Approval and Communication of Refinery, Maintenance, or Engineering Instructions

Document No.: RI-370	**Title:** Management of Change	**Current Date:** 04/2012
Action: ☐ New ☒ Revision ☐ Cancellation		**Next Revision Due:** 11/2014
Responsible Organization: PSM	**Position to Contact With Questions/Suggestions:** PSM Specialist	

Summarize Rewritten Material: **Review:** **Minor** ☒ **Complete** ☐

Since this is a "minor" revision, the "Next Revision Due" date does not change.

Updated Appendix III "In Kind" Operating Changes Vs "Not-In Kind" Operating Changes per CalARP audit recomendation A16-01.

REQUIRED COMMUNICATION/TRAINING

If Type 2 or Type 3 training is necessary – Instruction Owner is responsible for developing the training material and must work with Development Department Manager and Managers of affected personnel to coordinate training of affected personnel and documentation of training.

This document should be reviewed by:	Type 1 Simple Change	Type 2 On-The-Job Training	Type 3 Classroom Training
All Refinery Personnel	☒	☐	☐
Operations	☐	☐	☐
Maintenance & Reliability	☐	☐	☐
Technical	☐	☐	☐
HES	☐	☐	☐
Other: Contractors	☒	☐	☐

Necessary Approval for Instructions:

- Refinery Instructions: ***Standard RI approvals have been check marked***
- Safe Work Practices: Development, Operations, Maintenance & Reliability, HES, and Refinery Manager
- Emergency Plans (400 Series RIs): Development, Operations, Maintenance & Reliability, HES, and Refinery Manager
- Engineering Instructions: Technical and HES Manager
- Maintenance Instructions: Maintenance & Reliability and HES Manager
- Cancellation of Instruction: Owner and Refinery or Appropriate Dept. Manager

APPROVALS

☒	**Instruction Owner:** Gary Lassen	☐	**Development Manager:** *(first signature before final routing)*
☐	**Operations Manager:**	☐	**Technical Services Manager:**
☐	**HES Manager:**	☐	**Maintenance & Reliability Manager:**
☐	**Refinery Manager:** *(final signature)*	☒	**Other Manager:** Steve Wildman

On Completion – Instruction Owner will send file and message to IPC to post on the Refinery server.

RICHMOND REFINERY INSTRUCTIONS

PROCESS SAFETY MANAGEMENT **MANAGEMENT OF CHANGE**

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RICHMOND REFINERY INSTRUCTIONS

1.0 PURPOSE

The purpose of this Instruction is to establish and communicate Richmond Refinery's policy for complying with the Management of Change elements of:

1. US Federal EPA requirements of 40 CFR Part 68 – Prevention program elements for Risk Management Plan (RMP).
2. Cal/OSHA requirements of General Safety Orders, CCR Title 8, 5189 Process Safety Management (PSM) regulation.
3. Cal/OSHA requirements of CFR Title 8 19, Division 2, Chapter 4.5 California Accidental Release Prevention (Cal/ARP) program.
4. City of Richmond Industrial Safety Ordinance (RISO) 42-01. Limited to 6.43.90(b).
5. Corporate Operational Excellence Expectations, Element 4, Management of Change.

2.0 SCOPE

These regulations require an employer to establish and implement written procedures to manage changes (except for "replacement in kind") to process chemicals, technology, procedures, equipment, and changes to facilities that affect a covered process.

MOC is an administrative tracking process, which identifies specific tasks or reviews to be performed.

2.1 Prerequisites

MOC is for managing approved changes, not proposing new ones. Before starting the MOC process, confirm the work will be performed.

2.2 Requirements

The MOC process shall ensure the following are addressed:

1. Technical basis for the change;
2. Impact of the change on safety and health;
3. Modifications to operating or maintenance procedures;

4. Necessary time period for temporary changes, not to exceed 1 year;

5. Authorization requirements for the proposed change;

6. Communication or training employees affected by the change before start-up, and;

7. Updating Process Safety Information (PSI), operating procedures, maintenance procedures, or practices before start-up.

3.0 CHANGES REQUIRING MOC

The MOC process manages changes (except for "replacement in kind") to a covered process; these are changes that do not satisfy the existing design specification. The list below provides examples.

Use the MOC process in the following circumstances:

3.1 Use of different feeds, chemicals, or catalysts.

3.2 Use of different process conditions, process control, instrumentation, and protective devices which would affect the plant or other plants (upstream or downstream). E.g., operating outside of established "Safe Upper or Lower Limits," outside of equipment specifications, piping identified at flagged thickness, etc.

3.3 Use of new or modified equipment or piping that is not a "replacement in kind."

3.4 Equipment siting, buildings, trailer locations, roads, or bridges.

3.5 Changes to operating procedures that may affect workplace safety or maintenance procedures that may affect the ongoing integrity of process equipment.

