

1.1 PURPOSE

- 1.1.1 The purpose of this program is to control the change process to minimize or eliminate any detrimental impact on safety, property, and environment, as well as quality, security, or any other aspect of interest to TERRY R PITT CONSTRUCTION and to ensure that various changes are assessed for potential safety risks and appropriate action is taken to ensure existing safety performance levels are not compromised. This program ensures changes do not have an adverse effect on safety critical activities or safety critical positions.

1.2 RESPONSIBILITIES

1.2.1 Initiator

- 1.2.1.1 Propose a change or identify that a change occurred
- 1.2.1.2 Work with change owner to prepare supporting documentation
- 1.2.1.3 Recognize the need for changes
- 1.2.1.4 Knowledge the MOC system
- 1.2.1.5 Basic awareness of preliminary impact assessment

1.2.2 Change Owner

- 1.2.2.1 Responsible in the area where change is proposed
- 1.2.2.2 Work with the initiator in preparing the initial review
- 1.2.2.3 Has ultimate responsibility for the change
- 1.2.2.4 Monitor the implementation of the change
- 1.2.2.5 Ensure proposed changes are managed and controlled in accordance with this procedure
- 1.2.2.6 Verify change is functioning as intended
- 1.2.2.7 Document all changes, ensuring that the change is subjected to hazard identification, risk assessment, and personnel are informed of the change

1.2.3 Approver (operations manager from TERRY R PITT CONSTRUCTION)

- 1.2.3.1 Appraise the initial review to confirm the need for change
- 1.2.3.2 Validate the preliminary impact
- 1.2.3.3 Determine the relevant experts to carry out the risk assessment
- 1.2.3.4 Coordinate with the management team to review any changes and document the changes

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1.2.3.5 Allocate sufficient resources to ensure changes are managed and controlled

1.2.3.6 Ensure that all changes are performed in accordance with safe systems of work such as a permit to work system

1.2.4 MOC Coordinator

1.2.4.1 Responsible for the implementation of the program

1.2.4.2 Make sure changes that go through the program are completed in a timely manner

1.2.4.3 Check for compatibility and alignment with other management processes and other site procedures

1.2.4.4 Verify compliance with the MOC program through regular audits and reviews

1.2.4.5 Provide assistance to determine the risk associated with a change

1.2.4.6 Trained in risk assessments and astute for risk identification

1.3 TYPES OF CHANGES

1.3.1 Most changes controlled by a MOC program fall into one of the following categories: equipment, operational, or organizational changes

1.3.2 Equipment or technological changes

1.3.2.1 New equipment

1.3.2.2 Replacement or modification of equipment

1.3.2.3 Replacement or modification of computer hardware

1.3.2.4 Modification to software (logic, interlocks, controls, alarms, instrumentation)

1.3.2.5 Bypasses around equipment that is normally in service

1.3.2.6 Disabling of safety/critical systems for testing, calibration, or repair/replacement, if not covered by procedure

1.3.2.7 Modification or removal of safety equipment (firefighting equipment, first aid equipment, escape and evacuation, personal protective equipment, etc.)

1.3.2.8 Changes to structural support, layout, or configuration

1.3.2.9 New maintenance chemicals

1.3.2.10 New/changed solid/liquid/gas wastes (ex. produced fluids, by-products)

1.3.2.11 Change to the utilization of equipment

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1.3.2.12 Change resulting from recommendations originated from non-conformances, root-cause analysis, hazard identification studies, etc.

1.3.2.13 Contracted equipment and facilities

1.3.2.14 A MOC is required for existing horizontal tank batteries and saltwater disposal facilities when the following types of changes are made:

1.3.2.14.1 Equipment change that is not "replacement-in-kind"

1.3.2.14.2 Changes that affect the Area Classification Drawings and/or Process Flow Diagrams, if applicable

1.3.2.14.3 Any change that affects the operating procedures of the equipment

1.3.2.14.4 Modification of existing facilities that result in changes of facility or equipment design, structural support, layout, or configuration

1.3.2.14.5 Significant changes in operating conditions, including pressures, temperatures, flow rates, or process conditions different from those in the original process or mechanical design

1.3.2.14.6 Equipment changes, including the addition of new equipment or modifications of existing equipment, including changes in alarms or instrumentation outside of facility design standards.

