested parties, local communities
- Records of tests for emergency preparedness, drills and training exercises
- Inspection, maintenance and calibration records
- Incident records, with corrective/preventive actions taken
- Audit results: internal, external, third-party
- Periodic management review results
- Process monitoring records
- Documentation of environmental determinations
- Records of significant environmental aspects
- Records and minutes of meetings, planning notes, pertaining to the environment
- Environmental performance information
- Training records from all levels
- Records of applicable legal requirements and revisions
- Legal compliance records
- Decisions concerning external communications
- Records pertaining to contractors and suppliers

[1] *Adapted from:* Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Best Practices to Measure and Monitor Performance – **Record Keeping**

Exhibit 4: How to Demonstrate Transparency and Verification in Record Keeping

Transparency:

- make facility environment, health and safety policy(s) available to the public,
- make consolidated summaries of facility health and safety performance available to the public,
- make company reports available to shareholders and society, including information pertaining to environment, health and safety performance,
- provide information about facility activities and operations to clients as necessary, to demonstrate due diligence or duty of care, and
- develop an annual report based on performance information gathered.

Verification:

- verify planning, operating, checking and corrective actions for ESM to demonstrate compliance with applicable legal requirements, industry best practices, and refurbishing and recycling standards; and
- provide public assurances that operations and activities are compatible with ESM; such provisions may include participating in third-party audits and inspections, for example.

Example

1. Your facility just completed emergency evacuation testing this week—it involved a review of procedures you have had in place for some time. Should you record the results of the testing (for example, how long it took to evacuate the building, any problems that occurred, and any positive aspects observed during the testing)?

Answer: Yes—records should be kept of this type of testing, to enable you to monitor improvements over time.

2. You are a new employee. You have taken the introductory training but no other training yet. Do you need to record this training somewhere?

Answer: Yes—all training you take should be recorded in a central place by your management so they can tell if any important training has been missed by individuals or if refresher courses should be administered. You could also keep your own personal record of any training taken, to ensure a back-up copy exists.

Best Practices to Measure and Monitor Performance – **Document Control**

Document Control

Best Practice: Implement, use, and review the document control procedure, which describes where documents are located and how and when they are reviewed or updated. This will facilitate the ability to measure performance, and demonstrate legal compliance of facility operations and activities.

The importance of developing a document control procedure was introduced in Module 2, along with a list of important procedures that should be documented. In Module 6, the emphasis is on implementing the procedure by using it, reviewing it and updating it as necessary.

The document control procedure should be used regularly and should incorporate the following:

- Records should be dated, legible, identifiable and traceable.
- All the records to be maintained should be identified in a list. A company retention policy should be defined for these records. Adherence to this policy will ensure that key documents needed for performance measurement can easily be identified.
- A document retrieval system should be used for paper or electronic documents. For records in electronic form a good management information system should be implemented and followed. The need to store records on-site and/or at an off-site centralized location should be considered. Some legal requirements may require certain records to be retained on-site at the facility at all times.

On the Floor

Employees should follow the procedure for **document control**, such as who can edit and *approve* documents, and how frequently documents should undergo *review* and *updating*. Elements of document control that are useful for any documents kept by your facility include: issue and revision date, effective date, approval, revision number, document number, copy number, and relevant cross references to other documents, policies or procedures.

Example

1. How do you ensure a document is traceable? What exactly does traceable mean?

Answer: Traceable means that you can ensure that the document can be identified and found. You should write the date and the author on the document, and make reference to the fact that it exists in other supporting procedures on the front page. Some facilities may not have an electronic document retrieval system, so it is also important to do this directly on any hard copies, and on other supporting documentation.

Best Practices to Measure and Monitor Performance – **Document Control**

Exhibit 5: An Example of a Document Control Procedure[2]

Purpose:

- The purpose of this procedure is to establish a process for the review, distribution, and implementation of documents that describe and control the environment, health and safety management system.

Scope:

- This procedure applies to all environment, health and safety documents of the company.
- The procedure applies to the environment, health and safety actions of all employees at the plant.

Definitions:

- Procedure: A pre-described series of actions to be executed in a pre-determined sequence.

Responsibilities:

- The manager is responsible for maintaining the environment, health and safety records, including audit results, management review reports, corrective action requests and the communication log.
- Supervisors are responsible for periodically reviewing, updating (if required) and maintaining environment, health and safety records pertinent to their responsibilities.
- both managers and supervisors are responsible for ensuring that documents are legible, identifiable and traceable.

