

Safety Management of Change

28th June 2022

Mike Reddish



What is sMOC?

Kimberly-Clark Safety Management of Change (sMOC)

- Introduced in the late 90's – internally developed in North America Family Care Sector
- Rolled out across EMEA 2009
- Global Committee set up to manage the ongoing maintenance and development of the process and tool
- Environmental and Health impacts added in early 2010



What is sMOC?

- A collection of processes used to give guidance in the consideration of the possible **EHS impacts of a change**.
- It is a steps and gates style of process requiring check and adjust at key stages in the life of the change.
- Its power is in the requirement for discussion, collaboration and communication.



Why sMOC?



- Evidence from our past history shows that we have unintentionally injured our people (in some cases severely) from the effects of making a change.
- Is a key requirement of our EHS management system.
- Change is happening without leadership knowledge or consent.
- Otherwise, we rely on people for the success of a change – we don't have a systematic approach.

The Purpose of sMOC

- Reduce the risk of injury/ill health to our people or impact to our environment from the effects of changes we make.
- To anticipate or foresee the impacts of changes
- Make changes visible.
- Gives a systematic approach – less reliance on people.



Other Benefits – Lean Culture



- Drives discipline and focus to the management of changes:
 - Provides structure to work that should already be being done
 - Provides a standard work approach to change preparation activity
- Provides visibility of changes to the leadership.

Other Benefits

- Feedback from facilities using sMOC for all changes and who have embraced it into their culture tells us:
 - Removes unnecessary change
 - Prevents time being wasted on changes not required (less tinkering)
 - Focuses resource on key changes aligned with facilities strategies
 - Highlight's problems and triggers root cause problem solving.
 - Speeds up change when measured from idea to completion
 - No one person shoulders the responsibility for the change
 - Leadership visibility /consent of change
 - Leaders know the preparation activities required
 - Control and reduction of cost
 - Increased productivity from less tinkering)

Other Benefits

- Enables cross functional input
- Gives legal defensibility – process has been followed
- Forces thinking about application of required Standards
- Communications to those affected by the change:

Process includes notifying those affected prior to the change taking place.

NOTICE OF CHANGE

Expected Date of Change: _____
sMOC #: _____ Work Order #: _____
Change Coordinator: _____
Phone: _____ Page: _____
Equipment Affected: _____
Asset: _____
RSR/HSR/PSR Number: _____
Description of Change: _____

POTENTIAL IMPACT AND/OR HAZARD TO:

Operations/Operators: _____

Maintenance/Maintenance Personnel: _____

Asset Leader: _____

Team Leader: _____

Safety Representative: _____

Other: _____

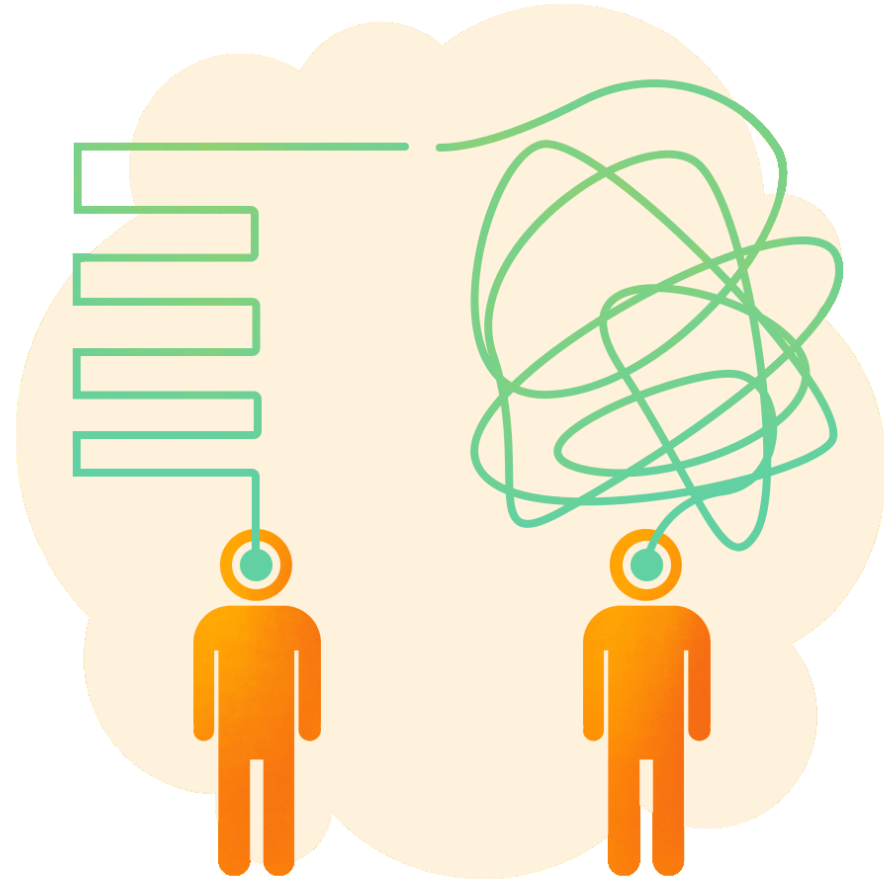
This Notice of Change is for a change with _____ Risk sMOC process.

