Change Management
Or
Management of Change:

A Vital Tool for EHS Professionals

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Agenda and Goals

- Define Change Management
- Discuss how Management of Change is utilized in OSHA PSM, EPA RMP and ISO
- Segue into how MOC can be utilized by EHS professionals

Hello, I am Matt Fail.

- Principal of AWF Process (Wilmington, NC)

- BS and MS - Chemical Engineering
- Professional Engineer (NC, SC)

- 20+ years in chemical manufacturing facilities
  - Plant and process engineering
  - Process controls
  - EHS oversight, including OSHA PSM program development
  - PSM specialties: Process Safety Information, Process Hazard Analyses, Mechanical Integrity

- Personal MOC Lens: OSHA PSM

Management Of Change (MOC)

Looking through the OSHA PSM/EPA RMP Lens

40 CFR 68.75 Management of change. *(EPA RMP Definition)*

(a) The owner or operator shall establish and implement written procedures to manage changes (except for "replacements in kind") to process chemicals, technology, equipment, and procedures; and, changes to stationary sources that affect a covered process.

Both EPA RMP and OSHA PSM have the same MOC requirements.

Another Lens: ISO Standards

(Quality, Safety, Environmental, Information Security)

What is "Management of Change"?

- ✓Best Practice for managing changes to complex, dangerous, or critical processes
- ✓Create a positive atmosphere for asking critical questions of and with management, technical staff, and floor level personnel:
  - ✓Safety
  - ✓Design intent
  - ✓Quality
  - ✓Environmental Compliance
- ✓When practiced appropriately, MOC will improve all around performance in these areas!

Change is inevitable. Managing Change = Managing Risk.

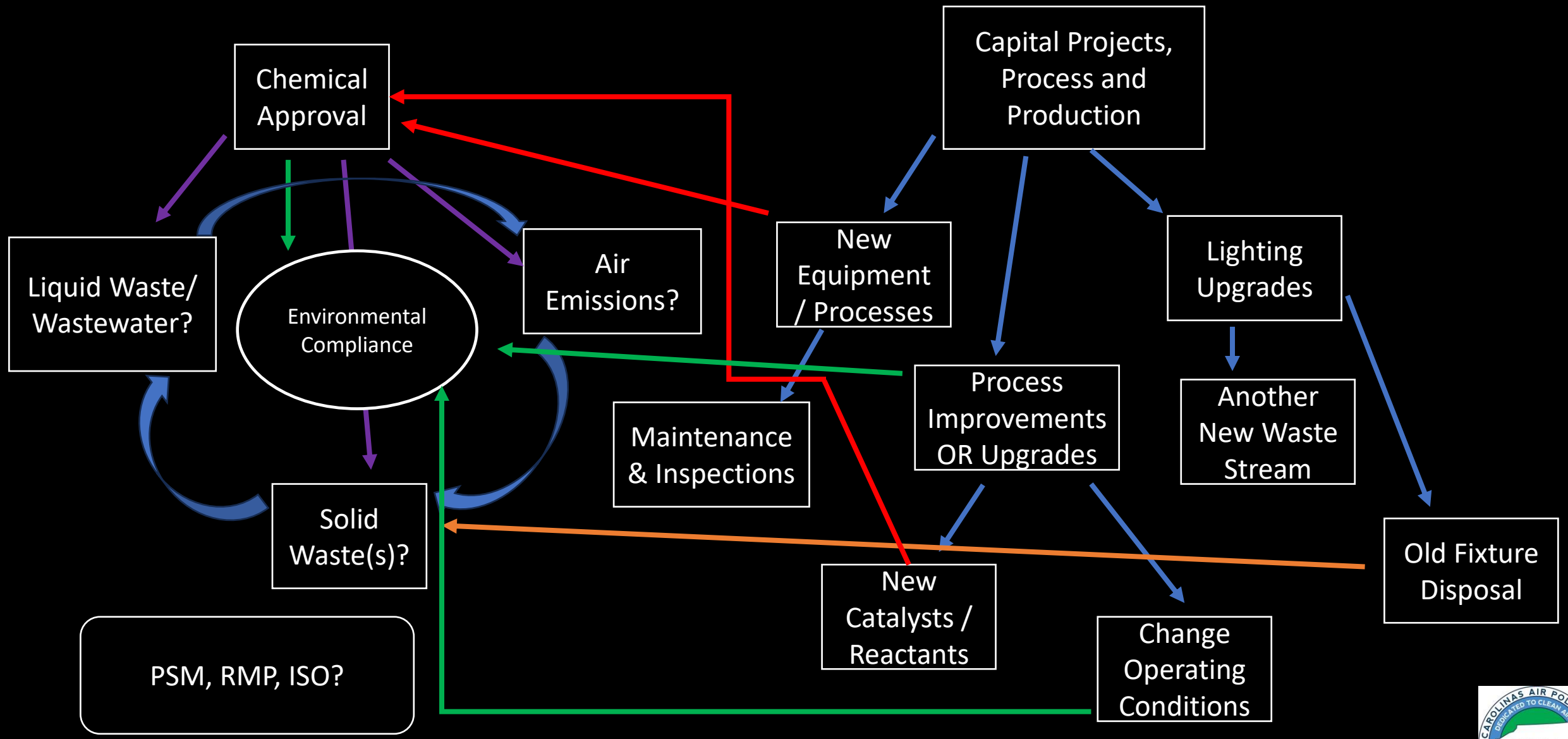
“When you can’t control the winds, adjust your sails.”

