Development of Maintenance Procedures

APPROVED:_____ DATE APPROVED:_____ DATE EFFECTIVE:_____
Maintenance Manager

PURPOSE

This procedure defines the Y O U R C O M P A N Y N A M E H E R E Maintenance procedures. The process for procedure, development, review, approval, document control and formatting standards are described.

REFERENCES

Department of Labor (OSHA), 29 CFR part 1910.119, **Process Safety Management of Highly Hazardous Chemicals**, Final Rule, February 24, 1992.

American Petroleum institute, API Recommended Practice 750, "Management of Process Hazards", January 1990.

DEFINITIONS

APPROVAL -- Authorization granted by the Maintenance Manager to issue a new procedure or revision, delete an approved procedure, or implement a field change. Approval authority shall not be delegated, except in the absence of the Maintenance Manager.

CONTROL COPY -- A control copy is the only version of a procedure which is considered up-to-date at all times. Working copies shall be reproduced from a control copy.

DATE APPROVED -- The date a procedure is approved by the Maintenance Manager and becomes authorized for use. This means the content of the procedure is satisfactory and the procedure is to be implemented.

DELETED PROCEDURE -- A procedure rescinded and not replaced by a later revision. The procedure's number will not be reused.

EXPIRATION DATE -- The date or condition after which a **TEMPORARY PROCEDURE** will no longer be used.

INTENT CHANGE -- A change to the content of a control copy which:

- Changes the purpose or outcome
- Creates new process safety issues
- Changes any operating parameter or limit
- Causes other Departments to perform tasks not previously required.

NON-INTENT CHANGE -- A change to a procedure which does not change the purpose, safety concerns, parameters, flow paths or the validity of any data taken. Such changes may include the following:

- Clearly identifiable typographical errors, misspelled words and correction to punctuation
- Inadvertently omitted information or clearly erroneous data
- References to other documents which must be corrected due to the reference document title, number, or revision number changing

MAINTENANCE MANAGER -- The Manager who is responsible for the equipment or operation will sponsor applicable procedures and has the approval authority.

MAINTENANCE PROCEDURE - identifies hazards associated with employees job task. Field procedures will contain information to assure that the employee can perform the job task in a safe manner. A Maintenance Procedure shall include, where applicable, specific instructions and values as needed to execute the job correctly, e.g., manufacturer's "bolt torque" specifications.

REVISION -- The process of incorporating approved changes into a control copy which results in a change in the procedure's revision number.

TEMPORARY PROCEDURE -- A procedure intended for one use that has a finite life (that is, a specified effective date and expiration date or predefined condition.)

USE OF SHALL, SHOULD AND MAY -- These words have definite meanings:

- **SHALL** denotes a requirement
- **SHOULD** denotes a recommendation
- **MAY** denotes permission (that is, neither a requirement nor a recommendation)

WORKING COPY -- A procedure either under development or revision.

PROCEDURE USAGE

PROCEDURE AVAILABILITY -- Plant procedures shall be readily accessible to all workers who perform Maintenance activities. The procedures shall be written to provide clear instructions for safely performing work activities.

USER RESPONSIBILITY -- Each worker is responsible for reviewing the procedures for their area of responsibility as often as necessary to ensure adherence to current operating and maintenance practices.

MAINTENANCE PROCEDURES

Maintenance Procedures will identify any specific hazards associated with the job, along with any exposure effects and references to Material Safety Data Sheets for treatment required.

Maintenance Procedures need to be specific to the type of equipment. Identical or very similar items of equipment in similar service need not have individualized procedures. Each procedure must clearly identify the equipment to which it applies.

These procedures will contain specific job instructions on "how to do the job correctly". When tasks have to be done in a fixed, specific sequence and special instructions need to be followed, these will be included as part of the procedure.

Maintenance Procedures will also identify any initial conditions (prerequisites) that must be satisfied or actions that should be performed prior to starting the procedure (i.e., Lock and Tag, obtain Work Permit, etc.).

Procedures will reference other guidelines, such as ISA, NEC, ASME, or API, as they apply to each individual procedure. Manufacturer's manuals and/or drawings will also be referenced as applicable.

PROCEDURE DEVELOPMENT

The need for new procedures or procedure revisions may be identified or initiated by anyone.

The Maintenance Manager is responsible for arranging for procedure(s) be written according to the format and writing standards described in this document. Capital projects and other process engineering changes should automatically initiate development of procedures or revisions to procedures as part of the Management of Change (MOC) process.

