



MALLARD EXPLORATION
OPERATIONS SAFETY MANAGEMENT PROGRAM

Version 1.0

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1 INTRODUCTION

1.1 OVERVIEW

In accordance with Colorado Oil and Gas Conservation Commission (COGCC) Rule 602.d, Operators will establish and maintain a written operations safety management program for all Oil and Gas Operations. The operations safety management program will establish operational practices and procedures for safety.

Included in this plan are procedures for:

- Change Management Program
- Pre-Startup Safety Review Program for all new and existing Oil and Gas Locations

The Change Management Program (CMP) describes how Mallard Exploration (Mallard) records changes to technology, equipment, and procedures and changes to facilities that affect process. The Pre-Startup Safety Review (PSSR) describes how safety and technical review inspections are conducted prior to startup of any new or modified equipment or process at the Oil and Gas Location.

Mallard will operate and maintain all Locations and Facilities in a safe manner. This Operations Safety Management Program is a written plan that includes a list of procedures that will be utilized at each Mallard location. All personnel working on Mallard locations will be trained to safely conduct job responsibilities, including safe operation of all equipment, and to be aware of the hazards presented by oil and gas operations.

1.2 PURPOSE

Change is necessary to meet varying circumstances, make needed improvements or respond to emergency conditions. Careful consideration must be given to the safety and environmental implications that result from any change. Without proper review, a change may result in unsafe conditions, process hazards, or operating problems.

The purpose of the Change Management Program (CMP) is to ensure that changes are recognized, documented, formally reviewed, and approved by qualified personnel prior to their implementation in order to avoid potential safety or operational problems and to comply with local, state, and federal regulations.

This CMP Procedure provides guidance for the following:

- How to recognize a change.
- Use of the CMP to properly manage change.

- Documenting and communicating information associated with a change.

1.3 SCOPE

The CMP shall be applied in accordance with this procedure for all changes that affect Environmental Health Safety & Regulatory (EHSR) compliance, physical, operational, chemical and process changes made at any Oil and Gas Location operated by Mallard.

The CMP is applicable throughout the lifecycle of the Oil and Gas Location. This includes all phases from the design, construction, drilling, completion operations, production operation, well abandonment, to reclamation.

The major steps of the CMP are:

- Initiate CMP
- Classify type of change
- Evaluate Review stage
- Approve change
- Implement change
- Close documentation

1.4 DEFINITIONS & KEY TERMS

- Change: any change in physical means of operations, method of operation, equipment, or procedure. Process
- Process: any activity involving plumbing, repairing, constructing, repurposing, or major modification to oil and gas equipment. This equipment may include, but is not limited to, surface wellhead equipment, flowlines, pipelines, process piping, compressors, separation equipment, and tanks.
- Process Hazards Analysis (PHA) and Design Review: A review of the process design, specifications, standards, or practices that are required to ensure assets are designed safely, potential hazards are identified, and the consequences of incidents are eliminated or mitigated.
- Risk Assessment: The results of a risk analysis are evaluated by judging their acceptability through comparison with risk targets. The results of this process are used as information for decision making.

1.5 RESPONSIBILITIES

Management shall:

- Ensure staff is adequately trained on the CMP.
- Ensure that appropriate resources and personnel are assigned for implementing and maintaining the functionality of the CMP.
- Ensure work is completed according to the approved CMP including attached documentation and reviewers conditions of approval.

Initiator shall:

- Utilize the CMP, complete the appropriate sections and supply adequate documentation for change in accordance with this procedure.

CMP Coordinator shall:

- Coordinate and monitor the CMP throughout the process as described within this procedure.

CMP Supervisor shall:

- Implement and maintain the program
- Define roles and responsibilities
- Provide appropriate training as requested by management
- Perform process compliance audits to identify deficiencies and opportunities for improvement

ROLE	NAME	CONTACT
Management	John Tonello	720-543-7952
CMP Supervisor	Cory Eikenberg	970-673-2023
CMP Coordinator	Facility Engineer	Varies
Initiator	Varies	Varies
Operations Lead/Foreman	Cory Eikenberg	970-673-2023

2 CHANGE MANAGEMENT PROGRAM

2.1 OPERATIONS

CMP shall be implemented for all physical, process, procedural, and equipment changes at Mallard Oil and Gas Locations in accordance with the requirements of this procedure.