Procedures:

- The management representative will maintain all documents and records.
- The management representative will retain master documents and have sole access for making changes.
- Submission of the initial draft of documents for comment will be by the affected departments within the company. All comments received on draft documents will be incorporated into the document or discussed until a resolution is reached.
- The final draft will be submitted to the managing director for review or approval by signing and dating.
- All procedural documents should include: issue and revision date; effective date; approval; revision number; document number; copy number; and applicable cross-references to other procedures.
- For electronic document control systems, the final signed and dated document will be converted to a PDF-file, and placed on the LAN (local area network) for distribution.
- Documents will be reviewed annually for updates or as regulations or conditions change. This same process will be used for revisions. The revision number will be indicated on the document and index.
- Document retention will be determined by the manager but will be based on legal requirements.
- Documents', permits' and other regulatory instruments' retention times are listed in the document retention list.
- Documents past the retention date will be reviewed annually for destruction. If it is determined that the document needs to be retained, the manager will reassign a new retention period.

References:

- List appropriate references used by your company in the development of this procedure.

[2] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Notebook

Facility Check-in

❒ *Goal*: My facility keeps appropriate records, uses these records to demonstrate transparency and verification, and has a document control procedure in place.

Note the current situation: _____

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Note where improvement could be made: _____

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Are there any challenges to implementing these practices? How might these challenges be overcome? _____

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Note one step you can take today / next week / next month to begin the change process:

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6.6.2 *Developing Performance Indicators*

Best Practice: Always use performance indicators to facilitate performance measurement. Consider important principles when deciding what key performance information to collect and report.

Performance indicators are commonly used by an organization to evaluate its success or the success of a particular activity in which it is engaged. Performance indicators are sometimes defined in terms of making progress toward strategic goals or objectives. As you determine what indicators to include in your facility's performance reporting, consider the following principles.[3]

Principle	Question to Consider	Description
Relevance	Does the performance indicator address key issues that are relevant to your organization?	Include the important issues and indicators relevant to your organization's activities. Be sure to consider the reasonable expectations and interests of your stakeholders.
Completeness	Do you have a performance indicator selected for each of your operations and impacts?	Sufficiently reflect all of your organization's operational activities, to assess performance for a defined period.
Balance	Are both positive and negative performance aspects considered?	Reflect both positive and negative aspects of your organization's performance, explaining the reason for any shortfalls in a report.
Comparability	Does your performance report present performance data for three or more years, to demonstrate trends?	Present performance data over multiple years, to facilitate an analysis of your organization's performance over time, and consider using benchmarks to compare your performance to others.
Reliability	Do you have confidence in the methods used to calculate your data?	Gather, record, compile, analyze, and disclose data and information in a transparent way that communicates the quality and relevance of the information. External audits conducted by independent, third-party and certified auditors can help enhance the credibility of your report.
Clarity	Does your report present relevant contextual information and identify limitations associated with the data and information?	Ensure that readers can readily understand the data and information that is presented within your report. Provide explanatory text, where necessary, with exhibits if they are included. Identify limitations for use and/or extrapolate data where appropriate.

[3] Stratos. 2007. *Performance Measurement and Reporting for Extended Producer Responsibility Programs Reporting Guidance Document*. Prepared for Environment Canada.

Best Practices to Measure and Monitor Performance – **Performance Indicators**

Best Practice: Include performance indicators that use a combination of quantitative data (e.g., numbers, frequencies and ranges) and/or qualitative data (e.g., descriptions, observations and meanings) over defined time periods to measure and monitor your operation's progress towards achieving specific ESM criteria.

It is important to select operational performance indicators that will effectively measure your success in meeting specific ESM criteria using quantitative and qualitative data. Quantitative data generally refers to information that is comprised of numbers and frequencies that is easy to plot on graphs and analyze mathematically. Conversely, qualitative data generally refers to non-numerical descriptions and observations that tend to convey meaning. In practice it is often best to use a combination of quantitative and qualitative data to measure whether performance indicators are being met in a timely manner. Examples of ESM performance indicators that rely upon quantitative data are outlined in the box below.

Box 1: Examples of ESM Performance Indicators that Rely upon Quantitative Data

Category	Example of Performance Indicators	Sources of Data for Measuring
Health & Safety	▪ worker lost-time incidents: goal of zero each year ▪ medical leave incidents: goal of zero each year ▪ reportable incidents: goal of zero each year ▪ compliance with usage of personal protective equipment as per company guidelines: goal of 100%, ▪ compliance for all required training objectives for worker health and safety: goal of 100% ▪ concentration of heavy metals in worker blood levels: goal of 0%	▪ accident/incident reports ▪ observations/inspections, with reports ▪ training completion records ▪ blood-work monitoring semi-annually/annually.
Regulatory Compliance	▪ iIncidents of non-compliance with permit limits: goal of zero ▪ incidents of non-compliance with certification authority requirements: goal of zero ▪ iIncidents of non-compliance with international transboundary regulations and agreements (e.g., Basel Convention): goal of zero	▪ incident reports, permits, inspection reports, regulatory orders, audit reports, etc.
Environmental Protection	▪ increase in average % of material reclaimed per unit recycled by X% over X period of time ▪ amount that mass-balance inventory tracking system balances: goal of 100% of inventory coming in and going out accounted for ▪ percentage of downstream processors used by your company that you have detailed documentation for to demonstrate assurance of their use of ESM practices: goal of 100%	▪ numbers from inventory tracking system ▪ contracts/agreements with processors; inspection reports

Best Practices to Measure and Monitor Performance – **Performance Indicators**

Examples of ESM performance indicators for administrative controls that rely upon qualitative data are outlined in the box below.