NOTE: The following "guidance" documents which are used to maintain compliance with the requirements of the Cal/ARP and RISO program are also subjected to the MOC requirements:

1. Electronic Operating Manual (EOM) Guidebook

2. Latent Conditions Guidance Document

3. Compliance Audit Guidance Document

4. Root Cause Analysis Guidance Document

5. Management of Organizational Change (MOOC), RI-382

6. Inherently Safer System (ISS) & Human Factors Program Documents

4.0 MOC PROCESS AND MOC FORM

The MOC process uses a central database tracking system and standard form to guide the work through the necessary reviews, authorizations, and prestart-up. The MOC database is located on the Refinery intranet.

The MOC process ensures changes are reviewed, completed, and documented properly. The form has two main sections: Section 1, technical basis of the change, and Section 2, review and approval of the change (Refer to Appendix V).

4.1 Section 1

The MOC originator generally completes the Section 1 review. This review consists of filling out as much of this section of the MOC Form as possible.

For definition of terms in Section 1, see Appendix I, Glossary.

4.2 Section 2

Section 2 has three stages:

Stage 1: Items to be completed before implementing a change.

Stage 2: Items to be completed before starting up a change.

Stage 3: Items to be completed before closing the MOC.

1. Minimum Required Activities

   Perform the following activities for each MOC:

   a. Health and Safety Evaluation (HSE) or Process Hazards Analysis (PHA)

   b. Communication and Training

   c. Prestart-up Safety Review (PSSR) (n/a for changes limited to operating procedures).

   d. Update all affected Process Safety Information (PSI).

5.0 SPECIAL CIRCUMSTANCES

5.1 Simultaneously Begin Construction and Start-Up of Planned Work

For work such as hot taps, stopples, leak seal work, modification to control strategies, control systems, or control logic changes, "Implementation" and "Start-up" occur at the same time. Complete all Pre-implementation and Prestart-up activities before performing the work. Perform a Prestart-up Safety Review (PSSR) for this type of work at the time the work is started.

5.2 Emergency Work

This is work that must be performed immediately to avert an undesirable event, which could adversely affect the health and safety of employees, environment, community, or create a severe economic impact to the facility.

1. The Shift Team Leader, OA, or the appropriate Section Head or RSL, must ensure any impact of the change has been addressed by:

   a. Conducting a Health and Safety Evaluation (HSE) before giving authorization to implement the change.

   b. Training the affected on-shift personnel.

   c. Confirm there is a communication/training plan to train affected oncoming personnel before completing their turnover.

   d. Completing a PSSR (n/a for changes limited to operating procedures).

2. The Section 2 Reviewer/Approver must determine and assign appropriate tasks and reviews on the next working day (Monday to Friday) for completion as soon as possible.

5.3 Extension of Temporary Change

Before a temporary change expires, the Section 2 Reviewer/Approver will review the change to determine whether to extend or remove the change. If the change is to be extended, the Section 2 Reviewer/Approver must:

1. State on the MOC form why the change needs to be extended.

2. Verify the original conditions still exist.

3. Complete a new HSE Extension and select a new Expiration Date, not to exceed 1 year. This requires RBM or delegate approval. A temporary MOC may not be extended beyond the next planned shutdown.

5.4 Temporary Change to Permanent

Before a temporary change expires, the Section 2 Reviewer/Approver will review the change to determine whether to remove or make the change permanent. If the change is to be made permanent, the Section 2 Reviewer/Approver must:

1. Complete and approve a new Permanent MOC.

2. Close out the Temporary MOC.

5.5 Projects, Dismantling, and Shutdowns

If modifications are required after the PSSR for the project or shutdown have been completed and the authorization to start up has been signed, the changes must go through the MOC process.

For projects and shutdowns, the RBU involved will assign a Section 2 Approver during the preliminary planning phase of the project or shutdown.

For projects and shutdowns, related changes may be listed on a single MOC.

5.6 Inter-Business Unit/Area or Refinery-Wide Changes

If changes affect two or more RBUs or departments, representatives of each affected area should be involved in the MOC process to determine the necessary reviews. Depending on the changes' complexity, it may be necessary for each affected area to have an MOC to capture all required reviews (refer these MOCs to each other for reference). Each must address the items specific to their area such as procedures, training, and updating PSI. Each Refinery-wide MOC shall also be reviewed and approved by the Refinery PSM Specialist.

5.7 Repetitive Work

One MOC may be written to perform work on a specific piece of equipment the same way each time (for example, replacing several "type X" transmitters in one RBU).

6.0 DOCUMENTATION

PSM group shall maintain all electronic MOC files as documentation for a minimum of five (5) years. As technological limitations dictate, "hard-copy" documents may be retained by each RBU for compliance purposes.

