AMMONIA REFRIGERATION
PROCESS SAFETY /
RISK MANAGEMENT PROGRAM
MANAGEMENT OF CHANGE FORM (MCF)

MOC Number: _____________  Anticipated Start-up Date: ________________

Description: ____________________________________________________________
______________________________________________________________________

This information is completed by the Maintenance Manager.

PHASE 1: INITIATION OF MANAGEMENT OF CHANGE FORM
Phase 1 is to be completed by individual originating the MCF and forwarded to the Maintenance Manager.

ORIGINATED BY: __________________________ DATE: __________________

PRIORITY OF REQUEST: (CHECK ONE)

[ ] CRITICAL. Affected portion of system should be shutdown until safety issue(s) are resolved.
[ ] URGENT. Affected portion of system should operated short term with caution until safety issue(s) resolved.
[ ] IMPORTANT. Affected portion of system should be operated with caution until safety issue(s) resolved.
[ ] ROUTINE. Affected portion of system should be noted and work to resolve minor safety issue(s) scheduled.

REASON FOR REQUEST: (CHECK ONE)

[ ] Incident Investigation Rec.  [ ] Change in Refrigeration Requirements (Upgrade)
[ ] Mechanical Integrity Audit Rec.  [ ] Process Hazard Analysis or Safety and Health Review
[ ] Pre-start Safety Review Rec.  [ ] Expansion or Renovation of Facility or Systems
[ ] Routine Maintenance  [ ] Repair Activities

[ ] Other (Explain) ____________________________________________________________

Reference Number(s): ______________________________________________________

DESCRIPTION OF TECHNICAL BASIS FOR CHANGE (PURPOSE, ALTERNATIVES, REFERENCE SKETCHES OR DRAWINGS): (use additional pages if necessary)

_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________
_______________________________________________________________________

Sample

Sample
# Phase 2: Initial Screening

Section 2 is to be completed by the Maintenance Manager or Designate and forwarded to the Plant Manager.

## ASSESS TECHNICAL BASIS OF CHANGE

1. **Type of Change?**
   - [ ] Change is not subject to the Management of Change Program.
   - [ ] Replacement in kind
      - Review complete and signed.
      - STOP: If the change is not subject to the Management of Change Program, STOP HERE!

2. **Is the change temporary or permanent?**
   - [ ] Change is permanent
      - Do not complete the sections outlined in pink below.
   - [ ] Change is temporary
      - The sections outlined in pink below must be completed in addition to the remainder of this form.

3. **How significant is the change?**
   - [ ] Modification is a sub-minor change
      - The sections outlined in green below must be completed, the Process Safety Information updated and the MOC form files.
      - (Meets the design specifications and only requires a change to the Refrigeration System Documentation.)
   - [ ] Modification is a minor change
      - An Engineering Review Checklist and Safety Review Checklist must be completed. The Maintenance Manager may elect to perform a Process Hazard Analysis in lieu of the Safety and Health Review. (Modified or Added; Process or Equipment must meet the criteria outlined for minor changes in the written program.)
   - [ ] Modification is a major change
      - An Engineering Review Checklist and Process hazards analysis is required.

4. **Is the change necessary, consistent with company policy, and an acceptable course of action?**
   - [ ] Yes
      - Change should be forwarded for preliminary engineering.
   - [ ] No
      - Change should not be implemented and an explanation should be attached.

## EXCEPTIONS / COMMENTS: (use additional pages if necessary)

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REVIEWED BY: ________________________________  DATE: __________

(Maintenance Manager or Designee. The Originator cannot sign here.)
IF THIS CHANGE IS A REPAIR OR REPLACEMENT IN KIND, PAGES 1-2 ARE TO BE FILED; PAGES 3-6 ARE TO BE DISCARDED.
DURATION OF CHANGE (This section should be completed for temporary changes only)

Scheduled start date: _____________________

Scheduled date to return unit to original service: _____________________ (this date can be no more than 7 days after the scheduled start date).

No temporary change should be granted more than five, one week extensions or be allowed to extend beyond a total of six weeks including any extensions.

SCHEDULE FOR TEMPORARY CHANGES

<table>
<thead>
<tr>
<th>Initiation Date</th>
<th>Expiration Date</th>
<th>Authorization</th>
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<tbody>
<tr>
<td>Initial request</td>
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<tr>
<td>Extension #1</td>
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<td>Extension #2</td>
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<td>Extension #3</td>
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<td>Extension #4</td>
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<td>Extension #5</td>
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</table>

PHASE 3 UPDATING PSM ELEMENTS (PROCESS SAFETY INFORMATION, PROCEDURES, AND DOCUMENTATION)

Identify the information which needs to be revised as a result of this change. Please list the items requiring update or development. Alternately a copy of the master document list with the proposed changes outlined or a letter of transmittal may be attached.