1.3.2.14.7 Modifications of the process or equipment that cause changes in the facility pressure relief requirements, including increased flow rates, operation at higher temperatures or pressures, increased size of equipment, or the addition of equipment that might contribute to greater pressure relief requirements.

1.3.2.14.8 Bypass connections around equipment that is normally in service excluding temporary bypasses for cleaning equipment/routine maintenance.

1.3.3 Operational changes include administrative controls or management system that define the way processes are conducted throughout the organization

1.3.3.1 Deviation from preventive maintenance or mechanical integrity programs

1.3.3.2 Deviation from inspection program or testing frequency

1.3.3.3 Deviation from testing methods

1.3.3.4 Deviation from operational procedures and safe work practices

1.3.3.5 Deviation from repair requirements

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- 1.3.3.6 A response to external circumstances that is not defined in standard procedures
- 1.3.3.7 Change to a controlled document
- 1.3.3.8 Implementation of new procedures
- 1.3.3.9 Operations outside current operation procedures and parameters
- 1.3.4 Organizational includes personnel and worker modifications, such as changes to crew, management structure, shift manning, company-wide programs, regulations, etc. Changes such as realignment of organizational resources resulting from acquisitions, mergers, new joint ventures, and alliances should be evaluated to provide consistency with safety objectives and minimize adverse effects on the enterprise risk. When organizational changes take place (changes in reporting relationships, elimination of positions, restructuring, etc.), a change control is needed to verify that the reassignment of responsibilities is clearly evaluated and explicitly documented.
 - 1.3.4.1 Changes to onboard management
 - 1.3.4.2 Crew turnover/crew change-out by a predetermined percentage
 - 1.3.4.3 New crew on board (ex. different reporting requirements)
 - 1.3.4.4 New contractors
 - 1.3.4.5 New and forthcoming regulations
 - 1.3.4.6 Acquisitions, mergers, new joint ventures, and alliances
 - 1.3.4.7 Elimination of positions or restructuring
- 1.3.5 There may be changes that overlap one or more categories (ex. a major technological change may necessitate modifications to equipment, operations, and organization). These categories illustrate to the developers and users of the management system what may constitute a change.

1.4 TEMPORARY OR EMERGENCY CHANGES

- 1.4.1 It should be identified during the Initial Review if the change falls into the category of temporary or emergency. This distinction is important, as the MOC program should offer some flexibility to control changes under these special circumstances.
- 1.4.2 A temporary change is one that is intended to exist for a short and predetermined period of time (180 days or less). Management of change procedures for temporary changes should follow the same process as a permanent change, but they are only valid for a specific time limit as they may carry a higher level of risk that is acceptable only for a short term. Examples of temporary changes may include, but are not limited to temporary piping, temporary structural supports, temporary controls systems, or temporary electrical conductors.