Box 2: Examples of ESM Performance Indicators for Administrative Controls that Rely upon Qualitative Data

ESM Criterion	Example of Qualitative Indicators	Measurement Result
#1 Top Management Commitment	▪ Has our company implemented a systematic approach to achieve ESM (e.g., environment, health and safety system, policy, or other management system)?	▪ Existence of a comprehensive documented system
#2 Risk Assessment	▪ Has our company conducted a risk assessment to identify key environment, worker health and safety risks (e.g., informal or formal method to identify and prioritize risks)? Is this risk assessment conducted on a routine basis? (e.g., annually)?	▪ Existence of a comprehensive documented system
#3 Risk Prevention and Management	▪ Has our company implemented a risk management program (e.g., informal method to prevent or minimize risks identified, or formal systematic method such as environment, health and safety system)?	▪ Existence of a comprehensive documented system
#4 Legal Requirements	▪ Has our company developed a process to routinely monitor whether we are meeting our legal obligations? Does this process include a method to identify new or upcoming legal compliance issues every (x) months?	▪ Existence of a comprehensive documented system
#5 Awareness, Competency and Training	▪ Has our company developed a process to identify worker training requirements, and routinely monitor whether we have implemented those requirements within a defined period of time?	▪ Existence of a comprehensive documented system ▪ Worker training records
#6 Record Keeping and Performance Measurement	▪ Has our company developed a process to document all important procedures and maintain records? ▪ Has our company developed a process to evaluate performance at achieving ESM?	▪ Existence of a comprehensive documented system ▪ Management reviews, compliance evaluation results
#7 Corrective Action	▪ Has our company developed a process to identify required corrective actions and implement those actions within a defined period of time?	▪ Management reviews, compliance evaluation results, audit reports
#8 Transparency & Verification	▪ Has our company developed a process to ensure transparency in our operations (e.g., record keeping) and allow for verification of our records and facts?	▪ Management reviews, compliance evaluation results, audit reports

Notebook

Facility Check-in

❒ *Goal*: My facility uses performance indicators that incorporate both quantitative and qualitative data when measuring and reporting ESM performance.

Note the current situation: _____

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Note where improvement could be made: _____

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Are there any challenges to implementing these practices? How might these challenges be overcome? _____

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Note one step you can take today / next week / next month to begin the change process:

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Group Discussion 1: Performance Indicators

As a group, develop a list of performance indicators that are monitored at your facilities and the types of data or information sources that are used to measure performance. Then brainstorm additional performance indicators that could be monitored to improve environmental, health and safety safeguards and identify potential data or information sources that could be used for measurement.

6.6.3 Performance Measurement and Monitoring Procedures & Systems

Performance Measurement:

A process for collecting and reporting information that can be used to monitor progress towards achieving defined organizational goals and objectives. It can involve looking at processes or procedures currently in place, and whether outcomes are in line with what was intended (objectives) or should have been achieved. Both quantitative and qualitative data can be used to measure performance. Record keeping also plays an important role in performance measurement. Performance measurement is often done internally by management. However, at times, measuring performance is conducted by external parties (i.e, by government regulators or independent, third-party auditors, for example).

Use of an official procedure to outline the performance measurement and monitoring practices to be followed is instrumental to ensureing that facilities can gauge their success in meeting objectives, and strive toward continual improvement. The procedure should document all the aspects of the company's operations that should be monitored, for example:

- ✓ environmental health and safety policy goals, objectives/targets, and performance (see this section—Audits and Inspections),
- ✓ incoming, stored and outgoing waste volumes (see this section—Tracking Systems),
- ✓ conformance to legal requirements (see Module 5),
- ✓ effluents and emissions (see Module 4),
- ✓ ambient air quality (see Module 4), and
- ✓ worker exposure levels (see Module 4).

Procedures

Best Practice: Develop, document and implement a procedure to measure and monitor your company's success at meeting operational goals, objectives and targets that pertain to ESM.

Measurement and monitoring of performance indicators should be undertaken continually and frequently. Results from monitoring should be recorded to track how well engineering, administrative and personal protective equipment controls conform to the organization's goals, objectives and targets. Measurement and monitoring procedures and activities should be well documented, to maintain quality control procedures for verification purposes.

Example

1. When conducting performance measurement and monitoring, what steps should you follow?

Answer: When conducting performance measurement and monitoring, you should follow the steps outlined below:[4]

1	2	3	4
Identify and document what will be measured or monitored, and how it will take place	Identify and document the types of performance that indicators will be used to measure and monitor against (these should be documented in a business plan or other document)	Identify the time, place, and workers responsible for undertaking measurement and monitoring	Ensure corrective actions are identified and implemented if non-conformities are identified through measurement and monitoring

[4] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Best Practices to Measure and Monitor Performance – **Procedures & Systems**

Exhibit 6: An Example of a Performance Measurement and Monitoring Procedure[5]

Purpose:

- The purpose of this procedure is to ensure that those operations and activities that can have a significant impact on the environment are measured and monitored on a regular basis, in order to track health and environmental performance and compliance with objectives, targets and legal requirements.