2.2 REQUIREMENTS

- Engineering and Construction contractors shall implement a CMP during the design and construction phase of all Mallard Oil and Gas Locations.
- Facility Engineering Construction shall implement a CMP for any change identified prior to the drawings being issued for construction (IFC).
- A CMP shall be initiated if an existing system is changed by a new construction project.

- This CMP will focus on the effects to existing infrastructure, processes, training and notifications.
- The CMP will not review the previously approved engineered design relative to the original CMP.
- Changes shall be managed in accordance with the procedure subsequent to the completion of the project PSSR

Refer to Appendix C for CMP Checklists.

2.3 EMERGENCIES

An emergency CMP is any change that requires quick initiation and implementation for safety, environmental or potential equipment damage circumstances once the area Emergency Response Plan has been implemented.

The on-site supervisor has the authority to review and directly approve a change for implementation and start-up. The steps to manage an emergency CMP are as follows:

1. An emergency is declared. The Emergency Response Plan is in effect, and the steps required to correct the situation are taken immediately to avoid injury to employees, contractors and/or the general public, the environment, or the mechanical integrity of the asset.
2. Implement the necessary change to mitigate the hazard and follow-up, as soon as possible, after the emergency response situation is under control.
 - a. Within the next business day following the change, the Operations Lead/Foreman (or designate) initiates the CMP.

2.4 TEMPORARY CHANGE

All temporary changes must be documented using the CMP. The specific point in time when a temporary change is scheduled to return to original condition is called the "Temporary to" date. The Operations Lead/Foreman are responsible for ensuring that all temporary changes are properly closed on or before the specified "Temporary To" date, this must be entered on the CMP.

The CMP Process offers two options for closing out a temporary change:

1. Returned to original conditions: Once a temporary change is no longer required and the change is restored to its original pre-change configuration, a second PSSR will be completed prior to being brought back into service. The CMP can then be closed.

2. Made Permanent: If the temporary change is going to become a permanent change, the CMP must be restarted, and the change reviewed as a permanent change to the asset.

2.5 CANCELLED CHANGE CLOSURE

Cancellation of CMPs must be documented. The date of the cancellation, the person cancelling the CMP, and the reason for cancellation must be identified on the CMP. All individuals that were involved in the CMP must be notified by the CMP Coordinator.

2.6 CHANGE PROCESS

The major steps of Management of Change are initiate, classify, evaluate, approve, implement and close. The initiator recognizes and communicates a proposed change by assembling the initial justification, asset and design information, and submits it to the Operations Lead/Foreman. The Operations Lead/Foreman and /or Engineer will evaluate the proposed change with the following in mind:

- Are there any safety, regulatory, or environmental considerations?
- Is the change necessary to meet operational objectives?
- Does the change make sense from a business perspective?
- Is this a change or a replacement-in-kind?

Once classified as a change, the CMP will be used and initiated. The Initiator shall complete all fields on the CMP Checklist.

The Initiator shall maintain all required documentation. Possible documents may include but are not limited to the following:

- Drawings include P&ID's, electrical, civil, manufactures, etc. (sketches, redlined drawings, typicals, IFC drawings, etc.). Drawings should include information such as piping size, schedule, valves (ball, gate, globe, needle, size, rating, service, etc.), fittings, controllers, sensors, cable size, etc. Equipment specifications (data sheets, manufacturer's information, PSV specs, etc.) for all new equipment
- Marked up pictures
- Scope of work
- Commissioning plan
- MSDS's for new chemicals
- License information and/or Regulatory requests

2.7 CHANGE CLASSIFICATION

The change is categorized by the Operations Lead/Foreman as one of three types:

1. Permanent

2. Temporary
3. Emergency (immediate).

All proposed changes are forwarded to the CMP Coordinator.

2.8 CHANGE EVALUATION

The CMP Coordinator reviews the change and information provided to determine if the required documentation is adequate to assign reviewers. The Operations Engineer, Facility Engineer or Field Personnel may recommend that a Risk Assessment is followed to evaluate the change. Based on the technical review, the CMP is approved or rejected.

If there is design engineering involved, then a Process Hazards Analysis (PHA) and Design Review shall be completed.

The CMP Coordinator notifies all affected personnel of the CMP as required and assigns technical reviews.

Potential reviewers may be: Facilities, Operations and/or Electrical Engineers, Health, Safety & Environmental (HSE), Field Operations, Emergency Response Program Coordinator and Measurement Specialist.

