



U.S. ARMY



# USAG Fort Buchanan

## Sustainability and Environmental Management System (SEMS) Training for Environmental Compliance Officers (ECOs)



*Sentinel of the Caribbean*



# Topics

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- Environmental Management and Sustainability
- The basics of a Sustainable Environmental Management System (SEMS)
- ISO 14001 Model
- Key Elements of Fort Buchanan's SEMS

**Fort Buchanan is committed to demonstrating leadership in environmental management ...**

**by integrating environmental accountability into day-to-day decision-making and long-term planning processes, across all missions, activities, and functions.**



# Sustainability



*“Meets the needs of the present without compromising the ability of future generations to meet their own needs.”*



# Sustainability Commitment

“The US Army Garrison Fort Buchanan is committed to protecting its natural, cultural and human resources, promoting pollution prevention through continual improvement of environmental management technologies, implementing energy and water efficient controls and complying with all applicable laws, regulations and Presidential Executive Orders.”

## \* Fort Buchanan's Policy Memorandum 23



# A Sustainable Army Simultaneously:

- Meets current as well as future mission requirements worldwide
- Safeguards human health
- Improves quality of life
- Enhances the natural environment

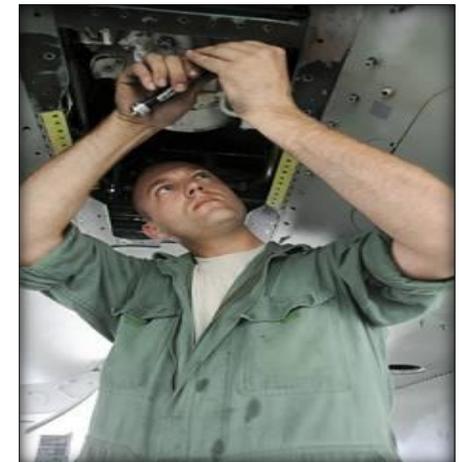
– *The Army Strategy for the Environment, October 2004*





# What is SEMS?

- SEMS is a well-defined management structure designed to address the impacts of an organization's activities, products, and services on the environment.
- It helps protect the long-term viability of the mission based on current actions and impacts.
- SEMS incorporates environmental considerations into day-to-day operations throughout the organization and is designed to promote continual improvement.





# SEMS Supports Mission

- Integrates mission priorities with environmental considerations
- Focuses resources towards mitigating impacts with the greatest potential to impact mission readiness
- Fosters compliance and stewardship
- Ensures sustainable operations
- Promotes understanding and response to host community priorities
- Reduces risk





# SEMS Drivers

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- Executive Order 13423 (24 Jan 07): Strengthening Federal Environmental, Energy, and Transportation Management
  - Requires federal agencies to implement an EMS at all appropriate organizational levels
- DoD Instruction (DoDI) 4715.17 (15 Apr 09): Environmental Management Systems
  - Requires EMS to be integrated into the mission and activities of DoD organizations to enhance operational mission performance
- ACSIM Policy Memorandum (12 Oct 10): Environmental Management and Assessment Requirements
  - Stipulates additional requirements on “appropriate facilities” and establishes timelines for implementing/completing corrective action measures



# Bottom Line

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- SEMS is mandated by Executive Order 13423 and Army/DoD Policies.
- An effective SEMS ensures employees know and follow procedures that will reduce or avoid environmental impacts.
- Federal agencies expect use of an SEMS to facilitate permitting, reduce regulatory oversight costs and reduce reporting requirements.
- SEMS can improve environmental performance, reduce costs, and ensure compliance with federal/state laws, Army regulations, and DoD policies.



***ISO 14001 Model  
and the Components of an EMS/SEMS***

*Sentinel of the Caribbean*



# What is ISO?

## International Organization of Standardization

- Founded in Geneva in 1946
- Until the 1980's ISO dealt only with product standards (ISO film speed, paper sizes, thickness of credit cards)
- ISO 9000 - first “management system” standard
- ISO 14000 - **Environmental** Management System





# Key ISO Terms

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Environmental Aspect: **element of an organization's activities, products or services that can interact with the environment**

*Examples: energy consumption, air emissions, use of raw materials*

Environmental Impact: **any change to the environment, adverse or beneficial, resulting from an organization's environmental aspect**

*Examples: natural resources depletion, air pollution, hazardous waste generation*



# Key ISO Terms

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Significant Aspect: **an environmental aspect that the organization has determined to have or possibly have a significant environmental impact**

Operational Controls: **SOPs, work practices or instructions for mission activities or operations, including those associated with significant aspects**