Scope:

- The operation's significant environmental and health impacts which need to be measured and monitored.

Definitions:

- Operational monitoring includes the collection of data on the company's systems and processes that may significantly affect human health or the environment. Examples include air emissions monitoring, waste water quality monitoring, waste generation, and recycling volumes.
- Systems monitoring includes collecting information about the performance of the company in conforming to its policies and meeting environmental objectives. This includes tracking and reporting on the main elements of an EHS policy, including goals, objectives, targets, training, communication, corrective actions etc.

Responsibilities:

- It is the responsibility of the supervisor to: accurately measure and monitor all on-site and off-site activities and operations which can have a significant human health or environmental impact.
- It is the responsibility of the management representative to: collate, review and summarize the records of performance; and report on environmental performance.

Procedures:

Operational monitoring: The company has a monitoring and recording program that covers: legal requirements; safety requirements; effluents and emissions; incoming, stored and outgoing waste, in particular hazardous waste.

- Details of measurement and monitoring activities related to the above should be defined in an appendix, along with other measures planned to help the company achieve its objectives and targets (e.g., reference other documents such as policies, procedures and permits).
- Records of measurement and monitoring activities should be established and maintained.
- All relevant environmental records are to be maintained and made available to the competent authorities upon request, in accordance with applicable legal requirements.
- The company will maintain records of the generation, collection, recovery or disposal of waste, and its types and amounts.
- Such records shall show performance over time; e.g., monthly water consumption. Performance data shall typically include quantities, costs or other suitable key characteristics, to enable comparison against the company's goals, objectives and targets.
- Measurement and monitoring records shall be kept up-to-date.
- Measurement and monitoring data shall be analyzed in order to evaluate environmental performance.

Systems monitoring:

- A summary of environmental performance data shall be provided at management review meetings where performance shall be assessed against the environmental, health and safety goals, objectives and targets specified in the environmental health and safety (EHS) policy and program.
- Measurement and monitoring equipment used shall be calibrated in accordance with the calibration control procedure of the quality management system or, if such system not present, through a certified service supplier.

References:

- List appropriate references that your company used in the development of the procedure.

[5] Adapted from: Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Best Practices to Measure and Monitor Performance – **Procedures & Systems**

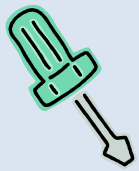
Best Practice: Implement and maintain a tracking system to: 1) control, weigh, and document total incoming and outgoing equipment, materials and wastes; and (2) identify original generators and downstream processors/receivers for all incoming and outgoing equipment, materials and wastes.

The tracking system can be used to calculate the total volumes for incoming and outgoing equipment, materials and wastes, as well as to record their destinations, on a regular basis. It is important to track all incoming and outgoing equipment, materials, and wastes to allow for: good inventory management; transparent record checking by stakeholders or auditors; and oversight of original generators and downstream processors.

On the Floor

The information you track should include:

- types, weight, volume and original generators of incoming equipment, materials and wastes, using an inventory control system with parameters relevant to your company, and your certification processes, if applicable (for example, some certifications require tracking of serial numbers of equipment);
- equipment refurbishing, software or hardware updates, and testing and/or repair requirements; and
- types, weight, volume and downstream processors/receivers of outgoing equipment, materials and wastes.



You should track both total weight and percentage by weight of each of these groups:

- reuse/refurbishment,
- material recovery/recycling,
- disposal (at non-hazardous solid waste management facilities), and
- disposal (at hazardous waste management facilities).

Information about wastes should be divided into categories:

- CRT glass or other leaded glass,
- mercury-containing devices,
- batteries containing mercury, cadmium, lead or acid,
- lithium-ion batteries,
- other batteries,
- printer or copy drums or other materials containing arsenic or selenium,
- polychlorinated biphenyl (PCB) equipment,
- radioactive materials,
- toners and inks and their containers/cartridges, and
- antifreeze or coolant glycols.

Refurbishing and recycling facilities often tag and weigh batches of incoming pallets, equipment, materials and wastes. The act of tagging helps record information such as the original owner or generator of the equipment, materials and wastes and the date that it was received). Tagging and batch processing incoming and outgoing shipments facilitate the ability to track whether or not a shipment has been received and where in the process the shipment is (i.e., pre-processing, processing or post-processing). This is particularly useful for reporting back to clients regarding the current status of their shipment and for the purpose of issuing certificates of recycling (or refurbishing), where requested.

