Environmental Management Systems and ISO 14001

NC Environmental Stewardship Initiative

www.ncesi.org

N.C. DIVISION OF
ENVIRONMENTAL ASSISTANCE
AND CUSTOMER SERVICE

NCDENR

EMS?

- Emergency Medical Service
- Emergency Management Services
- Express Mail Service
- Electromagnetic Spectrum
- Ethyl Methane Sulfonate
- Electronic Mail Service
- Excess Mileage Surcharge
- European Monetary System
- Earth and Mineral Sciences

NO

Well, yes, but not today!

Environmental Management System

A proven tool that is specifically designed to help any organization manage its activities and allow successful pursuit of that organization's environmental policies and goals.

What does an EMS do?

- Provides a systematic way of managing an organization's environmental affairs
- Ensures environmental considerations are a priority
- Gives order and consistency for organizations to address environmental concerns through:
  - allocation of resources,
  - assignment of responsibility
  - ongoing evaluation of practices, procedures and processes
- Focuses on continual improvement of the system

Why Implement an EMS?

- Helps to focus organization's priorities and avoid "flavor of the month syndrome"
- Helps to prioritize and keep sustainability goals from competing with each other for resources and attention
- Establish a framework to move beyond compliance
- Vehicle for positive change; improved employee morale, enhanced public image
- Helps to identify the root causes of environmental problems

What is ISO?

- **"ISO" is a word, derived from the Greek isos, meaning "equal."**
- **ISO an acronym - International Organization for Standardization**

www.iso.org

ISO ….

- The ISO film speed code.
- Telephone and banking cards
- Paper sizes
- ISO metric screw threads
- ISO 9000 & ISO 14000

What is ISO 14001?

- Developed by an NGO representing over 100 countries
- ANSI is the US representative
- Widely adopted
- Some customers demand implementation, some even require certification
- Auditable
- Compatible and easily integrated with other ISO standards (ISO 9000, ISO 50000, etc)

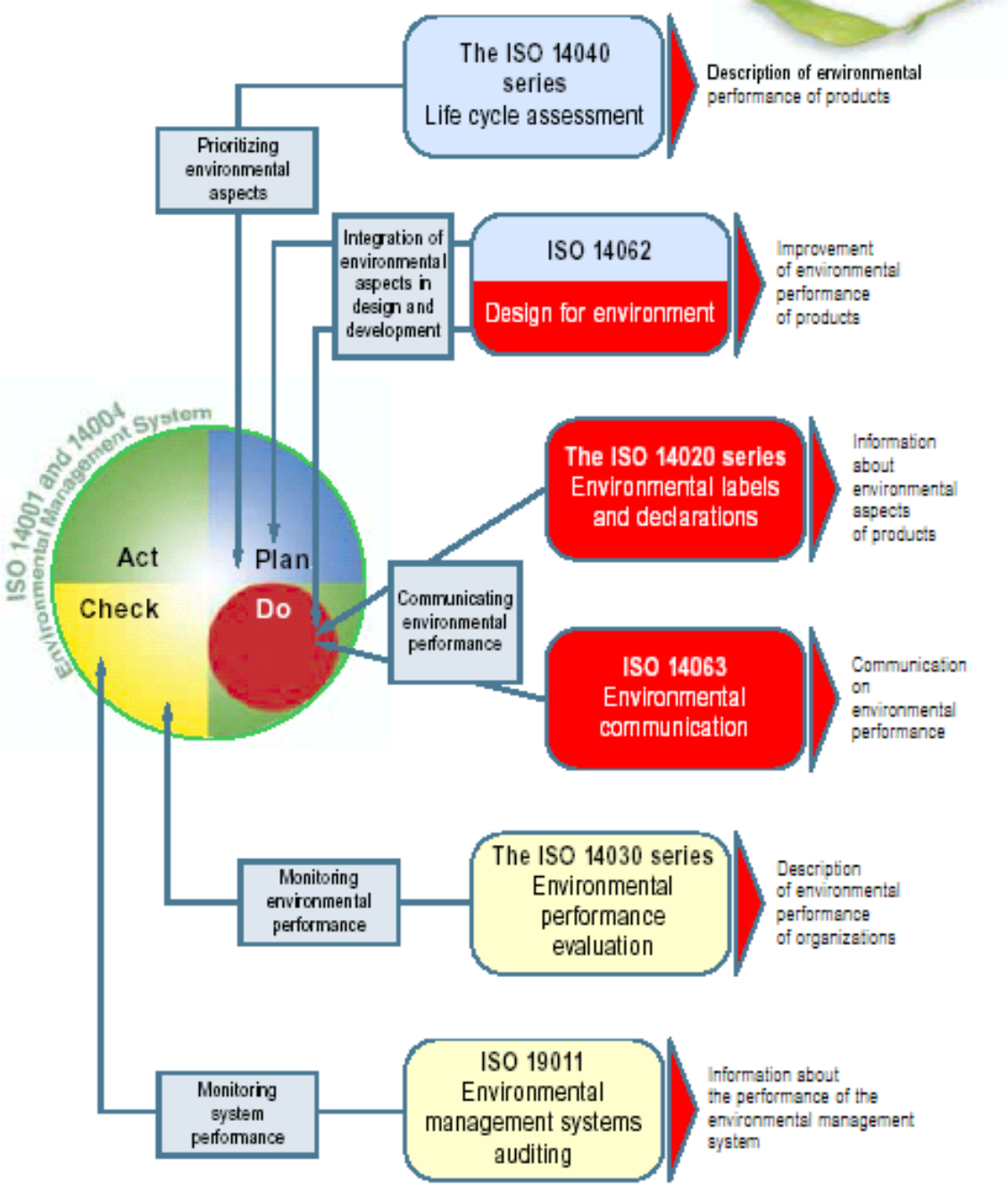
NC Environmental Stewardship Initiative

ISO 14000 Series of Standards

3 main Stds:

- ISO 14001
- ISO 14004
- ISO 19011

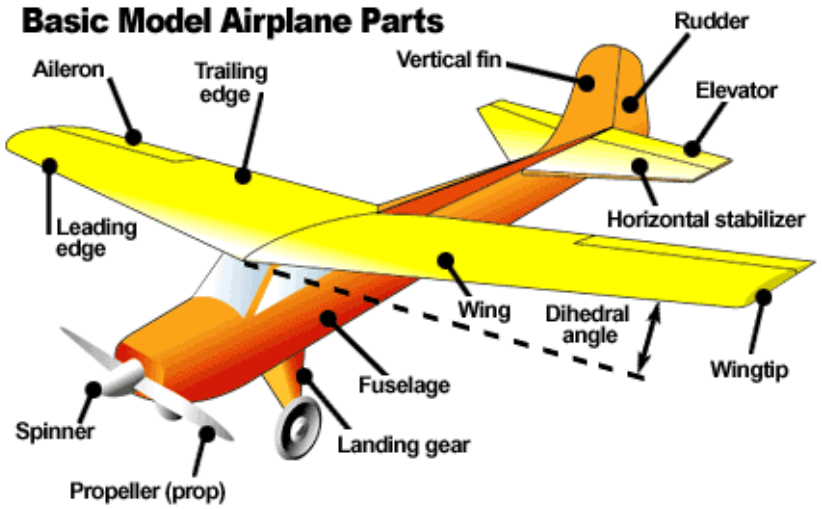
www.iso.org



What ISO 14001 is NOT !

- **NOT Focused strictly on regulatory compliance (regulatory is 1 of 3 focuses)**
- **NOT A process wherein you immediately address every single potential environmental impact**
- **NOT A performance standard**
- **NOT An occupational health and safety standard**

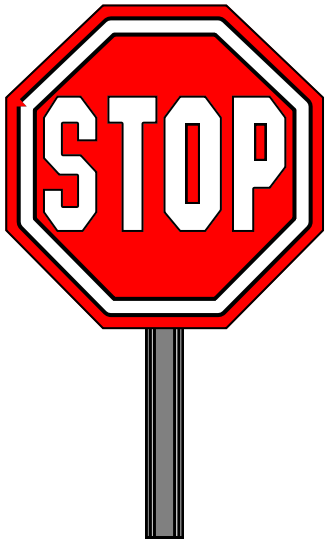
ISO 14001 is a Model



OTHER EMS MODELS

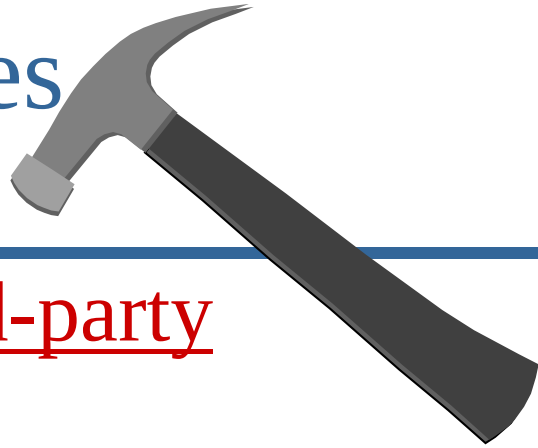
- **EMAS - Eco-Audit and Management Scheme for the European Commission**
- **Responsible Care by American Chemistry Council (most chemical companies migrating to RC-14001)**

List reasons for getting registered



1. _____
2. _____
3. _____
4. _____
5. _____

Registration Mandates



- **Ford -** Suppliers required to be third-party registered by **7/1/2003**
- **General Motors -** all suppliers implement an EMS by **12/31/2002**
- **DaimlerChrysler ….all suppliers …. by 12/31/2002**
- **Toyota -** obtain 3rd party certification to ISO 14001 by **12/31/2003**
- **Honda - … 2004 ...**

Does an EMS have to be ISO 14001 certified?