REVIEW AND APPROVAL

Prior to approval, each new procedure or procedure revised for an intent change or due to periodic review comments will be reviewed to ensure that it addresses the following:

- Safety
- Technical accuracy
- Regulatory requirements
- Sound operating and maintenance practices
- Quality

PROCEDURE CONTROL

The master document shall be titled as a “Control copy”. A Control copy is the only version considered up-to-date at all times. All other copies of procedures are "For Information Only" and should be compared with the Control copy prior to use to ensure that they are current and to include all field changes.

WORKING COPIES – Procedures titled as “Working Copy” will not be considered as current.

NON-INTENT CHANGES - should be written in ink on a Controlled Copy, signed and dated by the person making the change and submitted for correction.

PROCEDURE REVIEW

Procedures will be reviewed as often as necessary to ensure that they reflect current operating practice, including changes that result from changes to process chemicals, technology, and equipment, and changes to facilities.

The Maintenance Managers will certify annually that the procedures are current and accurate. Each procedure's 12 month review cycle will restart immediately following the approval of a revision to the procedure. Procedure revisions identified as a part of the MOC review of other process safety information changes must be reviewed and approved in accordance with this procedure.

When a procedure is formally revised the Maintenance Manager will ensure that the earlier versions are removed and the latest revision inserted in its place. Revised procedures will be published and distributed in their entirety.The Maintenance Manager shall ensure all employees affected by the new or revised procedure will be informed of or trained in the change prior to the effective date.

TEMPORARY PROCEDURES

Temporary procedures are written for a temporary situation or condition. Each temporary procedure has a an effective date and an end date or when a predefined condition is satisfied. Temporary procedures will be centrally archived after their expiration date.

Temporary procedures shall be marked **"TEMPORARY"** after the title. They will include an expiration date or terminating condition in the Purpose section. Temporary procedures may be hand written if the writing is clear and legible.

PROCEDURE FORMAT

Procedure pages will include a header and footer containing the following information:

PROCEDURE NUMBER -- An alphanumeric code consisting of:

1. Procedure Type Indicator – e.g. MNT
2. Craft prefix number - e.g. FIXED, INST
3. Sequential number - e.g. 001, 002
4. Revision Number - e.g. 0, 1 (The first revision is Rev. 1)

PROCEDURE TITLE -- A summary of the major goal of the procedure, usually a major job or task description. For example: "Unit #1 Startup" or "Loading Product Tank Cars"

APPROVED BY -- Signature of approval authority by the Maintenance Manager. This line appears on the top of the first page only.

DATE -- Month and year when the current revision of the procedure was approved and published.

PAGE NUMBER -- Each procedure begins on page one and is numbered consecutively through the last page of the procedure. Each page shows the page number and the total number of pages in the procedure (including attachments). For example, the last page of a three-page procedure is Page 3 of 3.

TABLES AND FIGURES

Tables, simple drawings, exploded drawings, figures, diagrams, and charts serve to clarify confusing or difficult ideas. Locate them close to the point in the procedure where they are referenced. If complicated drawings are necessary for understanding the procedure they may be included as attachments. If this is not practical (as with vendor manuals or numerous detailed PFDs) the procedure user should be directed to the appropriate document.

PROCEDURE SECTION

Maintenance procedures contain the following sections, identified in the left margin of each procedure:

1. **PURPOSE** -- A brief description of summary of the use and goal of the procedure.
2. **REFERENCES** -- Documents that support the maintenance work being performed. In case of possible chemical exposure, include references to appropriate MSDS, using the actual chemical name(s).

3. **PRECAUTIONS** -- A brief description of any dangerous conditions that exist or could be encountered while performing the procedure as identified by a Job Hazard Analysis.

4. **SPECIAL TOOLS AND EQUIPMENT** -- A list of equipment or materials unique to the procedure or which should be in place before beginning the procedure. This section would not include normal Personal Protection Equipment (PPE) worn to meet general plant safety requirements.

5. **PREREQUISITES** -- Actions or conditions which shall be performed or verified before starting the procedure. The technician skill level that the work requires will be stated here. Other job planning information is identified here as well as special training and regulatory requirements.

6. **PROCEDURE** -- The step-by-step instructions for achieving the purpose of the procedure.

   Procedural steps will consist of an action and the object of the action. For example:

   Mechanic 1. VISUALLY INSPECT gasket seat for signs of rusting or pitting.

   2. WIPE the gasket seat area with a cloth soaked in machine oil.

   NOTES contain information that will help in the performance or understanding of a procedural step. Notes will precede the procedural step to which they refer. It is advisable to limit the use of "nice to know information" in notes as well as in procedural steps. Notes do not normally contain actions. Notes will be designated as shown below:

   CAUTIONS are placed **before** a step to identify potential or actual hazards that could injure personnel, damage equipment or reduce a component's mechanical integrity.

END OF PROCEDURE

The centered word { **END** }, in bold type, shall appear after the last step or paragraph of a procedure.

END