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- 1.4.3 Temporary changes must have a specified time limit to ensure they are returned to the original system condition or that further steps in managing the change are addressed (ex. converting the temporary change into a permanent change).
- 1.4.4 An emergency change is a change that must be performed in a true emergency. Generally, the situation is such that action is required quickly, and the persons required to provide approvals may not be available to meet the requirements of the written MOC process. In these emergency situations, safety could be jeopardized by waiting for completion of the formal MOC process. In an emergency situation, the change should be reviewed to the best of the staff's abilities. This emergency MOC process should involve a risk assessment using any and all available resources and time to evaluate the risks involved with the change and it may be verbal, rather than written. The focus should be on the immediate risks only.
- 1.4.5 Situations such as the following may require an emergency MOC:
 - 1.4.5.1 Correcting a deficiency that may cause an immediate threat to worker safety or facility
 - 1.4.5.2 Imminent environmental release
 - 1.4.5.3 Impending external threats that could result in a loss of equipment, such as natural disasters, security threats, or extreme temperatures
- 1.4.6 The following process should be used in the event of an emergency condition:
 - 1.4.6.1 The initiator of the emergency change immediately contacts the Production Superintendent to verbally request the change and evaluate the potential safety and environmental impacts of the change. If it is agreed that the change is safe and justified, the change will be implemented immediately.
 - 1.4.6.2 Changes made under an Emergency MOC must be removed, or a MOC change request form must be submitted, within 48 hours of obtaining approval.
 - 1.4.6.3 The MOC initiator will complete an emergency MOC form and submit it to the supervisor to implement the normal MOC review and approval process, including updating any associated documentation.
 - 1.4.6.4 For temporary MOCs, follow the standard MOC initiation process. The Temporary MOC process to review and approve the change is the exact same as the Standard MOC process. The change request is only used when waiting on Replacement-in-Kind equipment that is not readily available.

1.5 CHANGES NOT SUBJECTED TO MOC PROGRAM

- 1.5.1 Addressing all types of modifications with the MOC program will undeniably reduce the overall effectiveness of the system without adding significant risk reduction. Types of changes typically not governed by the MOC program include the following:

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1.5.1.1 Replacement in kind - A replacement-in-kind is a change wherein an item, process, or person meets the specified criteria for the item it is replacing, if such criteria exist. This may take the form of an identical replacement, or an alternative that is specifically designed within specifications criteria and therefore will not adversely affect the function of the system.

1.5.2 Changes that the company chooses to control via other management process such as:

1.5.2.1 Routine personnel changes (crew rotation, personnel absences and replacements, shift, or tour changes) controlled by operating procedures, safe work practices, training, etc.

1.5.2.2 Routine in-service changes where the operating procedures provide appropriate guidelines for the change and the operating procedures have been adequately reviewed prior to becoming effective.

1.5.2.3 Domestic activities (janitorial, food, beverage, laundry, housekeeping, etc.)

1.5.2.4 Other types of changes as defined by the company

1.6 ELEMENTS OF MANAGEMENT OF CHANGE PLAN

1.6.1 Project title/date

1.6.2 Approach rationale

1.6.2.1 Clarify the reason for change

1.6.2.2 Outline the impact of proposed changes on safety, the environment, costs, quality of service, and/or managerial efficiencies

1.6.2.3 Demonstrate how the approach will promote commitment amongst those directly affected by the change

1.6.2.4 Detail how project will be evaluated in achievement of objectives and approach

1.6.3 Objectives

1.6.3.1 Clear, concrete, and measurable

1.6.4 Proposed staffing structure/training

1.6.4.1 Highlight the differences between current and proposed structures

1.6.4.2 Assess any impact on the work or conditions of staff

1.6.4.3 Outline cost implications of changing staff members or organizational structure

1.6.5 Impact on workloads

1.6.5.1 Identify impact on the workload of staff

1.6.6 Key steps, responsibilities, and timeframes

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- 1.6.6.1 Define the change process including the key steps, those responsible for undertaking them, and appropriate time frames
- 1.6.6.2 Target completion and evaluation dates
- 1.6.7 Communication/consultation strategy
 - 1.6.7.1 Means by which staff will be informed of the objectives of the project
 - 1.6.7.2 Formal and informal meetings will keep staff informed of the progress of the project
- 1.6.8 Proposed transition arrangements
 - 1.6.8.1 Proposed timing of implementation (ex. stages or all at once)
 - 1.6.8.2 Recruitment and/or selection approach for any new positions
 - 1.6.8.3 Need to review any current job status
 - 1.6.8.4 Training and staff development implications