Each assigned reviewer shall;

- Review the CMP and associated material as assigned.
- Request additional reviewers if required.
- Provide or verify the applicable specifications or standards.
- Provide requirements for each review item in the comments section.
- Provide recommendations on the change impact on related process or equipment.

The assigned reviewers should complete their evaluation within assigned working period once notified by the CMP Coordinator. Reviewers should designate an alternate if they are unavailable. Each reviewer must complete the CMP Checklist.

In the event that a design change is made after or during the review (which includes a PHA or Risk Assessment) the change must be re-assessed in accordance with all requirements of this change evaluation phase.

After all reviews are completed, the CMP Coordinator will complete a QC review to ensure all comments and documentation match the original intent of the Change Description.

2.9 CHANGE APPROVAL

Once the QC review is completed the CMP Coordinator will change the state to “Approved for Construction by CMP Coordinator”.

The Operations Lead/Foreman or assigned delegate reviews the documentation for the change and once satisfied that all job safety requirements are met, signs the CMP as being “Approved for Construction by Foreman”.

At this point, the CMP and supporting documentation are handed off to the constructor of the change.

2.10 APPROVAL FOR STARTUP

After the change is complete, the Operations Lead/Foreman or delegate confirms that the change has been completed according to the approved CMP and supporting drawings and/or documentation. Any change including as-built discrepancies to the approved CMP must be reviewed and approved by the CMP Coordinator and applicable reviewers. Approval of further changes, which are completed after the CMP has been approved, must be reviewed and approved prior to start-up.

Prior to implementation of the change, the Operations Lead/Foreman or delegate shall ensure all required documentation, which includes a pre-startup safety review (PSSR), is completed.

The Operations Lead/Foreman or delegate should have all required closure documentation and appropriate sign offs completed and saved within the CMP within two weeks of change being implemented.

All PSSRs must be completed with the final sign off by the Operations Lead/Foreman or assigned delegate.

2.11 APPROVAL FOR CLOSURE

Once the change is implemented, the next step in the CMP Process is to perform an as-built post-audit. The Operations Lead/Foreman or delegate will then approve the CMP for closure. This individual is responsible for ensuring that:

- Operating procedures are updated
- Operations staff have been trained or are scheduled to be trained on how to operate any asset that has been subject to the change
- Operations staff is aware that the change is being implemented

3 REVIEW PROCESS

3.1 PROCESS ENGINEERING REVIEW

A qualified Engineer(s) reviews all process-related aspects of the change. This review ensures that the change is consistent with the facility design and operation, piping and instrumentation diagrams (P&IDs), PLC programming, safe operating

limits, relief system design, and safety systems. This step is usually addressed in the project's process design review. Attach process design documentation to the CMP if appropriate.

3.2 OPERATIONS REVIEW

The Operations Lead/Foreman or designate reviews all operational aspects of the change to ensure all policies, procedures and specifications are met. The Operations Lead/Foreman will be responsible for ensuring that all Operating hazards have been assessed, any changes to training or competency of staff have been addressed, and the notification of all impacted stakeholders is sufficient.

3.3 MEASUREMENT REVIEW

The assigned reviewer evaluates the effects on measurement which may include Production Accounting, schematics, custody transfer, receipt point, calibration, metering and testing requirements, as per regulatory and Mallard Standards.

3.4 MECHANICAL ENGINEERING REVIEW

A qualified Engineer(s) evaluates all mechanical aspects of the change to ensure that it is consistent with the unit's mechanical and equipment design basis. This work is usually addressed in the project mechanical design review. Consideration is given to the impact of electrical classification, materials of construction, stress, and other design elements. The mechanical documentation is attached to the CMP as appropriate.

3.5 ELECTRICAL/INSTRUMENTATION REVIEW

The assigned reviewer(s) evaluates the change to ensure that all electrical, instrumentation, SCADA and control-related considerations have been properly identified, addressed, and documented.

3.6 ENVIRONMENTAL HEALTH SAFETY & REGULATORY REVIEW (EHSR)

The assigned reviewer(s) evaluates the change to ensure that all safety, health, environmental and regulatory considerations have been properly identified, addressed, and documented. This review may include Emergency Response Plans, local, state, and federal regulations, and Third-Party Agreements.

3.7 OPERATING PROCEDURES REVIEW

Procedures must be updated in accordance with Mallard's Occupational Safety and Health Compliance Manual. The assigned reviewer evaluates the change to ensure that all procedure related considerations have been properly identified, addressed, and documented. For operating, maintenance and/or mechanical procedures, the assigned reviewer identifies and documents not only revisions to the existing procedures, but also to new procedures required by the change.