*Examples: Energy Reduction Plan, work practices for turning off lights*



# Key ISO Terms

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Environmental Objective: **Overall environmental goal that an organization sets itself to achieve**

*Example: Reduce Energy Consumption*

Environmental Target: **Detailed (and measurable where practical) performance requirement that arises from the environmental objective and that needs to be set and met in order to achieve those objectives**

*Example: Reduce energy intensity by 3% annually through the end of FY 2015*



# Key ISO Terms

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## Environmental Management Program:

**A program for achieving an organization's targets and objectives. Includes designation of responsibility at relevant functions and levels of the organization, and the means and time-frame by which they are to be achieved.**

**At Fort Buchanan, these programs are called EMAPs --“Environmental Management Action Plans”**



# Key ISO Terms

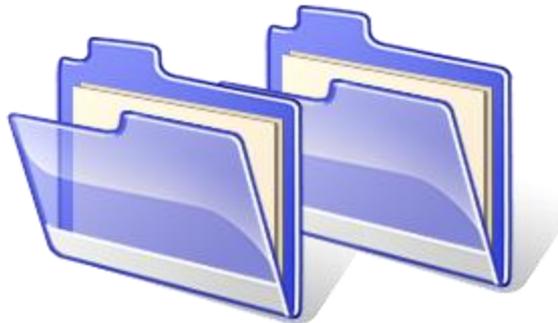
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**Document: Information and its supporting medium**

*Examples: SEMS manual, SOPs, operating instructions*

**Record: Document stating results achieved or providing evidence of activities performed**

*Examples: training records, EQCC meeting minutes*





# SEMS Framework

- Based on “Plan, Do, Check, Act” approach and ISO 14001 model which focus on continual improvement





# Components of a SEMS

The ISO 14001 model has five basic phases:

- Environmental Policy
- Planning
- Implementation and Operation
- Checking and Corrective Action
- Management Review



# Continual Improvement Process

# ISO 14001 Model

**Environmental Policy**  
Top management's commitment to:

- Regulatory compliance
- Pollution Prevention
- Continual Improvement

**Management Review**

- Review environmental performance
- Review EMS performance
- Review policy, priorities and objectives
- Allocate appropriate resources

**Planning**

- Identify aspects and legal requirements
- Set objectives and targets
- Create environmental management programs

**Checking and Corrective Action**

- Monitor and measure environmental performance
- Perform evaluations of compliance
- Establish nonconformance and corrective and preventive action system
- Keep appropriate records and control
- Conduct internal audits of EMS

