



Establishment and Documentation of MAOPs, MOPs, and FDPs for Pipelines Operating at Greater Than 60 PSIG

**Summary** This work procedure details steps for establishing and documenting the Company's maximum allowable operating pressures (MAOPs), maximum operating pressures (MOPs) and future design pressures (FDPs) of its gas transmission pipelines.

Level of Use: Information Use

**Target Audience** All gas engineering and operating personnel.

**Safety** This work procedure ensures that all MAOP, MOP and FDP are established and documented in a standard way to comply with applicable gas safety regulations, as well as maintain employee and public safety.

Perform all work in compliance with the *Code of Safe Practices* and *Utility Standard Practice (USP) 22, "Safety and Health Program."*

**Before You Start** NA



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Table of Contents for Procedure Steps

Subsection	Title	Page
1	Establishing MAOP .....	2
2	Establishing MOP .....	3
3	MOP/MAOP/FDP Documentation .....	4

**Procedure Steps**

**1 Establishing MAOP**

**1.1 Pipeline Installed Before July 1, 1970**

1. For lines installed before July 1, 1970, establish the MAOP by the highest actual operating pressure for the 5 years ending July 1, 1970 that can be documented (for example, documented on a pressure chart, station or foreman's log, dispatcher's order, etc.), unless the system was subsequently updated in accordance with CFR Title 49, Part 192, Subpart K, "Upgrading," or pressure tested after July 1, 1965, in accordance with Numbered Document A-34, "Piping Design and Test Requirements." (See Utility Procedure TD 4125P-04, "Revising the MAOP, MAOP, and FDP of Pipelines Operating at Greater Than 60 PSIG," for more details on this procedure.)
2. Maintain documentation for the historic operating pressures in MAOP binders. (See TD-4125P-02 Attachment 1, "MAOP Binder Requirements," for more details on the MAOP binders.)

**1.2 Pipelines Installed On or After July 1, 1970**

1. For lines installed, replaced, or rehabilitated on or after July 1, 1970, establish the MAOP by a test conducted in accordance with Numbered Document A-34, "Piping Design and Test Requirements."
2. Design and test new, replaced, or rehabilitated sections of line in accordance with Numbered Document A-34 to qualify the pipeline to be operated up to the FDP of the system, as listed in the latest version of Drawing Number 086868, "MAOP of Lines Operating At or Over 20% SMYS."
3. In existing systems where the MAOP is less than the FDP, test new additions to that system to establish an MAOP and design pressure at least equal to the FDP.



Establishment and Documentation of MAOPs, MOPs, and FDPs for Pipelines Operating at Greater Than 60 PSIG

1.2 (continued)

4. The department managing gas transmission system planning activities must establish the FDP for transmission and gathering lines in consultation with the department managing pipeline engineering activities.
  - a. For pipelines with nominal diameters up to 24 inches, establish the FDP at 275 psig, 720 pounds per square inch gauge (psig), or 1440 psig to match the American National Standards Institute (ANSI) ratings of 150, 300 and 600, respectively. The FDP selected depends on current and projected operating needs and conditions.
  - b. Establish the FDP on a project-specific basis for nominal diameters greater than 24 inches, or for very large jobs where it is more cost-effective to optimize the pipe for the job and class location.

**2 Establishing MOP**

The MOP must not exceed the lowest of the following pressures:

1. The lowest established MAOP for any pipe segment in the pipeline system.
2. The MAOP of any connected system of lower MAOP, unless required regulation and overpressure protection is provided between them.
3. A pressure limited by operating conditions, or the condition of the system.
4. The pressure rating of any valve, fitting, piece of equipment, or facility installed in, or connected to, any pipe segment in the pipeline system.
5. For segments in a high consequence area (HCA - see Map Guide for locations) that are made from pre-1970 electric resistance welded (ERW) pipe, or pipe with a joint efficiency factor less than 1, and MAOP was not previously established by a valid Subpart J pressure test, the previous 5-year maximum historical operating pressure.