It was authorized by: _____ (Asset leader or designee) on _____ (date).

This posting can be removed on _____ (date) and given to the Asset Safety Facilitator.

Misperceptions of sMOC

- Extra work
 - sMOC really only gives structure and discipline to work that we should already be doing.
- Slows down change
 - Evidence has shown that changes are quicker, through less rework activities.
- Lots of paperwork have to be generated:
 - The outputs from sMOC are documents to assist in communicating and documenting the change. Administration has been minimised.
- It's just for engineers
 - For anyone making changes



Expectations from Management

- Clearly sMOC is a culture change within the organisation:
 - Requires strong committed management support to overcome resistance
 - Requires ongoing leadership involvement
- “If leaders do not show discipline and focus to follow key processes then how can we expect our workforce to do the same?”
- Support your sMOC coordinator

Leadership Responsibilities

- *Ensure the system is followed (no sMOC – no Change takes place).*
- *Attend the required gate meetings*
- *Become the decision makers*
- *Ask questions and challenge*
- *Determine if the proposed change should move forward and check that the activities chosen by the change coordinator in the activities list are appropriate to manage the change.*
- *Sign the Authorization form and the “sMOC activities” list.*
- *Review the work, agree that all expectations were met, the change was implemented safely, and the required sMOC process activities were completed.*



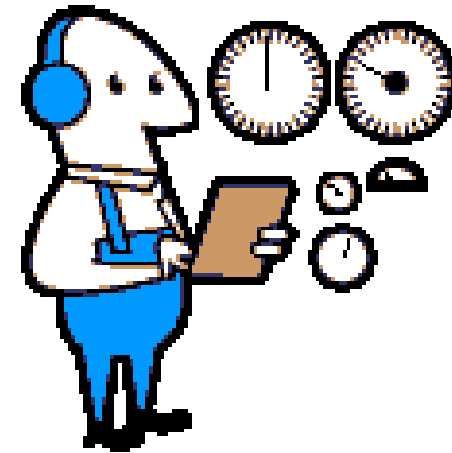
“Leadership: Whatever happens, you are responsible. If it doesn’t happen, you are responsible.”