3.8 PRE-STARTUP SAFETY REVIEW (PSSR)

The assigned reviewer ensures that the change is implemented as designed and ready for service. The reviewer is responsible for involving others, as needed, to complete the appropriate PSSR and document all findings and follow-up work required. Assigned reviewers shall verify that findings from all reviews are resolved and ensures the engineering drawings reflect “as-built” status by performing field verification. As the above review can only be completed on an individual basis, a separate PSSR will be required for each location. The Pre-Startup Safety Review checklist shall be attached to the CMP.

On a temporary change a PSSR is required to commission the change. A separate PSSR is required when the change is put back to the original state.

PSSRs shall be conducted prior to the startup of any new or modified equipment or process at Mallard Locations.

Refer to Appendix D for PSSR Checklists.

4 DOCUMENTS & RECORDS

This Operations Safety Management Program is maintained electronically and is accessible to both Mallard field personnel and office employees. A copy of the plan can be provided upon request to any regulatory agency. Records requests should be provided within two business days.

Mallard will maintain and keep all records, reports, and underlying data associated with the CMPs and PSSRs for a minimum of five years. The final copies of all documentation associated with a CMP will be saved. This may include, but is not limited to the following:

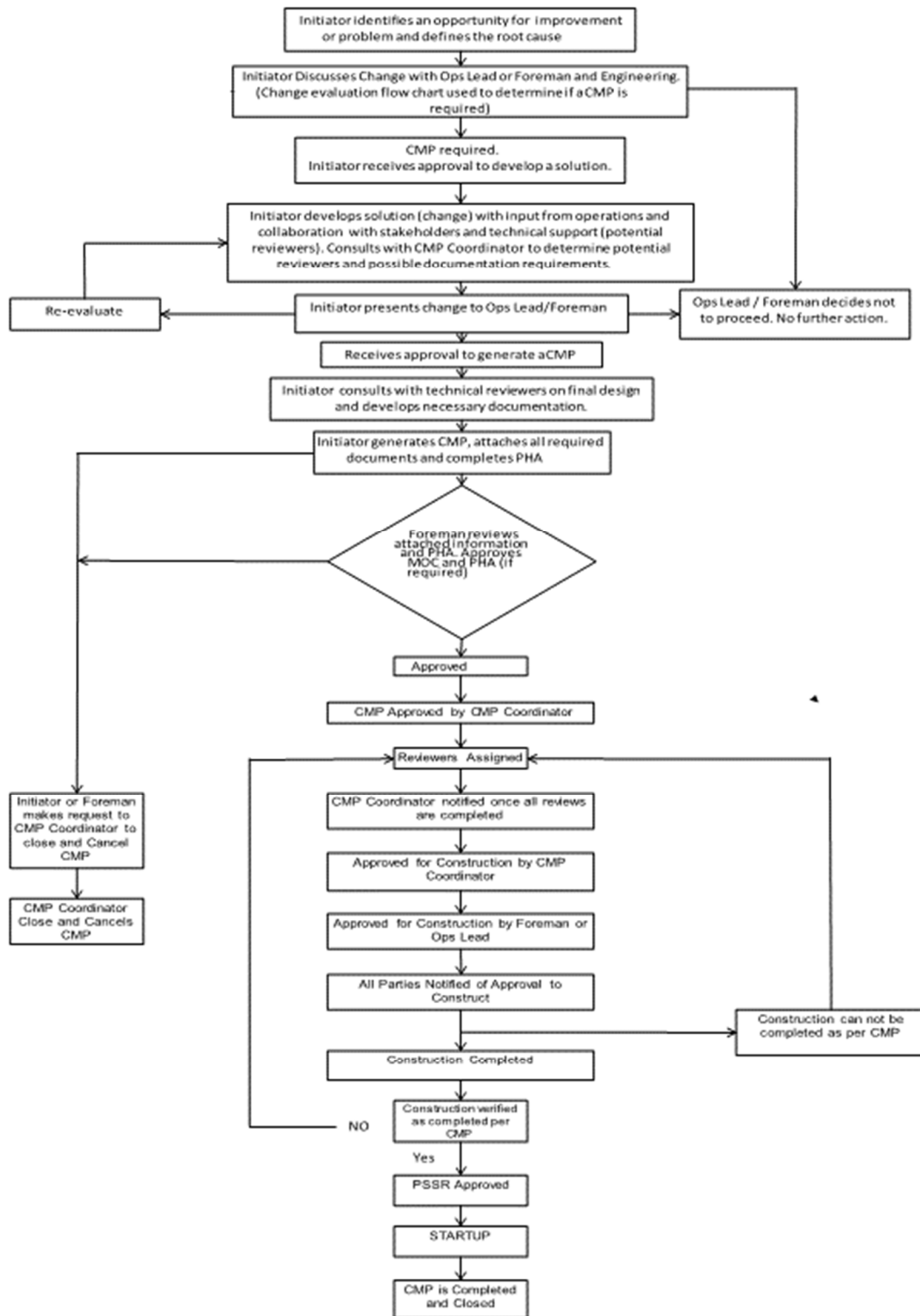
- A set of all drawings / sketches
- PLC programming
- Shutdown keys
- Construction reports
- Quality Assurance/Quality Control documents
- Internal communications, such as memos and e-mails that pertain to the CMP.