Establishment and Documentation of MAOPs, MOPs, and FDPs for Pipelines Operating at Greater Than 60 PSIG

### 3 MOP/MAOP/FDP Documentation

#### 3.1 PG&E Drawing Number 086868, "MAOP of Lines Operating At or Over 20% Specified Minimum Yield Stress (SMYS)."

1. Drawing Number 086868, "MAOP of Lines Operating At or Over 20% SMYS," is available online through the, "UO Technical Information Library" intranet website located under the following drill-down menus: Gas, Transmission or Distribution, and other documents.
2. The manager of the department with transmission system planning responsibilities must annually confirm the FDPs listed in Drawing Number 086868. This confirmation must be made on or before January 15. The confirmation must be made to the manager of the department that oversees the gas transmission mapping and operating records.
  - a. The manager of the department that oversees the Company's gas transmission mapping and operating records must issue and distribute an updated copy of Drawing Number 086868 annually on or before March 15.
  - b. Drawing Number 086868 lists the MAOP, MOP, and FDP of backbone and local transmission pipelines, distribution feeder mains (DFM), and pipe-type, high-pressure gas underground holders operating at or over 20% SMYS. Note revisions to the pipeline and operating pressure data by the shaded cells of the document.

#### 3.2 Pressure Update Documents

1. All records (originals and copies contained in the MAOP files) that document the MAOP and MOP of pipelines and mains must remain on file for the life of the pipeline, main, or pipeline facility.
2. Except as noted, keep all original records (for example, charts, strength test pressure reports, all completed forms, letters, etc.) in the job file.

#### NOTE

If there is no job associated with an MAOP or MOP change, as in the case of an MAOP lowered due to class location change and documented only by Form TD 4125P-01-F01, "Establishing MAOP," keep the original record in the MAOP file described in Section 3.3, "MAOP File."

3. The gas transmission and distribution (GT&D) records section and area headquarters (for distribution facilities) must establish and maintain MAOP files that consolidate copies of records documenting the MAOP and MOP of a pipeline (or segment of pipeline), main, or pipeline facility. Record all changes in the geographic information system (GIS) mapping to each pipe segment.



Establishment and Documentation of MAOPs, MOPs, and FDPs for Pipelines Operating at Greater Than 60 PSIG

3.3 MAOP File

1. The manager of the department that oversees the Company's gas transmission mapping and operating records must maintain binders to document the system level MOP/MAOP/FDP of gas systems greater than 20%.
2. Requirements and procedure for maintaining the binder content are described in TD-4125P-02 Attachment 1, "MAOP Binder Requirements."

**END of Instructions**



Establishment and Documentation of MAOPs, MOPs, and FDPs for Pipelines Operating at Greater Than 60 PSIG

**Definitions** See definitions in Utility Standard TD-4125S, "Maximum Allowable Operating Pressure Requirements for Gas Distribution Systems and Transmission and Gathering Lines."

**Implementation Responsibilities** GT&D pipeline engineering implement the requirements of this work procedure.

**Governing Document** Utility Standard TD-4125S, "Maximum Allowable Operating Pressure Requirements for Gas Distribution Systems and Transmission and Gathering Lines."

**Compliance Requirement/Regulatory Commitment** CFR Title 49, Part 192, Subpart J, "Test Requirements."

CFR Title 49, Part 192, Subpart K, "Uprating."

CFR Title 49, Part 192, Subpart L, "Operations."

**Reference Documents** **Developmental References:**

Code of Safe Practices

CFR Title 49, Part 192, Subpart K, "Uprating."

Drawing Number 086868, "MAOP of Lines Operating At or Over 20% SMYS."

Numbered Document A-34, "Piping Design and Test Requirements."

Utility Procedure TD-4125P-04, "Revising the MAOP, MAOP, and FDP of Pipelines Operating at Greater Than 60 PSIG."

Utility Standard Practice (USP) 22, "Safety and Health Program."

Utility Standard TD-4125S, "Maximum Allowable Operating Pressure Requirements for Gas Distribution Systems and Transmission and Gathering Lines."



Establishment and Documentation of MAOPs, MOPs, and FDPs for Pipelines Operating at Greater Than 60 PSIG

**Supplemental References:**

NA

**Appendices**

NA

**Attachments**

Attachment 1, "MAOP Binder requirements."

**Document Recision**

This is a new document.

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**Revision Notes**

Where?	What Changed?
NA	NA