APPENDIX I GLOSSARY

1. Definitions Within Section 1

a. *MOC No.*

Unique ID number assigned by the common database to facilitate tracking of the MOC. This will be the only numbering system used for MOCs.

b. *Originator*

Anyone who initiates an MOC. This person must be trained on the Refinery MOC process and understand the use and purpose of the MOC system.

c. *Date Issued*

Date that the MOC was electronically generated. This box is not modifiable.

d. *Type of Change*

Can be only one of the following:

☐ *Permanent Change:*

Once completed, the change will become a normal and continued operational change.

☐ *Temporary Change:*

*A change that will be removed by the specified expiration date. Handle the review of a temporary change in an identical manner as a permanent change. The MOC is considered complete when the change has been removed or made permanent.

☐ *Emergency Change (Permanent or Temporary):*

Work which must be performed on an immediate basis to avert an undesirable event which could adversely affect employees' health and safety, the environment, community, or create a severe economic impact to the facility. An emergency change may be permanent or temporary.

e. *Section 2 Reviewer/Approver*

Evaluates the change, assigns all necessary tasks and reviews, and approves changes before implementation. Training on these duties will be given before performing the job.

f. *Title*

A short title using key words (starting with affected equipment number) to recognize the overall scope of the work.

g. *Expiration Date*

If the change is temporary, enter a date in this box (not to exceed 1 year, determined by the Section 2 Reviewer/Approver). The date entered is the anticipated removal date of the temporary change. Before the temporary change expires, the Section 2 Reviewer/Approver will review the change to determine whether to extend, remove, or make the change permanent.

h. *Technical Basis for the Change*

Detailed technical description including the overall scope of the approved work.

i. *Will This Change?*

Answering "yes" to one or more of the five questions in Section 3.0 will require completing an MOC.

j. *Target Closure Date*

If the change is permanent, enter a date in this box. The date entered is the anticipated completion date of the MOC.

2. Common Definitions Within Section 2, All Stages

   a. *Department Person Responsible*

      Identifies the person who has been assigned a specific task or review based upon his/her expertise in a specific process, area, or activity. This person has the responsibility to ensure the assigned task or review is completed. This person is also responsible for the "Reference" box on the MOC form.

      Persons assigned a review or task will be notified by e-mail. Reviews of tasks should be completed electronically and documented in the MOC database.

   b. *Date Complete*

      Date on which the task or review was completed by the assigned person.

   c. *Completed By*

      Electronic signature of the person who has completed the assigned task or review.

   d. *References*

      All documentation required for any review or task must be attached to or referenced on the MOC form. Mark the documents to indicate the name of the task or review and the MOC number.

3. Definitions for Section 2, Stage 1

   The activities in this stage are to ensure certain tasks and reviews are completed before implementing the change in the field.

   a. Authorization to Implement Change

      The authorization to implement the change must be approved <u>before</u> the change is implemented. The approver is typically the Section 2 Reviewer/Approver. Before authorizing the change, the approver must:

      (1) Confirm all assigned tasks and reviews are complete.

      (2) Confirm appropriate documentation is attached or referenced.

4. Definitions for Section 2, Stage 2

The activities in this stage are to ensure certain tasks and/or reviews are completed before starting up the change.

a. Authorization to Start Up Change

Authorization to start up is required before using any procedure or starting up any piece of equipment that has been changed. The approver is typically the RBL, STL, OA, or Section Head or Section 2 Reviewer/Approver.

The approver confirms:

(1) The change is safe to start up or use.

(2) Procedures and process safety information have been updated (red lined mark-up), approved, and are available to affected work groups.

(3) Communication or training of affected work group has been completed and a communication/training plan is in place.

(4) All critical safety items from the PSSR have been completed, and all other PSSR exceptions have owners and completion dates assigned.

b. Authorization for Extension of Temporary Change

This authorizes the new expiration date, maximum of 1 year at a time, for extending a temporary change. The approver for this extension will be the RBM or delegate. The reason for the extension must be noted on the MOC form, and a new HSE must be completed (see RI-370, Section 5.3).

c. Expiration Date of Extended Temporary Change

The new expiration date for a temporary change, not to exceed 1 year, must be assigned and approved before the original expiration date. The MOC is not considered complete until the temporary change has either been removed or made permanent through completing a new Permanent MOC.

5. Definitions for Section 2, Stage 3 (Post-S/U)

The activities in this stage are used to ensure that, before the MOC is signed off as complete, changes to Process Safety Information have been documented, and are "in-place."

a. Authorization – Change is In-Place, Reviews, and Documentation Completed

This authorizes that an MOC is complete. Authorization is given by the Section 2 Reviewer/Approver, OA, or equivalent confirming all information about the change is "in-place." When all documentation, including exceptions from the PSSR have been completed, the MOC may be signed off as complete.

b. Authorization - MOC Cancelled

This authorizes that an MOC has been cancelled. This may be signed off by the Section 2 Reviewer/Approver, OA, or equivalent. This person has identified that the MOC will no longer be pursued or that the change suggested will not be made.

c. Reason for Cancellation

This documents the reason for cancellation on the MOC form. If the MOC is cancelled, the MOC Cancellation Approver shall communicate this information to the Originator.

