

# procedure

[YOUR FACILITY]

Category PSM - MANAGEMENT OF CHANGE (I)	Dept.# PSM	Procedure# 0001	Rev.# 0
Subject MANAGEMENT OF CHANGE (MOC) EVALUATION PROCESS			Dept. Desig.# PSM- 0001

Process Safety Management  
...ment in kind, to go through a

... that the following items be addressed prior to any

... basis for the proposed change. (The technical basis  
... of the nature of the change why the change needs to be  
... change will have on the operation of the equipment and the  
... change on safety and health.

... of change on any Environmental Regulations / Permits.

... ations to existing operating and maintenance procedures or gen  
... ures must be evaluated and defined by the proposed change.

... ary time period for the change. (Permanent or temporary. If te  
... must be specified.)

... ation requirements for the proposed change.

... es involved in operating a process, maintenance and cont  
... tasks will be affected by the change in the process, sha  
... in, the change prior to start-up of the process or af

... made in the process safety information, such  
... gly.



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parties.)

in approvals of the extension in  
improving the original MOC. (PSM Form No  
be used for this purpose).

Notify PSM in writing of the approved MOC exten

d. Prior to expiration of the extension, complete ste  
above.

MOC Risk Screening Tool Diagram (Appendix 3) must be use  
type of Process Hazard Analysis (PHA) and Pre-Startup Safety R  
will be required for each particular MOC. See (Appendix 4)  
ance on answering the screening tool questions.

MOC's must go through a full PSSR or mini PSSR as determine  
Screening Tool Diagram.

changes in control software, such as DCS Software, Engineer  
etc., that may affect process safety, (e.g., change to int  
tics, operator training and/or training manuals), need to b  
process.

installation of trailers, portable buildings, a  
st be authorized by the MOC process (Refer  
#5381, Facility Siting of trailers and Te

temporary installations may

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Environmental impact

## Delegation and Responsibilities

STEPS MUST BE COMPLETED IN THE ORDER LISTED

### ACTION

Approver

1. Approve the work notification and applicable evaluation in SAP, if applicable.
2. Initiate the MOC process upon review of work with appropriate departments.
3. Request Approval on MOC number from Maint. Department.

**NOTE:** MOC Originator is defined as a representative from the corresponding department (Instrument Dept., Inspection Dept., Equipment Dept., Reliability Dept., Tech. Services, and Operations) in charge of developing the MOC. The MOC could be handled and/or initiated by the corresponding departments (see step 5).

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Issue to MOC Originator  
forms defined by the MOC

5. a. Determine the level of the PHA  
MOC Screening Tool (Appendix
- b. Coordinate the preparation of  
including, but not limited to, informa  
chemicals or equipment, completion  
engineering studies, and preparation  
design documentation and revised P&ID
- c. Conduct the level of PHA determined  
Screening Tool.
- d. When the required PSI has been assem  
PHA completed, circulate MOC packa  
applicable approvals. Approvals mus  
before any construction / work is started

**NOTE:** The change proposed might  
Environmental Construction  
must be obtained before a  
work is started.

- e. Complete the MOC Developp  
utilize this table to track MOC

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Seek any  
MOC Originator.

- c. Authorize or reject the MOC  
results of the evaluation.

At, the MOC Package must consist of (refer to Appendix N

- |                         |     |  |
|-------------------------|-----|--|
| al basis for change     | (e) | Environmental Checklist                                      |
| creening Tool Diagram   | (f) | New or modified procedure, if<br>using PSM Form No. 71 (Appe |
| heck list/Approval Form |     |  |
| ved PSI Information     | (g) | HAZOP documentation, per MOC<br>Screening Tool               |
|                         | (h) | MOC Development Tracking Ta                                  |

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...ate training, acknowledgment, and  
understanding for employees affected  
MOC package. (Refer to Appendix  
guidelines.)

**NOTE:** If any additional information is required to  
the employee, it shall be incorporated  
package.

...visor or 10. Upon completion of the field work, notify Operations  
er work notification has been completed and submit  
Integrity (Piping, Instrument, Electrical and/or Rotating  
Equipment) Forms to MOC Originator.

1. Compile all the MOC documentation and submit to Operations  
Startup Safety Review (PSSR).

...point, the MOC Package must consist of (refer to Appendix No. ...)

- |                        |                                  |
|------------------------|----------------------------------|
| ...al basis for change | (g) HAZOP documentation, per     |
| ...eening Tool Diagram | Screening Tool                   |
| ...klist/Approval Form | (h) Signed PSSR Form             |
| ...PSI Information     | (i) Signed Training Verification |
| ...al Checklist        | proof of understanding           |
| ...d procedure, if     | (j) Applicable signed off        |
| ... PSM Form No. 71    | Integrity Forms                  |
|                        | (k) MOC Development              |
- ...mit complete MOC Package to

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PSM reqs

**THEN** send a request for  
Originator and correct  
applicable (refer to P  
Appendix No. 11.

- c. **IF** the MOC documentation compl  
PSM requirements,

**THEN** close the MOC AND file in the P

- d. Send an MOC completion notice to the fo  
departments, as applicable:
- Maintenance Database Department
  - Design Department
  - Environmental Department
  - Operations

## MOC Evaluation Requirement After Initiation of Work

s should be followed, if during the execution of the v  
it is determined that the job cannot be completed with

1. **IF** work cannot be executed with re  
in-kind m

**THEN** discontinue execution  
evaluation from M



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the necessary written approval  
be obtained in a timely manner.

