

An Overview of Environmental Management Systems (EMS)

and How Sustainable Practices are
Successfully Integrated into an EMS

Agenda

- Drivers for EMS
- EMS 101
- Including energy in an EMS

The Requirement - the EO

Sec. 3. *Duties of Heads of Agencies.* In implementing the policy set forth in section 1 of this order, **the head of each agency shall:**

- (b) **implement** within the agency **environmental management systems** (EMS) at all appropriate organizational levels to ensure
 - (i) use of EMS as the **primary management approach for addressing environmental aspects** of internal agency operations and activities, **including environmental aspects of energy and transportation functions,**
 - (ii) **establishment of agency objectives and targets** to ensure implementation of this order, and
 - (iii) **collection, analysis, and reporting of information** to measure performance in the implementation of this order;

The Requirement in the EO Instruction

- *Overarching Policies and Directives* - In implementing the policy, goals, and objectives of E.O. 13423, agencies shall apply the following overarching directives:
 - (1) Environmental management systems. E.O. 13423 directs Federal agencies to implement environmental management systems (EMS) at all appropriate organizational levels to **ensure the use of EMS as the primary management approach** for addressing environmental aspects of internal agency operations and activities, including the **environmental aspects of energy and transportation functions**; **establishment of agency objectives and targets** to ensure implementation of the E.O.; and collection, analysis, and reporting of information to measure performance in the implementation of the E.O.

WHAT IS AN ENVIRONMENTAL MANAGEMENT SYSTEM? The ISO 14001 Definition

- “The overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for **developing, implementing, achieving, reviewing and maintaining the environmental policy.**”

“ems” vs. “EMS”

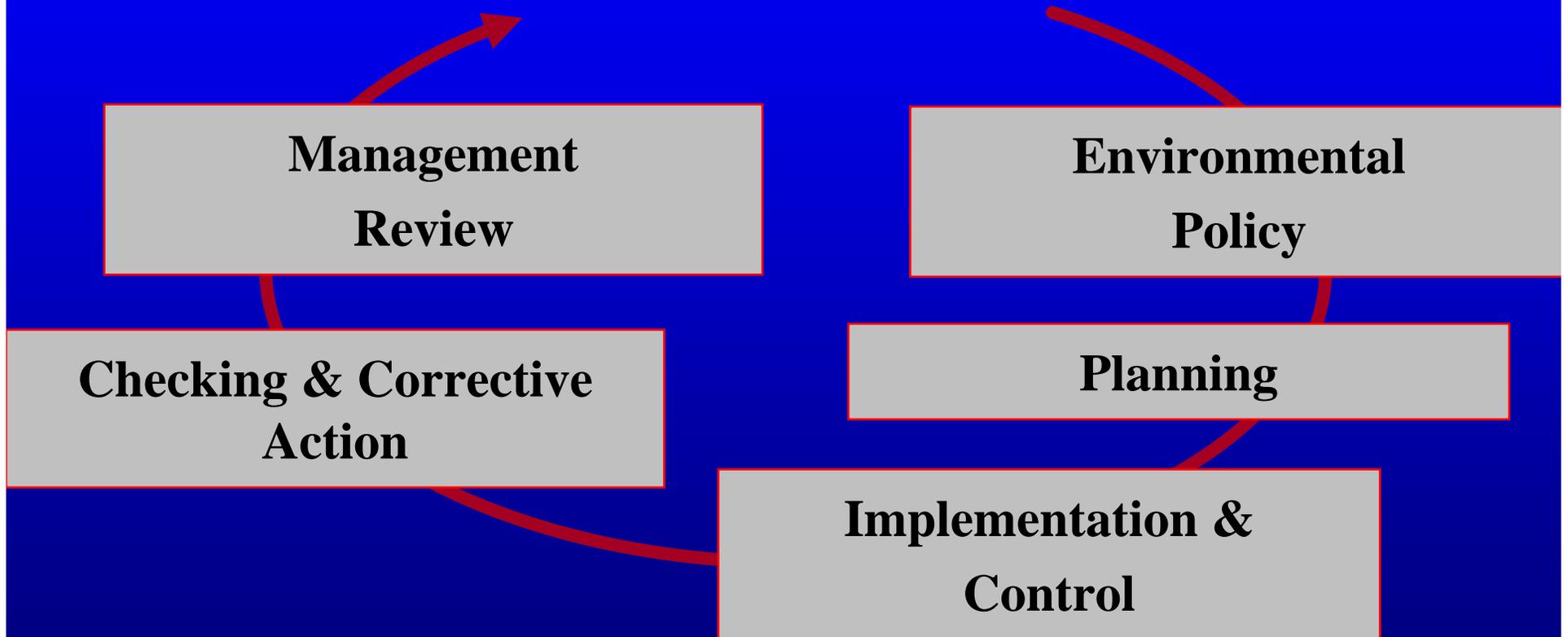
- All organizations have some type of environmental management system regardless of what they do
- For this discussion, the focus is a more formalized, recognized, and structured approach defined in the international EMS standard, ISO 14001
- In most cases, additional effort is needed to transition from existing environmental activities to the more formal ISO 14001-type EMS