6. Additional Definitions

a. Affected Personnel

The Section 2 Reviewer selects who (which affected work/support groups) needs training. Work/support groups are people who currently operate, maintain, or support the equipment or the process. Support groups, for example, may include Maintenance, Contractors, Engineering, Drafting, IMI, I&E, Inspection, etc. Employees who are on extended absence, vacation, or on a special assignment away from the plant are not considered "affected" until they return to work.

b. Communication and/or Training

Affected personnel shall receive the appropriate communication and/or training of the change before operating or maintaining the affected equipment or process. Write and plan all communication and training so affected personnel are trained before start-up.

A communication or training plan is required for anyone who is not trained before start-up. Unless situations/opportunities dictate otherwise, this plan must be in place and implemented near the start of each shift. This allows the on-shift crew to start up a change while ensuring the remaining affected work groups will be trained in the future.

Given various levels of employee experience, tailor training to meet employees' needs.

(1) Guidelines for selecting the type of training:

Type 1: Communication of a "Simple" Change:

- Written, verbal, or electronic notification.
- May be self taught.
- Occurs immediately after turnover.
- Takes a few minutes to complete (typically ten or less).
- Signatures are NOT required for documentation.

Type 2: Training for an "Enhanced" Change:

- Requires an instructor who is knowledgeable about the change.
- Takes approximately ten to 30 minutes to complete.
- May require hands-on training.
- Signatures are required for documentation.

Type 3: Training for a "Complicated or Complex" Change:

- Requires an instructor who is knowledgeable about the change.
- Typically takes two hours or longer to complete.
- Requires verification of understanding.
- Best delivered in a classroom.
- May require hands-on training.
- Signatures are required for documentation.

(2) How to assign Type 2 and Type 3 training using TRIM:

- Log on to the MOC Access database.
- Open the Communication/Training Review (Section 2, Stage 2).
- Select a group from the dropdown menu "Mailing Group." This is a list of operator jobs for the area.
- Click the "notify" button. This will notify via e-mail the people in that job's list (maintained by the WPIA) and the TRIM Administrator in Development Department.
- If more than one group requires training, select and notify each of the groups.

If training is required for people not on the drop down menu, list these jobs or people in the "Summary and Comments" field. The Training Records Administrator in Development Department will include these people in the TRIM database, and will forward the e-mail notification about requiring training to them. Examples of people not in the group may include area engineers, field maintenance workers, the RMC, etc.

Communication and training in Section 2, Stage 2 (Pre-S/U) is for training affected people on a change before the change is started up. Communication and training in Section 2, Stage 3 (Post-S/U) is only for informing affected people when a temporary change has been removed (usually Type 1 training is sufficient for this).

c. Prestart-Up Safety Review (PSSR)

PSSR is a redundant process mandated by law to ensure that certain previously required steps have been completed. A PSSR must be completed whenever the modification is significant enough to require a change to the Process Safety Information (refer to RI-362). An exception to this is for changes limited to operating procedures.

RI-367 contains PSSR guidance for shutdowns, turnarounds, or major changes to the facility.

For less complex changes, a PSSR Appendix III is used to ensure:

(1) Equipment and construction completed in accordance with the critical design specifications,

(2) Safety, operating, maintenance, and emergency response procedures in place and adequate,

(3) Communication or training of affected operating, maintenance, or contract workers has been completed.

(4) Quality assurance goals of mechanical integrity have been met.

(5) An HSE or a PHA has been performed and all recommendations have been addressed or resolved.

(6) Modifications meet the requirements contained in MOC, and all follow-up items that would not affect the safety of the employees have been resolved or completed. Resolved is defined as:

(a) Action/Expectation assigned **and**

(b) Owner and due date assigned.

d. In-Place

Documentation is "in-place" when it is readily available to the people who use it in their work assignments. Documentation may be stored electronically.

e. Health and Safety Evaluation (HSE)

This focuses on the impact of a change on the health and safety of employees. A knowledgeable team consisting of the right mix of expertise shall perform and document an HSE. This team may include: knowledgeable Operators, Engineers, Mechanics, Inspectors, Safety Reps, etc.

The Section 2 Reviewer/Approver must notify a USW representative, as USW has the option to participate in all HSEs or PHAs resulting from an MOC.

The HSE facilitator schedules and runs the HSE meeting. At each meeting, the facilitator maintains the focus on health and safety. The facilitator shall document, on the HSE form, comments, action items, and recommendations assigned during the HSE. Assigned action items or recommendations shall be completed or declined before the facilitator signs off the HSE as complete.

During the HSE, the facilitator may solicit the HSE participants to verify the following decisions from the Section 2 Reviewer:

(1) The affected work groups that need to be communicated with and/or trained in the change.