- Unless you are required by a mandate, NO

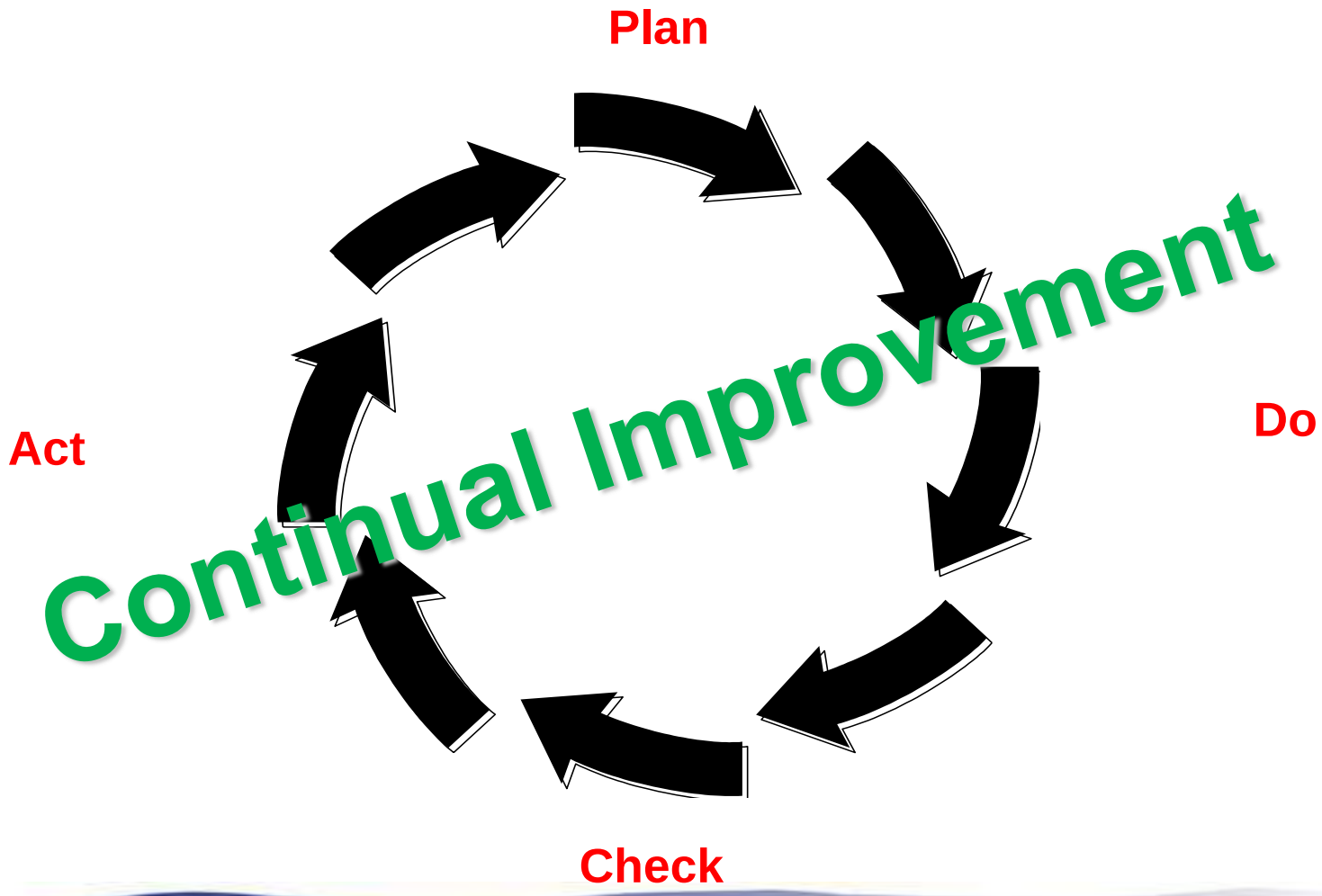
3rd party certification is:

- A way to ensure your EMS isn't forgotten about
- A confidential outside set of eyes to assist with systemic improvements

List some FUNCTIONS of an EMS

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

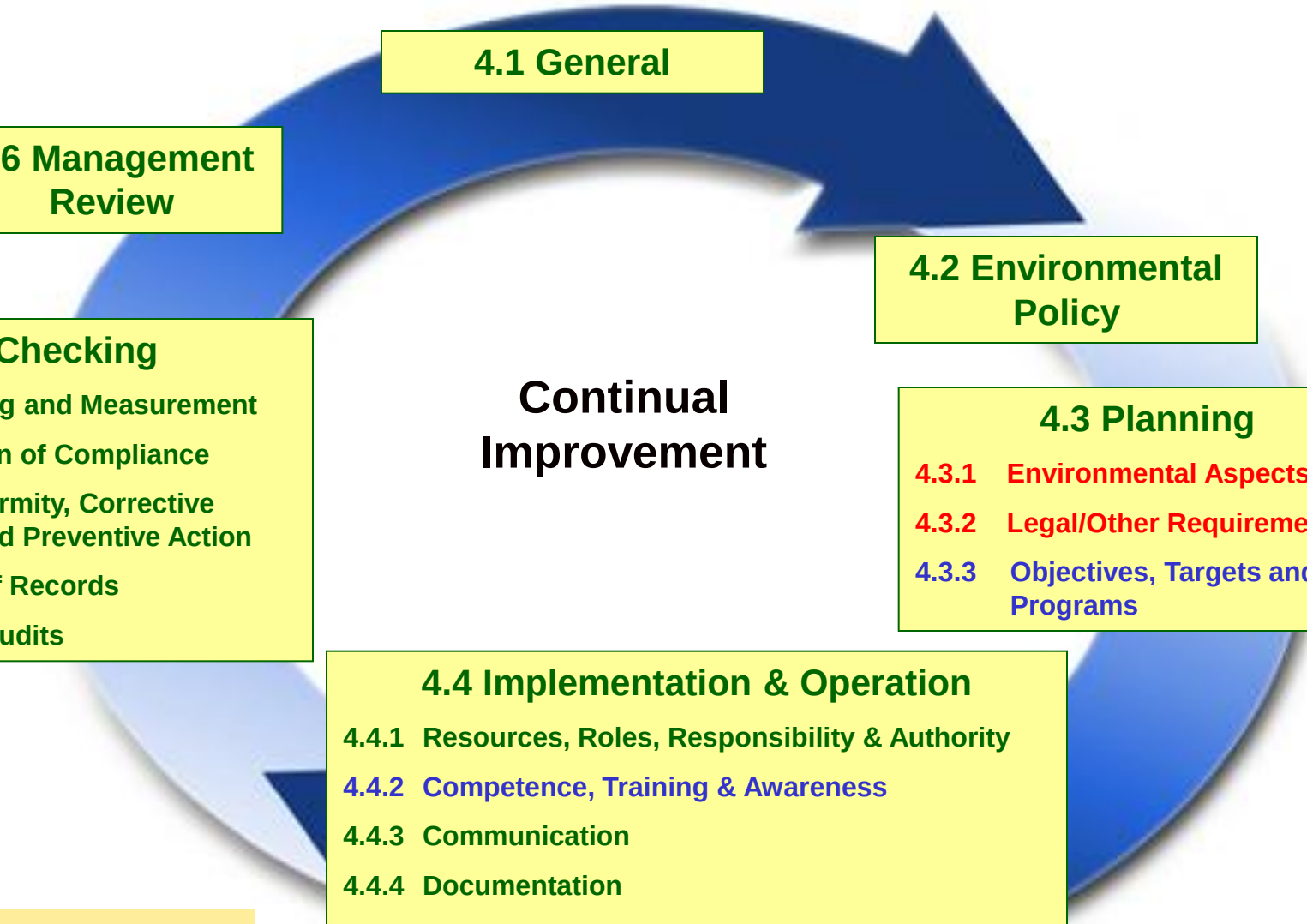
P-D-C-A Model of Continual Improvement



P-D-C-A Exercise Activity:

EMS PROGRAM CYCLE

ISO 14001 - 2004



4.1 General

4.2 Environmental Policy

4.3 Planning

- 4.3.1 Environmental Aspects
- 4.3.2 Legal/Other Requirements
- 4.3.3 Objectives, Targets and Programs

4.4 Implementation & Operation

- 4.4.1 Resources, Roles, Responsibility & Authority
- 4.4.2 Competence, Training & Awareness
- 4.4.3 Communication
- 4.4.4 Documentation
- 4.4.5 Control of Documents
- 4.4.6 Operational Control
- 4.4.7 Emergency Preparedness/Response

4.5 Checking

- 4.5.1 Monitoring and Measurement
- 4.5.2 Evaluation of Compliance
- 4.5.3 Nonconformity, Corrective Action and Preventive Action
- 4.5.4 Control of Records
- 4.5.5 Internal Audits

4.6 Management Review

Continual Improvement

Red = Identifying Env. Issues
Blue = Managing Env Issues

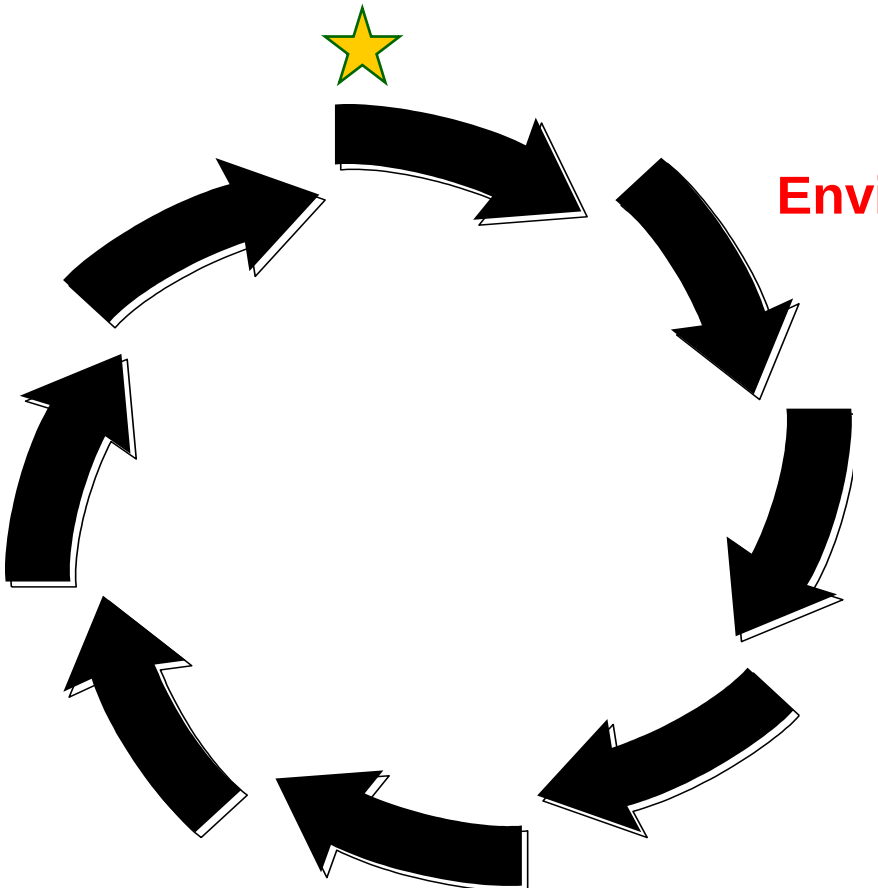
4.1 General Requirements

Define the scope of your EMS (what is covered)