EMS and ISO 14001

- Created by International Organization for Standardization (Geneva, Switzerland)
- Each participating nation has a committee that develops consensus and contributes (one vote each, for US it is ANSI)
- Finalized and issued in 1996, revised in 2004
- Market sector created and driven; governments participate but it is not legislative or regulatory
- Process standard, not performance

Plan Do Check Act

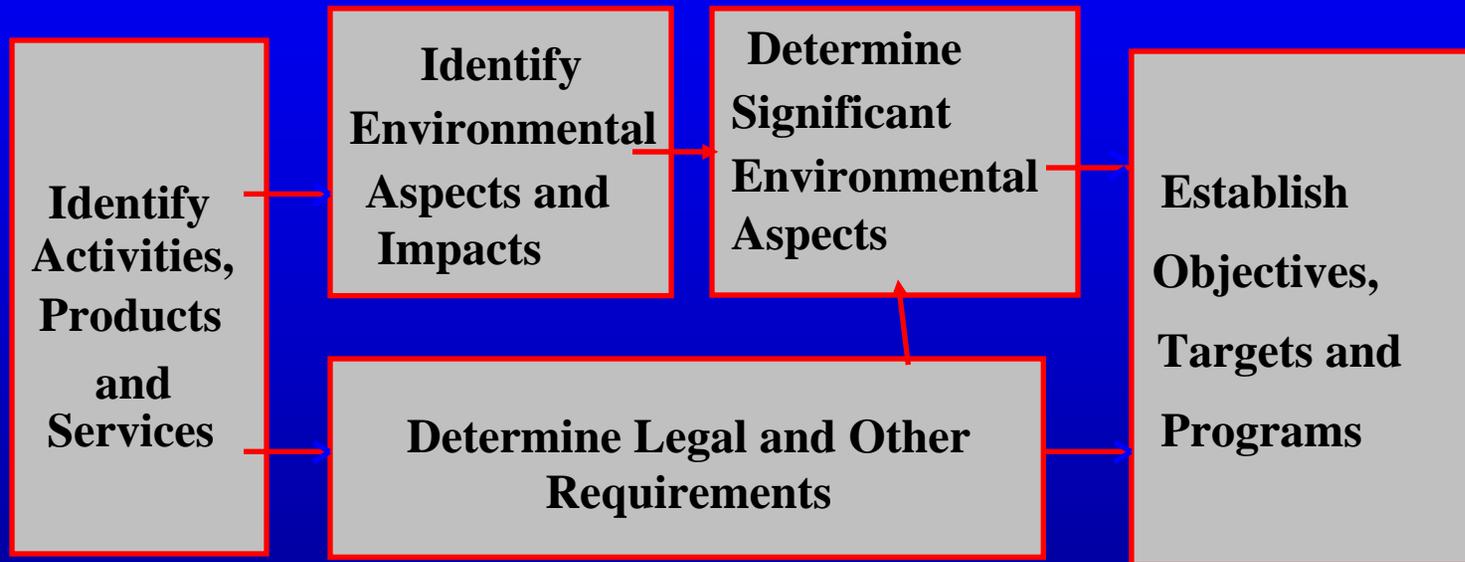
Continual Improvement



Policy

- Statement of an organization's intentions and principals in relation to its overall environmental performance
- Provides a framework for the EMS objectives and targets
- Usually includes sustainability goals including energy conservation

