ABS Guidance Notes on

Management of Change for the Marine & Offshore Industries

Guidance Notes on Management of Change: Outline

- What is Management of Change (MoC)?
- Why is MoC important to the marine and offshore industries?
- What is in the ABS Guidance Notes for MoC?
  - Recognition of Change
  - MoC Process
  - MoC Program Implementation
  - MoC Program Monitoring
- Questions

What is Management of Change (MoC)?

- Successful organizations are dynamic
- MoC is evaluation of potential impacts of proposed changes
  - No unacceptable risks
  - Minimize impacts to safety, environment, quality, reputation, security,
  - Formal MoC procedure
- Types of changes
  - Temporary and permanent
    - Equipment: e.g., machinery, materials, technology
    - Operational: e.g., procedures
    - Organizational: e.g., personnel

Why is MoC Important to the Marine & Offshore Industries?

- Uncontrolled change may result in accidents if:
  - Technically inappropriate
  - Poorly executed
  - Its risks poorly understood
  - Management fails to ensure communication to key personnel
- MoC
  - Risk Management Best Practice
  - Safety and Environmental Management Systems (SEMS)
  - Tanker Management Self-Assessment (TMSA)
  - Requirement in OSHA PSM since 1990s

Overview of ABS MoC Guidance Notes

- Key considerations for developing and maintaining a successful MoC process
  - Core principles
  - Key functions
  - Models and examples
- Audience
  - Management and personnel responsible for initiating and coordinating changes
- MoC Industry Guidance
  - Center for Chemical Process Safety (CCPS)
  - CFR Q&A for SEMS and OSHA PSM

Recognition of Changes

- Recognizing a change:
  - Equipment, e.g.,
    - Replacement or modification of equipment, ship components, infrastructure including emergency replacements when out at sea
    - New fluids used
    - Acquisition of a new ship into a fleet
  - Operational, e.g.,
    - Deviation from preventive maintenance or mechanical integrity programs
    - Trading patterns, new routes or ports, ship type, change in cargo
    - Offshore logistical change (personnel transport, supply transport, etc.)
  - Organizational, e.g.,
    - Changes to onboard management
    - Change of key shore-based staff supporting the ship or offshore facility
    - Crew turnover and crew change-out by a predetermined percentage

Recognition of Changes

- Changes that do not need to be controlled:
  - Activity or system outside the MoC program scope
  - Replacement in kind
  - Changes controlled via other management
  - Domestic activities
  - Other as defined by the company