The sMOC Process



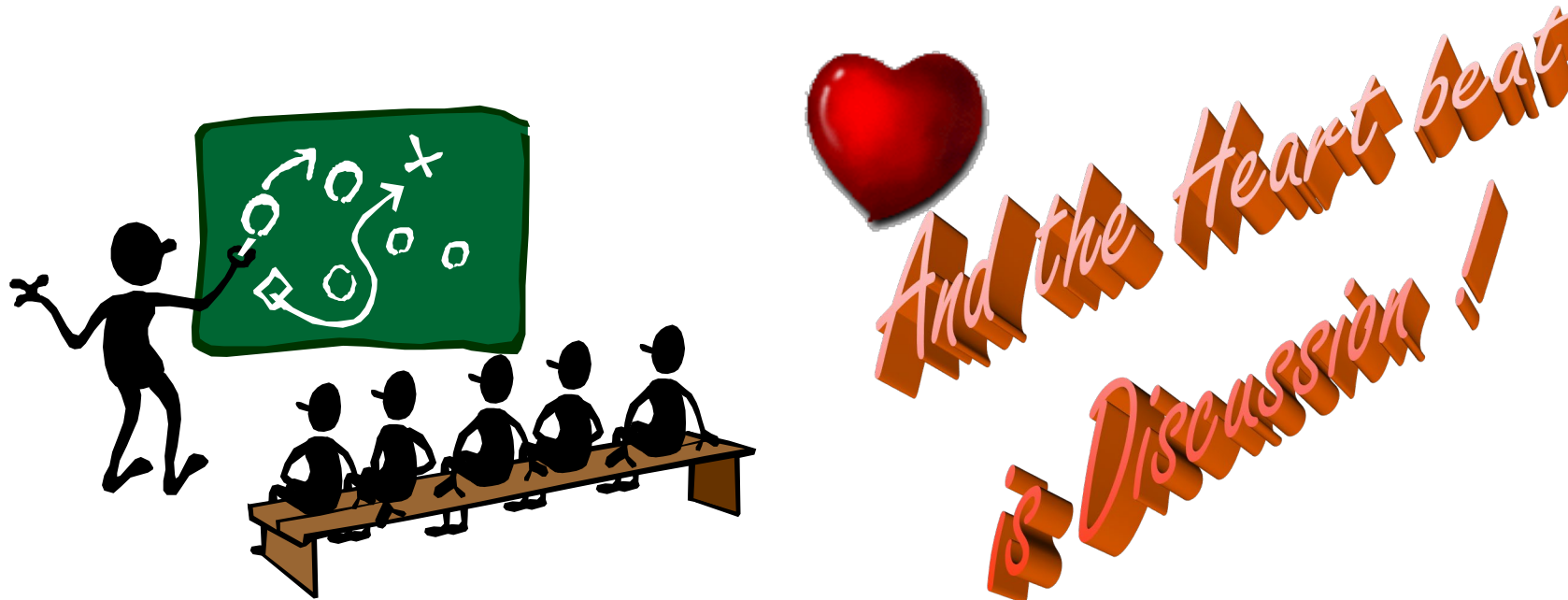
- Q: What do we mean by “Change”?
- A: “Change” means installation of, alteration to, or modification of

- Equipment
- Operational Controls
- Processes
- Facilities
- Buildings
- Work procedures
- Established training instruction
- Raw materials
- Operating guidelines
- Any part of the industrial environment in which we work.



More simply, a **change** is when we make something different than it was before

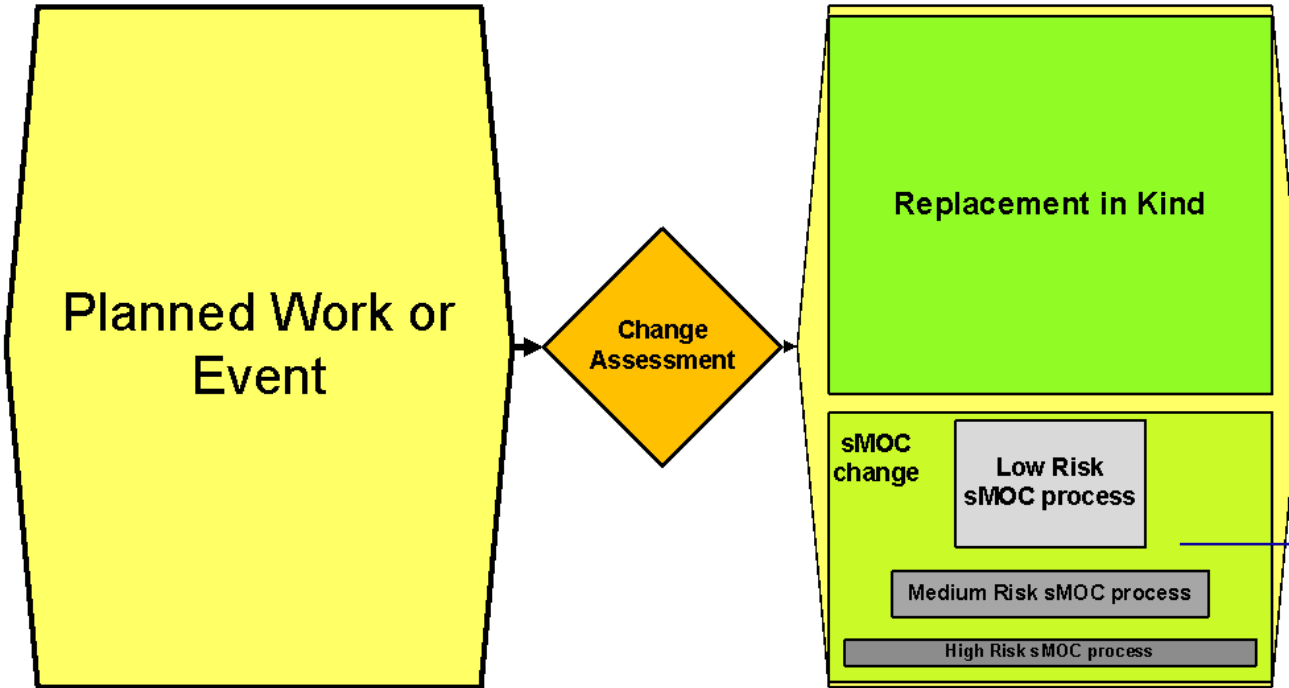
What is the real power behind the sMOC ?