**Implementation and Operation**

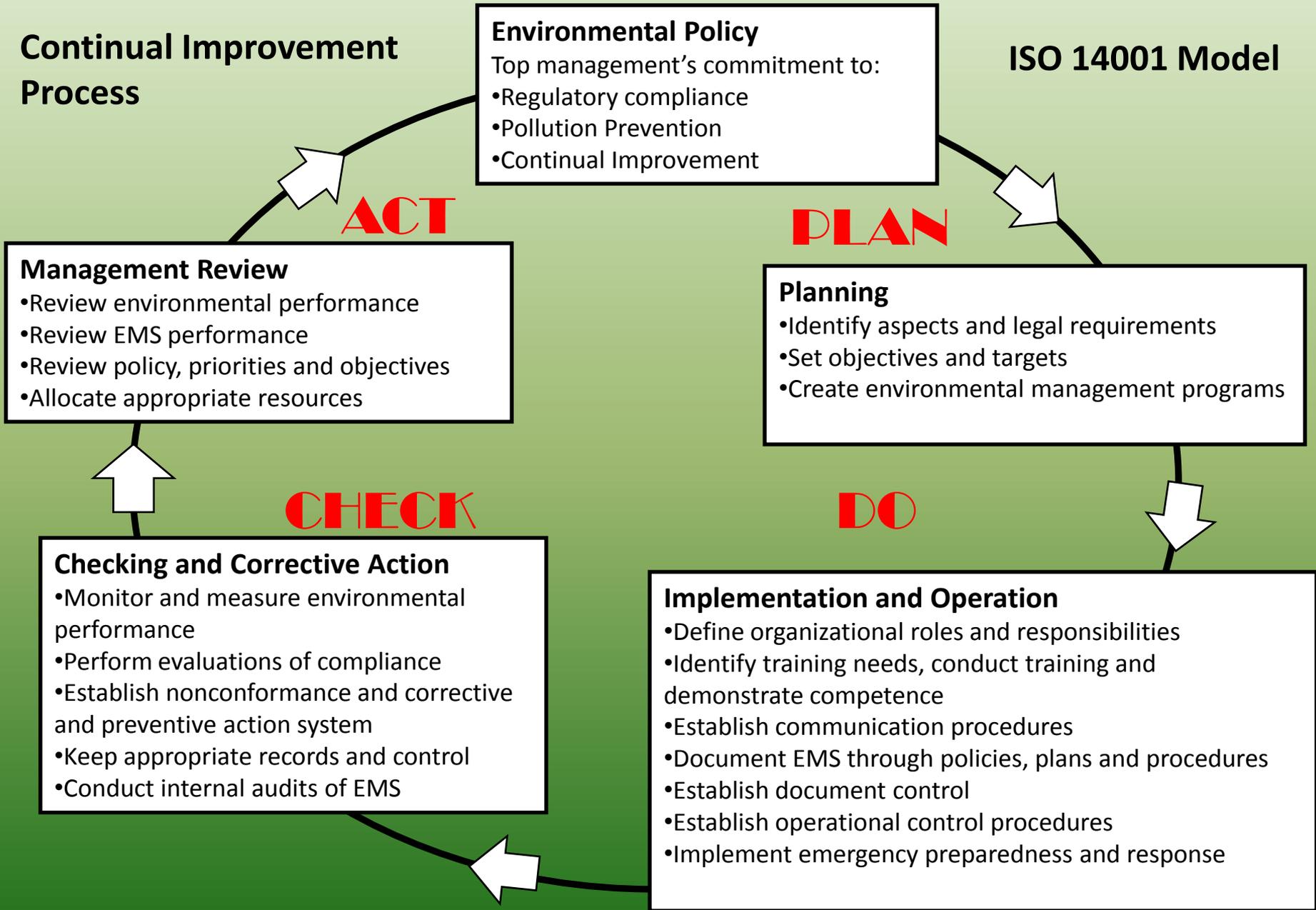
- Define organizational roles and responsibilities
- Identify training needs, conduct training and demonstrate competence
- Establish communication procedures
- Document EMS through policies, plans and procedures
- Establish document control
- Establish operational control procedures
- Implement emergency preparedness and response

**ACT**

**PLAN**

**CHECK**

**DO**





# Review

## Match the Term with its Example

- Aspect
  - Objective
  - Target
  - Action plan or task
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- Facilities submit work order for installation of motion sensor faucets
  - Install motion sensor faucets in admin bldgs by 3Q FY12
  - Reduce water use
  - Water Consumption



# ***Key Elements of Fort Buchanan's SEMS***

*Sentinel of the Caribbean*

ISO 14001 Element	Title
4.1	General Requirements
<b>4.2</b>	<b>Environmental Policy</b>
<b>4.3.1</b>	<b>Environmental Aspects</b>
4.3.2	Legal and Other Requirements
<b>4.3.3</b>	<b>Objectives, Targets, and Programs</b>
<b>4.4.1</b>	<b>Resources, Roles, Responsibility, and Authority</b>
<b>4.4.2</b>	<b>Competence, Training, and Awareness</b>
<b>4.4.3</b>	<b>Communication</b>
4.4.4	Documentation
<b>4.4.5</b>	<b>Control of Documents</b>
<b>4.4.6</b>	<b>Operational Control</b>
<b>4.4.7</b>	<b>Emergency Preparedness and Response</b>
<b>4.5.1</b>	<b>Monitoring and Measurement</b>
<b>4.5.2</b>	<b>Evaluation of Compliance</b>
4.5.3	Nonconformity, Corrective & Preventive Action
<b>4.5.4</b>	<b>Control of Records</b>
4.5.5	Internal Audit
4.6	Management Review



U.S. ARMY

# Fort Buchanan's Environmental Policy

(Policy Memorandum No. 23, 7 Feb 2013)

**MISSION**

**ENVIRONMENT**

**COMMUNITY**

## FORT BUCHANAN ENVIRONMENTAL MANAGEMENT POLICY

To demonstrate our commitment to Environmental Health & Protection, Fort Buchanan has established the following principles that provide the framework upon which Environmental stewardship objectives are based:

- NATURAL RESOURCE CONSERVATION
- WASTE REDUCTION
- MATERIALS RECYCLING
- ENERGY CONSERVATION
- ENVIRONMENTAL MANAGEMENT & SAFETY
- COMPLIANCE
- CULTURAL RESOURCE CONSERVATION
- CONTINUAL IMPROVEMENT
- MANAGEMENT OF RISK
- PREVENTION OF POLLUTION