- **Locations**
- **Exclusions**

EMS PROGRAM CYCLE

MANAGEMENT COMMITMENT



Environmental Policy

4.2 Environmental Policy

- “Heart” of the EMS
- Establishes the organization’s commitment
  - Prevention of pollution
  - Compliance with environmental regulations
  - Continual improvement
- Established by management
- Sets the framework for environmental objectives and targets
- Must be appropriate to the nature, scale and environmental impacts

Policy Slogans

NC Zoo

G ***Growth in knowledge and continued improvement***

R ***Reduction in use of resources and waste***

E ***Environmentally responsible and sustainable operation***

E ***Example to others***

N ***Necessary compliance with environmental laws and regulations***

NC Environmental Stewardship Initiative

Policy Slogans

Policy Slogans

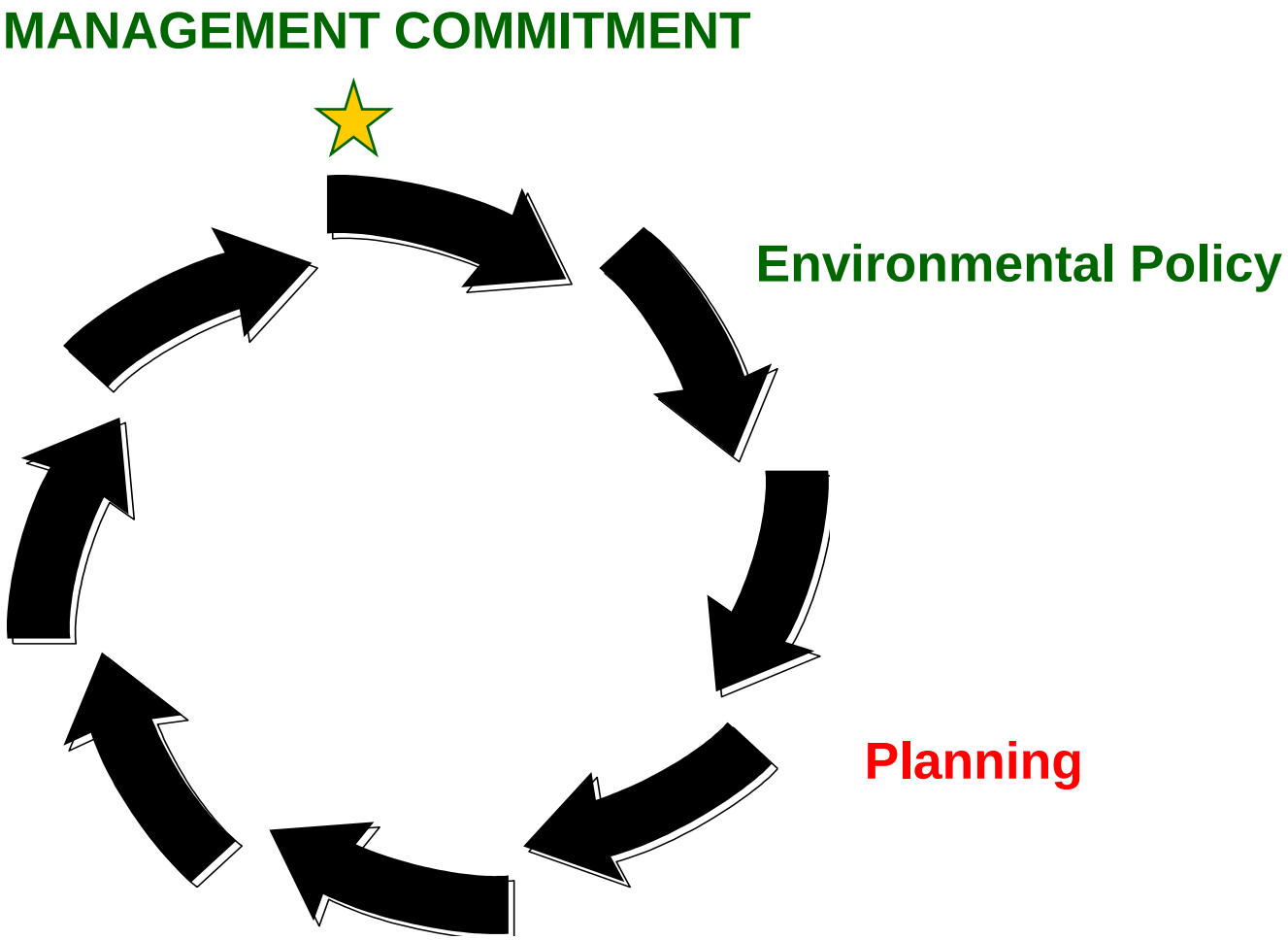
OUR ENVIRONMENTAL STATEMENT

Respect for the Environment

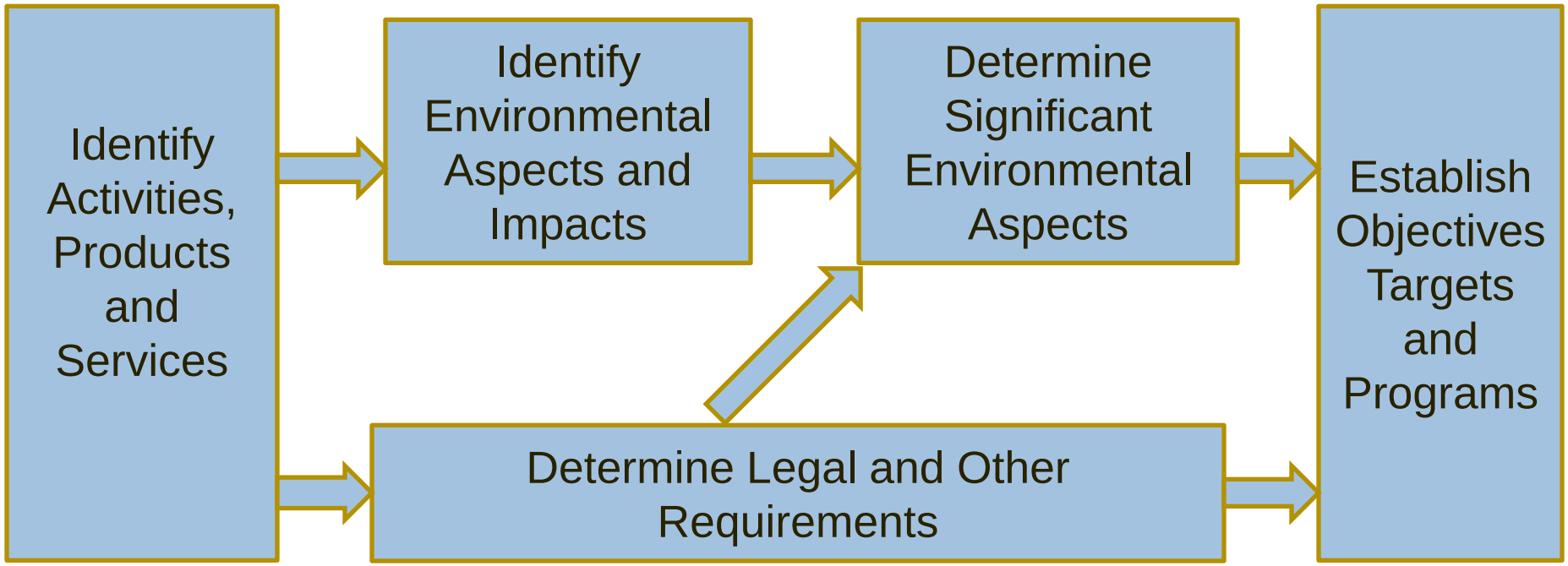
Reduce energy use
Eliminate wastes and emissions
Survey our processes
Plan for the future
Evaluate options
Comply with all laws and regulations
Treasure our employees, community and environment

Collins & Aikman

EMS PROGRAM CYCLE



Planning


Identify Activities, Products and Services
Identify Environmental Aspects and Impacts
Determine Significant Environmental Aspects
Establish Objectives Targets and Programs
Determine Legal and Other Requirements

4.3.1 Environmental Aspects

Environmental Aspect:

Cause

- Element of an organization's **activities**, **products**, and **services** (A/P/S) that can interact with the environment **(Waste Stream)**

Environmental Impact:

Effect

- Any **change** to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's **activities**, **products**, or **services** (A/P/S) -