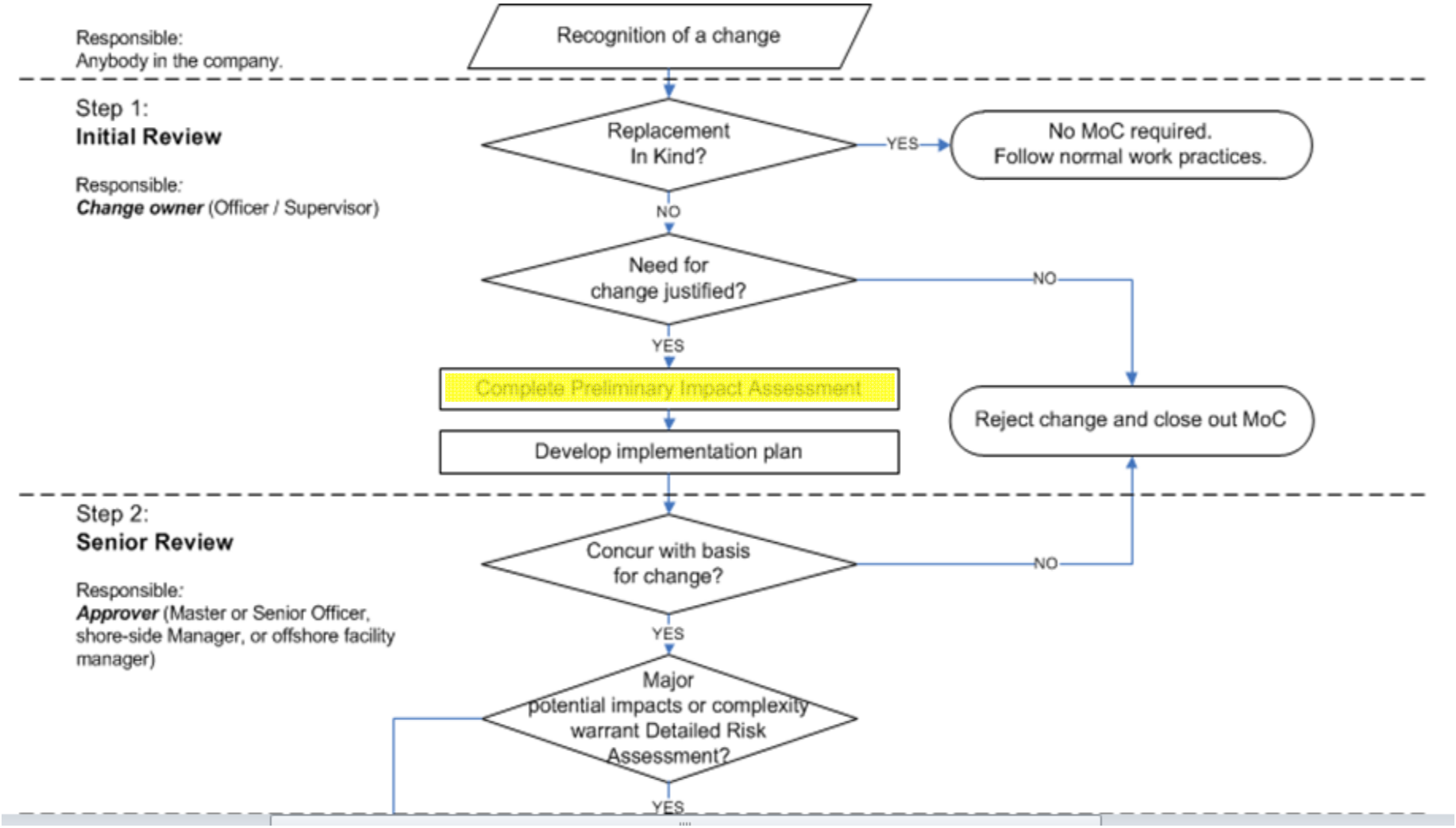
Recognition of Changes

Change	*If the Answer to Any Question is "No", Change is to be Controlled by the MoC System*	*Yes*	*No*
Ship/Facility Mode	• Is the new mode of operation equivalent to a previous mode of operation that was managed successfully?	☐	☐
	• Is the present crew familiar with this mode of operation?	☐	☐
	• Have all shore and shore-interface modifications for the new mode of operation been carried out before?	☐	☐
	• Does mode change require modification to procedures and manuals?	☐	☐
New equipment or software	• Does the new equipment have same performance, functional, material, maintenance, control systems and dimensional specifications as old equipment?	☐	☐
	• Are the existing procedures applicable to this new equipment?	☐	☐
New hazardous cargoes/ hydrocarbon/chemical	Does new cargo/hydrocarbon/chemical have similar properties to previous in terms of:		
	• Fire and explosion	☐	☐
	• Toxicity	☐	☐
	• Corrosiveness	☐	☐
	• Reactivity	☐	☐
	• Spill response	☐	☐
	• Physical properties (boiling and freezing points, thermal expansion, decomposition, vapor pressure)	☐	☐
	• Chemical compatibilities with other cargos/materials handled?	☐	☐
Handling new cargoes/material	• Are existing equipment and crew skills adequate for safe handling, loading or unloading of the new cargo/material?	☐	☐
	• Are procedures for handling new cargoes/materials available?	☐	☐
Personnel	• Does the new candidate meet the competencies, training, education, and experience requirements for the position?	☐	☐
	• For organizational changes ashore (eliminating positions, restructuring, etc.), do reporting relationships, job responsibilities, work load, etc., remain unchanged?	☐	☐
Contractors	Changes to contractors working in areas or activities so designated by company or regulation, should be subject to MoCs, unless the contractor change is a "replacement-		