**OUR TEAM WORK – It takes us
working as a TEAM to manage
CHANGE SAFELY!!**

Overview of Changes

sMOC "Planned Work or Event" Transformation



Emergency Changes:

Process includes an emergency process

EMERGENCY sMOC CHECKLIST		YES	NO	N/A
1.01 Emergency Change				
1. Complete the Emergency sMOC Checklist address the safety concerns of the change.				
2. Complete a Temporary Risk Assessment form.				
3. Complete an Emergency Notice of Change (ENOC) and additional risks and precautionary measures.				
4. Obtain written approval for the change from the Shift Team Technical Support leader.				
5. Mark the change.				
6. Turn off the change and undertake any procedures required as a result of the change including additional training and any other required conditions.				
7. Mark the Low Risk Change if the basis of the change.				
8. Mark the High Risk Change and take an Emergency sMOC in Operator and identify the cause and solution of the change.				
9. Complete Form to Shift Admin for day support handover. Include a copy of temporary risk assessment form.				
Title for Change:	Date:			
Equipment affected:				
Description of Change:				
10.01 sMOC Change 10.1. High Voltage electrical systems (excluding high voltage systems not listed below): 1. Shifters or high pressure steam systems. 2. Process systems: Air Compressors, Recovery Systems, Pressure Systems, Safety Regulators. 3. Gas Processing systems: absorbers, scrubbers, extractives, the steam system, Spink Purifiers. 4. Feedforward systems (including the). 5. Medium and high voltage systems (over 600V). 6. Industrial medical systems (excluding but not limited to: chemical dosing systems, biotech systems, CO2 scrubbers). 7. Significantly increase the potential for personal exposure to hazardous materials - eg Lead, Cadmium (CO2 scrubbers). 8. Reason for the material requested to be changed: chemical or physical variables. 9. Significantly increase or reduce the potential for personal exposure to a physical hazard or chemical agent: include but not limited to: Heat, Cold, Noise, Radiological Energy, Electrical Shock, Release from Control Systems, High Voltage and High Pressure Hazards, Steam Burns from Cooling Towers, Chlorine and Air Weathers, Hot water tanks where contents are under pressure (CO2, hot water, sulphuric systems, Process Recovery, Regenerators, etc.). 10. Cause the change into the process system, or maintain outside the safe operating envelope? 11. Introduce a significant element: new material, intermediate, or result in the production of a new element? 12. Alter or affect existing risk control measures of critical equipment or critical control systems or equipment: include systems including safety PCLs, Safety systems, electrical, safety interlocks, gas/dusts. 13. Involve production or use of chemicals in equipment not designed for the purpose or suitable for equipment involving being exposed. 14. Exclude the current operational design limits for equipment. 15. Exclude the current control systems: Control, Control and Ring equipment. 16. Any other facility designated High Hazardous System - Attention to Building Structures, Ventilation Lifting System, Hoists, Control and Ring equipment. 17. Environmental Control or Regulatory Control required. 18. Are there any consequences to any functional and/or physical hazards introduced by the change: include but not limited to: High pressure, High temperature, Unstable/uncontained liquid, gas, or solid (including for operators, etc.) 19. Are there additional warning signs that have not been installed? Will pedestrian traffic be obstructed by this change, will material flow or traffic increase within the operation. If yes, are additional signs in place?				

NOTICE OF EMERGENCY CHANGE	
Date and Time of Change:	
Integrator Change Reference Date:	
Must be marked by sMOC AMOC if not approved within 30 days	
File:	
Shift Leader:	Admin:
Description of Change:	
POTENTIAL IMPACTS/HAZARDS:	
Operations:	
Maintenance Staff:	
Precautionary measures provided:	
Operations:	
Maintenance Staff:	
Change Coordinator:	Sign:
Person who makes the change:	Print:
Shift Leader:	Date/Time:
Form to be used for the purpose of this change if the shift leader is not the sMOC leader. Form to be used for the purpose of this change if the shift leader is not the sMOC leader.	

