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The Value of an EHS Management of Change Process

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The Value of an EHS Management of Change Process

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Agenda



- ▶ MOC Process Rationale, Definitions, Principles
- ▶ Real Life Scenarios
- ▶ MOC Types and Workflow
- ▶ Introducing Chemicals, Processes, Equipment, Personnel
- ▶ EHS MOC Process Examples
- ▶ Conducting an EHS Review: 10 Simple Steps
- ▶ Levels of Change - Examples
- ▶ Key MOC Processes, Tools, Learnings, Benefits

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Why Manage Change?

- ▶ **Uncontrolled change** is a frequent contributor to incidents, and can result in injury to personnel, damage to the environment, and loss of quality.
- ▶ **Managing change** is essential to maintaining and improving the EHS controls of existing operations, and for the safe startup and operation of a new process or facility.

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Why EHS inclusion is essential in both the design and start-up stages?



MOC Types and Workflow

- ▶ MOC Process needs to address Permanent, Temporary, Emergency Changes
 - ▶ Description, Justification, Impact on EHS
 - What, Where, When, Who, and Why?
 - ▶ Initiating Changes:
 - Reduce the risk of unintended consequences due to change
 - Seek and maintain records of technical and financial input to a change
 - Provide visibility to changes being planned or already underway
 - ▶ Approving Changes
 - Review the change request to gain an understanding of the proposed change and its impacts
 - Indicate what changes to the initial request are necessary, if any, in order for the change request to be approved
 - Indicate support for proceeding with the proposed change
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Introducing a New Chemical

- ▶ Hazardous Material Business Plan updated?
 - ▶ Which work areas/employees will be handling this material?
 - ▶ What other employees might be affected (e.g. maintenance, waste handlers)
 - ▶ Safety Data Sheet?
 - ▶ New Hazards Presented?
 - ▶ OSHA regulations? Fire Code? OELs? Monitoring method? Exposure potential?
 - ▶ How will chemical be stored and used?
 - ▶ Training?
 - ▶ Medical surveillance?
 - ▶ Engineering controls? PPE? Respiratory Protection?
 - ▶ Waste Stream?
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Example: Ordering Chemicals

- ▶ How does the ordering process work?
 - ▶ New material or used before? Any adverse incidents or institutional knowledge that needs to be integrated?
 - ▶ What documentation is needed and how do I find it?
 - ▶ How much do I need to order?
 - ▶ Is there sufficient storage space?
 - ▶ Do we have a waste stream designated?
 - ▶ What do I do if there is a spill of this material?
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Introducing New Equipment

- ▶ Robotic?
- ▶ Ergonomics?
- ▶ What materials will be in contact with equipment?
- ▶ Magnetic fields?
- ▶ Ionizing or non-ionizing radiation?
- ▶ Exposed moving parts?
- ▶ Is noise generated?
- ▶ Air emissions?
- ▶ Waste generation?
- ▶ Access by maintenance staff for repairs, PM?

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Introducing New Equipment

For New Construction, Renovations and Remodels:

- ▶ Storage, handling, release of potentially hazardous materials (chemical, biological, physical hazards)?
- ▶ Installation/removal of safety showers/eyewashes?
- ▶ Permit required confined spaces or machine guarding issues?
- ▶ Impacts on LEV or other control equipment?
- ▶ Wastewater discharge?
- ▶ Will project affect Life Safety issues?
 - Installation/modification of fire alarm or suppression systems
 - Installation of elevators or other lift devices
 - Change of egress routes, exit signage
 - Access/egress restrictions

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Introducing New Personnel

- ▶ Essential experience, skillsets and training to do the job?
- ▶ Training curricula/assignments?
- ▶ Evacuation roster?
- ▶ Workstation ergonomics evaluation?
- ▶ Medical surveillance program?
- ▶ Respirator clearance and use?
- ▶ Prescription safety glasses?
- ▶ Clearly defined roles and responsibilities?

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Example of an MOC Process – Before Change Happens

- Identify the level of change and type of review needed
- Gather the information needed to identify hazards
- Gather the people needed for the review
- Include additional internal or external experts if needed
- Conduct the EHS review
- Classify actions by priority
- Assign responsibilities and due dates for actions
- Follow-up on actions
- Document actions to closure

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Formal EHS Review - Example

- ▶ **The formal EHS review is used when you are making a basic change and when introducing new processes.**
- ▶ **Documentation:** minutes from the formal EHS meeting and action points.
- ▶ **People involved:**
 - Originator of the change,
 - Person(s) who will be affected by the change;
 - Person who knows about the effects of the change;
 - Management representative from the area that is affected;
 - EHS representative;
 - Person who will maintain the equipment.

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Formal EHS Review - Example

- ▶ Designed to identify, evaluate and eliminate potential hazards by people who understand the hazards and necessary safeguards for the change
- ▶ Proposed change meets the criteria for Basic Change or Major Process or Facility Change
- ▶ Meeting with department management designee and personnel responsible for proposed change, affected personnel, EHS Professional
- ▶ **Documentation is required**
 - Classify actions by priority
 - Assign responsibilities and due dates for actions
 - Follow-up on actions
 - Document actions to closure

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PHA/HAZOP Review - Example

- ▶ **The PHA/HAZOP review is used when you are adding a major new facility or new processes**
- ▶ **Documentation:** minutes from the PHA/HAZOP meeting, action points and changes to P&ID's.
- ▶ **People involved:** a PHA/HAZOP expert is the leader, and the team is made up of site personnel including those affected by the changes being considered.

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Major Accident Prevention Plan Study

- ▶ **A MAPP study is performed for process changes and new processes involving bulk chemical quantities above the minimum storage amounts.**
- ▶ **Documentation:** minutes and action points from the MAPP study.
- ▶ **People involved:** a MAPP expert is the leader, and the team is made up of site personnel.

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Key MOC Tools and Learnings

- ▶ EHS Management of Change SOP
- ▶ Training on MOC Processes
- ▶ Proactive Quarterly Dept. Meetings with EHS, Facilities and Affected Department Managers
- ▶ Defining Acceptable Process Parameters/Boundaries beyond which the MOC Process is triggered
- ▶ Leveraging Software Tools

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Management of Change Benefits

- ▶ **Involves affected employees** - *Two heads are better than one*
- ▶ **Identifies:**
 - Hazards before they become incidents
 - Problems when they are least expensive to fix
 - Safeguards and actions to reduce risk
 - Training and procedures that are needed
- ▶ **Reduces risk of:**
 - Injuries and illnesses
 - Environmental spills and releases
 - Catastrophic events (e.g. fire / explosion)
- ▶ **Confirms built-as-designed, avoids rework, and verifies EHS requirements for safe operations**

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