**FORT BUCHANAN ENVIRONMENTAL MANAGEMENT POLICY**  
**DIRECTORATE OF PUBLIC WORKS ENVIRONMENTAL DIVISION**

U.S. ARMY

Fort Buchanan Support

ENVIRONMENTAL DIVISION  
SUSTAINING THE ENVIRONMENT

# Identifying Environmental Aspects

Activity, Product or Service	Environmental Aspects	Environmental Impacts
Equipment Repair and Maintenance	•Air emissions (VOCs)	–Air pollution, ozone depletion
	•Waste generation (solvents, fuels, POL, solid waste)	–Degradation of the environment and depletion of natural resources
	•Discharges, spills or other releases to soil, surface water or groundwater	–Surface or groundwater contamination
Food Services	•Procurement of raw materials and packaging	–Resource depletion +Benefits associated with use of green products
	•Waste generation (compostables, greases, recyclables, solid waste)	–Waste storage and disposal +Creation of usable products (compost and recycling)
	•Use of resources (water, energy)	–Source water and energy resource depletion



# Aspects

Identify as many aspects and impacts as you can in the following photo



DIESEL  
FLAMMABLE

39

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# Significant Aspects

- Fuel Usage Reduction
- Solid Waste & Recycling Management
- Energy Conservation
- Water Conservation
- Pesticides Reduction
- Hazardous Material Management
- Hazardous Waste Management
- Endangered Species & Ecological Management
- Real Property, Construction & Demolition Management
- Spill Prevention





# Objectives & Targets (O & T)

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- Reduce gasoline and diesel fuel usage by GSA fleet vehicles/light duty vehicles
- Reduce 50% of generated solid waste (SW)
- Reduce energy consumption through energy efficiency and reduce of greenhouse gas emissions
- Reduce water consumption/water loss
- Reduce usage/application of toxic pesticides and herbicides
- Reduce purchase, usage, and disposal of hazardous materials
- Reduce hazardous waste (HW) generation rate
- Maintain endangered species habitat areas
- Conduct property transactions and construction projects (construction, demolition and renovation) that include NEPA and environmental
- Manage POL to minimize releases to the environment as a result of spills and/or accidents



# Meeting Objectives & Targets

- • What are some things soldiers, civilians, and family members can do to help achieve these objectives?

- Solid Waste Reduction
- HW Reduction
- Minimization of Spills
- Conserve Natural Resources
  - Water Use Reduction
  - Energy Use Reduction





# O & Ts (continued)

- Programs (**EMAPs**) must be established, implemented and maintained to achieve O & Ts
- EMAPs shall include:
  - **WHO**: designation of who's responsible for achieving O&T at relevant levels of the organization
  - **HOW**: the means by which O&T will be achieved
  - **WHEN**: the timeframe in which O&T will be achieved

SEMS Environmental Management Action Plan (EMAP)			
1. Action Plan Name: Fuel Usage Reduction Action Plan			
2. Significant Environmental Aspect(s): #1 Vehicular Consumption of Gasoline and Diesel Fuel	3. Document Control Code: FB-200-EMAP-1	6. Working Group Assigned to:	
	4. Date: 25 February 2011	7. EMAP Manager (Environmental Division Manager responsible for this action plan):	
	5. Document Approver: Garrison Commander		
8. Objective(s) and Targets			
Objective(s)	Target(s)	Performance Indicator(s)	Resource requirements (personnel and funding)
Reduce gasoline/diesel usage by GSA fleet vehicles/light-duty vehicles and heavy equipment vehicles as per EP Act (Energy Policy Act of 1992 requirements)	#1 Reduce fleet fuel consumption by 30% by the end of FY 2020	1. Vehicles leased from GSA replacements or new acquisitions for the next 3 years must average 20 MPG in overall use	
	#2 Require the enhanced acquisition of electric or hybrid vehicles (5%) by FY 2015 ( 75% already established by EPAct 1992)	1. Use of Electric (Golf Carts) vehicles	
	#3 Develop Fleet Action Plan/SOP to integrate AFV requirements into DOL transportation acquisition process	1. Include to DOL / DLA procurement availability of AFV	
	#4 Establish alternative fuel procurement /consumption that is non-petroleum-based by 10% annually	1. Include to DOL / DLA procurement Alternative Fuels	
9. Reason(s) for Significance: Consumption of fossil fuels			
10. Potential Environmental/Organizational Impacts:			
a. Depletion of natural resources (fossil fuels)			
b. Air pollution (potential to reduce greenhouse gas and other pollutant emissions).			