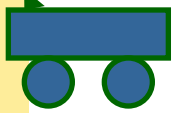
Environmental Aspects & Impacts

Air Emissions
Air Pollution

Energy Use
Fossil Fuel Depletion

Packaging
Land Fill Space

Metal Chips
Minerals Depletion



Stormwater
Water Pollution

Transportation
Air Pollution

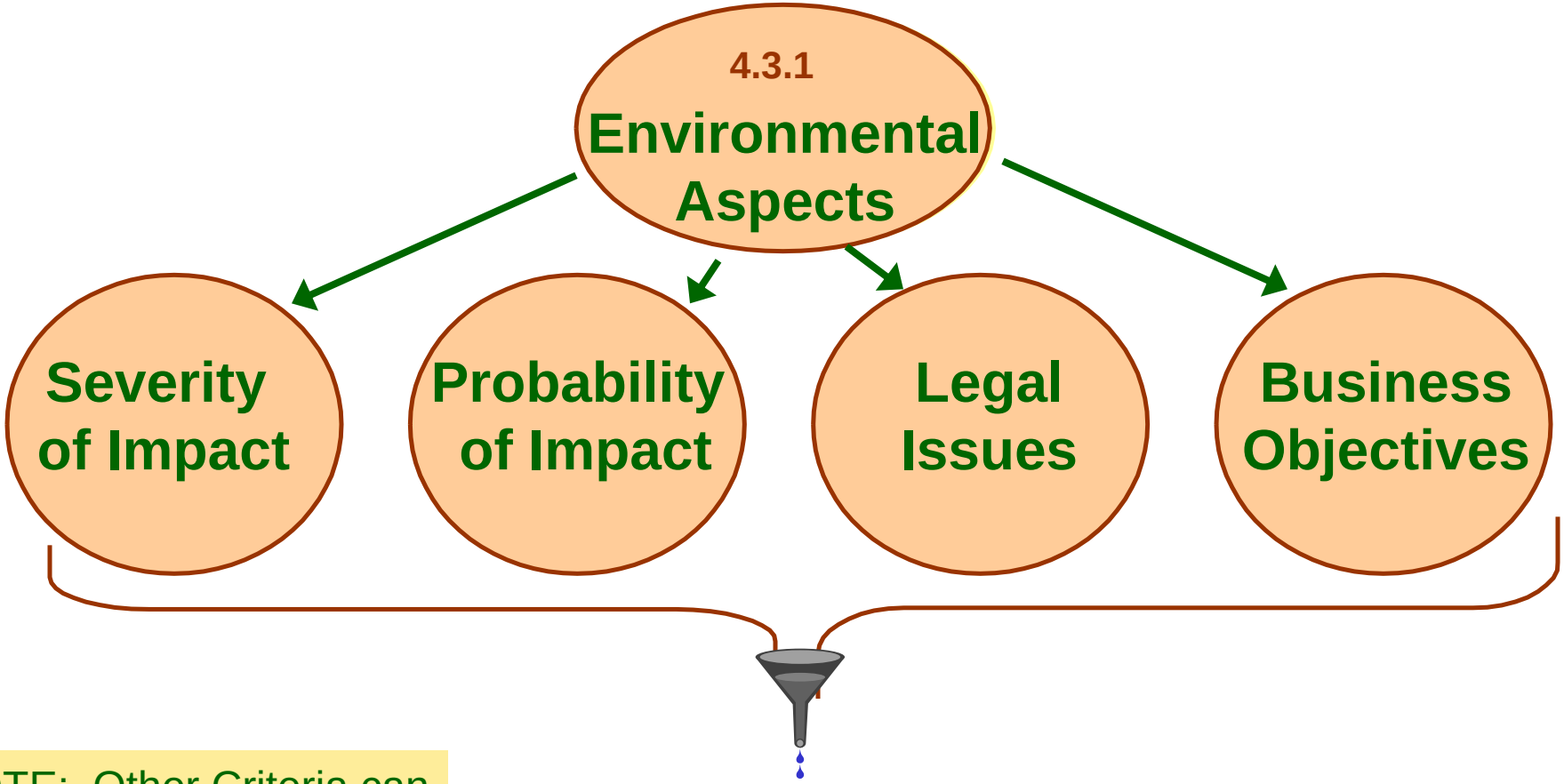
Wastewater
Water Pollution

Choose if its an Aspect (A) or Impact (I)

Remember:
An Impact has to include:
1. which resource (i.e. water)
2. type of change to that resource (i.e. pollution)

Column 1		Column 2		Column 3	
Type	Description	Type	Description	Type	Description
	• Delivery Truck Operation		• Damages flora/fauna		• oily rags storage and handling
	• Depletion of water resources		• Generating noise		• solvent emissions
	• Using propane in forklifts		• Boiler combustion		• water pollution
	• Bio-waste disposal		• Paint booth over-spray		• store/handle hazardous waste
	• excessive noise in community		• vehicle washing		• CFC emissions
	• Conservation of available landfill space		• chemical spillls		• increasing the river water temperature
	• used tires disposal		• store solid waste		• discharging waste water to the storm sewer
	• aluminum cans storage		• lawn care		• office cleaning
	• using styrofoam packaging peanuts		• forests depletion		• used batteries disposal
	• air conditioning		• paint booth emissions		• VOC emissions
	• facility electricity usage		• use of solvents		• asbestos removal
	• depletion of metal ore		• soil pollution		• chemicals & pesticide use
	• waste water effluent discharge		• oil leaks		• detergent use
	• ozone layer destruction		• erosion of hillside		• PCB disposal
	• operating a fossil fuel fired boiler		• waste water discharges		• trash disposal
	• generating metal scrap		• heavy metals disposal		• community degredation
	• endanger human health		• depletion of arabian oil		• water usage in the plant
	• end of product life (disposal method)		• indoor air quaity degredation		• employee exposure
	• paper usage		• used antifreeze disposal		• degrading facility appearance
	• used filters disposal		• freon 12 loss		• beautifying the community
	• disposal of oil		• storage of oil and gasoline		• sanitary sewer discharge
	• landscaping		• water depletion		• Depletion of available landfill space

Significant Aspects

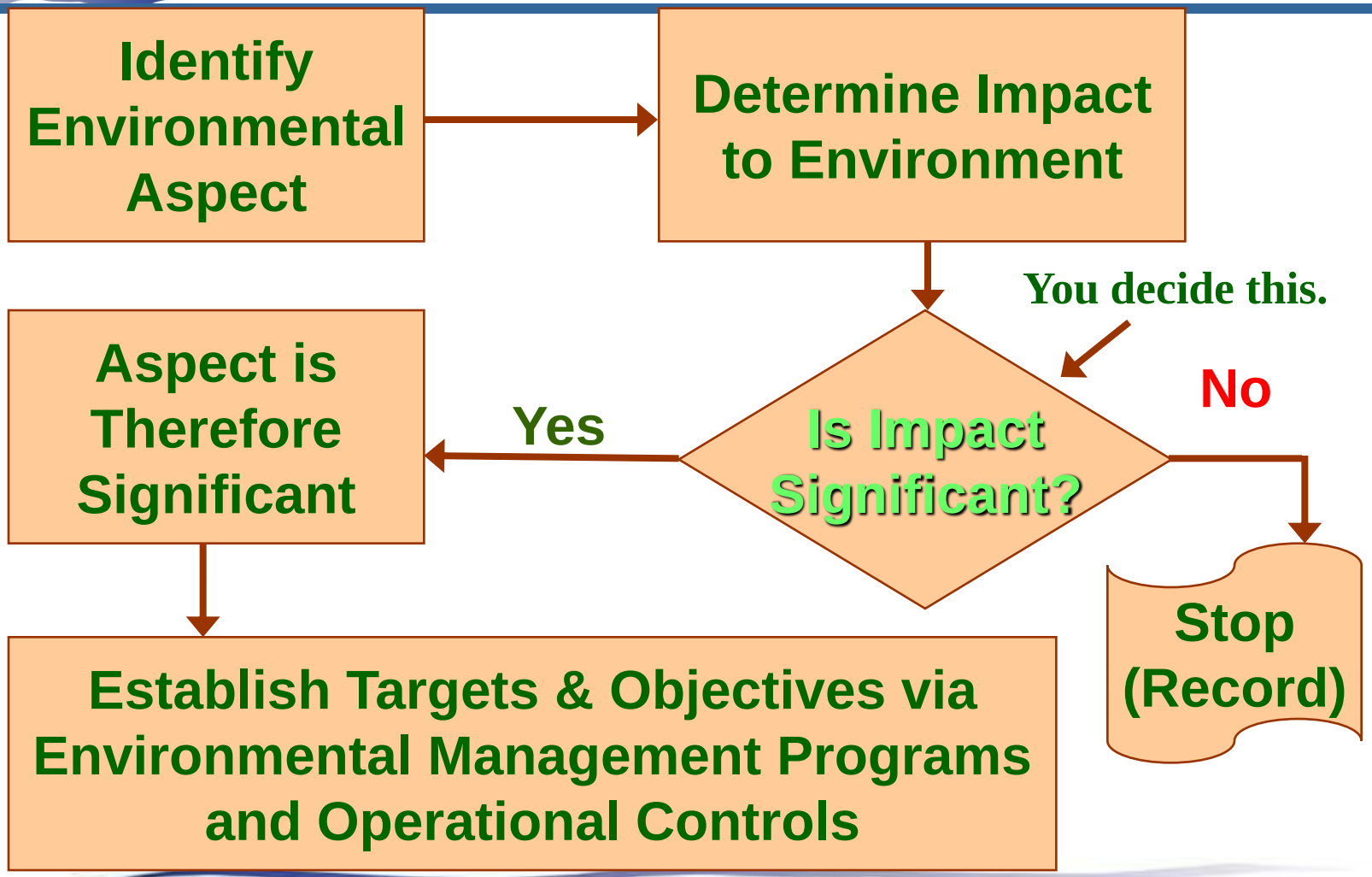


NOTE: Other Criteria can be used as well

4.3.1 Identifying Significant Environmental Aspects

Activity	Aspect	Environmental Impact	Severity	Probability	Legal Issues	Stakeholders's Concerns	Business Concers	Numerical Score	Significant Aspect	
Boiler Operation	Air Emissions	Air Pollution - NOx	2	4	5	4	5	**20**	**Y**	R E
	Fuel Consumption	Natural Resource Depletion	2	3	3	2	1	**11**	**N**	
	Boiler Water Blowdown	Water Pollution	3	4	3	4	4	**18**	**Y**	R E V
	Water Consumption	Natural Resource Depletion	2	2	3	3	1	11	**N**	

Identifying and Evaluating Environmental Aspects/Impacts

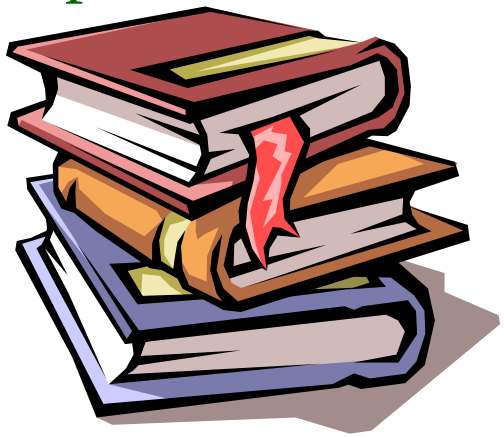


4.3.2 Legal and Other requirements

- Identify Requirements
- Have access to them
- Determine how they apply to its aspects

- Write a Level 2 Procedure covering this process

NOTE : DOES NOT HAVE TO BE LISTED FOR EACH ASPECT



Example Legal Requirements

Legal Req't	Code	Aspect
Hazardous Waste Management	40 CFR 261	Haz Waste Disposal
Air Quality Permit	15A NCAC 2Q.0100	Air Emissions
Storm Water Exclusion	15A NCAC 2H.0126	Stormwater Run-off
Municipal Wastewater	Thomasville Code	Wastewater Discharges

Other Requirements

Other Req't	Code	Aspect
Corporate Environ. Policy	Company Web Site	Could be several
Customer Manadate for ISO	Customer Letter	Could be several
Pallet Nemotode Treatment	Geographical Request Letter	Shipping
Customer Prohibition of Toxics	Customer Letter	Raw Material Usage
ESI Annual Report	ESI Application	Could be several

ISO 14001 Req’ts for Legal Issues

4.2 Environmental Policy	Demonstrate a Commitment to Compliance
4.3.2 Legal & Other	Identify Your Legal and Other Requirements
4.3.2 Legal & Other	Have Access to the Code
4.3.2 Legal & Other	Determine How They Apply
4.3.3 Objectives & Targets	When establishing O & T, shall consider L & O
4.5.2 Compliance Evaluation	Determine Compliance
4.6 Management Review	Updates (developments) in Legal Req’ts

Legal and other - it can cost you ?