- “sMOC **Change**” means installation of, alteration to, or modification of

Change Assessment

sMOC | Safety Management of Change - Global

[Internal](#) [Home](#) [New](#) [View](#) [Modify](#) [System Administration](#) [Reports](#) [Training & Info](#)

Is the work requested defined as a 'Change' to be managed?

Yes	No	
<input type="radio"/>	<input type="radio"/>	Does the work requested require an update of any process safety information ?
<input type="radio"/>	<input type="radio"/>	Is the request for a new product, product trial, or raw material change?
<input type="radio"/>	<input type="radio"/>	Is the work requested within equipment limits and is appropriate documentation available ?
<input type="radio"/>	<input type="radio"/>	Is the work requested within process limits and is appropriate documentation available ?
<input type="radio"/>	<input type="radio"/>	Does the work requested require updating any safe work practices or any operating, maintenance, or emergency response procedures?
<input type="radio"/>	<input type="radio"/>	Does the work requested fit the definition of Replacement in Kind ? Examples

Process Level Determination

S/MOC Process Selection Test for High Risk

Yes	No	Answer questions in sequential order
<input type="radio"/>	<input type="radio"/>	1) Does the change affect an identified Highly Hazardous system? (Link at top center of screen will show you list of systems.)
<input type="radio"/>	<input type="radio"/>	2) Would the change affect highly flammable or explosive materials systems (natural gas, propane, gasoline, cellulose or polymer dust, etc.)?
<input type="radio"/>	<input type="radio"/>	3) Will the change affect boilers or high pressure steam systems (above 15 psig (1 bar))?
<input type="radio"/>	<input type="radio"/>	4) Does the change affect Pressure Vessels?
<input type="radio"/>	<input type="radio"/>	5) Would the change affect Fire Protection Systems?
<input type="radio"/>	<input type="radio"/>	6) Will the change affect Medium and High voltage systems exceeding 600 volts?
<input type="radio"/>	<input type="radio"/>	7) Does the change affect hazardous chemical systems containing materials with a NFPA or HMIS flammability, reactivity or health rating 3 or 4 or a GHS hazard classification of 1 or 2?
<input type="radio"/>	<input type="radio"/>	8) Does the change significantly increase or create the potential for exposure to a hazardous material (asbestos, lead paint, etc.)?
<input type="radio"/>	<input type="radio"/>	9) Will the change result in a new material known or suspected to be thermally, chemically, or physically unstable? (Refer to MSDS, if necessary)
<input type="radio"/>	<input type="radio"/>	10) Does the change significantly increase or create the potential for personal exposure to a <i>physical hazard</i> or <i>physical agent</i> ?
<input type="radio"/>	<input type="radio"/>	11) Could the change take the process, system, or machine outside the safe operating envelope?
<input type="radio"/>	<input type="radio"/>	12) Does the change introduce a substantially different raw material, intermediate, or result in the production of a new chemical?
<input type="radio"/>	<input type="radio"/>	13) Could the change alter or affect existing risk control measures of critical equipment or critical control systems/components? Examples
<input type="radio"/>	<input type="radio"/>	14) Does the change involve production or use of chemicals in equipment not designed for that purpose or create a potential for equipment limitations being exceeded?
<input type="radio"/>	<input type="radio"/>	15) Does the change exceed current documented design limits?

Follow a High Risk Process

If any yes

If all No

S/MOC Process Selection Test for Medium Risk

Yes	No	Answer questions in sequential order
<input type="radio"/>	<input type="radio"/>	1) Does the change result in an increase in the inventory of toxic, flammable, or reactive materials by more than 25%? (raw materials, intermediates, additives, etc.)
<input type="radio"/>	<input type="radio"/>	2) Does the change affect compliance with any regulatory or consensus safety standards?
<input type="radio"/>	<input type="radio"/>	3) Does the change reorder, expand, or contract the process sequence?
<input type="radio"/>	<input type="radio"/>	4) Does the change significantly impact the energy balance or material balance?
<input type="radio"/>	<input type="radio"/>	5) Does the change necessitate significant or unique training for operators or technical personnel?
<input type="radio"/>	<input type="radio"/>	6) Does the change necessitate substantial operator interaction needed for normal and/or emergency operations of the existing system?
<input type="radio"/>	<input type="radio"/>	7) Could the change result in chemical, material, equipment compatibility issues?
<input type="radio"/>	<input type="radio"/>	8) Does the change increase the physical capacity requirements of operators (strength, repetition, height)?
<input type="radio"/>	<input type="radio"/>	9) Is the change being made to an electrical system in the 240 to 600 volt range?
<input type="radio"/>	<input type="radio"/>	10) Is the change affecting multiple machines or processes?
<input type="radio"/>	<input type="radio"/>	11) Would the change result in an occupational exposure to a chemical, physical or biological risk?
<input type="radio"/>	<input type="radio"/>	12) Does the change exceed current documented operating limits?