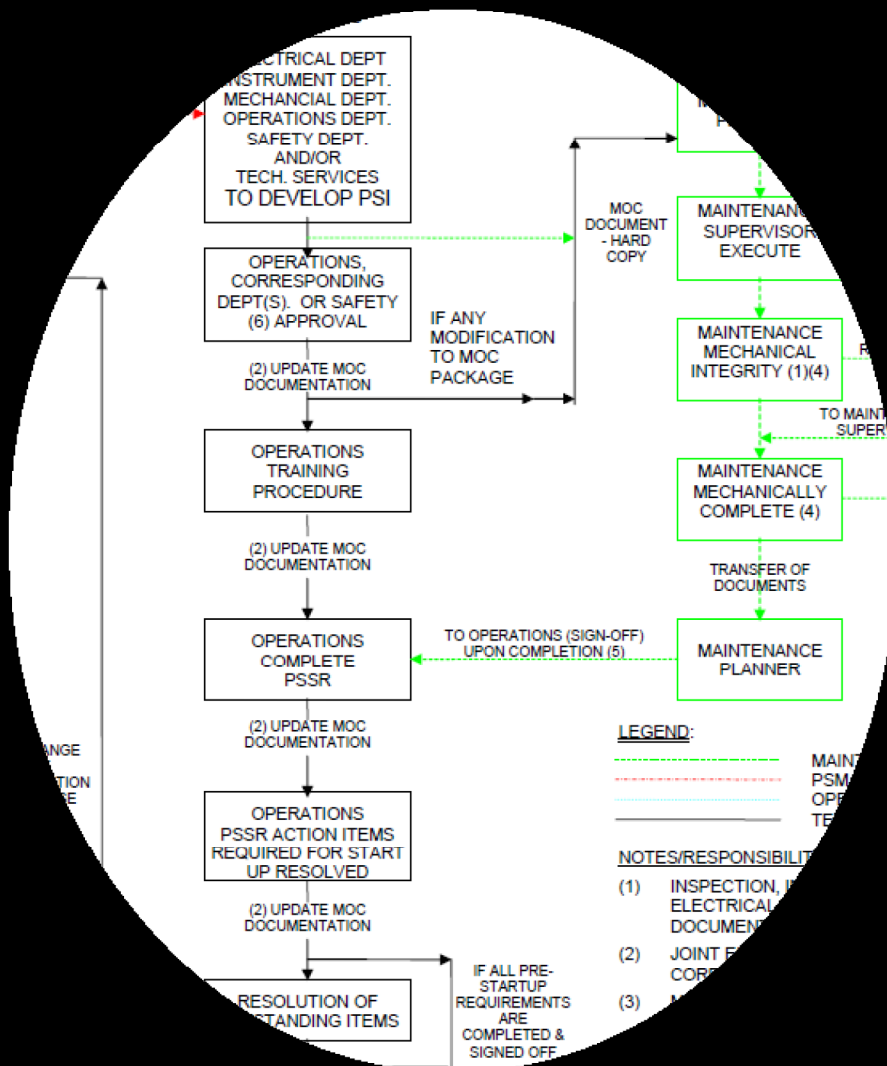
**THEN** a waiver of written approval shall be obtained from the Refinery Shift Superintendent.

3. Proceed with the execution of the job.
4. Start up system upon completion of the PSSR.
5. Submit the MOC documentation to PSM Management:
  - a. within 48 hours after the emergency work was initiated, or;
  - b. at the completion of the PSSR.
6. Review MOC documentation for compliance with the corresponding follow-up as per Section III, step 1 procedure.

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\_\_\_\_\_

RE OF TEMPORARY MOC # \_\_\_\_\_

No. \_\_\_\_\_

\_\_\_\_\_

allation has been removed and returned to its original configuration as  
and field verified by \_\_\_\_\_

\_\_\_\_\_

(print & sign)

Documentation the system has been restored to the same specific  
for to the temporary installation.