1.7 CHANGE PROCESS

- 1.7.1 Regardless of a company's culture, organization, values, and programs, the key steps discussed in this section should be considered when designing any formal management of change program.
- 1.7.2 Prior to start-up of a new or modified process or facility, the following should be verified:
 - 1.7.2.1 Construction and equipment are in accordance with specifications and recognized industry standards.
 - 1.7.2.2 Safety, environmental, operating, maintenance, and emergency procedures are in place and are adequate.
 - 1.7.2.3 Safety and Environmental Information is accurate, current, and in place.
 - 1.7.2.4 Mechanical integrity testing and documentation have been completed.
 - 1.7.2.5 All protective packing has been removed from equipment, and necessary pre-service has been performed as recommended by manufacturer/vendors.
 - 1.7.2.6 Safety and control devices are set and are properly operating.
 - 1.7.2.7 Training of operating and maintenance personnel has been completed and documented.
 - 1.7.2.8 All requirements of MOC have been completed.

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- 1.7.2.9 Initial review - This step involves stating the justification for the change, as well as developing an initial assessment of the hazards associated with the change, and proposing an implementation plan with risk control options.
- 1.7.2.10 Senior review - involves presentation of the initial analysis to the designated approval authority. Before a change can be implemented, the approver should review and concur with the basis for the change, confirm that the preliminary impact assessment did not identify significant concerns warranting cancellation of the proposed change, and provide agreement with the implementation plan.
- 1.7.2.10.1 The initial review is repeated but with a focused objective to provide substantial input in addressing the concerns raised by the approver.
- 1.7.2.10.2 The change is rejected and the MOC form is considered *closed* and retained for future reference.
- 1.7.2.10.3 A more detailed form of risk assessment may be requested and resulting implementation plan approved before the change may be executed.
- 1.7.2.11 Detailed risk assessment - carried out by a team including subject matter experts from various disciplines. This detailed risk assessment should provide further clarification into the nature of risks to be controlled and as an output, produce a list of requirements or controls to be implemented before changes go into effect.
- 1.7.2.11.1 The first step of a risk assessment is to identify all likely potential undesirable events and then to evaluate the risks they present in terms of how often they are likely to happen and how severe the consequences will be if the loss occurs. Once this information is ascertained, the next step is to determine how the risk, and therefore the change, will be managed.
- 1.7.2.12 Approval - If the implementation plan presented in either preliminary impact assessment or detailed risk assessment is approved, the change may be executed.
- 1.7.2.13 Implementation - executing the change and implementation plan. It also includes updating the documentation to reflect the change, communicating the change, and training personnel on the change.
- 1.7.2.13.1 Before change is implemented, affected personnel should be aware of the change. The change owner should emphasize consequences of concern and special precautions to be taken as a result of the change.
- 1.7.2.14 Verification and closeout - once any change is implemented, it is good practice to revisit it in the short term to assess effectiveness. All changes that have gone through the MOC review process, even if they were eventually rejected by management, should be signed-off and retained for audit and inspection. This is an essential step to be able to audit the MOC program and monitor the program for continual improvement.
- 1.7.2.14.1 Are the changes meeting their intended functions?