Variation on Cora Hatch quote (1859)

Change is inevitable. Managing Change = Managing Risk.

Definition of Sailing

"Hours of peace and contentment interrupted by moments of sheer panic"



Potential Facility Changes – "the Napkin Version"

MOC Form Example

Creating Order from Chaos… "Raising our Sails"

MoC Process: Preliminary Impact Assessment

I-B Preliminary Impact Assessment

Impacts Checklist. Check all that apply.

Organization	*Crew and Human Factors*	*Equipment and Instrumentation*
Can the change have an impact on:	*Can the change have an impact on:*	*Can the change have an impact on:*
☐ Management systems	☐ Crew workload	Hydraulic System *(list system)*
☐ Responsibilities	☐ Workplace stress	☐ Alarm panels
☐ Work practices	☐ Crew communication	☒ Electrical systems
☐ Staff movement	☐ Crew understanding	☒ Lifting equipment
☐ Contractors	☐ Crew morale	☒ Design pressure
☐ Company reputation	☒ Crew performance	☐ Design temperatures
☐ Regulatory compliance	☒ Ergonomics	☐ Materials of construction
☐ Insurance	*Ship Systems and Operations*	☐ Relief rate
Environment	*Can the change have an impact on:*	☐ Vessels
Can the change have an impact on:	☐ Navigation	☐ Vents
☐ Effluents – solid	☐ Recovery from blackout	☐ Pipework/supports
☐ Effluents – liquid	☒ Cargo operations	☐ Piping/pumps/other equipment
☐ Effluents – gas	☐ Ballasting operations	☐ Valves/relief devices
☐ Noise	☐ Berthing	☐ Filters
☐ Regulatory compliance	☒ Anchoring	☐ Instrumentation
☒ Accidental spills	☒ In-port	☐ Corrosion/erosion
☐ Marine eco-system	☐ Station keeping	☐ Vibration
Safety and Health	☐ Propulsion	☐ Spares
Can the change have an impact on:	☐ Maneuvering	*Structural/Mechanical Integrity*
☒ Personal Safety	☐ Communications	*Can the change have an impact on:*
☐ Fire detection/protection/fighting	☐ Towing	☒ Structure
☐ Means of escape	☒ Crane operations	☐ Stability
☐ Life saving equipment	*Offshore Systems and Operations*	☐ Pipelines
☐ Emergency procedures	*Can the change have an impact on:*	☐ Port facilities
☐ Local exhaust ventilation	☐ Drilling	*Maintenance and Inspection*
☐ Mechanical isolation	☐ Diving	*Can the change have an impact on:*

ABS 11

MOC Steps

“Setting Sail” and “Changing Tack”

Credit: DB HSE International – “….(MOC): Why It’s Often Misunderstood”

Primary MOC Questions

- For every proposed change, how will the Process, Quality, Environmental, Safety, and Hygiene all be impacted?
- Is this a temporary or permanent change?
- What tools will operators need to do their job safely?
  - Operating procedures
  - Training

Administrative Controls

- When things go sideways, will the process fail safely?
  - Process documentation revisions needed?
  - Engineering Design Document(s) updates needed?
    - Is the Intent of the Design Standards being met?
    - Has the Technology of the Process changed?

Engineering Controls

- Where does EHS (predominantly safety anyway) fit into this?