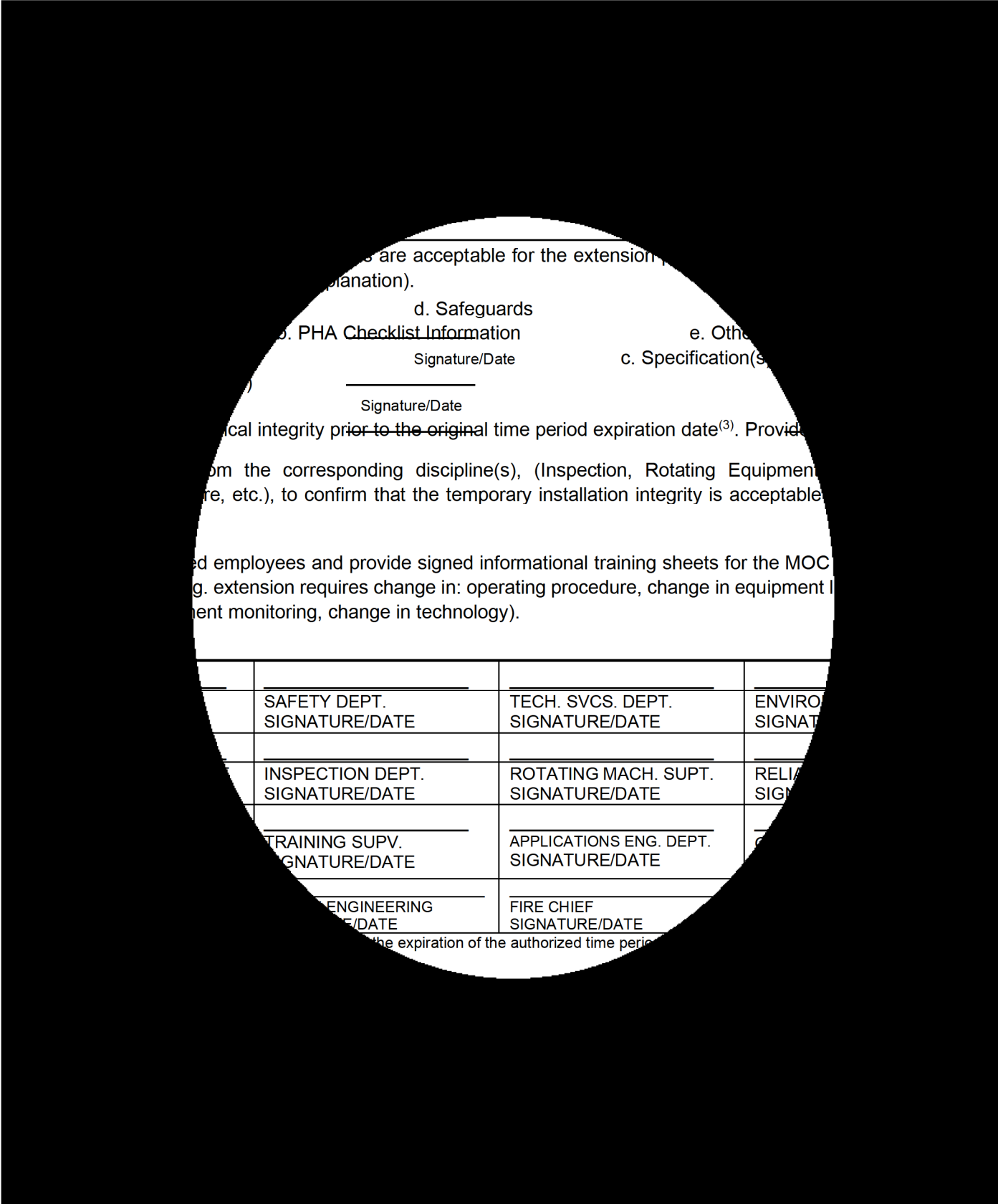
\_\_\_\_\_

Department

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... are acceptable for the extension, (provide explanation).

d. Safeguards

b. PHA Checklist Information

e. Other

Signature/Date

c. Specification(s)

Signature/Date

... integrity prior to the original time period expiration date<sup>(3)</sup>. Provide

... from the corresponding discipline(s), (Inspection, Rotating Equipment, etc.), to confirm that the temporary installation integrity is acceptable

... ed employees and provide signed informational training sheets for the MOC

... g. extension requires change in: operating procedure, change in equipment I

... ent monitoring, change in technology).

SAFETY DEPT. SIGNATURE/DATE	TECH. SVCS. DEPT. SIGNATURE/DATE	ENVIRO SIGNAT
INSPECTION DEPT. SIGNATURE/DATE	ROTATING MACH. SUPT. SIGNATURE/DATE	RELI/ SIGN
TRAINING SUPV. SIGNATURE/DATE	APPLICATIONS ENG. DEPT. SIGNATURE/DATE	G
ENGINEERING SIGNATURE/DATE	FIRE CHIEF SIGNATURE/DATE	

... the expiration of the authorized time period

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... Potential Severity and ... Required MOC Actions for the change. Please note: These are the suggested actions. You may choose to utilize a higher level of safety review at their discretion.

... provided to aid the user in determining the results in the MOC screening tool. This change that falls under the regulation of the [FACILITY] PSM. The [FACILITY] PSM Management for acknowledgment and review. (For guidance on answering the screening tool questions).

**Definitions**

... not a "replacement-in-kind." (For example, replacing a pump with the same model is a replacement-in-kind; but a pump with a different capacity is a change).

**Change in Potential Severity**

... for the potential severity of the hazard that could arise due to change.

**Hazard** (Yes if)

- ... significantly adds a toxic, flammable, or reactive material to the process, or alters a hazard.
- ... significantly increase material hazards.
- ... Inventory Quantity of Material (Yes if) ... increases the inventory of a hazardous material.

- **Change in the Potential for Personnel Exposure** (Yes if) Any change that increases the potential for personnel to be exposed to a chemical, mechanical, thermal, or pneumatic hazard.
- **Change in Process Energy** (Yes if) Any change which increases the amount of energy in a new source of, chemical, mechanical, thermal, or pneumatic energy in the process.