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- 1.7.2.14.2 Are the actions from the implementation plan being complied with and meeting the intended function?
- 1.7.2.14.3 Have the temporary changes expired? If so, can the system revert to its original state? If the answer is no, proceed to convert to a permanent change, restarting the MOC review process.
- 1.7.3 Determine the significance of the change.
- 1.7.4 All changes of a human resource, emergency response, and equipment will be subject to the management of change process.
- 1.7.5 The team managing the change should ensure that they consider the following:
 - 1.7.5.1 Carry out fact-finding and evaluation of alternatives.
- 1.7.6 Prepare detailed arrangements required for implementation
 - 1.7.6.1 Develop an implementation plan, which states the activities and responsibilities.
 - 1.7.6.2 Develop any required documentation including procedures, organization charts, forms, report formats, and audit checklists.
 - 1.7.6.3 Disseminate information about the change to all personnel who need to know.
 - 1.7.6.4 Identify training modules and/or develop any additional training modules required and ensure that personnel affected by the change are competent.
 - 1.7.6.5 Identify the means for measuring the effects of the change.
 - 1.7.6.6 Undertake monitoring to ensure that there is no adverse impact on safety.
- 1.7.7 All changes will be reviewed and assessed to ensure that safety implications are identified and assessed and their hazards controlled prior to any changes being made. The MOC procedures will be utilized for revisions and changes in operating procedures, safe work practices, and training programs. Affected employees will be consulted prior to making proposed changes.

1.8 APPROACH RATIONALE

- 1.8.1 After deciding to proceed, a case for change will be made and documented. This will include:
 - 1.8.1.1 Detailed information on the change
 - 1.8.1.2 Changes to systems, procedures, or human resource structures
 - 1.8.1.3 Other changes necessary as a result of the change
 - 1.8.1.4 Effects on safety critical activities or positions

- 1.8.1.5 Issues that may require a revision to a safety case and a plan for effecting that revision, including legislative requirements. Affected employees should also be included in revision process.
- 1.8.1.6 Hazards that may be created directly or indirectly and the associated risk
- 1.8.1.7 Changes to previously accepted levels of risk
- 1.8.1.8 Justification for the change considering both the risks and the benefits
- 1.8.1.9 Recommendations for progressing to implementation

1.9 IMPLEMENTING THE CHANGE

- 1.9.1 An effective MOC program requires preparation beyond defining and documenting a program to outline the system. The following factors are vital to successful implementation of the program:
 - 1.9.1.1 Clear roles and responsibilities
 - 1.9.1.2 Appropriate organizational preparation
 - 1.9.1.3 A written MOC program manual that includes MOC forms
 - 1.9.1.4 Pilot roll out before the full scale deployment, training of affected personnel
 - 1.9.1.5 Close attention when integrating MOC with existing program
- 1.9.2 A plan will be documented to implement the change and should include:
 - 1.9.2.1 Timeline for implementation
 - 1.9.2.2 A developed formal communication plan/process for consulting with and informing affected employees of proposed changes and the consequences of such changes
 - 1.9.2.3 Acceptance criteria/standards that must be met before change is considered complete – this may not be applicable in all cases but will be considered and documented
 - 1.9.2.4 Training requirements resulting from the change and a program for completing training
 - 1.9.2.5 Arrangements for change verification and sign off
- 1.9.3 Ongoing communication before, during, and as follow-up to the change will be implemented and monitored by the approving authority.

1.10 ORGANIZATIONAL PREPARATION

- 1.10.1 Management should lead the commitment toward execution of MOC.
- 1.10.2 Management should allocate required resources to achieve successful implementation of the program.

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- 1.10.3 Commitment should be demonstrated throughout all levels of management and across various business segments within the organization.
- 1.10.4 TERRY R PITT CONSTRUCTION takes into consideration the existing culture of the company and assists in creating an environment that encourages commitment to the program.
- 1.10.5 Complacency should not overshadow the importance of safety and unless importance of safety is emphasized, opportunities for eliminating unsafe behaviors are not realized. Preventing negative perceptions is important for successful implementation.
- 1.10.6 TERRY R PITT CONSTRUCTION will encourage and engage employees early in the development stages of the program to promote buy in and help to control negative perceptions.
- 1.10.7 Operations manager should discuss MOCs with employees on a regular basis.
- 1.10.8 If the requirements of MOC are suspended even temporarily for the benefit of business and economic advantage, the MOC process is trivialized.