6.6.4 *Audits and Inspections*

An important business practice is to periodically conduct internal or external audits on a regular basis. This exercise involves the use and interpretation of quantitative and qualitative data to verify conformance to specific objectives, targets and other parameters, for example those outlined in an EHS policy or program, license, permit, or certification. Managers and workers have different roles in the auditing process. **Managers** oversee the process, review results, and implement corrective actions based on results. **Workers** support the process by providing data as necessary. Sometimes audits and inspections are required, to obtain and maintain certification under provincial or state refurbishing and recycling programs.

Performance measurement vs. audit or inspection

Performance Measurement: the act of acquiring quantitative and qualitative data that can be used to provide evidence to determine the level of progress made towards achieving specific defined goals, objectives and targets.

Audit/Inspection: an unbiased review of a facility's current progress at meeting ESM requirements and other criteria, such as specific defined organizational goals, objectives and targets. The audit reports the facility's success level and any improvements or corrective actions that could be implemented to improve performance by addressing identified non-conformities and deficiencies.

Both of the above may be administered by the facility or through independent external assessment (e.g., auditing firms, government officials).

The purpose of audits and inspections is to:[6]

- evaluate conformance to corporate policies, systems and procedures;
- assess the effectiveness of the company's environmental protection measures;
- assess the effectiveness of the company's worker health and safety measures;
- evaluate the effectiveness of the company's environment, health and safety system implementation;
- evaluate compliance with a certification scheme or legal requirement to operate; and/or
- promote understanding of findings from the performance measuring by management, staff and employees, and communicate information to all staff about findings, with an aim for continual improvement.

Best Practice: Implement an auditing program to verify conformance to established objectives and thus to ensure environment protection and worker health and safety.

In order to achieve maximum benefit, the audit program/procedure must: be planned, using procedures that clarify "audit scope," "audit frequency," "auditor qualifications," "reporting requirements" and "follow-up requirements;" be based on objective evidence; be executed competently; and be reported constructively.

[6] Bureau of International Recycling. (BIR) 2006. *Tools for Environmentally Sound Management: All You Need for an ISO Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Best Practices to Measure and Monitor Performance – **Audits and Inspections**

Best Practice: If your company has a certified environmental, health and safety management system in place that requires auditing to maintain certification, you should ensure that internal audits of the management system are conducted at planned intervals (e.g., annually), by competent individuals.

Managers are responsible for assessing whether their facility complies with its environment, health and safety certification, they should:[7]

1. determine the facility's compliance with and effective implementation of its environment, health and safety certification, as outlined by its performance in achieving objectives and targets, and its use of the environmental manual, EHS procedures and work instructions, and

2. determine whether EHS objectives were achieved.

Workers are responsible for supporting the auditing process—this might include gathering data for managers, or answering questions posed by third-party auditors.

Auditors used to validate whether a facility meets requirements of environment, health and safety standards such as ISO 14001, EMAS or OHSAS 18001 should have specific expertise, and be knowledgeable about:[8]

- ✓ environmental science and technology,
- ✓ technical and environmental aspects of facilities operation,
- ✓ environmental law and regulations,
- ✓ environmental management systems, and
- ✓ auditing techniques.

Example

1. When a worker is asked by a manager to be involved in an audit conducted by someone from outside your company, how should he/she respond?

Answer: All workers should make time to answer all questions posed by auditors, and answer truthfully.

Best Practices to Monitor and Measure Performance – **Audits and Inspections**

[7] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

[8] Ibid.

An example of the essential elements that an internal auditor should include in an audit report is presented in Exhibit 7.

Exhibit 7: An Example of an Audit Report Template[9]

Essential Elements of an Audit Report Form

Audit Number:
Title of Audit:
Date(s) Audit was Conducted:
Scope/Objectives of Audit:
Auditee (Who/What/Where):

Audit Team
Lead Auditor:
Auditor:
Audit Team:

Reference Documents Reviewed in Audit:

Audit Summary (summary of audit process, including any obstacles encountered, audit findings, reference to supporting evidence, etc.):

Conclusions (Conformance to EMS audit criteria, whether the system is properly implemented and maintained, whether the internal management review process is able to ensure the continuing suitability and effectiveness of the EMS, etc.):

Distribution List for Audit Report:

Author of Audit Report
Name: Signature: Date:

Lead Auditor
Name: Signature: Date:

Uncontrolled//*Controlled* copy [*delete inappropriate status]
Revision date: Approved by:

Example of List of Documents to be Reviewed During Inspection of an Electronics Recycling or Refurbishing Facility (California Department of Toxic Substances Control), available free at:
<http://www.dtsc.ca.gov/HazardousWaste/EWaste/upload/List-of-Docs-Final.pdf>

Example of an Audit Checklist for an Environment, Health and Safety Management System (Electronic Products Recycling Association, Canada—Recycler Qualification Office), available free at:
<http://rqp.ca/ESW/Files/Audit_Checklist.docx>

[9] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

6.6.5 Compliance Evaluations

Best Practice: Document and implement an environment, health and safety compliance review program using routine inspections to review operations, and procedural reviews to assess programs. Results from compliance evaluations should be used to inform management reviews.