(2) Type of communication or training which is required.

(3) If a procedural review is required.

If there is a difference between the Section 2 Reviewer's recommendation and those of the HSE team, the HSE facilitator shall present the team's recommendation to the Section 2 Reviewer. The Section 2 Reviewer will consider the recommendations and make changes as appropriate.

HSE participants provide their discipline's perspective. Participants will present concerns and solutions impacting the health and safety of the persons involved with operating and maintaining the change under evaluation. It is important each participant acts as a team under the facilitator's direction.

For complex changes of major impact (e.g., a major capital project), an HSE alone may be insufficient; refer to RI-363, Process Hazards Analysis (PHA).

f. Red-Lined or Marked-Up Documents

To facilitate training and start-up, "red-lined" or "marked-up" documents may be used temporarily (i.e., P&IDs, SIS, or pump start-up guide). Red-lined or marked up documents must be "in-place" to satisfy the "Authorization to Start Up Change" requirements. Final updated documents must be in-place and all "red-lined" or "marked-up" copies distributed for temporary use be removed before the MOC can be signed as complete. "Red-lined" or "marked-up" copies attached to the MOC should remain for future reference.

The reviewer assigned for any review is responsible for all documentation that they red-line or mark up, to ensure it is "in-place." They are also responsible for ensuring all marked-up documentation is removed and replaced with final documentation. Ensure red-lined or marked-up documents are available until final documents are in place.

g. Covered Process

A covered process refers to any hydrocarbon or chemical processing unit within the Refinery, or ancillary process that ensures the safe operation of such processing units (e.g. cooling water, steam, electrical, natural gas).

h. Engineering Work Order (EWO)

EWOs are generated using the EWO database. An EWO may automatically generate a MOC, and satisfies the Stage 1 requirements of MOC. A HSE is embedded in the EWO, and must be completed before moving on to Stage 2 of the MOC.

The EWO database is linked directly to the MOC database for such purposes.

i. Leak Seal Review

A Leak Seal Review (LSR) is generated using the Leak Seal database. The LSR automatically generates a MOC, and satisfies the Stage 1 requirements of MOC. A HSE is embedded in the LSR, and must be completed before moving on to Stage 2 of the MOC.

The LSR database is linked directly to the MOC database for such purposes.

j. Workplace Safety

Workplace safety is considered to be the safe operation of a plant, unit, or equipment.

APPENDIX II ROLES AND RESPONSIBILITIES

Role	Responsibilities	Who fills this Role?
All Employees and Contractors	• Review RI-370. • Attend provided training. • Recognize other than in kind changes.	All employees and contractors
MOC Owner	• Ensure all identified tasks and reviews are complete per Refinery Instruction.	OA, STL
MOC Originator	• Before starting MOC process, verifies work has been approved and will be performed. • Perform Section 1 review - fill out as much of Section 1 as possible.	Subject Matter Expert (SME), Supervisor, Engineer, STL, Head Operator
MOC Section 2 Reviewer/Approver	• Ensures changes that are not in kind have been designed, reviewed, and implemented by qualified personnel. • Ensures Refining Tenets of Operation and applicable Refinery Instructions (RI) for managing changes are followed before permitting changes. • Serves as quality control step. • Determines which tasks and reviews are necessary, based on their knowledge, experience, training, and complexity of the change. • Assigns tasks and reviews to specific individuals who become part of the "change team." This includes contacting assignees and reviewing change and time requirements with each team member. • Notifies a USW representative that there will be an HSE or PHA (see HSE Facilitator below). • Determines which affected personnel require training in Operations,	RBM, Section Head, OA, Impact Supervisor, Operations Project Supervisor

Role	Responsibilities	Who fills this Role?
	Maintenance, Contractors, and Technical. • Identifies the appropriate type of training for each group. • Determines if manuals or procedures are required/affected; Operations, Maintenance, etc. • Determines which Prestart-up Safety Review (PSSR) is required (refer to RI-367). • For temporary changes, ensures the expiration date is identified. • For permanent changes, ensures the target closure date is identified. • Considers feedback from HSE facilitator concerning recommendations made by HSE participants.	
MOC Section 2 Task/Review Performers	• Persons identified on an MOC form are part of a change team. • Each team member performs specific task or review which will support the goal of successfully implementing and sustaining a change in the Refinery. Selection is based on job function and expertise, to design, develop, evaluate, and execute a change to the Refinery. • Use and adhere to applicable RIs, laws, corporate guidelines, best practices, and applicable industry practices to develop an incident-free product. • Use their specialized training to ensure changes are managed.	SME who perform Reviews/Tasks. Includes design engineers, process engineers, metallurgists, inspectors, relief system reviewers, safety and environmental reviewers, electrical engineers, controls/instrumentation engineers, utility/infrastructure reviewers (incl. civil engineers), Mechanical Integrity reviewers, construction reviewers, trainers, manual and procedure writers.