Planning

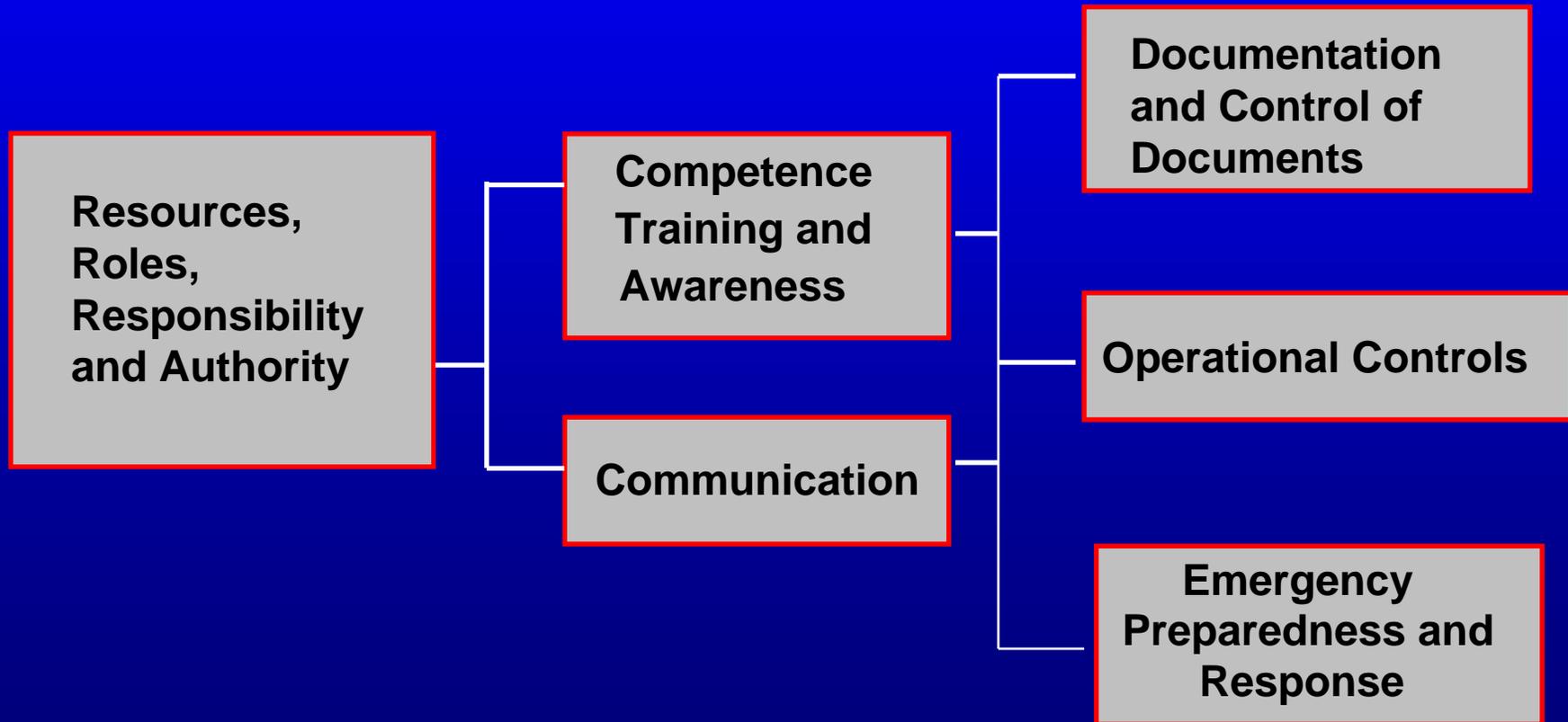


Implementation and Control

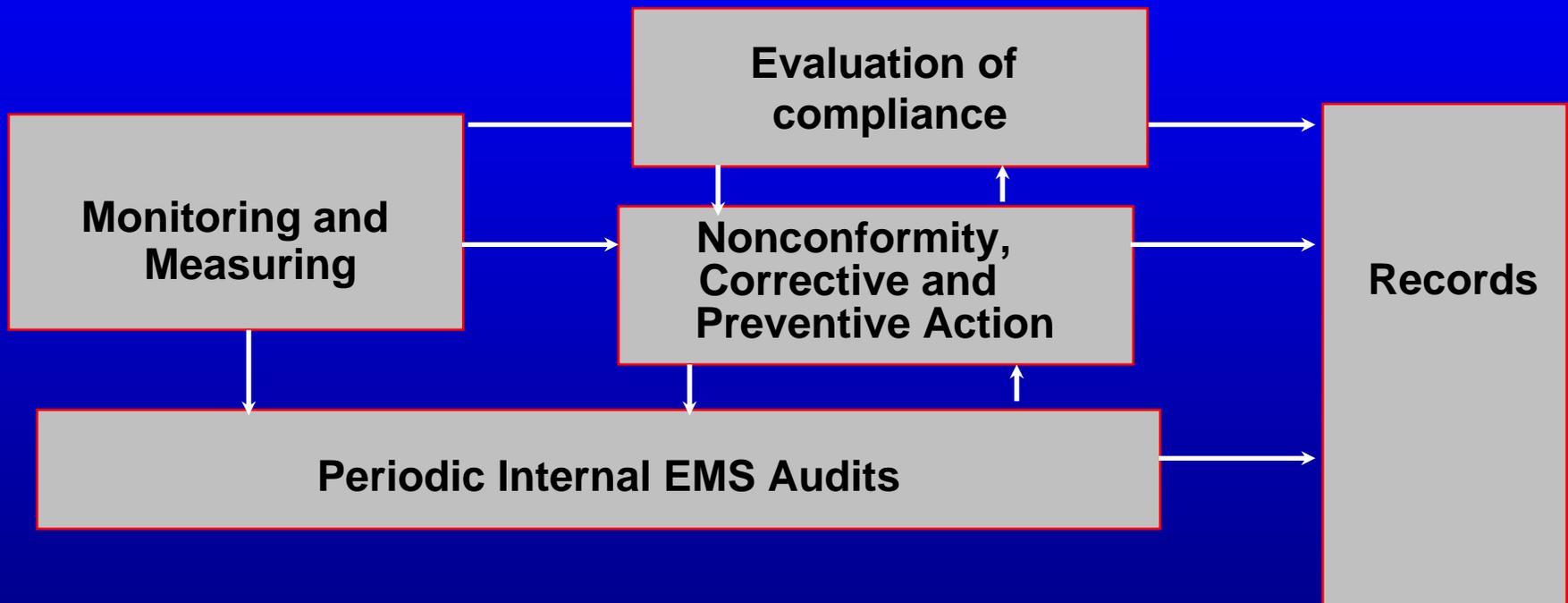
Organization & Accountability

Capabilities & Communications

Controls



Checking and Corrective Action



Management Review

Take account of:

- audit findings
- progress records on objectives
- changes to facilities
- changes in activities, products or services
- changes in technology
- concerns of interested parties
- other relevant information