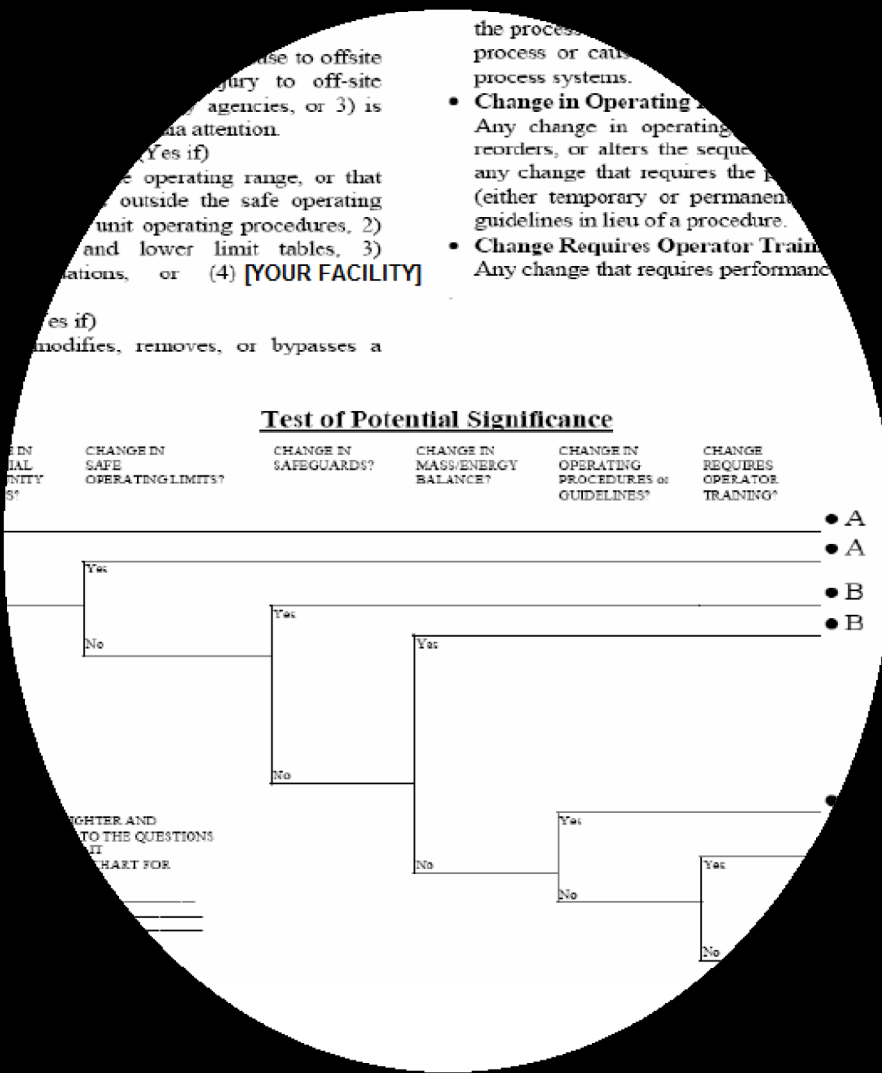
**Test of Potential Severity**

CHANGE IN THE POTENTIAL SEVERITY OF THE HAZARD?	CHANGE IN THE INVENTORY QUANTITY OF MATERIAL?	CHANGE IN THE POTENTIAL FOR PERSONNEL EXPOSURE?	CHANGE IN PROCESS ENERGY?
			• A
			• A
Yes			•
		Likely	
			No
No			

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...ction of a chemical that is not approved for non...  
...y indicated by the fact that the safety of its use has been...  
...e described in the unit operating procedures. A chemical is...  
...proved under a prior temporary MOC. Where there is an anticip...  
... particular unit, consideration should be given to writing standard proced...  
...izing its use via temporary MOCs. Examples would include the tempora...  
... temporary use of a chemical to sulfide a catalyst, addition of caustic to neut...  
...ly added to that stream, etc.

... conditions may make an already present chemical more hazardous than normal...  
... the temperature of a combustible liquid storage tank to above the flash point for the...  
... concern that a flammable vapor/air mixture might be formed in the tank head space.

### ... Hazardous Material?

...eases the inventory of a hazardous material in the unit.

...w tankage;

...ther than a drum for purchased chemicals dispensed within the unit

...imum permissible inventory (e.g., safe upper level limit) of a tank; • Increase in the...  
... therefore, density) of a gaseous process stream; • Increase in the diameter, length

### ... Personnel Exposure?

... the potential for personnel to be exposed to a chemical, mechanical, thermal

...mple system to an open system;

... disk discharging to atmosphere near grade level

... for route, where the design



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..., re-rating a vessel, or increasing the capacity of an existing flare,

... of caustic used to neutralize an acidic stream (higher heat

## GENERAL SIGNIFICANCE OF CHANGE

### Community Effects?

... the potential for a release to offsite areas that 1) poses the potential for injury to the community, 2) requires notification to regulatory agencies, or 3) is likely to attract significant, negative media attention.