MOC Building Blocks – The Engineering Side

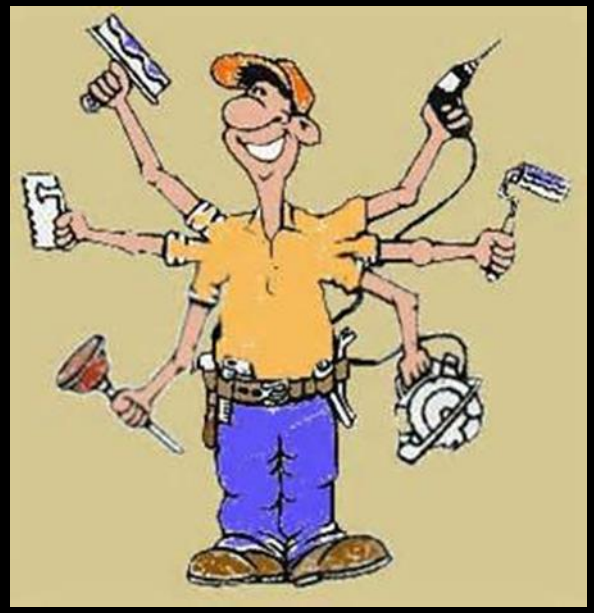
- Master documents:
  - Process Narrative – This outlines the Process Safety Information (PSI)
  - Engineering Design Documents – THE details for the process (or Technology)

- From these documents flow all the pertinent details for meeting various regulatory requirements (e.g., environmental and safety).

- Process chemistry, mass and energy balances:
  - Emissions estimates, waste generation, etc.

So, who is the responsible party for MOC?

- Plant Manager?
- EHS?
- Engineering?
- Maintenance?
- Document Control?
- Production?
- QC?
- R&D?
- Purchasing?



- It has to include:
  - Production Management
  - Design Engineer
  - Maintenance
  - Operators
  - EHS
- Who are the hardest to control?

How Process Changes Can Affect Regulatory Compliance

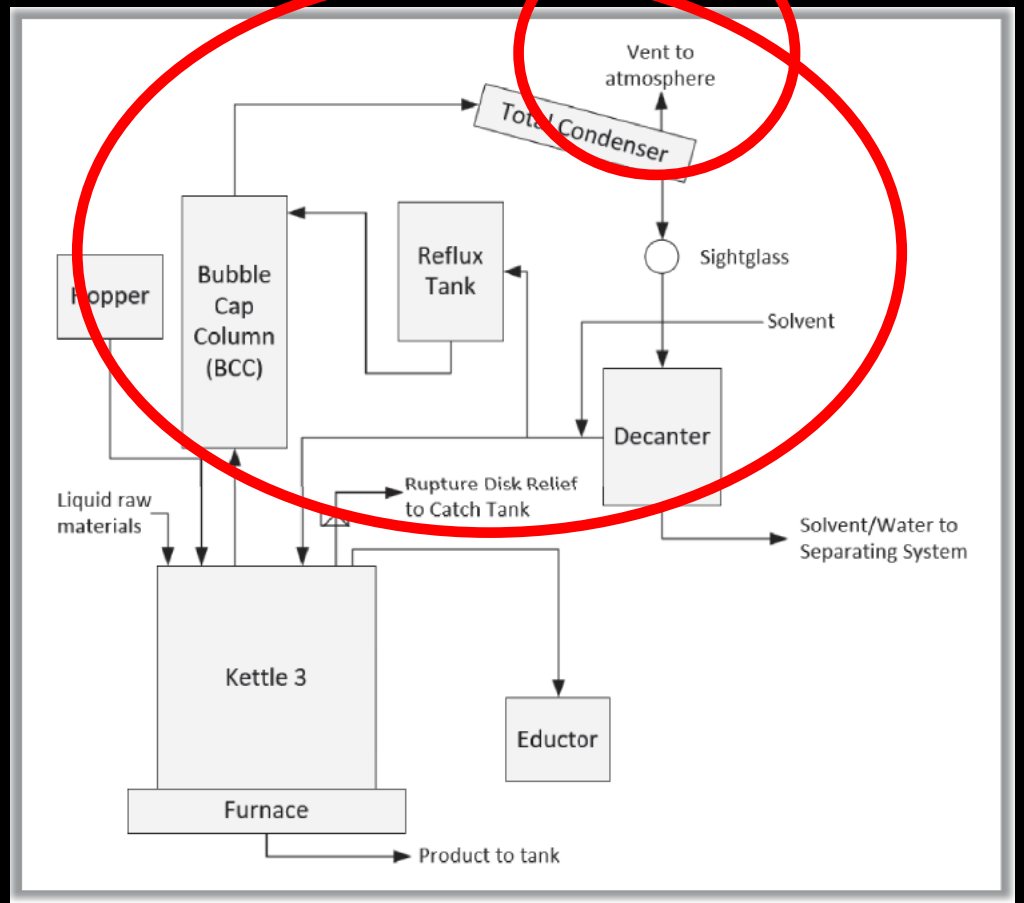


Figure 2. Simplified block diagram showing major equipment in the Kettle 3 system. (Credit: CSB)