To Assess the

- suitability,
- adequacy, and
- effectiveness of the EMS

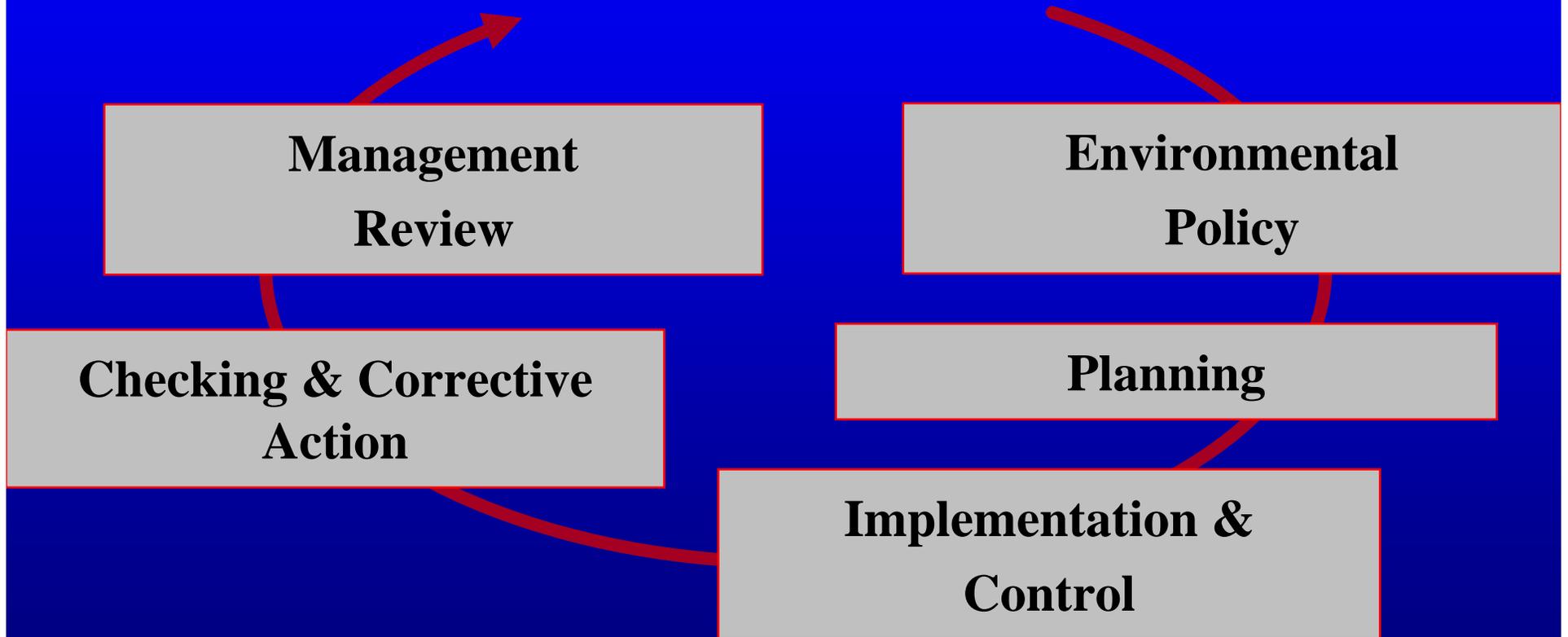


In order to determine the need for change and improvement to:

- the environmental policy
- the objectives and targets
- other elements of the EMS

Plan Do Check Act

Continual Improvement



Keep in mind...

- The EMS and related measurement tools are just that, tools. Alone, they will not guarantee success. The organization must use the tools, not just have them.
- An effective EMS is “alive”; constantly measuring performance, making adjustments, and looking for opportunities for continual improvement
- An EMS cycle gets repeated to ensure it is meeting the policy goals, working properly and updated as necessary

**So how is energy conservation
included in an EMS?**

Where does this fit in the EMS Planning Element?

- Activities, aspects, impacts analysis would have identified all activities that use energy – *air conditioning*
- Significance determination would have identified energy use as a “significant aspect”
- The EO requirement is now a “legal and other requirement”
- Objectives and Targets will set goals for energy conservation - *10% reduction by 2010 – replace chiller in main building*
- A “plan” would have been developed to support the Objective and Target

Where does this fit in an EMS?

Planning

- The plan would identify how the objective would be carried out including:
 - Responsibilities – who and in what area/function - *Joe in engineering and Frank in contracts*
 - Schedules – when would various activities happen - *select new chiller by December, purchase and install by March*
 - Metrics – what would be measured to determine success – *short term and long term - purchase and operation of new chiller - electricity use reduction*

Where does this fit in an EMS?

Implementation and Control

- Based on the plan, roles and responsibilities would be assigned – resources would be allocated – *Joe will select Frank will purchase*
- Necessary training would take place based on proposed actions - *chiller operators trained*
- Operational controls would be deployed to ensure actions are taken – *SOPs developed for operation of new chiller*

Where does this fit in an EMS?

Checking and Corrective Action

- Activities identified in the plan would be measured/monitored using the metrics in the plan - *measure energy use of existing and new chiller*
- Progress towards objectives and targets monitored/measured – *on target for purchase?*
- Effectiveness of actions towards objectives would be determined - *is new chiller reducing energy use?*
- Responsibility for dealing with non-conformances would be assigned - *Joe monitors operation of chiller*
- Where non conformities exist they would be fixed and steps taken to preclude further problems – *operators retrained*
- Records are created and maintained

Where does this fit in an EMS?

Management Review

- As part of the review of the EMS the objective for energy conservation would be reviewed
 - Targets would be assessed – *on track for 10%?*
 - Activities would be reviewed – *chiller replacement working?*
 - Updates would be proposed – *additional equipment changes?*
- Management would decide on how to proceed with pursuit of the objective and the cycle would begin again

Summary

- A formal EMS reflects an accepted framework for managing the environmental footprint of your organization including sustainable practices
- Most organizations already have several EMS elements in place - the system relationship is lacking and can be achieved by adopting the formal framework
- Success comes from following the framework and being committed to implementation and maintenance

Resources

- FedCenter.gov
- OFEE.gov

Will Garvey

202-564-2458

garvey.will@epa.gov