... question is warranted if the proposed change could result in more significant consequences from a release (e.g., toxic cloud at a higher concentration or extending farther off-site, more significant environmental incident, etc.). b) Examples include:

- ... inventories in existing tankage
- ... tankage or piping closer to the refinery property line
- ... more hazardous (e.g., higher vapor pressure) materials (e.g., use of liquid chlorine in water treatment applications)
- ... for processing temperatures or pressures
- ... [YOUR FACILITY] control) which alter the proximity, or usage patterns, of off-

### Operating Limits?

... the safe operating range, or that allows a process to be operated outside the safe operating range. (1) the safe operating range, (2) the associated safe upper and lower limit tables, (3) the [YOUR FACILITY] standards.

... both expanding the safe operating range (e.g., by increasing a safe upper limit, or by decreasing a safe lower limit), or narrowing the safe operating range (e.g., by decreasing a safe upper limit). Changes that narrow the safe operating range require that the overall significance of the proposed change is assessed (e.g., whether

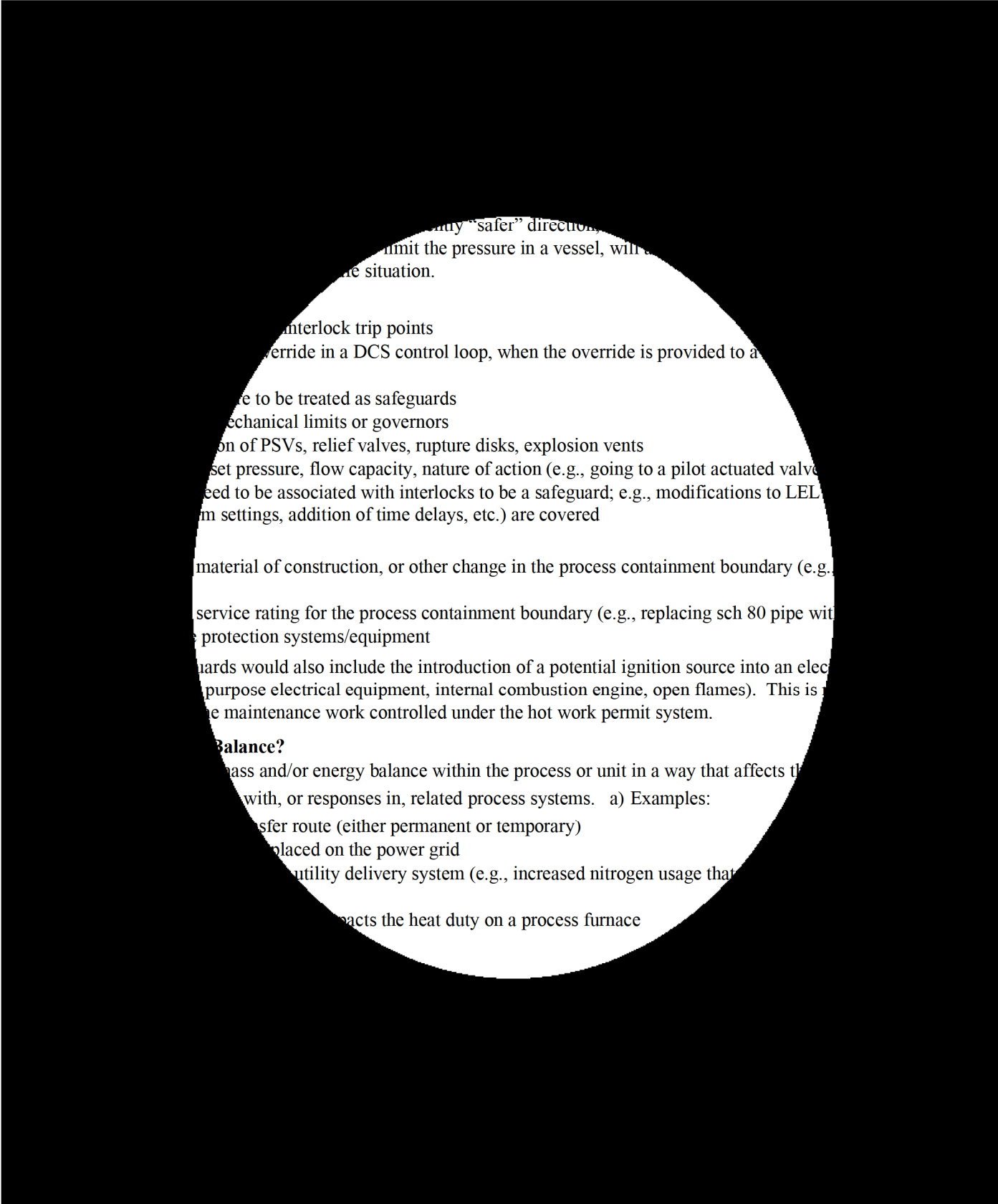
... higher pressure

... account for

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...only "safer" direction...  
...limit the pressure in a vessel, with...  
...the situation.

...interlock trip points  
...override in a DCS control loop, when the override is provided to a

...to be treated as safeguards  
...mechanical limits or governors  
...on of PSVs, relief valves, rupture disks, explosion vents  
...set pressure, flow capacity, nature of action (e.g., going to a pilot actuated valve  
...eed to be associated with interlocks to be a safeguard; e.g., modifications to LEL  
...m settings, addition of time delays, etc.) are covered

...material of construction, or other change in the process containment boundary (e.g.,  
...service rating for the process containment boundary (e.g., replacing sch 80 pipe with  
...protection systems/equipment

...ards would also include the introduction of a potential ignition source into an elec  
...purpose electrical equipment, internal combustion engine, open flames). This is  
...the maintenance work controlled under the hot work permit system.