Operational Compliance: Staff should use routine inspections to review environment, health and safety compliance at an operational level, to ensure that:

- permit conditions, or other regulatory or certification requirements associated with the facility's operations, are met on a continuous basis (this might include emissions monitoring, equipment maintenance, ambient testing, worker exposure monitoring, or observations regarding use of personal protective equipment).

Program Compliance: The company should also evaluate compliance of its programs, to ensure that:

- permits, regulatory changes, and operational changes are incorporated into the company's environment, health and safety compliance program documentation and all relevant procedures.
- important environment, health and safety programs are operating as intended.
- environment, health and safety training is conducted in accordance with company (or legislative) plans.
- environment, health and safety committees are established as outlined.

Exhibit 8 presents an example of a compliance evaluation procedure. Exhibit 9 presents an example of a compliance evaluation checklist.

Best Practices to Demonstrate Continual Improvement – **Compliance Evaluation**

Exhibit 8: An Example of a Compliance Evaluation Procedure[10]

Purpose:

- The purpose of this procedure is to ensure that the company has a documented means of periodically evaluating compliance with relevant environmental, health and safety (EHS) legal requirements, or other ESM criteria, based on OECD core performance elements (as per OECD Council Recommendation C(2004)100 on the Environmentally Sound Management (ESM) of Waste).

Scope:

- The company maintains an environmental, health and safety program and evaluates compliance from a program level. This approach ensures that permits, regulatory changes, and operational changes are incorporated into the company's environmental, health and safety compliance program.
- This procedure will be reviewed annually and revised when deemed necessary.

Responsibilities:

- The manager is responsible for ensuring that operations managers comply with applicable legal requirements and other requirements pertaining to environmental, health and safety.
- The manager reviews and approves all program and project plans designed to meet or exceed the applicable legal requirements for the operation and maintenance activities of the company. In addition, the management representative will review all inspection checklists and audit reports to ensure that observations, areas of concern, notices of violation or environment, and health and safety nonconformance issues are addressed in a timely and correct manner.
- Supervisors are responsible for complying with the environment, health and safety legal requirements.
- Supervisors are also responsible for meeting legal requirements that pertain to the operation of the company. Operations managers will review all inspections and ensure that all staff are informed and trained and comply with all applicable legal requirements associated with their areas of responsibility.

Procedures:

- Compliance assessments are accomplished through routine inspections conducted by the company's staff to ensure that applicable legal requirements and ESM criteria are fulfilled on a continuous basis.
- Supervisors shall routinely train their staff and monitor their performance for all regulated activity within their area of operations. Training and performance monitoring can be accomplished internally or through an appropriate outside resource.
- Periodic inspections are conducted to ensure the company is meeting the applicable legal requirements associated with the company's operations.
- When periodic site visits are scheduled, supervisors will ensure that all personnel, equipment and resources required to complete the activity are available.
- The manager shall establish a schedule in which the company will assess its legal compliance. The results of this report will be sent to the management team for action and for record retention.
- Supervisors are responsible for correcting all deficiencies identified through their internal and external inspections and audits or as a result of new or modified regulations and permit conditions. Corrective action will be directed by regulatory agencies, the manager, or through corrective/preventive action requests as a result of internal audits or observations by the staff. Results of all legal compliance and other audits and inspections will be sent to management for review and corrective action.

References:

- List appropriate references that your company used in the development of this procedure.

[10] *Adapted from:* Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Best Practices to Demonstrate Continual Improvement – **Compliance Evaluation**

Exhibit 9: An Example of a Basic Compliance Evaluation Checklist[11]

Items to Review	Y/N/NA	Action?
Has the company established a procedure to measure and monitor the key characteristics of its operations and activities that can have a significant impact on the environment or worker health and safety?		
Are the key characteristics of activities and services that can have a significant impact on the environment or worker health and safety regularly measured and monitored in accordance with the procedure?		
Does this procedure include calibration and maintenance requirements for equipment?		
Does this procedure include personal protective equipment?		
Does this procedure note that records should be retained?		
Does the procedure outline the requirements of the program to periodically review regulatory compliance and report results to management on a yearly basis?		
Does management ensure that the facility is at all times in compliance with applicable legal requirements regarding the environment, and occupational health and safety?		
Is there a responsibility and process to identify new or amended regulations?		

This checklist could be tailored to meet the specific needs of your company.

[11] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Notebook

Facility Check-in

❒ *Goal*: My facility has developed and implemented adequate procedures to measure and monitor its success at meeting its operational objectives and targets.