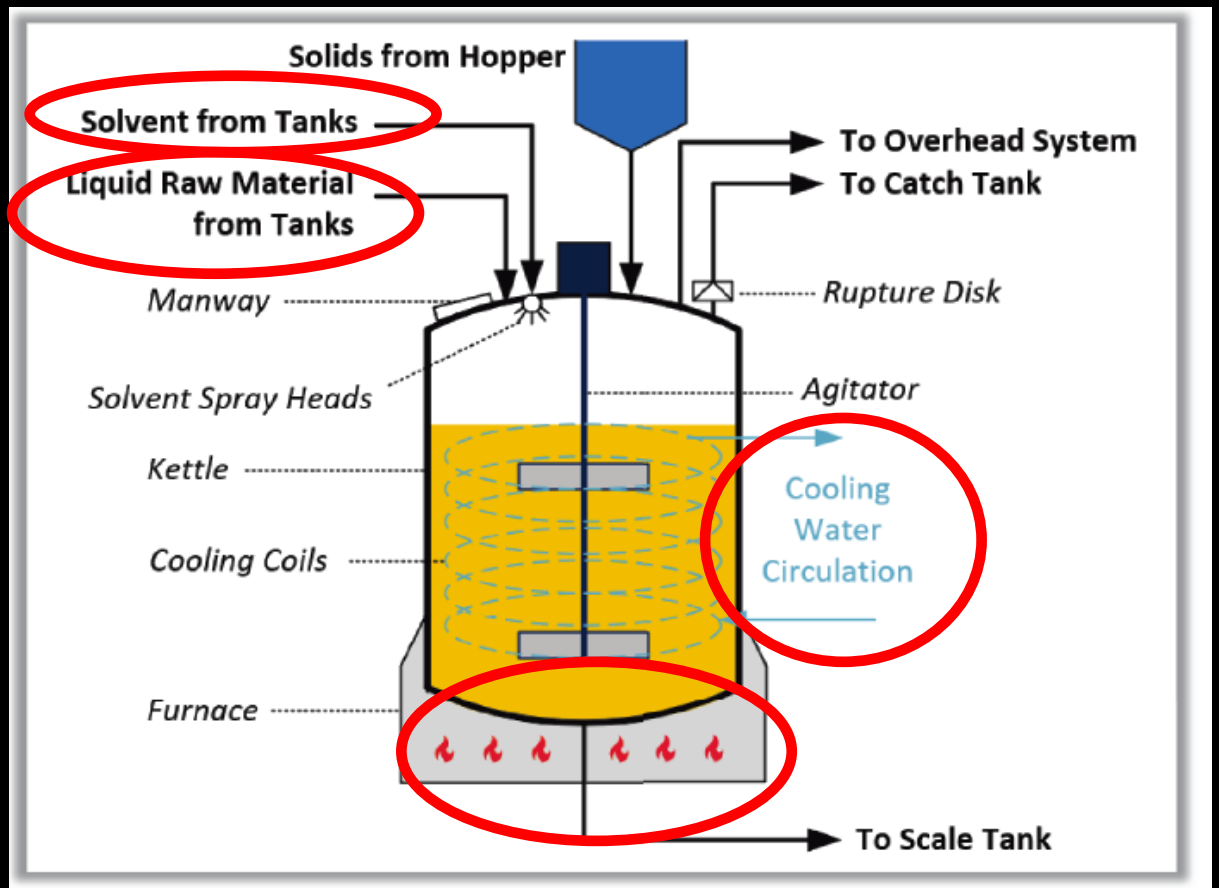


Figure 1. Simplified kettle drawing (not to scale). (Credit: CSB)

Batch Process Changes

No Big Deal, Right?

Figure 4. Exemplar AB Specialty batch tank with agitator and lid. (Credit: AB Specialty)

How can a batch process impact your regulatory requirements?

- Number of batches per time
- Changes in the volume of material in a batch
- "Temporary" tanks used for production
  - i.e., making the batches in open top drums (non-permitted source)
- Waste generation (liquid and solid)

Key Messages…

- Managing Change = Managing Risk
  - *Adjust your sails – keep moving forward!*
- MOC is an effective tool even if a facility is not subject to PSM/RMP/ISO
- Include EHS considerations in your MOC program
- When changes are made, confirm the EHS requirements and risks

THANK YOU!

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