**Balance?**  
...mass and/or energy balance within the process or unit in a way that affects the  
...with, or responses in, related process systems. a) Examples:  
...transfer route (either permanent or temporary)  
...placed on the power grid  
...utility delivery system (e.g., increased nitrogen usage that  
...affects the heat duty on a process furnace

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that is more than editorial or format-  
to cover the use of a temporary transfer route.  
st sulfiding operation  
ing?  
ance training for operators.  
g guidelines elsewhere in this procedure to determine the types of chan-  
s required.  
least informational training for operators, a YES answer to this question is no  
ormational

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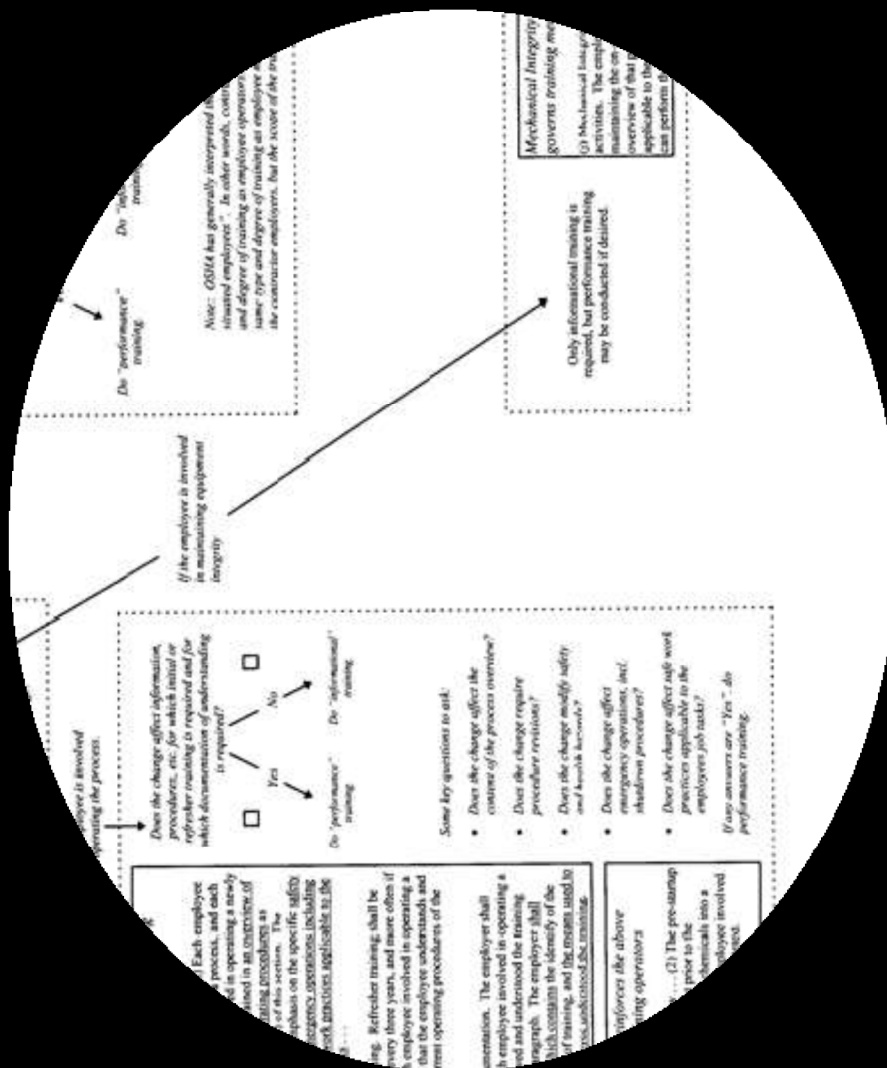
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<p>require an employee to fill out a questionnaire to verify that the change was understood.</p>	
<p><b>I</b></p> <p><b>Informational Training<sup>(1)</sup> To Understand The Change</b></p> <p>Informational Training is the type of training that consists of providing employees with the MOC package and a verbal explanation of what was done.</p>	<p><b>II</b></p> <p><b>MOC Requiring Performance Training To Understand The Change</b></p> <p>Performance Training is the type of training that requires the employee to fill out a questionnaire to be filled out or a field performance test to be witnessed by a supervisor.</p>
<p>Changes requiring "HAZOP" analysis.</p> <p>Changes in technology.</p> <p>Changes in equipment requiring a change in startup or shutdown procedure of the equipment.</p> <p>Relief valve installation as a result of a change in technology.</p> <p>ASD additions or deletions.</p> <p>Interlocks additions or deletions.</p> <p>Procedures - Changes to existing procedures.</p> <p>Procedures - New procedures.</p>	<p>Changes requiring "HAZOP" analysis.</p> <p>Changes in technology.</p> <p>Changes in equipment requiring a change in startup or shutdown procedure of the equipment.</p> <p>Relief valve installation as a result of a change in technology.</p> <p>ASD additions or deletions.</p> <p>Interlocks additions or deletions.</p> <p>Procedures - Changes to existing procedures.</p> <p>Procedures - New procedures.</p>