☐ Ammonia Inventory Calculation
☐ Engine room Ventilation Calculation
☐ Relief System Design Calculation
☐ Risk Management Plan / Release Scenarios
☐ Master Document List
☐ Process Safety Information Manual (Section# ________________)
☐ Mechanical Integrity Guidelines / Equipment List (Section # ________________)
☐ P&ID Drawings (# __________________________)
☐ Flow Schematics (# __________________________)
☐ Refrigeration Plan Views (# __________________________)
☐ Standard Operating Procedures (Procedure # __________________________)
☐ Operation and Maintenance Information (Tab # __________________________)
☐ Indexes (Tab # __________________________)
☐ Emergency Action/Response Plan Docs. (Tab # __________________________)

Other items:

__________________________________________________________________________
PRELIMINARY ENGINEERING

For Sub-minor changes, does the proposed change meet the design specifications?

Yes / No (Circle one)

For minor and major changes detailed engineering must be performed detailing the proposed change and construction specifications. The Engineering Review form should be utilized and attached to this Management of Change form as well as any supporting documents.

Please list any additional notes which may require follow-up:

__________________________________________________________________________________________

__________________________________________________________________________________________

Following the completion of the Engineering Review the form should be forwarded to the Safety Manager or his designee, for completion of the Safety and Health Review or the Process Hazard Analysis.

SAFETY AND HEALTH REVIEW / PROCESS HAZARD ANALYSIS

Type of Review: (Circle one)

Safety and Health Review / Process Hazard Analysis (Circle one)

Date the Review (Safety and Health Review or PHA) was completed _______________

Did the review address the impact of change on safety and health?

Yes / No (Circle one)

Please list any additional notes which may require follow-up:

__________________________________________________________________________________________

__________________________________________________________________________________________

If a Safety and Health Review was performed, please attach the Safety Review Checklist to this Management of Change Form.

Following the completion of the Safety and Health review or the Process Hazard Analysis this form should be forwarded to the Maintenance Manager or his designee.
CONTRACTORS

Contractors working in conjunction with this change must be listed below.

<table>
<thead>
<tr>
<th>Contracting Firm</th>
<th>Contractor Representative</th>
<th>Contractor approved via the Contractor Qualification Program. (Circle One)</th>
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<tbody>
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<td>YES / NO</td>
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<td>YES / NO</td>
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EMPLOYEE TRAINING

Employees affected by the proposed change must acknowledge their training and understanding of the modification by signing below. Alternately a separate training sign-in sheet may be used and attached.

<table>
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<th>Employee name (printed)</th>
<th>Employee Signature</th>
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FINAL VERIFICATION OF TEMPORARY CHANGES

Date temporary operations were returned to normal operating conditions _________

Maintenance Manager: ___________________________ Date: ______

Please list any additional notes which may require follow-up:

_________________________________________________________________
## STARTUP AUTHORIZATION

Before Ammonia Refrigeration Equipment is decommissioned and removed from the site, a Decommissioning Checklist must be completed.

<table>
<thead>
<tr>
<th>Decommissioning Description</th>
<th>DC Number</th>
<th>Removal from the site Authorized by:</th>
<th>Date Decommissioning Completed</th>
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| Before ammonia is added to the modified system (or into the equipment that has been modified) a Pre-Charging Checklist must be completed PRIOR to the introduction of ammonia.

<table>
<thead>
<tr>
<th>Charging Description</th>
<th>PCC Number</th>
<th>Charging Authorized by:</th>
<th>Date Charging Completed</th>
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If startup of the modification is to occur in phases, a Pre-startup Safety Review must be completed for each startup date.

<table>
<thead>
<tr>
<th>Phase Description</th>
<th>PSSR Form Number</th>
<th>Startup Authorized by:</th>
<th>Startup Date</th>
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## SECTION 9: PROJECT COMPLETION

Have all applicable drawings, procedures, and documentation noted in Section 2 been revised electronically and distributed accordingly (replacing redlines if redlines were used?)

(Check One) [ ] Yes [ ] No

Project is verified complete by:

Maintenance Manager: ___________________________ Date: ________