5 TRAINING

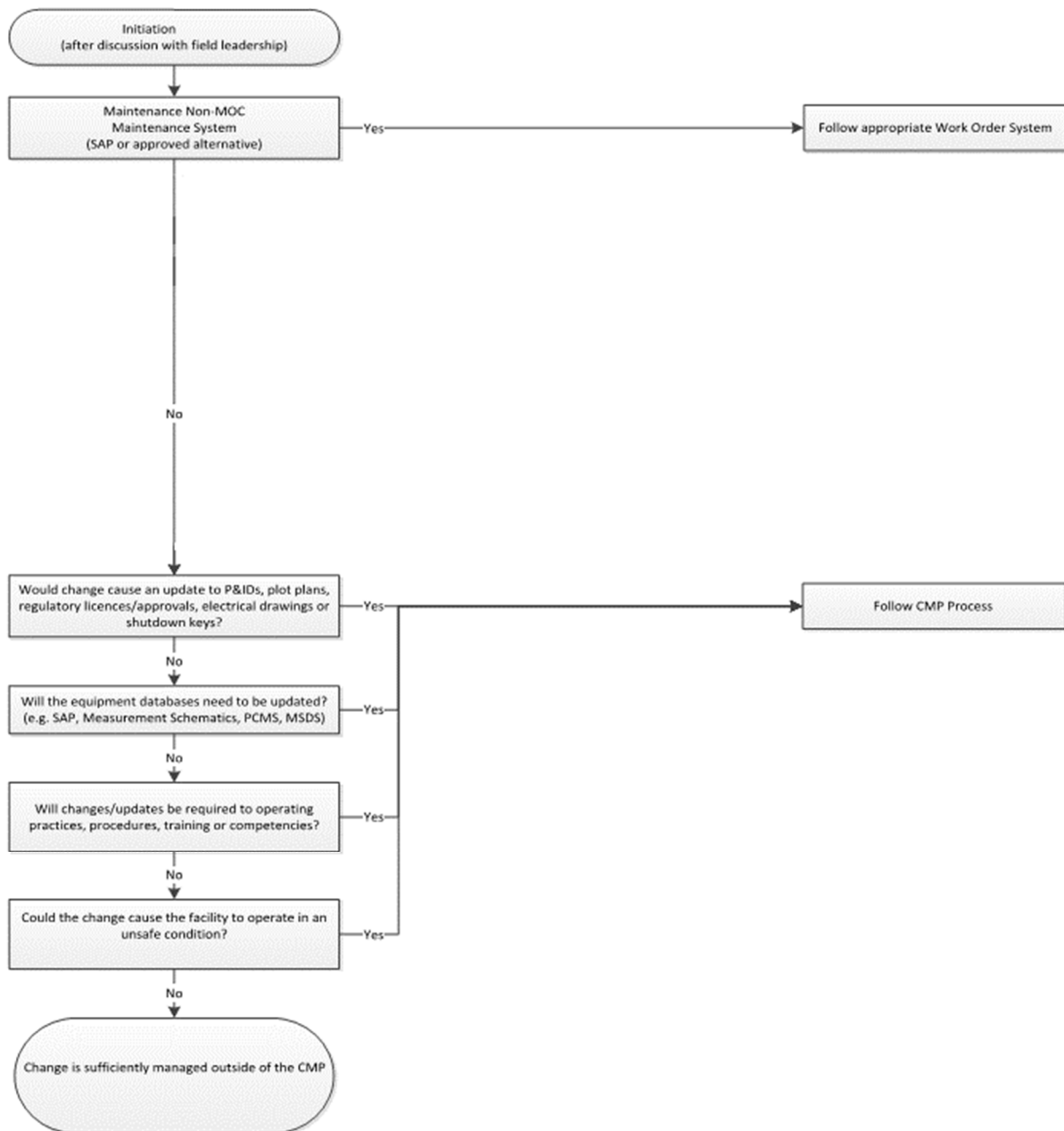
All personnel involved with design, construction, operations, and maintenance activities require a basic knowledge of change management. All applicable Mallard