- After discovering non compliances – you are obligated to correct them OR it's a willful violation ($$$$)
- Need to generate records to demonstrate compliance ($$)
  - i.e., Refrigerants for HVAC. If adding refrigerant, need follow-up visit from maintenance vendor – to verify no leaks occur

4.3.3 Objectives, Targets & Programs

Objectives: Overall Goals

Targets: Detailed performance requirement that helps you achieve the objective.

Programs: Due Date, Responsible Party and Detailed Plan (means)

Example Environmental Management Program

Project Plan Title:	Noise Minimization	Revision Date:	2/20/2003

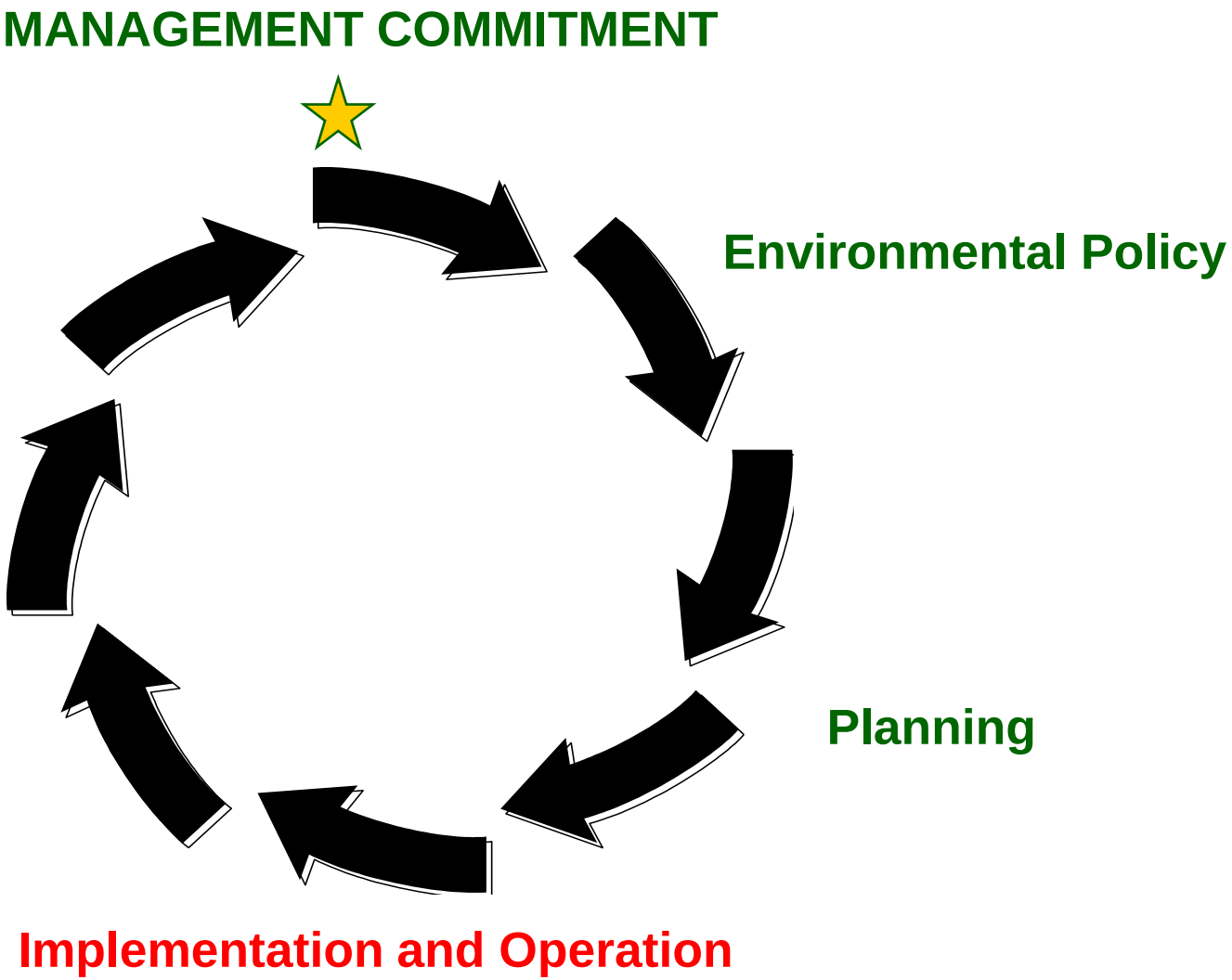
Activity/ Product or Service	Aspect	Impact(s):	Significant (S) / Legal (L) / Emergency (E)
Maint. Work Area	Noise (from Compressor)	Environmental Noise	S/L

Objective:	Decrease noise to below 80 dBA

	Target(s)	Responsibility		Date Due	Date Completed
		Employee	Title		
1	Build wall around work area.	Roy	Maintenance	Jun-03	
2	Purchase low noise compressors.	Roy	Maintenance	Aug-03	

Task #	Other Tasks - Description	Responsibility		Date Due	Date Completed
		Employee	Title		
1 - 1	Qet Quote on Wall				
1 - 2	Select Vendor, Get apporved and Award Bid				
1 - 3	Build Wall				
1 - 4					
2 - 1	Qet Quote on Compressors				
2 - 2	Select Vendor, Get apporved and Award Bid				
2 - 3	Install Compressors				
2 - 4	Investigate replacing all other "High Noise" Compressors				

EMS PROGRAM CYCLE



Implementation and Operation

Organization & Accountability	Capabilities & Communication	Controls
Resources, Roles, Accountability and Authority	Competence, Training and Awareness	Documentation and Control of Documents
		Operational Controls
	Communication	Emergency Preparedness and Response

Implementation Elements

4.4 Implementation

4.4.1 Resources, Roles, Responsibility & Authority

4.4.2 Competence, Training & Awareness

4.4.3 Communication

4.4.4 Documentation

4.4.5 Control of Documents

4.4.6 Operational Control

4.4.7 Emergency Preparedness/Response

4.4.1 Roles, Roles, Responsibilities and Authorities

- Roles, responsibilities, and authorities must be
  - defined , documented, communicated
- Management must provide essential resources:
  - People, skills , technologies, infrastructure, & money
- A Management Representative(s) must be designated (appointed by top management)
- MR must report on EMS and make recommendations for improvement to Top Management

Roles & Responsibility Matrix – An Example

Title	Responsibilities
Plant Manager	Establish overall direction, maintain Environmental Policy
Environmental Manager (MR)	Maintain Environmental Policy, monitor overall EMS performance, ensure EMS conformance
Production Supervisors	Develop objectives, targets and programs; Implement programs
Waste Disposal Operators	Collect and handle waste within the plant
Waste Treatment Operators	Operate the wastewater treatment plant
General Maintenance	Perform maintenance on production and waste handling and treatment equipment
Materials Manager	Track and control incoming chemical supplies
Human Resource Manager	Establish and maintain environmental training program; maintain training records
Receptionist/Administration	Logs environmental communication from interested parties and directs to appropriate responder

4.4.2 Competency, Awareness & Training

- Demonstrate Competency around Significant Aspects
  - Tests (CHMM, PE, etc)
  - Supervisor Sign-offs (Work Instructions, etc)
  - Certifications (Fork Lift Training)
- Identify Training Needs
- Conduct Trainings (Training records)
  - ISO 14001 Awareness
  - Emergency Evacuations
  - SPCC/ Stormwater, etc.

Example Training Needs Table

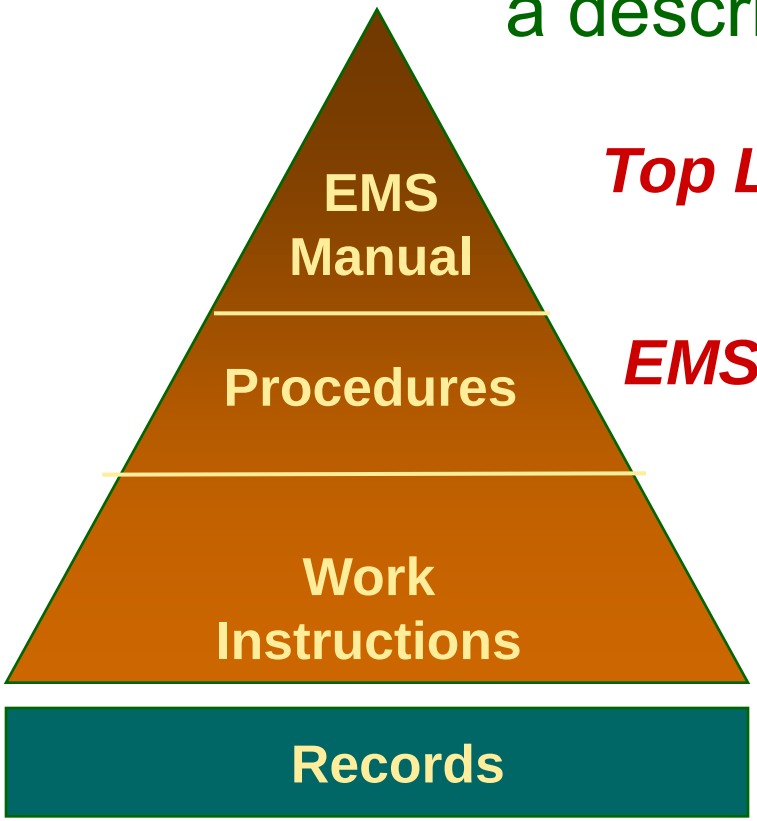
Department / Job Position's) OR Employee	Training Requirement							
	ISO 14001 Awareness	Evacuation plan	Spill Prevention & Response	SPCC Required Training	Hazardous Waste	DOT Haz Mat Shipping	Operational Controls	Internal Auditing
Top Management	x	x						
Clerical/Admin	x	x						
Production Supervisors	x	x	x	x			x	
Maintenance Supervisor	x	x	x	x	x		x	
Quality Management	x	x						
Machining Operators	x	x	x					
Assembly	x	x	x					
Laboratory	x	x	x					
Testing	x	x	x					
Maintenance / Facility	x	x	x	x				
Shipping and Receiving	x	x	x	x	x	x		
EMS Internal Auditors	x	x	x					x
FREQUENCY OF TRAINING	Once	1 / yr	1 / yr	1/3 yr	1 / yr	1 / yr	Once	Once