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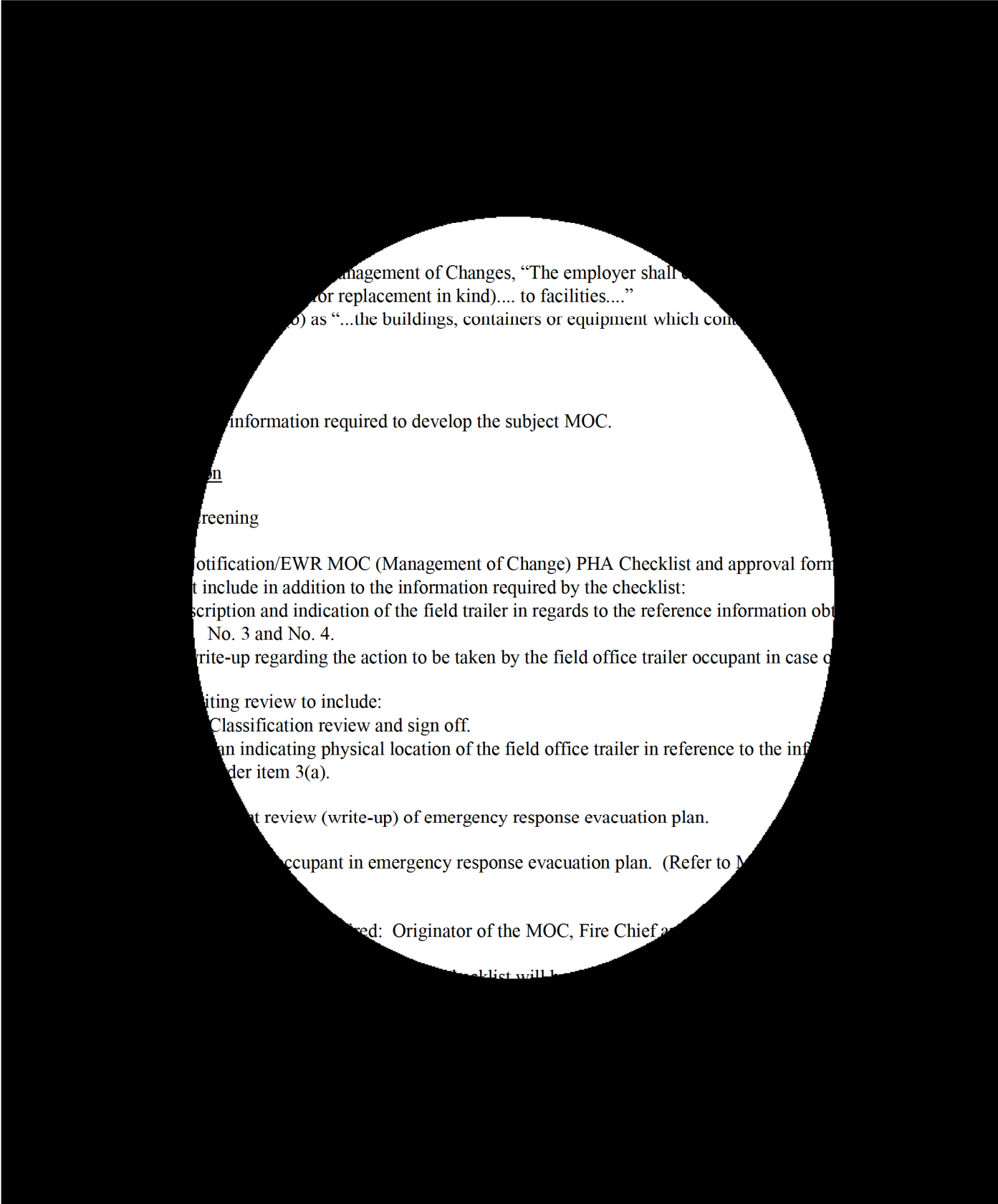
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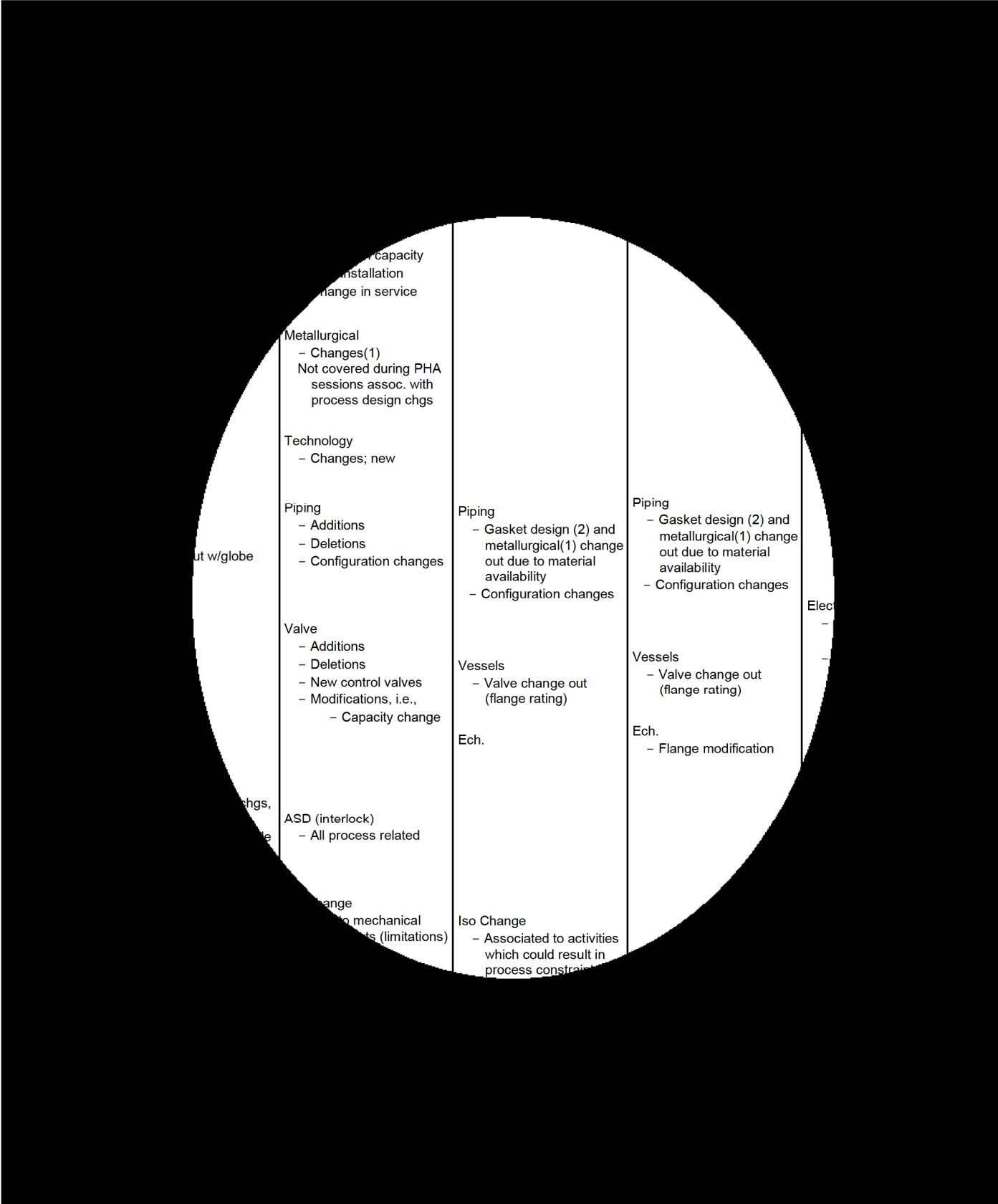