MoC Process

- Initial Review
- Senior Review
- Detailed Risk Assessment
- Approval
- Implementation
- Verification and Closeout

MoC Process


Responsible:
Anybody in the company.
Recognition of a change
Step 1:
Initial Review
Responsible:
Change owner (Officer / Supervisor)
Replacement In Kind?
YES
No MoC required.
Follow normal work practices.
NO
Need for change justified?
NO
YES
Complete Preliminary Impact Assessment
Develop implementation plan
Reject change and close out MoC
Step 2:
Senior Review
Responsible:
Approver (Master or Senior Officer, shore-side Manager, or offshore facility manager)
Concur with basis for change?
NO
YES
Major potential impacts or complexity warrant Detailed Risk Assessment?
YES

MoC Process: Preliminary Impact Assessment

I-B Preliminary Impact Assessment

Impacts Checklist. Check all that apply.

Organization

Can the change have an impact on:

- ☐ Management systems
- ☐ Responsibilities
- ☐ Work practices
- ☐ Staff movement
- ☐ Contractors
- ☐ Company reputation
- ☐ Regulatory compliance
- ☐ Insurance

Environment

Can the change have an impact on:

- ☐ Effluents – solid
- ☐ Effluents – liquid
- ☐ Effluents – gas
- ☐ Noise
- ☐ Regulatory compliance
- ☒ Accidental spills
- ☐ Marine eco-system

Safety and Health

Can the change have an impact on:

- ☒ Personal Safety
- ☐ Fire detection/protection/fighting
- ☐ Means of escape
- ☐ Life saving equipment
- ☐ Emergency procedures
- ☐ Local exhaust ventilation
- ☐ Mechanical isolation

Crew and Human Factors

Can the change have an impact on:

- ☐ Crew workload
- ☐ Workplace stress
- ☐ Crew communication
- ☐ Crew understanding
- ☐ Crew morale
- ☒ Crew performance
- ☒ Ergonomics

Ship Systems and Operations

Can the change have an impact on:

- ☐ Navigation
- ☐ Recovery from blackout
- ☒ Cargo operations
- ☐ Ballasting operations
- ☐ Berthing
- ☒ Anchoring
- ☒ In-port
- ☐ Station keeping
- ☐ Propulsion
- ☐ Maneuvering
- ☐ Communications
- ☐ Towing
- ☒ Crane operations

Offshore Systems and Operations

Can the change have an impact on:

- ☐ Drilling
- ☐ Diving

Equipment and Instrumentation

Can the change have an impact on:

Hydraulic System *(list system)*

- ☐ Alarm panels
- ☒ Electrical systems
- ☒ Lifting equipment
- ☒ Design pressure
- ☐ Design temperatures
- ☐ Materials of construction
- ☐ Relief rate
- ☐ Vessels
- ☐ Vents
- ☐ Pipework/supports
- ☐ Piping/pumps/other equipment
- ☐ Valves/relief devices
- ☐ Filters
- ☐ Instrumentation
- ☐ Corrosion/erosion
- ☐ Vibration
- ☐ Spares