Role	Responsibilities	Who fills this Role?
Health and Safety Evaluation Facilitator	• Selects HSE participants to include people from selected MOC reviewers, area operators, SMEs – include people who are affected by change). • Schedule meeting – contact all participants. • Notify USW when and where the meeting is. • Facilitate meeting – keep focus on health and safety impacts. • Enter notes from/during meeting, include concerns that need addressing after the meeting (follow up with appropriate person when resolved) if concerns cannot be resolved on the spot. • Follow up on open action items and concerns after meeting – include in documentation. • Sign HSE line off as complete after all items are complete (after all concerns are resolved - not just the meeting). • Review Section 2 Reviewer's decisions on following items with group: • Who are affected personnel that need to be communicated and/or trained in the change? (This is Section 2 Reviewer/Approver responsibility, though decision can be reviewed and feedback given if a change is needed.) • What method of communication or training is needed to inform affected personnel of the change? • Do manual or procedures need changes, are new procedures necessary? • What is appropriate level of PSSR and who (by job type) should attend? • Discuss team's recommendations with Section 2 Reviewer.	SME, WPIA, or other person as assigned by the Section 2 Reviewer.
Health and Safety Evaluation Participants	• Present concerns and solutions impacting health and safety of the persons involved with operating and maintaining the change. • Provide perspective in their discipline.	All Employees

Role	Responsibilities	Who fills this Role?
	• Before starting HSE, review meeting ground rules. Each participant must follow facilitator's direction. • Keep focus on health and safety impacts.	
WPIA	• Assists Section 2 Reviewer as required. • Audits all reviews, action items, and exceptions for completion. • Verifies Final PSI is "in-place."	WPIA
Authorization to Implement the Change - Approver	• Before authorizing implementation, confirm that: • All assigned tasks and reviews in pre-implementation section are complete. • Appropriate documentation is attached or referenced for each task or review. • Technical basis for the change has been evaluated. • All health and safety action items from HSE are resolved or complete.	RBM, Section Head, OA, Impact supervisor, Operations Project Supervisor

Role	Responsibilities	Who fills this Role?
Prestart-Up Safety Review Facilitator	• Selects PSSR participants to ensure that the right people are involved. • MOC should not be delivered for approval to start-up until the Prestart-up exceptions are assigned action items with due dates. • Document PSSR exceptions and notes in the electronic PSSR form attached to the MOC. • Refer to RI-367, Prestart-Up Safety Review.	Engineer, Assets Project Supervisor, Impact Supervisor, MS, RSL, OA, HO, Maintenance QA/QC, or other as assigned by the Section 2 Reviewer.
Prestart-Up Safety Review participants	• Follow directions reviewed by facilitator. • Ensure PSSR tasks in the PSSR checklist are complete. • Identify and resolve all exception items. • Refer to RI-367, Prestart-Up Safety Review.	Operators, Maintenance Representatives, Engineers
Authorization to Start Up Change - Approver	Before approving the use of any change, approver will confirm that: • All assigned tasks and reviews in prestart-up section are complete. • Review PSSR exceptions list. • Appropriate documentation is included or referenced for each task or review.	RBUM, OA, Impact Supervisor for S/D, RSL for off-hours and emergency MOC, GMS for Maintenance items, Lead Engineers for Technical changes (i.e., Engineering Instruction).
Health and Safety Evaluation Extension Approver	• Approves HSE Extension to allow a new Temporary MOC Expiration Date.	RBM or delegate

Role	Responsibilities	Who fills this Role?
MOC Complete Approver	• Confirms all information about the change is "in-place." When all documentation is complete, the MOC is ready to be filed as complete. • Verify process safety information (PSI), manuals and procedures are updated, this can be completed by: ▪ Reviewing documentation on the intranet. ▪ Auditing controlled copies of the documents. ▪ Ensuring updated PSI is available to affected personnel. • Verify all exceptions documented on, or attached to the PSSR are complete. • For changes which required training, verify that all affected work groups have been trained and/or a training plan is in place. (Individuals' training will be tracked by the TRIM Administrator and Section Trainers.) • For changes which required communication, ensure information is readily available. • Ensure temporary MOCs are not signed off as complete unless they have been removed or completed, and affected personnel have been communicated or trained on the change.	WPIA, Assets Project Supervisor, Impact Supervisor, MS, RSL, OA, PSM Specialist
MOC Metrics Reviewer	• Review Metrics. • Recommend improvements to the process.	For RBU: Refinery Business Unit Manager, OA or equivalent, WPIA For Refinery: PSM Specialist