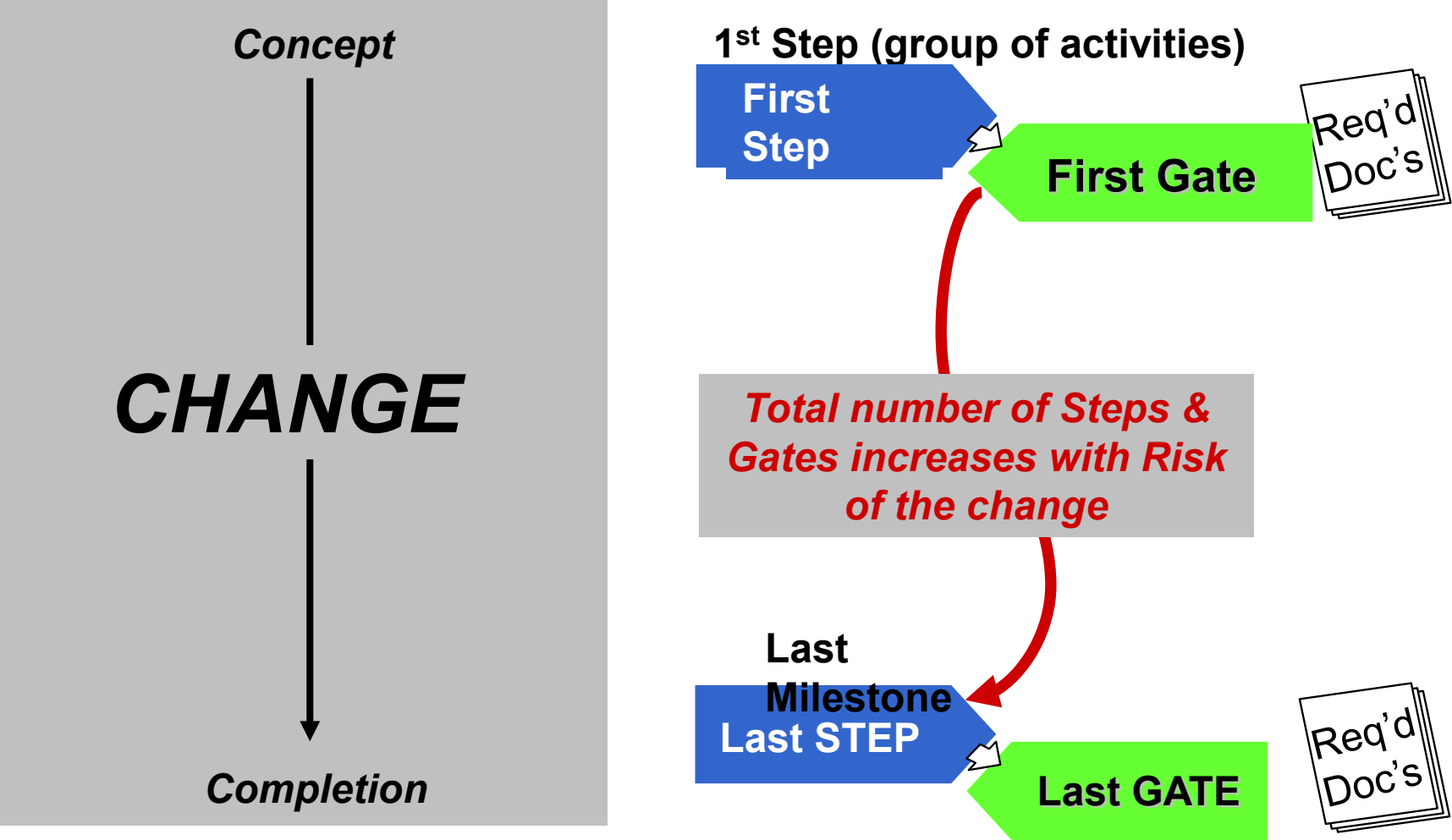
Follow a Medium Risk Process

If any yes

If all No

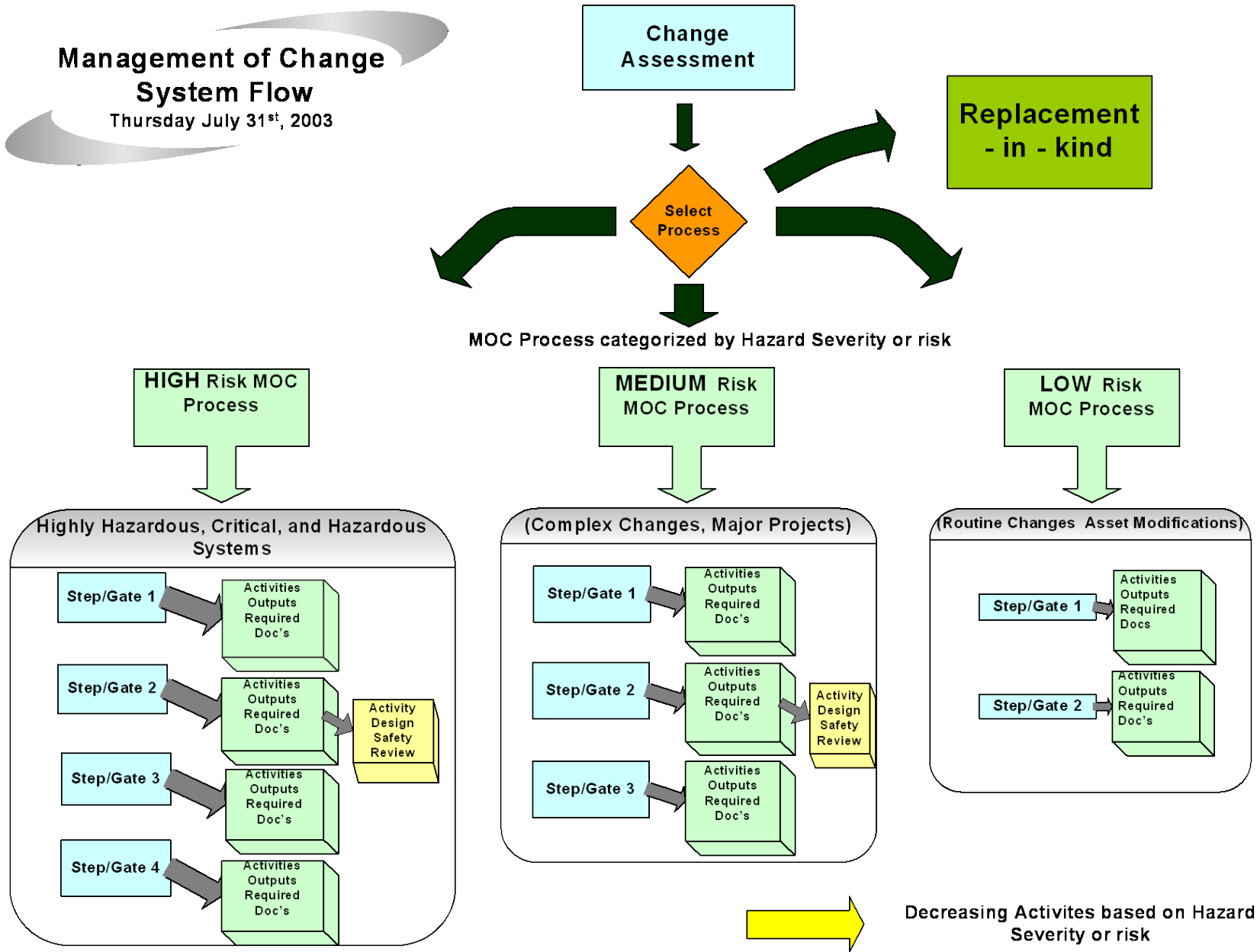
Low Risk