Structural/Mechanical Integrity

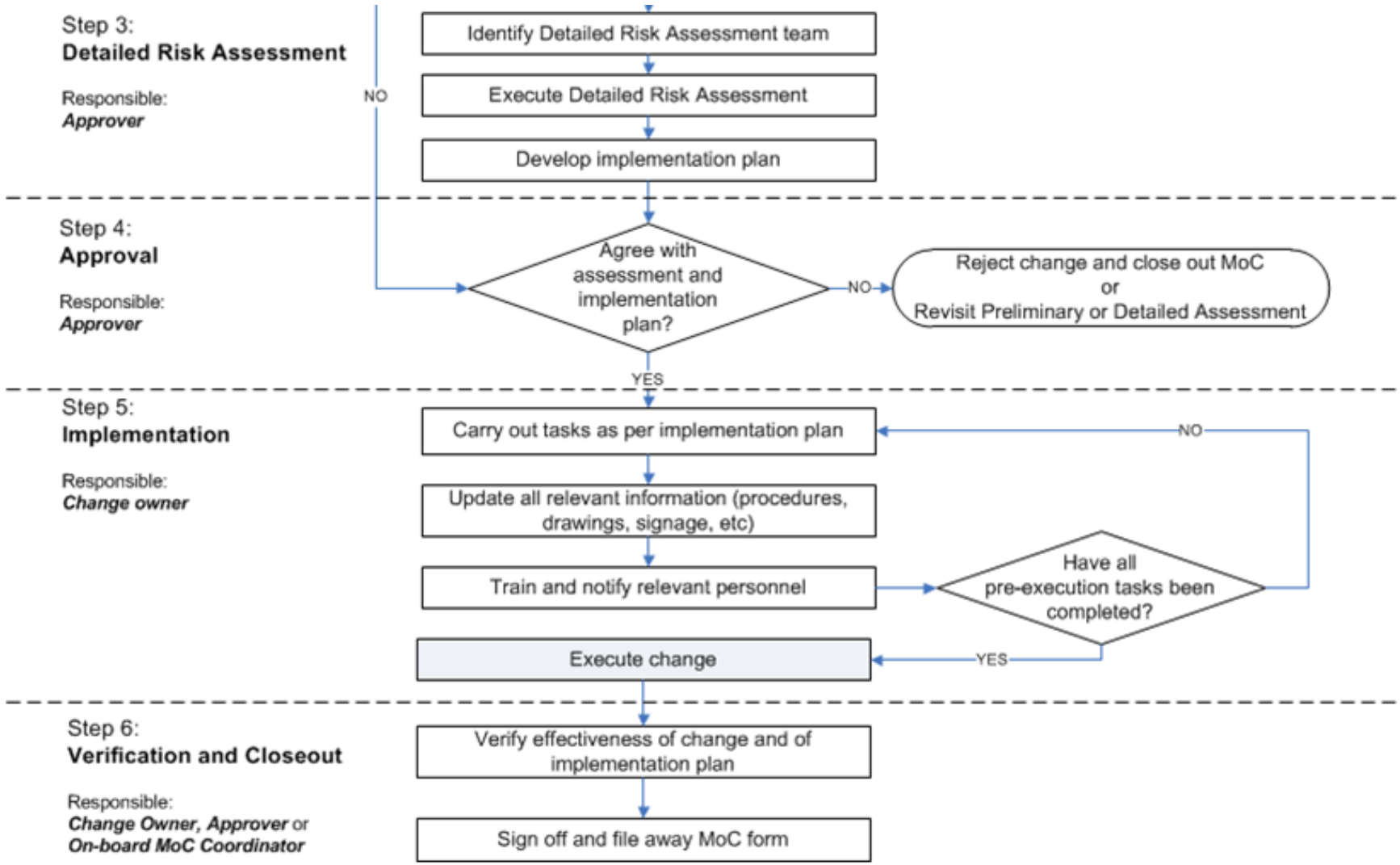
Can the change have an impact on:

- ☒ Structure
- ☐ Stability
- ☐ Pipelines
- ☐ Port facilities

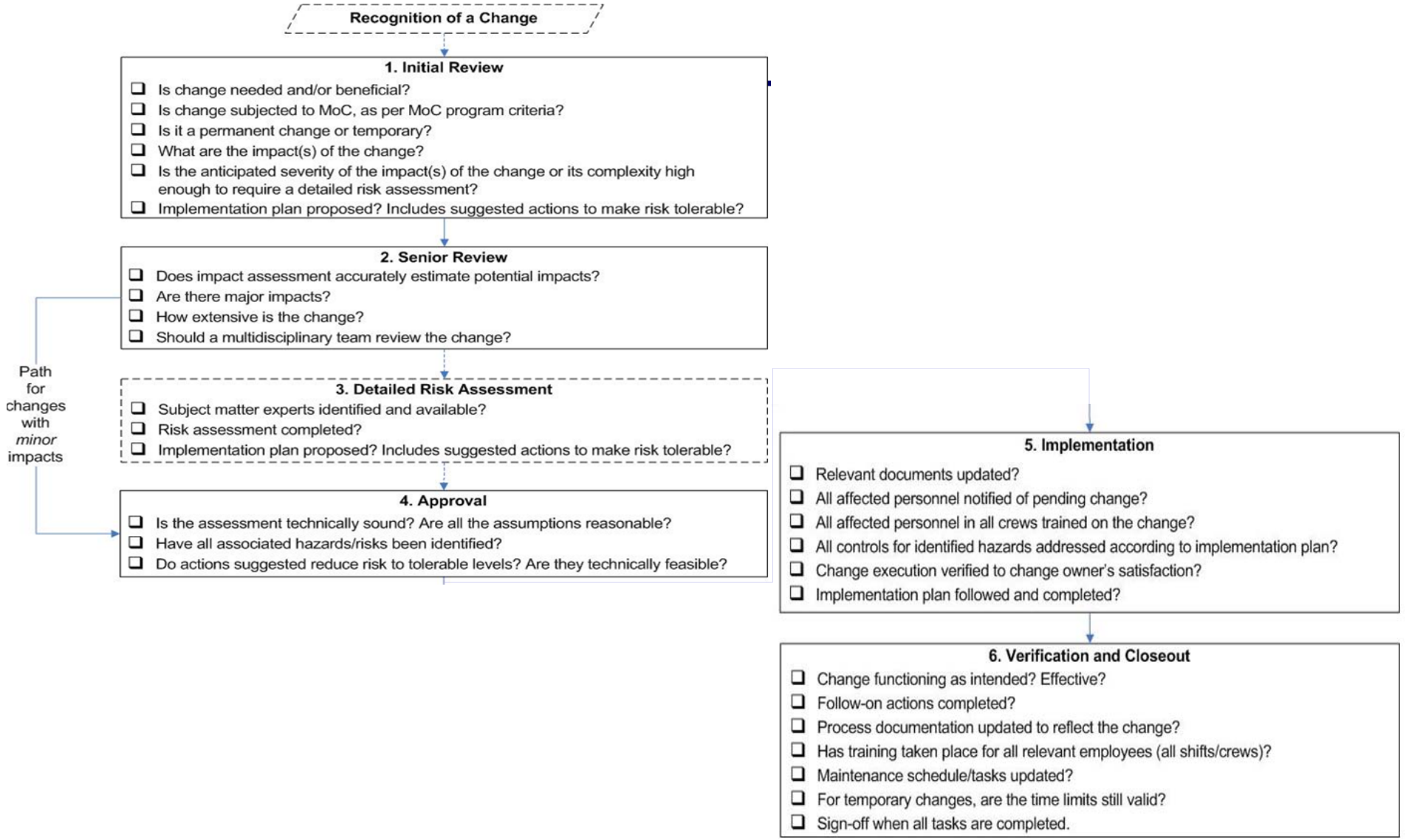
Maintenance and Inspection

Can the change have an impact on:

MoC Process

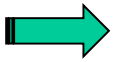

Step 3:
Detailed Risk Assessment
Responsible:
Approver
Identify Detailed Risk Assessment team
Execute Detailed Risk Assessment
Develop implementation plan
NO
Step 4:
Approval
Responsible:
Approver
Agree with assessment and implementation plan?
NO
Reject change and close out MoC
or
Revisit Preliminary or Detailed Assessment
YES
Step 5:
Implementation
Responsible:
Change owner
Carry out tasks as per implementation plan
NO
Update all relevant information (procedures, drawings, signage, etc)
Train and notify relevant personnel
Have all pre-execution tasks been completed?
Execute change
YES
Step 6:
Verification and Closeout
Responsible:
Change Owner, Approver or
On-board MoC Coordinator
Verify effectiveness of change and of implementation plan
Sign off and file away MoC form