4.3.3 Communication

- Develop procedure for
  - Internal communication
  - External communication
  - Decide on communicating significant aspects externally

4.4.4 Documentation

No Manual is required, But … You need a description of the main elements …



Top Level Document (Main Elements)

EMS Procedures (Aspects, Training, etc)

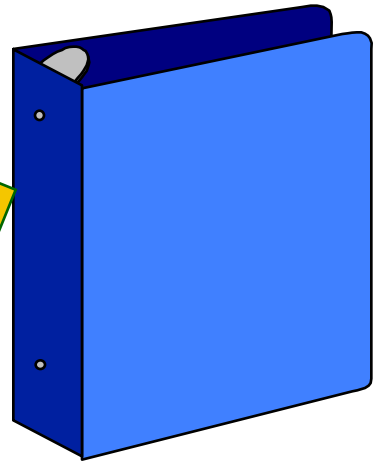
Waste Disposal, Permit Compliance, etc

Evidence of what you did (reports, (manifests, list of aspects, etc)

ISO 14001 – Level 2 Procedures

- Identifying Environmental Aspects *
- Legal & Other Requirements
- Setting Objectives, Targets, Programs *
- Environmental Training
- Environmental Communication
- Document Control
- Operational Controls
- Contractor Management
- Emergency Response Planning
- Monitoring & Measuring
- Compliance Evaluation
- Corrective & Preventive Action
- Environmental Records
- Internal EMS Audit
- EMS Management Review

* Sometimes combined into one procedure



Red

Add to 9000 Procedure

Required

Recommended

4.4.5 Document Control

Documents must be:

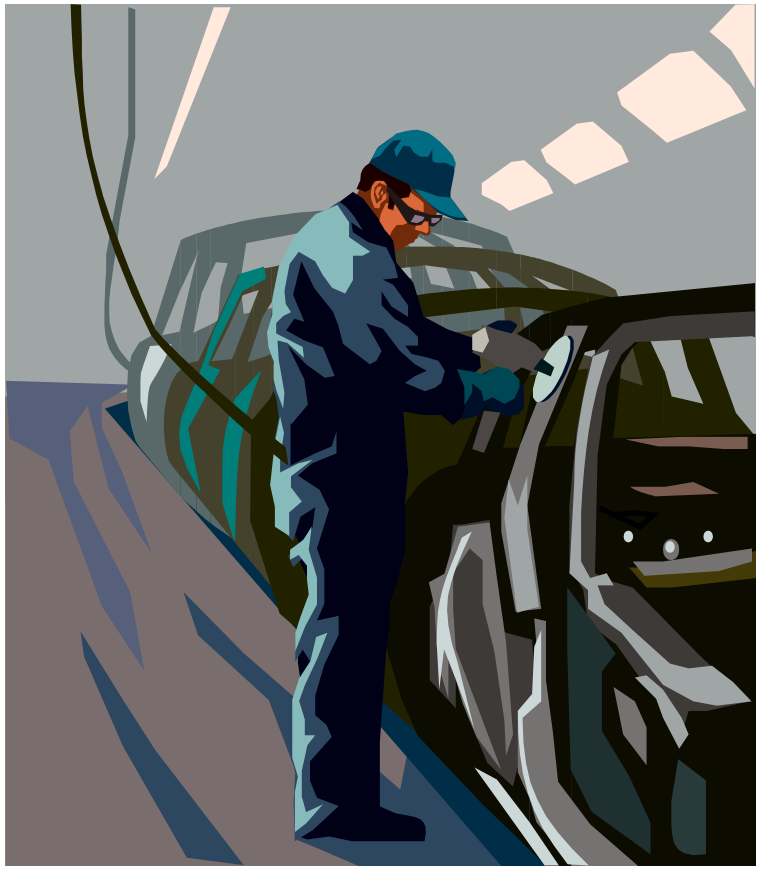
– approved and authorized
– periodically reviewed and revised
– have changes identified
– current versions are available
– obsolete documents identified or removed
– External Documents – distribution controlled

4.4.6 Operational Control

Identify those operations and activities associated with significant environmental aspects that need work instructions

i.e.,

- Haz Waste Storage
- Boiler Operation
- Paint Booth Maintenance
- Storm Water Sampling
- Air Permit
- Etc.



Operational Controls – Contractors and Suppliers

Include activities associated with significant aspects of goods and services used by the organization;

- relevant procedures must be communicated to suppliers and contractors

c)…. Examples Requirements to Communicate

Grounds keeping	No pesticides allowed
Air Conditioning/ Chiller servicing	Service technicians must show proper certification to handle Freon
On-site Construction	Contractors must follow our facility's liquid waste disposal procedures
Shipping (trucking, transportation, bulk delivery, labeling)	All Shipper's must check in with the Shipping/Receiving Dept. for instruction on our bulk chemical unloading procedures

Operational Controls Form

Significant Aspect	Operational Controls / Work Instructions	Affected Employees	Affected Contractors & Suppliers	Key Characteristics (Monitoring Parameters)	Calibrated Equipment or Certifications	Operational Control Document Description / Format	Operational Control Records
Waste Water Discharge	Dye Formulas	Lab Technician	chemical suppliers	Permit violations	- Flow Meter, - Wastwater Lab Certification	Formulas in Computer	Completed dye orders
	Finishing Formulas	Washline Operator	chemical suppliers			Procedure A	Procedure A
	General Wastewater Prohibitions	All Employees	IH Consultant			Sewer Use Ordinance	Training Record
	Wastewater Permit	Engineering Services	Env. Consultant			Permit	Permit Required Records
	Affected Equipment Maintenance	Engineering Services	Wastewater Contractor			Relevant PMs	Relevant PMs Records
Air Emissions - Dryer	Topical Finishing Formulas	Operator	chemical suppliers (dyes, etc)	Permit Violations	None	Approved formula attached to the tanks	None
	Backsize Formulas	Operator	chemical suppliers (dyes, etc)			Procedure B	Procedure B
	Air Permit	Engineering Services	None			Air Permit	Permit Required Records
	Affected Equipment Maintenance	Engineering Services	None			Relevant PM's	Relevant PM's Records

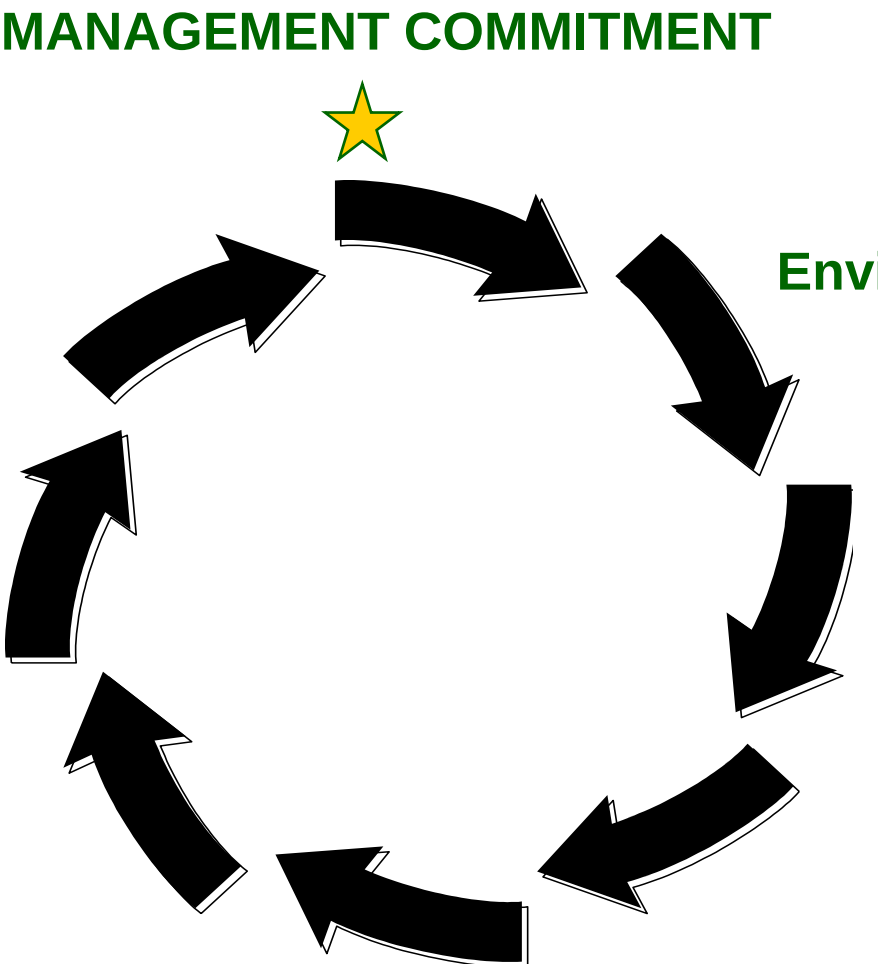
Emergency Preparedness

- **ID potential emergencies and develop response plans**
- **Include plans for mitigating “environmental impacts”**
- **Test emergency plans (fire drills)**