# Everyone's Roles

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- Know Fort Buchanan's Environmental Policy
- Recognize how your job impacts the environment
- Comply with legal requirements
- Complete environmental training
- Communicate environmental concerns
- Follow standard operating procedures
- Report spills
- Monitor and Measure your activities
- Evaluate your compliance performance
- Implement corrective actions when things go wrong
- Maintain records of inspections and training



# Competence, Training and Awareness

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- Personnel performing tasks for the organization, or on its behalf, who could potentially cause a *significant environmental impact* must be competent to perform job duties
  - Competence based on education, training or experience
  - Training records must be maintained

***Have you completed your environmental training?***



# Competence, Training and Awareness (cont'd)

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- Persons working for ***or on behalf of*** the organization must be aware of:
  - Importance of following the environmental policy and SEMS procedures
  - Significant environmental aspects associated with their work and environmental benefits of improved performance
  - Their roles and responsibilities in achieving conformance with the SEMS
  - Potential consequences if they don't follow specified procedures



# Communication

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- Effective communication is an essential foundation of a strong SEMS
  - It is a two-way process to exchange information, ideas, and opinions to achieve mutual understanding
- Internal communication requirements of the SEMS include:
  - Environmental Policy, Aspects, Objectives & Targets
  - Roles and responsibilities
  - Changes to activities, projects, products and services that affective environmental management programs

*How does internal communication occur in your work area?*



# Control of Documents

- Certain documents must be *controlled* so that those who rely on them are using the most up-to-date, approved versions

➔ **How do you know if you have the most current version of an SOP?**

*Electronic versions of controlled SEMS documents are posted on the Fort Buchanan intranet.*

*Printed copies are considered UNCONTROLLED.*





# Operational Controls (cont'd)

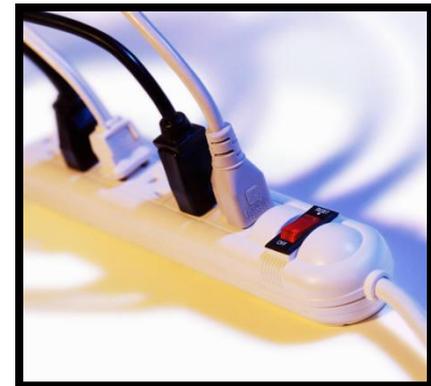


*What are some operational controls (SOPs) that you have for:*

*Solid Waste*

*Hazardous Materials/Hazardous Waste*

*Energy conservation*





# Emergency Preparedness and Response

- Procedures must be established, implemented and maintained to identify and respond to accidents and emergency situations
  - Establish procedures to prevent and/or lessen environmental hazards
  - Periodically review and revise procedures
  - Periodically test procedures

*ECOs are responsible for developing and providing site specific spill procedures to unit personnel whose jobs have the potential for spills.*





# Monitoring & Measurement

- Key characteristics of operations and activities that could have *significant impact* on the environment must be monitored.
  - Includes performance of activities, operational controls and conformity with objectives and targets
- Equipment used to measure results should be calibrated or verified at specified intervals against measurable standards.





# What are the Consequences of Nonconformance?



- Damage to the environment or human health
- Regulatory/legal violations
- Fines/cleanup costs
- Impact to mission



# Control Of Records

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- Environmental records must be maintained that demonstrate conformity to the requirements of the SEMS and include:
  - Records that demonstrate compliance
  - Process monitoring records, such as inspections, maintenance and calibrations
  - Training records
  - Incident reports
  - Audit results

*Records maintained in your work area should be legible, identifiable and traceable.*



# Apply Your Knowledge

**For each ISO element on the left,  
choose the example or description that best matches it**

- |                                      |                                    |
|--------------------------------------|------------------------------------|
| • Environmental Policy               | • Calibration Records              |
| • Operational Controls               | • Standard Operating Procedures    |
| • Competence, Training and Awareness | • Audit schedule and results       |
| • Monitoring and Measurement         | • Signed by the Garrison Commander |
| • Emergency Procedure                | • Operator certification records   |
| • Evaluation of Compliance           | • Spill Plan                       |



# *What can YOU do?*

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- Incorporate basic SEMS/environmental awareness into unit training
- Know and support your installation's SEMS objectives and targets
- Ensure that personnel are aware of and follow appropriate operational controls
- Take suggestions to improve the SEMS to the environmental office



# For More Information

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- Contact your SEMS Coordinator

**DPW Environmental Division**

**Fort Buchanan**

**787-707-3966 / 3522 / 3575**