Note the current situation for each of the following AND where improvement could be made:

a) Measurement and monitoring procedure

_____

_____

_____

_____

b) Equipment tracking system _____

_____

_____

_____

_____

c) Auditing and inspection program

_____

_____

_____

_____

d) Compliance evaluations

_____

_____

_____

_____

Are there any challenges to implementing these practices? How might these challenges be overcome? _____

_____

_____

Notes

Best Practices for Continual Improvement and Corrective Action

6.7 Best Practices for Continual Improvement and Corrective Action

The idea of continual improvement is that management will use performance measurement results to inform their decision-making about operations and systems. Once they have evaluated the facility's compliance they can determine any needed corrective action.

6.7.1 Corrective Action

Best Practice: Take corrective action to address nonconformities that are identified through performance-monitoring activities.

It is important that management:[12]

- identify and document nonconformities during performance monitoring,
- investigate nonconformities, determine their cause and take actions to avoid their recurrence,
- decide whether there is further action needed to prevent future nonconformities, and implement appropriate action designed to avoid their occurrence,
- record the results of corrective actions and preventive actions taken, and
- review the effectiveness of corrective actions and preventive actions taken.

Corrective Action

"Corrective action is necessary to remedy weaknesses that are identified with respect to achieving ESM. Corrective action also helps to ensure that facility approaches to ESM undergo continual improvement."

UNEP. Basel Convention. 2011. *Environmentally Sound Management (ESM) Criteria Recommendations*. Partnership for Action on Computing Equipment (PACE).

Exhibit 10 presents an example of a corrective action procedure.

[12] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Exhibit 10: An Example of a Corrective Action Procedure[13]

Purpose:

- This procedure sets out the requirements for dealing with actual and potential nonconformities and for taking corrective and preventive action.

Scope:

- This procedure is concerned with nonconformities. This procedure covers both nonconformities with the company's EHS procedures and nonconformities with certification specifications (if applicable).
- Reports of nonconformities may result from external audits or may occur as part of routine operations.

Definition:

- Nonconformity—non-fulfillment of a requirement.
- Corrective Action—action taken to eliminate the cause of a detected nonconformity.
- Preventive Action—action taken to eliminate the cause of a potential nonconformity or avoid repetition of the same nonconformity.

Responsibilities:

- It is the responsibility of the nominated management representative to prepare and issue a non-conformance report when a nonconformity is detected.
- It is the responsibility of all employees to bring suspected nonconformities to the attention of the management representative or supervisor.
- Operations managers and supervisors will comply with all corrective and preventive actions prescribed.
- The management representative will establish and maintain a reporting and record keeping system for nonconformities, corrective and preventive actions.
- Nonconformities, corrective and preventive actions will be reviewed through management reviews.

Procedures:

- The underlying cause(s) of the nonconformity must be investigated.
- Appropriate and timely corrective action must be taken according to the nature of the nonconformity.
- Preventive action, such as implementing, modifying or enforcing procedures or controls, will be taken to avoid repetition of the nonconformity, or to prevent a potential nonconformity from occurring.
- Any corrective or preventive action taken to address the causes of an actual or potential nonconformity must be appropriate to the magnitude of problems and commensurate with the impact encountered.
- The management representative will implement and maintain a system of reporting and record keeping for nonconformities and corrective and preventive action.
- Any changes to the EHS procedures as a result of corrective or preventive action will be recorded.
- A non-conformance report or form will detail the nature and scale of the nonconformity and proposed corrective and preventive actions, as appropriate, including references to procedure number and date, and will include timescales, where relevant.
- Repeated nonconformities of the same nature, or significant deviations from procedures (for example, disregard of the procedures) will be reported to the supervisor for action and resolution.
- Significant deviations from the environmental policy will be reported to the management representative.
- A report will be submitted to the management representative on a regular basis, reviewing all nonconformities and their respective corrective and preventive actions. The report will include: review of non-conformance reports; review of corrective actions; review of preventive actions; review of environmental complaints; review of internal or external EHS audits.
- Preventive actions involving long-term programming will be considered in the setting of objectives or targets.

References:

- List appropriate references used by your company in the development of this procedure.

[13] Adapted from: Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

6.7.2 Management Reviews

Management review is an essential step in the continual improvement of the organization. It is crucial to a system's improvement.

Best Practice: Top management should review the organization's environment, health and safety management systems and processes at regular planned intervals, and in the case of special circumstances (e.g., new or updated legal requirements or complaints), to ensure the systems and processes remain suitable, adequate and effective for the organization.

The review process should:[14]

- assess opportunities to improve the environment, health and safety systems and processes, including the environmental policy and worker health and safety objectives;
- assess whether workers and supervisors have complied with policy and procedures;
- review targets, objectives and performance indicators to establish their suitability in light of changing environmental impact or worker health and safety concerns;
- review results from performance measurement activity, and any results from the implementation of new worker health or environmental protection programs;
- determine if equipment and resources are (still) adequate for supporting the environmental, health and safety program requirements of the company;
- review regulatory compliance and whether all requirements have been achieved;
- determine if the operational controls, procedures, corrective actions, preventive measures and continual improvement efforts have resulted in enhanced environment, health and safety performance; include results from compliance audits undertaken;
- determine if there are any areas for improvement in staff expertise, practices, administrative and operational procedures, training, work instructions, process improvements, pollution prevention programs, etc.;
- review any emergencies that have taken place in the assessed time period, the preventive and corrective action taken, and communication to regarding emergencies;
- be documented, with records retained by management; and
- be followed up at defined intervals by a management team, to ensure that decisions made during the management review are implemented.