1.11 PROGRAM MONITORING/CONTINUAL IMPROVEMENT

- 1.11.1 Supervisors and workers are under significant pressure to meet schedules irrespective of weather conditions and it is easy for changes to happen more quickly than a MOC process would allow.
- 1.11.2 Compliance with the MOC program can be improved by:
 - 1.11.2.1 Communication of the importance of MOC and support from the top of the organization
 - 1.11.2.2 Effective administration, monitoring, and tracking of the program
 - 1.11.2.3 Continual improvements to optimize the program
- 1.11.3 Effective administrative strategies should be in place to operate and maintain the MOC program, starting from accurate and timely completion of MOC forms to the monitoring and continuous improvement of the program.
- 1.11.4 Evaluation and assessment can highlight improvements required to optimize the system.
- 1.11.5 The MOC coordinator must carefully monitor any temporary and emergency MOC changes, checking that temporary changes are followed up by the change owner within their given validity dates, and check for abuse on the use of emergency MOCs.
- 1.11.6 Part of the improvement process will be to start with a simple paper system and refine the operations and distribution systems. Then areas for improvement will be to optimize the form, add checklists based on information gathered in old forms to clarify further replacement-in-kind and preliminary impact assessment, judgment on minor/major impacts, improve distribution to relevant personnel, improve the assessment/review processes with more structured review approaches, combine sessions to make processes more efficient, look at electronic distribution and archiving of

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documents, develop key performance indicators and track performance, issue lessons learned, and expand the process to other areas of the business.

1.12 RECORDKEEPING

- 1.12.1 MOC records must meet corporate recordkeeping requirements at minimum.
- 1.12.2 MOC records will be kept locally for quick reference and for archival purposes.
- 1.12.3 MOC records will be maintained to distinguish them by areas/equipment for easy retrieval.
- 1.12.4 The owner of the change maintains responsibility for the change until it is closed out and needs to have easy access to the record.
- 1.12.5 Updates to documentation should be prompt and communicated to relevant personnel immediately so that all personnel involved with the change have access to the most recent and relevant information on which to base decisions.
- 1.12.6 Records will be kept according to company recordkeeping retention program, either in a paper-based system or electronically.

1.13 TRAINING

- 1.13.1 Employees must be educated to understand the benefits of managing change. The value of a MOC program for protecting personnel safety, the integrity of the facility, and the environment must be recognized by employees if implementation is to be successful.
- 1.13.2 Training personnel to understand the principles and procedures of the MOC program is essential to implementing a successful program. Training that is well crafted and delivered to meet the needs of an employee results in engagement rather than resistance.
- 1.13.3 Awareness training is necessary for all personnel affected by the introduction of the MOC program to ensure correct recognition of relevant changes and correct implementation of the system. Specific training will be necessary for personnel expected to originate change requests, conduct preliminary impact assessments, and review and approve changes.
- 1.13.4 All those who can make a not in-kind change should be familiar with the MOC process and should be capable of filling out the request for change and should understand what happens to it once filled out. All supervisors need to be familiar with the process and their role in the process. All those who may be involved or who could be asked to review MOCs should also receive training.
- 1.13.5 Effective training requires good, relevant examples of changes to be controlled as well as replacement-in-kind. Examples should show department specific examples of management of change in similar scenarios to those with which personnel are likely to be confronted. Issues that should be addressed in training include:
 - 1.13.5.1 Determining if a change is to be controlled by the MOC program

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- 1.13.5.2 How to complete the MOC log and form
 - 1.13.5.3 Permanent, temporary, and emergency changes
 - 1.13.5.4 Preliminary impact assessment
 - 1.13.5.5 Detailed risk assessment
 - 1.13.5.6 Approval process
 - 1.13.5.7 Documentation, communication, recordkeeping related to MOCs
 - 1.13.5.8 Handover of open MOCs at shift/crew change
 - 1.13.5.9 Lessons learned from MOCs
- 1.13.6 Refresher training will be implemented to promote continued improvement of the system.

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