management of Changes, "The employer shall...  
for replacement in kind)... to facilities..."  
) as "...the buildings, containers or equipment which com  
information required to develop the subject MOC.  
on  
reening  
otification/EWR MOC (Management of Change) PHA Checklist and approval form  
t include in addition to the information required by the checklist:  
scription and indication of the field trailer in regards to the reference information obt  
No. 3 and No. 4.  
rite-up regarding the action to be taken by the field office trailer occupant in case of  
iting review to include:  
Classification review and sign off.  
an indicating physical location of the field office trailer in reference to the inf  
der item 3(a).  
ent review (write-up) of emergency response evacuation plan.  
occupant in emergency response evacuation plan. (Refer to M  
ed: Originator of the MOC, Fire Chief and  
checklist will be

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Capacity Installation Change in service			
Metallurgical - Changes(1) Not covered during PHA sessions assoc. with process design chgs			
Technology - Changes; new			
Piping - Additions - Deletions - Configuration changes	Piping - Gasket design (2) and metallurgical(1) change out due to material availability - Configuration changes	Piping - Gasket design (2) and metallurgical(1) change out due to material availability - Configuration changes	
Valve - Additions - Deletions - New control valves - Modifications, i.e., - Capacity change	Vessels - Valve change out (flange rating)	Vessels - Valve change out (flange rating)	
ASD (interlock) - All process related	Ech.	Ech. - Flange modification	
change to mechanical (limitations)	Iso Change - Associated to activities which could result in process constraints		





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ERLINK TO YOUR MOC FORMS ON CORPORATE INTRANET



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to close the subject MOC. Submit the corresponding information.

rafting.)

FILE

Marked Up Procedure

OPERATIONS TRAINING (SIGN-OFF LIST)

Operations Proof of Understanding

INFORMATION TO OPERATOR (SIGN-OFF)

MAINTENANCE TRAINING

ENVIRONMENTAL CHECKLIST

PHA (MOC Screening will determine level of PHA)

Level

Session Documentation

Recomm. Resolution Sign-Off<sup>(2)</sup>

Recomm. Implemented Sign-Off<sup>(2)</sup>

TY (SIGN-OFF) & REF. FILE

PRE-STARTUP SAFETY REVIEW (SIGN OFF)

PSSR (Full Blown)

PSSR (Mini)

PSSR NON STARTUP ITEMS CLEARANCE (SIGN OFF)

OTHER

OTHER

OTHER

Corresponding MOC No. to identify any documentation associated with this project.

MOC checklist for additional detail.

re-evaluated.

PSM