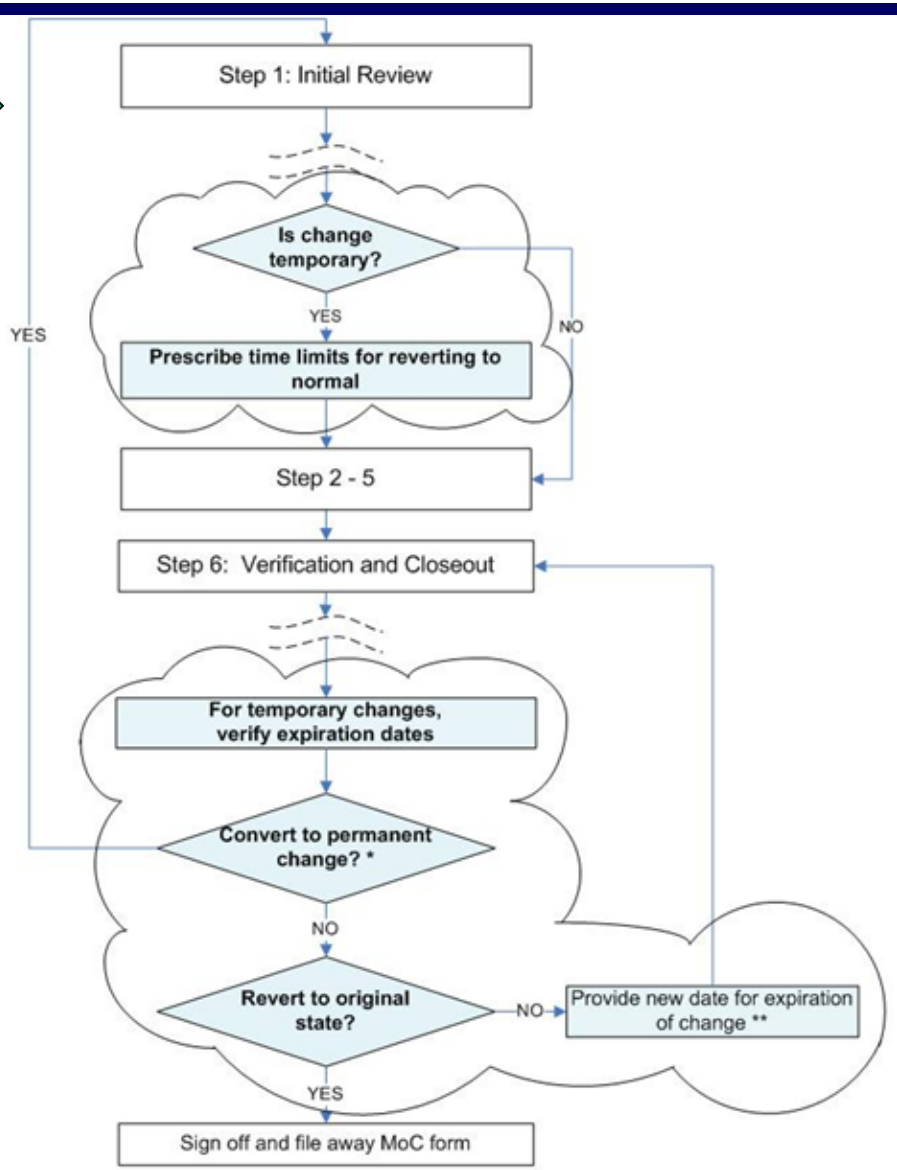
MoC Process: Checklist



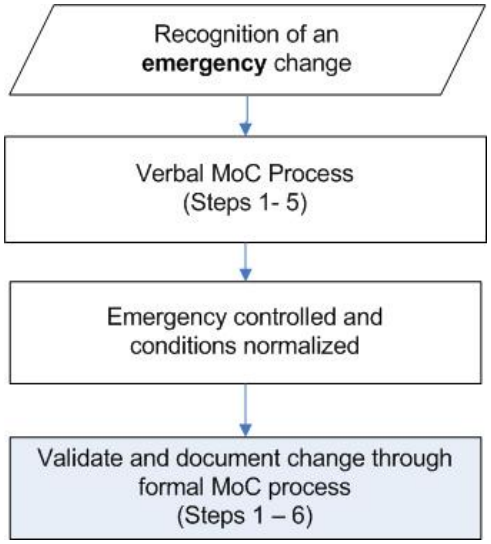
Temporary & Emergency Changes

- Temporary Changes



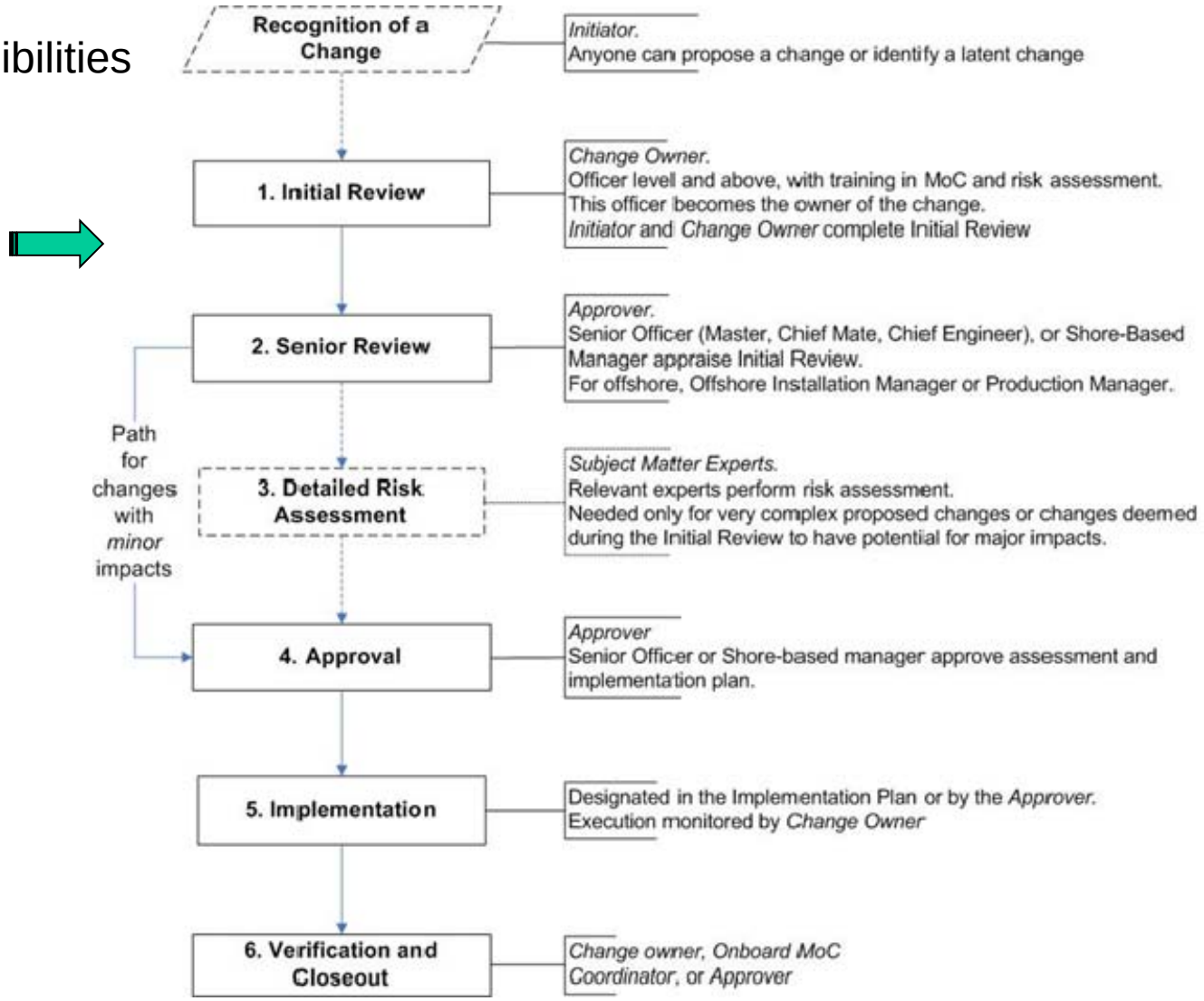


- Emergency Changes



MoC Program: Implementation

- Roles and Responsibilities
- Program Manual
- MoC Form
- MoC Log
- Handover of MoC
- Training on MoC



MoC Program: Monitoring & Appendices

- MoC Program Monitoring
  - Sample KPIs
- Appendix 1 – Preliminary Impact Assessment
- Appendix 2&3 – Completed MoC Examples

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