APPENDIX III "IN KIND" CHANGES VS "NOT-IN KIND" CHANGES

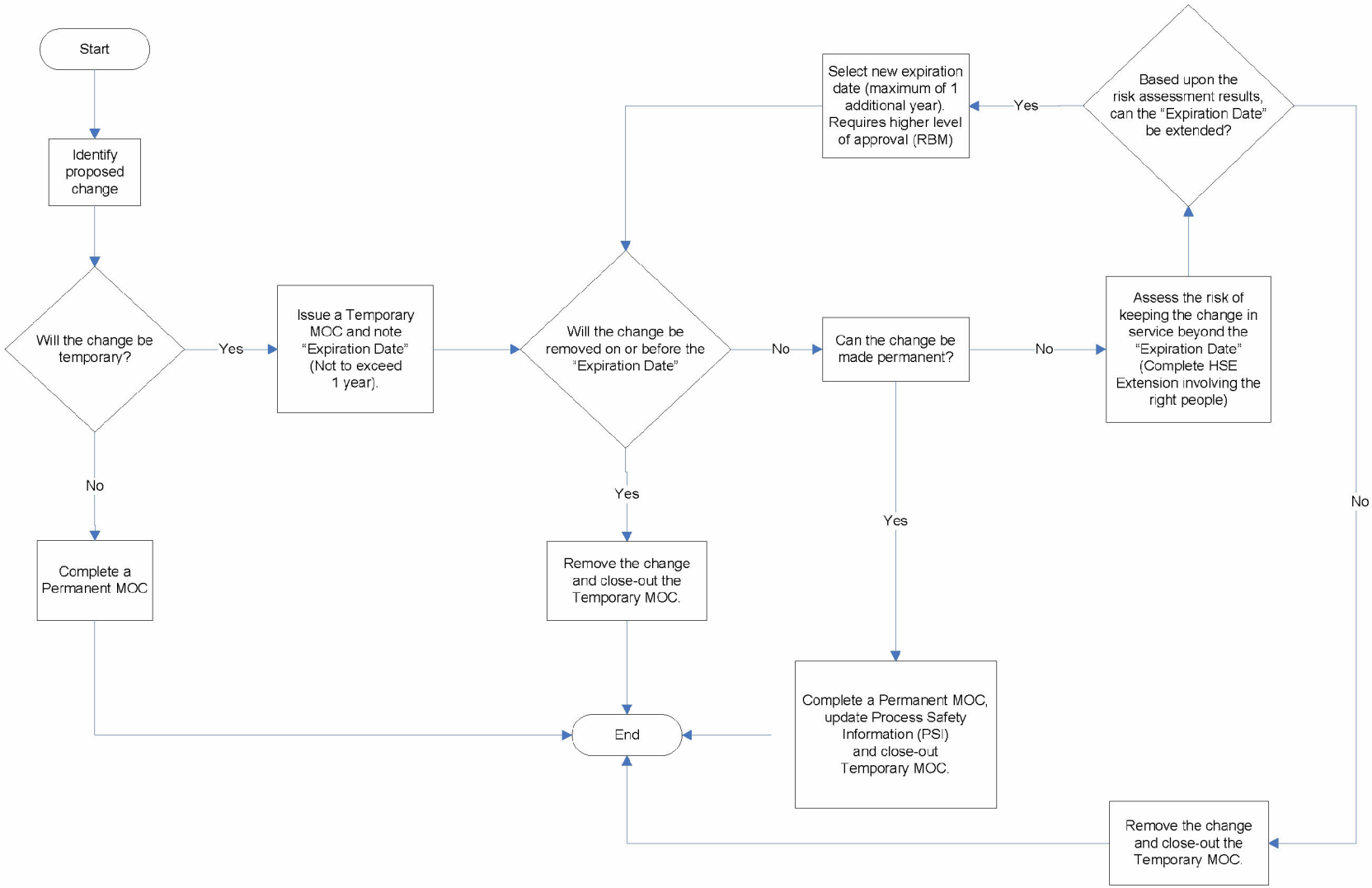
Note: These are examples only and this is not meant to be a comprehensive list.

Type of Change	Examples of "In Kind"	Examples of "Not-in Kind"
Equipment	Replacement satisfies the design specification; it is the same brand, model and manufacturer as the part it replaces.	Replacement does NOT satisfy the design specification; different brand, model or manufacturer.
Valves	Same style, material, rating, and size, and satisfies the design specs.	Different style, material, rating, or size.
Piping and Flanges	Same size, schedule, and material. Same rating. Same flange face.	Different material, schedule, rating, size, or flange face. Piping in use at or below flagged thickness.
Pumps and Compressors	Same manufacturer, type, pressure rating, capacity, and seal type.	Different manufacturer, type, pressure rating, capacity, or seal type.
Turbine, Reciprocating Steam Drivers, and Motors	Same manufacturer, same materials (all components exposed to process); same rating of pressure, voltage, and output torque; same HP capacity; same seal type, and same lubrication.	Different manufacturer, changes in materials of construction, rating change, capacity change or seal or lubrication change (e.g., sealed bearings as opposed to lubricated bearings.) Changes in motor efficiency that requires motor circuit protection changes.
Instrumentation	Same manufacturer, same range, multiplier, units, and sensing element.	Different manufacturer, changes to range, multiplier, units, or sensing element.
Chemicals and Catalysts	Same strength, composition, and reaction.	Different composition or reaction or function.