[14] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Best Practices to Demonstrate Continual Improvement – **Management Reviews**

Exhibit 11: An Example of a Checklist of Management Review Items [15]

Items to Review	Y/N/NA	Action?
Did we achieve our objectives and targets?		
Should we modify our targets in light of new information pertaining to worker health and safety or environmental protection?		
Is our environment, health and safety policy still relevant to what we do?		
Are roles and responsibilities clear and do they make sense?		
Are we applying resources appropriately?		
Are the worker health and safety procedures clear and adequate?		
Are the environmental protection procedures clear and adequate?		
Are workers using prescribed personal protective equipment?		
Did workers take designated training at recommended intervals (e.g., refresher training, new systems training, as appropriate?)		
Are we monitoring our management controls/systems?		
Do results from performance measurement tell us that improvements are required?		
What effects have changes in equipment, materials or products had on our EHS system and its effectiveness?		
Are there any upcoming changes in laws or regulations that will require us to change any of our procedures or equipment?		
Have there been any top management concerns raised since our last review?		
Is there a better way to achieve environment protection from our key processes? Are we using the best available technique (BAT) or practice?		
Where there any emergencies since our last management review? Did our company deal with the emergency in an appropriate timeline and manner?		
Are there any corrective actions required for our emergency plan?		

[15] Bureau of International Recycling (BIR). 2006. *Tools for Environmentally Sound Management: All You Need for an ISO-Compliant Environmental Management System that Includes OECD Core Performance Elements for the World's Recycling Industries*.

Notebook

Facility Check-in

❒ *Goal*: My facility has adequate processes in place to demonstrate continual Improvement.

Note the current situation for each of the following AND where improvement could be made:

a) Environment, health and safety compliance review program

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_____

b) Corrective action procedure _____

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_____

_____

c) Management reviews _____

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Are there any challenges to implementing these practices? How might these challenges be overcome? _____

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Note one step you can take today / next week / next month to begin the change process:

_____

_____

Notes

6.8 Summary—Key Take-away Messages

Effective record keeping and performance evaluation enable an organization to:

- ✓ manage its ongoing operations more effectively with data ("you can not manage what you do not measure;" i.e., you can not manage for improvement if you do not measure to see what is getting better and what is not);
- ✓ demonstrate accountability to regulators, certification or insurance bodies by having appropriate documentation in place and being able to make it available in a timely manner when requested to do so;
- ✓ be organized, by having records and documentation to demonstrate procedures, systems, etc., to workers and authorities as needed;
- ✓ facilitate both internal and external compliance audits undertaken by certification or regulatory bodies;
- ✓ demonstrate a commitment to transparency and verification;
- ✓ identify or confirm if a problem exists and allow for early corrective action; and
- ✓ measure and monitor effectiveness of corrective measures introduced to address problems by comparing with baseline data accumulated over time.

Important Definitions:

What is Record keeping?	The practice of creating written documents to support effective decision making, facilitate ongoing operations, allow for checking effectiveness, and meet compliance with legal requirements.
What is Performance measurement?	A process of identifying goals or objectives, measuring progress relative to these goals, and identifying necessary interventions to improve future performance against these goals (corrective action).
What is Corrective Action?	Improvements to an organization's business processes that do not conform to desired practices or objectives.
What is Transparency?	Providing publicly available information on an organisation's commitments, activities and performance in support of achieving ESM.
What is Verification?	The practice of evaluating results against set standards or objectives. Often, verification requires evidence– this can be attained through reviewing records, auditing or inspections.

6.9 Post-questionnaire

1. Were all of the learning objectives you identified in the Pre-questionnaire met? If not, what questions do you still have?

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_____

_____

_____

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_____

2. What best practices, ideas or suggestions that came out of this module and from other participants would you like to think about implementing at your facility?

_____

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3. Do you and your facility have the tools and knowledge (forms, skills, systems, personnel, etc…) to adequately measure performance? If not, what is lacking and how can you improve the situation?

_____

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6.10 Additional Resources

Record Keeping

State of California has a list of records/documents it consults during an inspection of e-waste facilities: <http://www.dtsc.ca.gov/HazardousWaste/EWaste/upload/List-of-Docs-Final.pdf>

Auditing

Washington State Preferred Performance Measures for Direct Processors—example of a completed audit report:
<http://www.ecy.wa.gov/programs/swfa/eproductrecycle/docs/ERIAuditSummary.pdf>

Performance Indicators

How to Develop Key Performance Indicators—video:
<http://www.youtube.com/watch?v=NCta6j5_FdM&playnext=1&list=PLA3EFA3286BE76EB2&feature=results_video>