personnel complete CMP Training as part of their introductory training. If found to be necessary, CMP training will be conducted for contractors and vendors working on Mallard locations.

Appendix A: CMP FLOWCHART



Appendix B: CHANGE EVALUATION FLOWCHART



Appendix C: CMP CHECKLIST

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Date:

[illegible]

PART 9 – (Orange) Post Change Effectiveness Evaluation				
Yes	No	Initials	Date Completed	
<input type="checkbox"/>	<input type="checkbox"/>			Post-Change Safety Audit conducted? (name)
<input type="checkbox"/>	<input type="checkbox"/>			Reviewed for Effectivness?
<input type="checkbox"/>	<input type="checkbox"/>			Was Change Effective?
<input type="checkbox"/>	<input type="checkbox"/>			Is the Change accomplishing its original intent?
Comments:				
CMP Supervisor:(name)			Signature:	Date:_____

_____ Date:

Appendix D: PSSR CHECKLISTS

[illegible]

PRE-STARTUP SAFETY REVIEW (PSSR) ELECTRICAL



Complete N/A Initial Date

Service

1	Meager each wire to ground and phase to phase after being landed if possible				
2	Parallel phasing is correct, check with meter				
3	ensure anti-oxidant is used on aluminum wire				
4	torque to spec and recorded				
5	Main bonding jumper is installed correctly				

Main distribution

1	Meager each wire to ground and phase to phase after being landed if possible				
2	Parallel phasing is correct, check with meter				
3	ensure anti-oxidant is used on aluminum wire				
4	torque all wire to spec and recorded				
5	torque all breakers if possible and recorded				
6	Main bonding jumper is installed correctly				

Heat trace transformers

1	Meager each wire to ground and phase to phase after being landed if possible				
2	Parallel phasing is correct, check with meter				
3	torque all wire to spec and recorded				
4	Bonding jumper is installed correctly				
5	ground wire is installed correctly				

Heat trace Panels

1	Meager each wire to ground and phase to phase after being landed if possible				
2	Bonding jumper is installed correctly				
3	ground wire is installed correctly				
4	torque all wire to spec and recorded				
5	torque all breakers if possible and recorded				
6	ensure all heat trace is on an equipment protection breaker.				

Heat trace

1	all heat trace on an equipment protection breaker.				
2	all start kits and end kits have the circuit number on them.				

Compressors

1	Meager each wire to ground and phase to phase after being landed if possible				
2	ground wire is installed correctly				
3	torque all wire to spec and recorded				
4	Parallel phasing is correct, check with meter				

Light Poles

1	Lights are pointed in the correct direction				
2	test the dusk till dawn photo eye				

PRE-STARTUP SAFETY REVIEW (PSSR) AUTOMATION



Complete N/A Initial Date

RTU

1	check 24V power/batteries				
2	All separator instruments are tied into the correct location and programed correctly				
3	All ECD instruments are tied into the correct location and programed correctly				
4	All compressor instruments are tied into the correct location and programed correctly				
5	All VRT instruments are tied into the correct location and programed correctly				

Tanks/Pits

1	ensure all tank/ pit instruments are install in the correct location				
2	calibrate each tank and pit levels				
3	ensure the tanks are reading into the screen/ignition properly				

LACT

1	communications from the RTU to the LACT				
2	Run status and ESD to LACT				

Well Heads

1	Establish communication from the well heads to the RTU				
2	Ensure the well heads are coming in correctly				
3	Check the MSO on each well head				

Gas Lift Shack

1	Establish communication from the Gas lift RTU to the Main RTU				
2	Ensure the wells are coming in correctly				
3	Set limits on injection controllers				

ESD

1	Test the ESD button on the RTU				
2	Test the ESD button at the location entry				
3	Test the ESD button from ignition				
4	Label all buttons "Pull to ESD"				