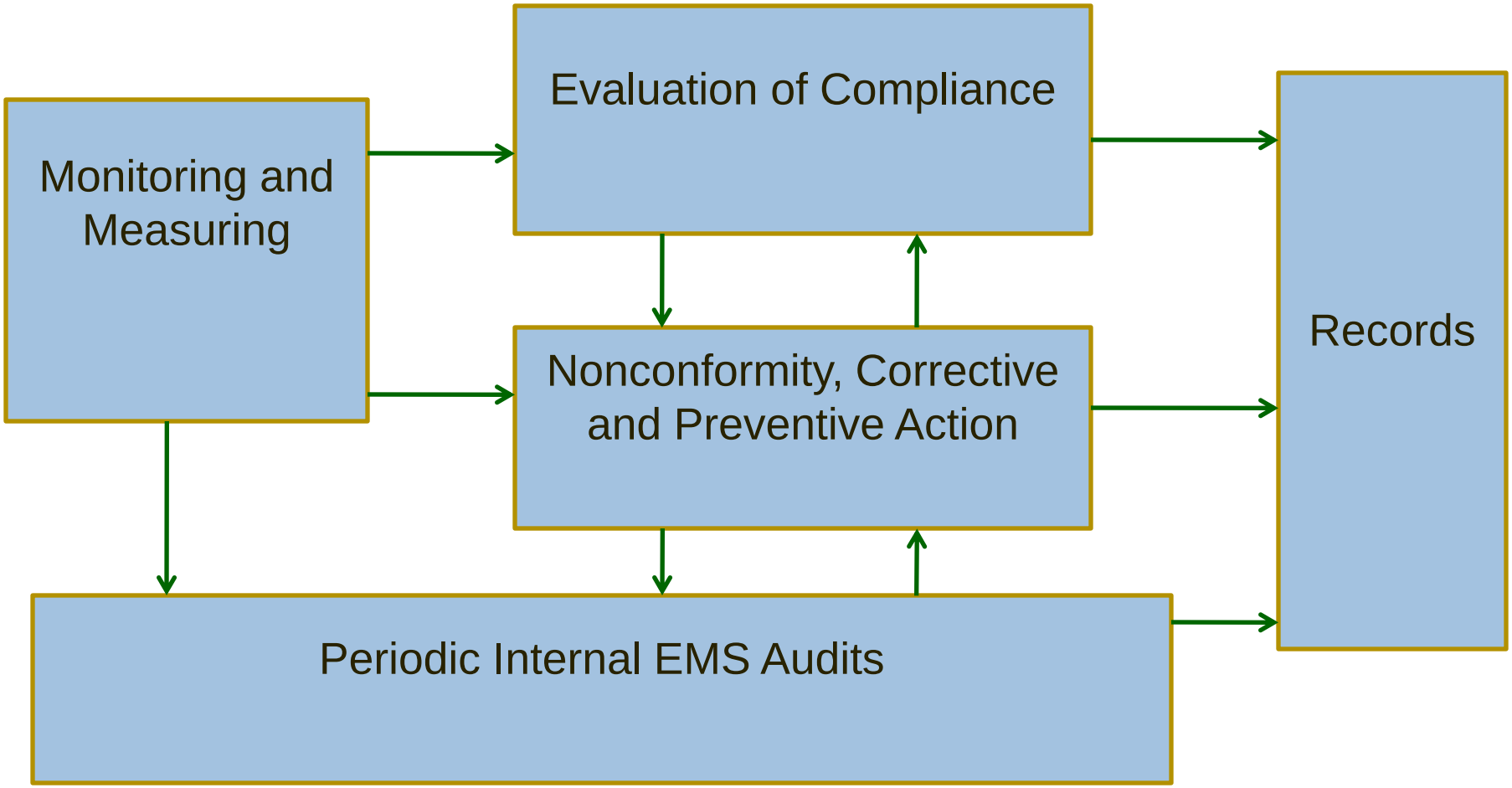
Example of List of Potential Emergencies

#	Potential Emergencies or Accidents	Potential Impact	Emergency Response Plan to be Used
1	**Floods**	Water Pollution from vehicles and machines	EWI-001
2	**Hurricanes**	Loss of Human Life	EWI-001
3	**Tornadoes**	Loss of Human Life	EWI-001
4	**Fire**	Air Pollution, Loss of Human Life	EWI-002
5	**Chemical Spills-small**	Employee Exposure (irritants mostly)	EWI-003
6	**Chemical Spills-large**	Employee exposure, Water Pollution	EW-003
7	**Waste Water Tote Spills**	Soil / Ground Water Contamination.	EWI-004

EMS PROGRAM CYCLE



Checking and Corrective Action



Checking Elements

4.5 Checking

4.5.1 Monitoring and Measurement

4.5.2 Evaluation of Compliance

4.5.3 Nonconformity, Corrective Action and Preventive Action

4.5.4 Control of Records

4.5.5 Internal Audits

Summary – What needs Monitoring?

- monitoring related to significant aspects (key characteristics)
- criteria listed in operational controls
- progress & conformance with objectives and targets
- monitoring required by regulations
- Others

"You can't manage it if you don't measure it"

Summary – What needs Calibrating?

- Only where data accuracy warrants it
- On equipment which the manual recommends periodic calibration
- Examples:

Scales	pH meter
Air/water flow meter	Thermometer
Natural gas meter	Electric meter
CO meter	O_2 meter

4.5.1 Monitoring and Measurement

Examples

Objective	*Target*	*Operational Control*	*Performance Monitoring*
Maintain compliance with EPA Air Permit	< 200 lbs hex chrome per week	Air Scrubber	Monitor & record daily air flow rate and calculate emissions
Reduce hex chrome emissions	< 150 lbs per week	Perform routine and preventive maintenance on air scrubber	Record maintenance activities in log book
Maintain compliance with City Wastewater Permit	< 1 mg/L Zinc average monthly conc.	Wastewater Treatment equipment	Monitor & record daily zinc concentrations

Monitoring Calendar ???

COMPLIANCE ITEMS ***Reports***	Employee Responsible	In shaded area (Month Due), enter specific Date competed J	F	M	A	M	J	J	A	S	O	N	D
Hazardous Waste - Waste Minimization Report	EC												
Chemical Inventory Submittal to Fire Dept.	EC												
Tier II Submittal to SERC, LEPC and Fire Dept	EC												
COMPLIANCE ITEMS ***Emergency Drills & Testing***	**Employee Responsible**	**In shaded area (Month Due), enter specific Date competed** **J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	
Emergency Contingency Plan - Evacuation Drills	EC												
Spill Response Drills/Training	EC												
Fire Extinguisher Drills/Training	EC	Monthly Visual Inspection, Annual Fire Dept Approval											
Drinking Water Back Flow Preventor Checks	EC												
COMPLIANCE ITEMS ***Inspections***	**Employee Responsible**	**In shaded area (Month Due), enter specific Date competed** **J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**	**S**	**O**	**N**	**D**
Waste Accumulation/Storage Areas	EC	Weekly											
SPCC Related Items	EC	Semi-Monthly											
Annual Asbestos Inspection	EC												
NON-COMPLIANCE ITEMS ***Miscellaneous***	**Employee Responsible**	**In shaded area (Month Due), enter specific Date competed** J	F	M	A	M	J	J	A	S	O	N	D
Annual Recertification of Non-Special Waste	EC												

4.5.2 – Evaluation of Compliance

- With Legal Environmental Requirements
- With Other Requirements (customer Environmental Requirements)

NOTE: No real guidance on frequency of compliance audits

Example Compliance Audit Report

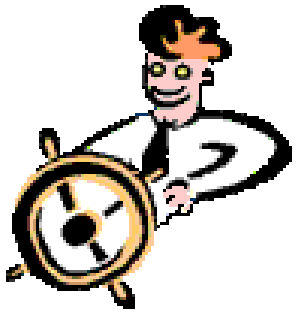
Company A COMPLIANCE EVALUATION - MARCH 2004					
Requirement Title:	**Emergency Planning and Community Right to Know (EPCRA)**			**3/31/2004**	
Requirements:		**Citation**	**Requirement Detail and Comments**	**Evidence of Compliance**	
				Requirement Fulfilled ?	**Comments**
EPCRA 311 & 312 - CHEMICAL INVENTORY, TIER II REPORTS and NC RTK Laws					
5	Establish Chemical Inventory Reporting - For Hazardous Chemicals stored on-site in amounts greater than 55 gal or 500 lbs:	NCGS Chapter 95-191 (see below)	- Update inventory annually or upon sig. Change	In-Compliance	Chemical Inventory is on this spreadsheet (Inventory page) - as it appeared at the time of this audit - and is maintained by EC (Maintenace Supervisor)
6	Maintain (Update) Inventoryat least Annually	NCGS Chapter 95-191		In-Compliance	Last Update was in Fall of 2003
7	Submit to Fire Chief Inventory & Emergency Contact Person (NCGS 95-194	NCGS Chapter 95-194 (see below)		**Out-of Compliance**	**Chemical Inventory Not Submitted to Fire Department, yet**
8	EPCRA-311: For Chemicals stored in amounts greater than the minimum threshold levels - Submit a list of MSDS / OR chemical inventory to: - NCERC (NCDEM) - LEPC - Local Fire Dept	- 40CFR370.21	One-time submittal and upon significant changes of inventory	Not Applicable	No OSHA Hazardous Chemicals or EPCRA EHS's are stored in amounts greater than the TPQs (see inventory sheet)
9	EPCRA-312: For Chemicals stored in amounts greater than the TPQs, Submitt Tier II Reports to: - NCERC (NCDEM) - LEPC - Local Fire Dept	40CFR370.25 (a)	Need to Submit Tier II for the affected chemicals - annually (due 3/1 of every year)	Not Applicable	

Other Checking Elements

- 4.5.3 Nonconformity, Corrective Action and Preventive Action
- 4.5.4 Control of Records
- 4.5.5 Internal Audits

4.5.3.2 – Nonconformity, Corrective & Preventive Action

- Mitigate environmental impacts (immediacy)
- Determine causes
- Correcting **actual** nonconformities
- Preventing **potential** nonconformities



This may require:

- New or Modified EMS Procedures

4.5.4 – Records

Keep them

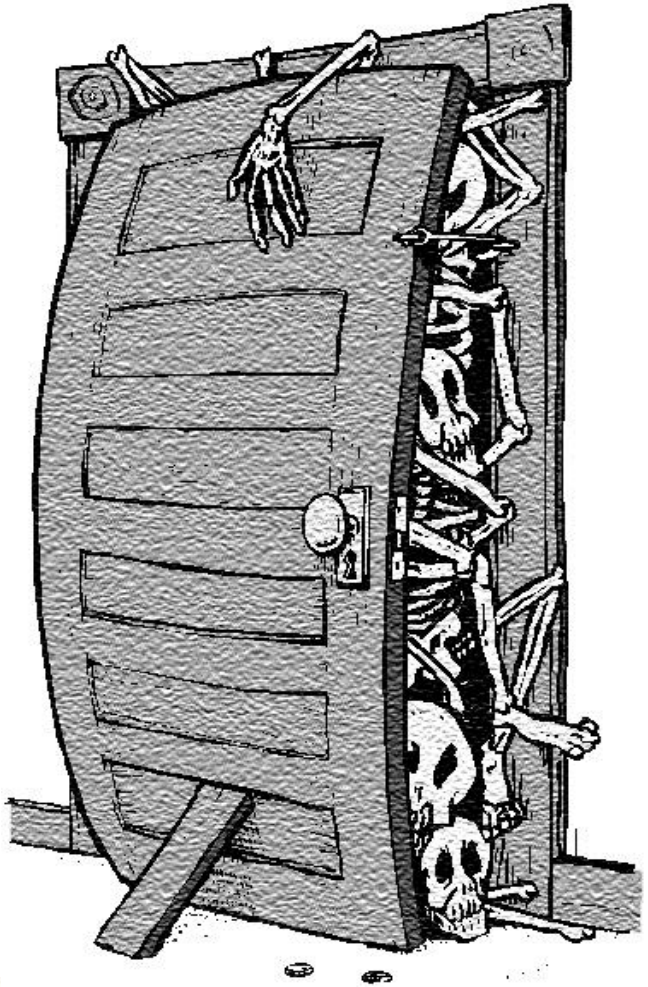
4.5.5 – Internal Audit

To Determine if EMS meets:

