ISO 14000 and Chemical Handling— A Pharmaceutical Case Study

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Discussion of ISO 14000 System Implementation as it relates to chemical and material handling.

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Why ISO 14000?

Several Reasons:

- Reduced operating costs and increased operating efficiency (including materials handling)

- Improved regulatory and public perception

- International markets may drive the decision

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- Environmental Department was "Reactive"
- Recordkeeping
- Clerical duties
- Increasing burdens
- Stifled enthusiasm

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Two Stage Process:

- Evaluation Stage
- Implementation Stage

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Evaluation Stage

- Educate Management

  — Overviews
  — One-on-one

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Evaluation Stage (con't)

- Gap Analysis
  - Convert each "Shall" into a question
  - Analyze using a rating system

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Evaluation Stage (con't)

- **Aspect and Impact Analysis**

"Identifying the environmental nature of your organization"

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Evaluation Stage (con't)

- How do you identify aspects and impacts?
  - Traditionally limited to regulated items
- Organization must be evaluated comprehensively
- Evaluate scientifically and environmentally

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Evaluation Stage (con't)

- **Environmental Aspect:**
  - Elements of an organization's activities, products, or services which can interact with the environment that it can control or have an influence.

- **Examples:**
  - Discharges
  - Resource consumption
  - Energy usage
  - Ecosystem alterations

*Chemical and materials procurement, handling, storage, use, and waste disposition are all aspects with related impacts".

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Evaluation Stage (con't)

- **Environmental Impacts:**
  - **Any change to the environment, whether adverse or beneficial, wholly or partly resulting from an organization's activities, products, or services.**

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Evaluation Stage (con't)

- **Examples of activities related to environmental aspects:**
  - **Raw material/chemical handling**
  - **Production and manufacturing**
  - **Wastewater treatment**
  - **Solid waste handling/disposal**

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Evaluation Stage (con't)

- Compliance Review
  - Required in later elements of ISO 14000, but can be done initially at this point

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Evaluation Stage (con't)

- Implementation Plan and Timetable
- Present to management, showing:
  - Basis for decision to proceed with implementation
  - Resources required, internal and external
  - Detailed timetable

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Implementation Stage

- Based on 4 key elements:
  - Planning
  - Implementation
  - Checking
  - Continual Improvement

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Implementation Stage (con't)

- **Planning:**
  - Develop environmental policy (can include CMA Responsible Care Commitment)
  - Set objectives, targets, and development of the system

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Implementation Stage (con't)

- **Environmental Policy Characteristics:**

  — **Top Management Development**

- **Commitment to:**

  — **Continual Improvement**
  — **Prevention of Pollution**
  — **Regulatory Compliance**
  — **Means of Reviewing Objectives and Targets**

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Implementation Stage (con't)

- **Objectives and targets:**
  - **Goals for the organization**

- **Example Objectives and Targets:**
  - **Conduct waste/effluent survey**
  - **Feasibility analysis of reduction options**

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Implementation Stage (con't)

- **Develop Documentation**
  - **Procedures, Work Instructions**
  - **Focused on conforming with the standard, but still reflecting site activities**

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Implementation Stage (con't)

- Implementation and Training
- Deployment of EMS program into the organization
  - Usually process-specific
  - Educate ALL employees and define roles

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Implementation Stage (con't)

- Internal Auditor Training
- Assess program's conformance to the ISO Standard
- Take corrective actions

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Implementation Stage (con't)

- Pre-Assessment Audit
- Corrective Action
- Formal Registrar Assessment
  - Accredited auditor will perform third party certification audit

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How Does the ISO 14000 System Directly Affect and Benefit Chemical Handling?

- Environmental aspects and impacts related to chemicals and materials identified, categorized, and prioritized

- Chemicals addressed throughout their "life" with the subject organization (i.e., procurement, handling, storage, use, disposition)

- Chemical-related activities monitored and measured as appropriate, even if not regulated

- Documentation oriented

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- Comprehensive emergency situation planning (exterior storage)

- Comprehensive employee training

- Proactive assessment of community concerns and planning, even if not regulated

- "Upstream" planning and improvement opportunity (including financial)

- Regulatory tracking a requirement

- Can integrate with Health and Safety programs

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Other Benefits of ISO 14000 Program

- Annual savings of over $250,000
- 34% reduction in waste generation, $100,000 net annual savings
- Elimination of CFCs, with efficiency improvement of 10%
- 75% recycling rate ($15,000 savings)
- Improved public relations
- Improved customer perception

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