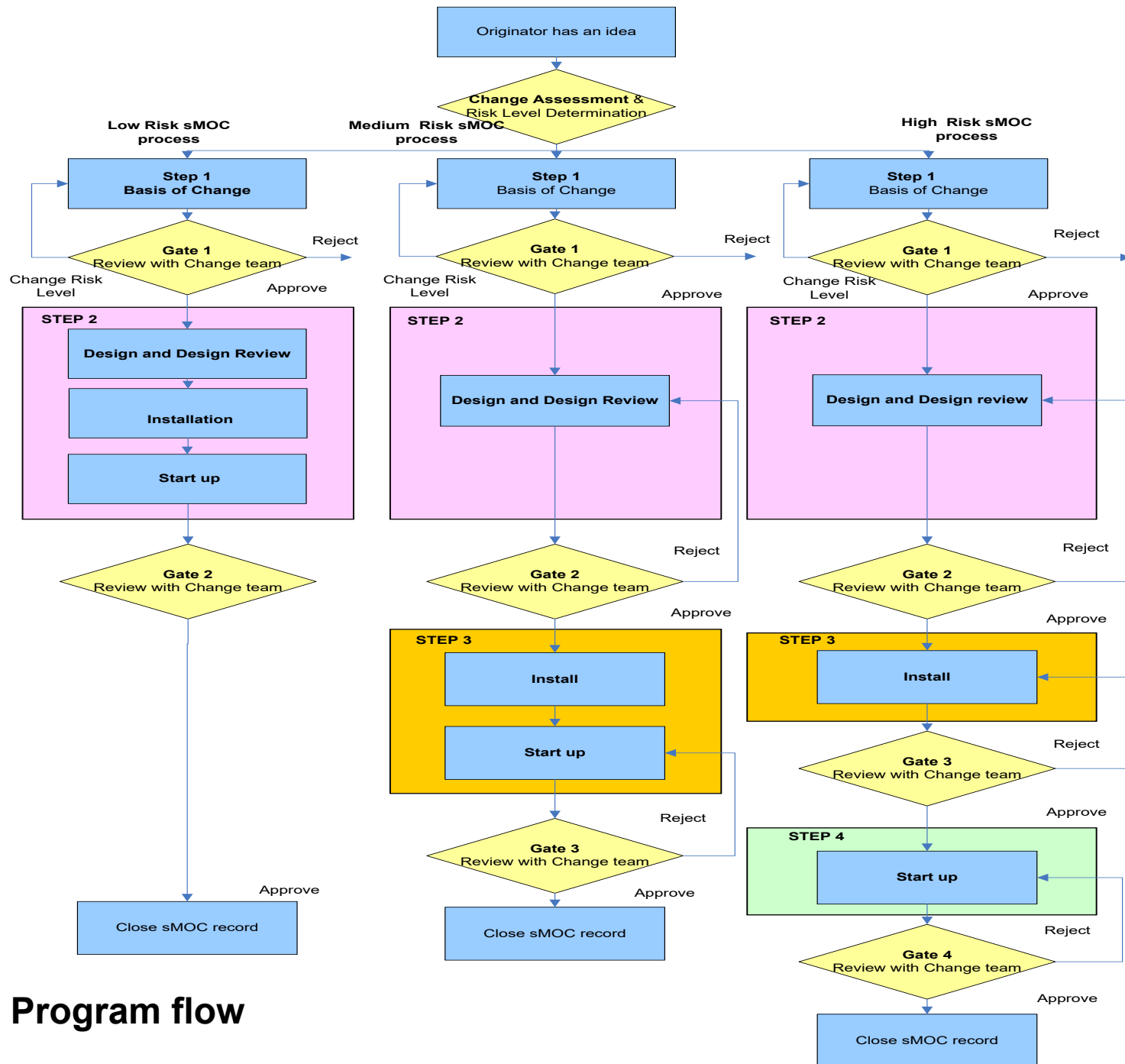
The “Steps & Gates” Concept:



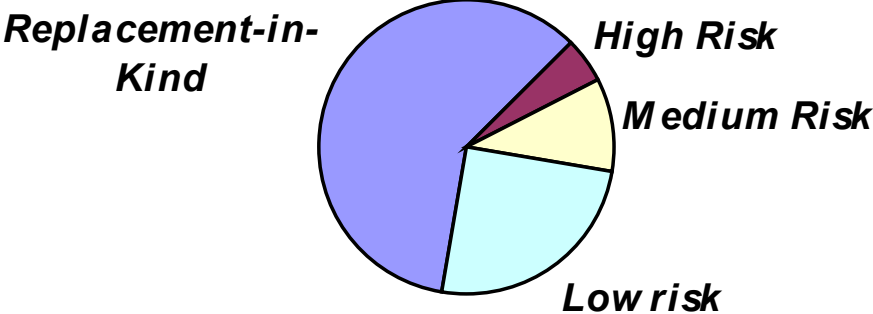
Management of Change System Flow

Thursday July 31st, 2003





Frequency of Change



- Replacement-in-Kind
- High Risk
- Medium Risk
- Low Risk

Application to Projects



Project Life Safety Focus