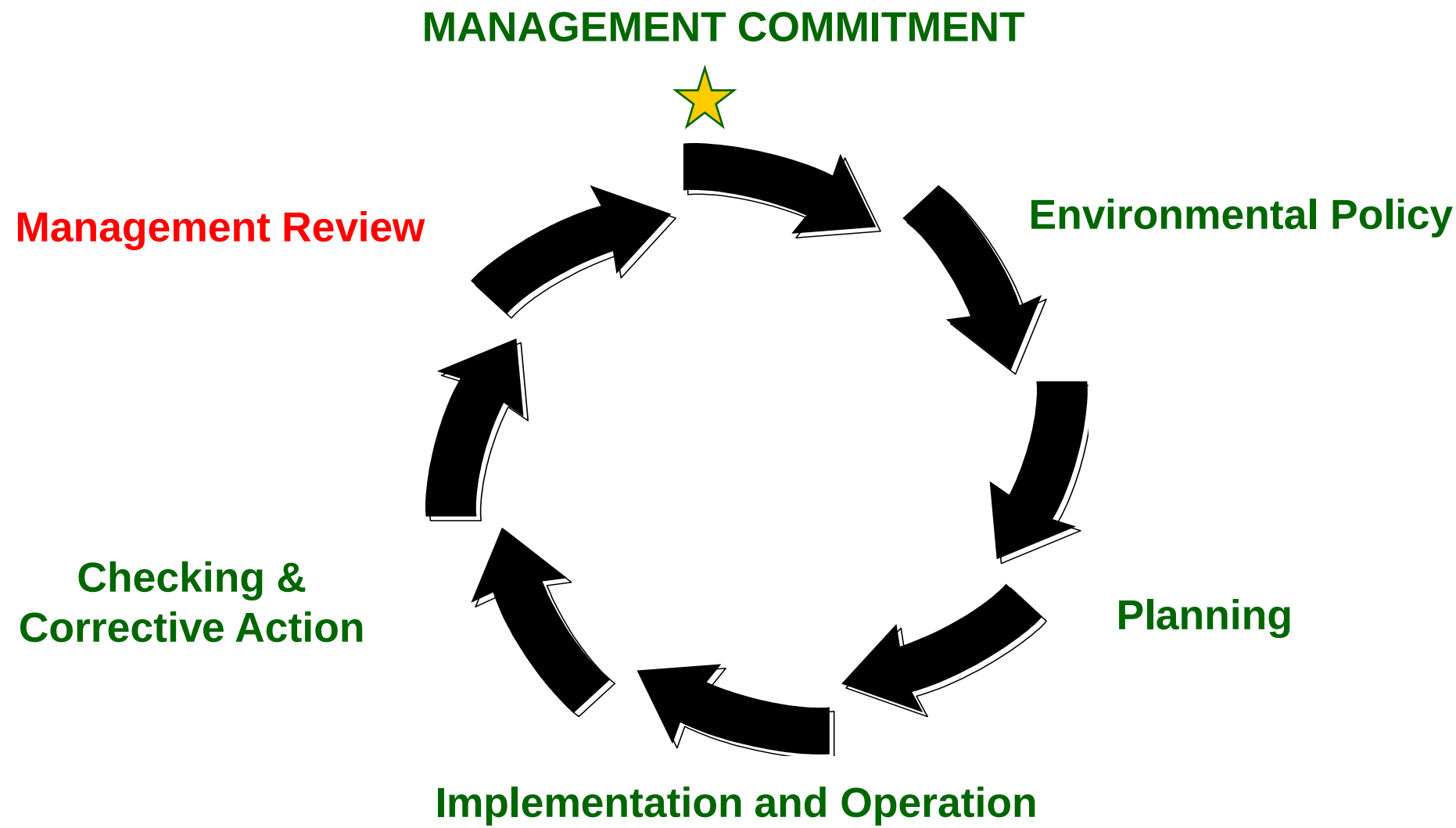
- ISO 14001
- EMS Procedures
- Policy & Objectives

NEED:

- Audit Schedule
- Audit Procedure
- Trained Auditors (typically)



EMS PROGRAM CYCLE



Management Review

Take account of:

- •audit findings
- •progress 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

4.6 – Management Review

- Involve Top Management
- Determine if EMS is
  - Continuingly Suitable
  - Adequate
  - Effective
- Determine if EMS needs to be CHANGED

NEED:

- Management Review Schedule
- Documented Minutes

4.6 – Management Review - Agenda

- Audit results
- Compliance Evaluations
- External Communications (complaints)
- EMS Performance (Sig Aspects)
- Objectives Status
- CARs and PARs Status
- Follow-up Actions from Previous MRs
- Changing Circumstances (esp Legal Reqt's)
- Recommendations for Improvements (Man Rep)

Which 3 ISO 14001 elements identify what environmental issues will be managed?

1. _____

2. _____

3. _____

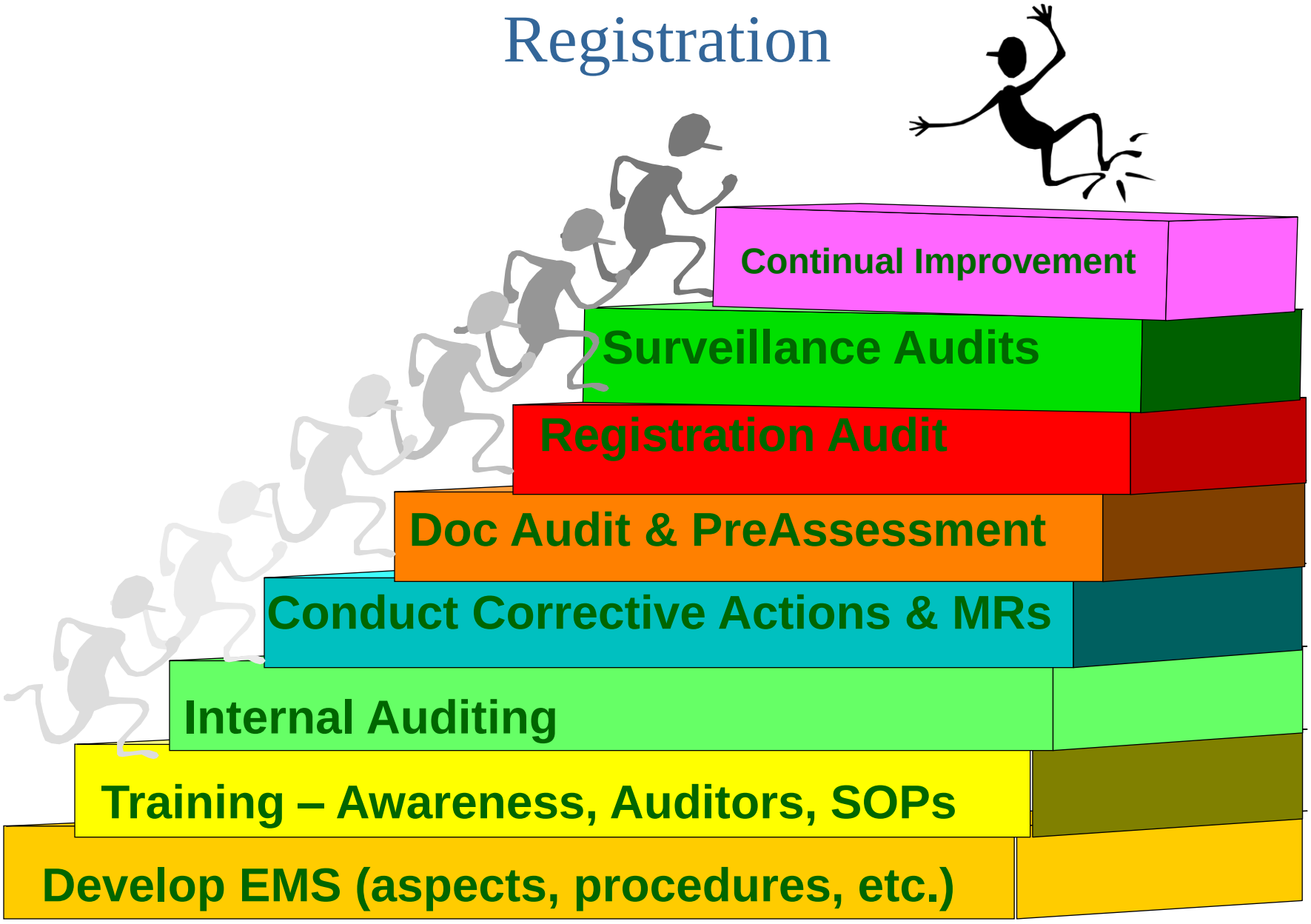
Which ISO 14001 elements manage significant aspects?

- _____
- _____
- _____

What performance results will you be held accountable for?

- _____
- _____
- _____
- _____
- _____

ISO 14001 EMS Development & Steps to Registration



ISO 14001 vs ISO 9001

25 to 40% ?

ISO 14001	ISO 9001
• Environmental Policy	• Quality Policy
• Training/Awareness	• Training
• Document Control	• Document/Data Control
• Monitoring/Measuring	• Inspection/Test/Control
• Nonconformance/C.A.	• Control/Noncon. Product
• Records	• Control of Quality Rec.
• EMS Audit	• Internal Quality Audits
• Management Review	• Management Review

Module Timing?

Module 2 – Policy, Scope, & Aspect and Impact Identification and Ranking

Module 3 - Operational Control and Monitoring and Measurement

Module 4 - Establishing Objectives and Targets/Environmental Management Programs

Module 5 - Corrective and Preventive Action, Compliance with Legal & Other Requirements and Environmental Management System Auditing

Module 6 - EMS Internal Auditor Training (Location TBD, ESI member facility)

NC Environmental Stewardship Initiative

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