Type of Change	Examples of "In Kind"	Examples of "Not-in Kind"
Maintenance Procedure	Minor clarification to a procedure.	New procedures or modifications of existing procedures.
Operating Procedure	Minor clarification to a procedure.	New procedures or modifications of existing procedures.
*Operating Changes	Process condition changes to improve yield or quality that stay within established limits; change does not affect other plants, and is covered by existing procedures.	Change in feed, chemicals, or catalysts. Process condition changes to improve yield or quality that are outside of established limits. Changes impacting other process units. Plugging exchanger or boiler tubes.
Control Systems	Operating within established limits. Changing set points within established limits.	Changes to ladder or control logic. Changes to monitoring system or equipment. Change of alarm, S/D, or trip limits.
Equipment Relocation	Relocations that do not require new connections, ID numbers, or drawing updates.	Relocations requiring installation of new equipment or connections or changes to ID numbers or drawings (P&ID).

Type of Change	Examples of "In Kind"	Examples of "Not-in Kind"
Electrical Distribution	Same ratings (amps, volts, watts, torque, enclosure, temperature). Planned routine electrical switching.	Temporary or permanent new connections in a process area. Change in a non-process area requiring a Utilities Connection Permit. Change of some types such as ERP cable to XLP. Changes of: • Protective relay, element, or timer settings • Control scheme or device • Motor type (efficiency rating) • Major component vendor (motors, transformers, starters, switchgear)
Inventory Changes	Changes not affecting the maximum/minimum intended inventory of a tank or vessel.	Changes to maximum/minimum intended inventory of a tank or vessel. Changing service of storage vessel or device (e.g., acid to caustic).

APPENDIX IV MOC FLOWCHART


Start
Identify proposed change
Will the change be temporary?
Yes
No
Complete a Permanent MOC
Issue a Temporary MOC and note "Expiration Date" (Not to exceed 1 year).
Will the change be removed on or before the "Expiration Date"
Yes
Remove the change and close-out the Temporary MOC.
No
Can the change be made permanent?
Yes
Complete a Permanent MOC, update Process Safety Information (PSI) and close-out Temporary MOC.
No
Assess the risk of keeping the change in service beyond the "Expiration Date" (Complete HSE Extension involving the right people)
Based upon the risk assessment results, can the "Expiration Date" be extended?
Yes
Select new expiration date (maximum of 1 additional year). Requires higher level of approval (RBM)
No
Remove the change and close-out the Temporary MOC.
End

Section 1

MANAGEMENT OF CHANGE (MOC)

ABU:	Plant:	Year:

MOC No:	Originator:	Date Issued:	Maximo No:	EWO No:

Section 2 Reviewer:	MOC Category:	PSM:	MOC Type:	Expiration Date:	Other Temporary Reason:

Project/Equipment Title:

Description of Change:

MOC will be required if the change will:

- ☐ Cause the use of different fee, chemicals, or catalysts.
- ☐ Cause the use of different process conditions, instrumentation, process control, or affect upstream/downstream plants.
- ☐ Cause the use of new or modified equipment [which is other than in kind].
- ☐ Alter equipment sitting, building, trailer locations, roads, or fire protection.
- ☐ Require modifying existing and/or developing new procedures.

Section 2

☐ Simultaneously Begin Construction and Start-up

Stage 1	Pre-Implementation	Dept./Person Responsible	Date Complete	Completed By	References
	Design Review				
	Process Engineering Review				
	Instrumentation Review				
	Control System Review				
	Utilities Review				
	Environmental/Regulatory Review				
	Safety/Regulatory Review				
	Building Permits Review				
	Mechanical Review				
	Inspection Review				
	Metallurgy Review				
	Construction Review				
	Leak Seal Review				
	Relief System Review				
	Infrastructure Review				
	PHA/HSE Review				

Authorization to Implement Change (Begin Construction): Approver: Date:

Stage 2	Pre-Startup	Dept./Person Responsible	Date Complete	Completed By	References
	Procedures Review				
	Communication/Training				
	Pre Start-up Safety Review				

Authorization to Start-Up Change: Approver: Date:

Extension of Temporary Change Approved By:	Approver:	Expiration Date:	Extension Reason:

Stage 3	Post-Startup	Dept./Person Responsible	Date Complete	Completed By	References
	Communication/Training				
	Process Safety Information				

Change in Place – Reviews, Documentation & Testing Complete	Approver:	Date:
MOC Cancelled:	Approver: Cancellation Reason:	Date:

Note 1: Emergency request for change should be routed by the Approver on the next working day Retain original in division for five years

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