

Uprate Written Plan Sample

The following is a sample format for preparing a written plan to uprate a pipeline and the related pipeline facilities:

(PROVIDE A TITLE INCLUDING THE FOLLOWING)

**NAME OF PIPELINE/DFM
ROUTE NUMBER(S), CITY
PM Number
UPRATE WRITTEN PLAN**

A. Description and Purpose of Uprating:

- Briefly describe the purpose of the uprate, overall length of pipeline, list the sizes in outside diameter (OD), and the current maximum allowable operating pressure (MAOP) and proposed MAOP.
- Write the project objective and pipeline routes involved.
- Indicate the location of the distribution feeder mains (DFMs) and transmission lines

B. System Definition and Scope

Define the pipeline system and scope of uprate. Include pipeline diameters, regulator stations, mainline valves, services off the pipeline, known abandoned service stubs, and number of pressure control.

Specification of Pipe Being Uprated

List pipe lengths and specifications in a table, or refer to an attached document that serves the same purpose. A template for listing the pipe specifications is attached as TD-4125P-04, Attachment 3, "Pipe Features List Template." Include starting and ending points. A starting point for this list is a download of the information in geographic information system (GIS) if it is available. If in the as-built data research, the GIS data is not correct, have the GIS data corrected per the as-builts, and strength test pressure reports (STPRs).

System components

List system components (elbows, tees, insulating fittings, etc.) and pressure ratings on TD-4125P-04 Attachment 3, "Pipe Features List Template."

Valves

List valves and pressure ratings in the pipeline system on TD-4125P-04, Attachment 3, "Pipe Features List Template." except for valves associated with stations. Document station valves, piping, and other equipment on TD-4125P-04 Attachment 4, "Station Equipment List Template."

Regulator Stations

List regulator stations and results of physical inspection, including date of inspection and findings, and whether or not the station components meet the proposed MAOP test pressures on TD-4125P-04 Attachment 4, "Station Equipment List Template."

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Services: Existing "In service" and "Not in service"

List all services and service stubs affected by the proposed uprate (add rows to the table below to document services).

There are __ (#) active services and inactive service taps directly served off the transmission system.

Service Record	diameter	WM/plat/block	Street

C. Maximum Allowable Operating Pressure

MAOP before uprating: _____ pounds per square inch gauge (psig)

MAOP after uprating: _____ psig

This information is included on TD-4125P-04, Attachment 3, "Pipeline Features List Template," along with the associated % specified minimum yield stress (SMYS) for each pipe feature for the existing MAOP and the proposed MAOP.

In addition to Attachment 3, "Pipeline Features List Template," TD-4125P-04 Attachment 4, "Station Equipment List Template" provides for listing regulator station equipment, and the associated station piping. On this list the rating of all equipment and % SMYS for all station piping is included.

D. Uprating Procedure:

The pipeline (or pipelines) uprate proceeds in accordance with Code of Federal Regulations (CFR) Title 49, Part 192, Subpart K, "Uprating." The line qualifies for uprate by complying with the requirements of CFR Title 49, § 192.555, "Uprating to a pressure that will produce a hoop stress of 30 percent or more of SMYS in steel pipelines."

This procedure meets the compliance requirements of CFR Title 49, § 192.553(c), "Written plan."

In accordance with § 192.555(b), take the following steps:

- (1) Review the design, operating, and maintenance history and previous testing of the segment of pipeline and determine whether the proposed increase is safe and consistent with the requirements of this part.
 - a. Review all job records and construction records. (See TD-4125P-04 Attachments 2 and 3.)
 - b. Review the operation and maintenance history as summarized in subsections Sections G, H, I, and J of this procedure.
 - c. Follow TD-4125P-04 Attachment 2, "Records Research Procedure," to ensure that all records were reviewed.
 - d. Attach a map of the section to be uprated. The map must clearly define the extent of the uprate, and the pressure boundaries. The

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- system map must also document the entire system for inclusion in leak surveys.
- (2) Make any repairs, replacements, or alterations in the segment of pipeline that are necessary for safe operation at the increased pressure:
 - a. Provide an itemized listing of all work that must be completed before increasing the pressure.
 - b. Example – A new regulator station will be constructed to protect all off line pipe segments that are not qualified for the new operating pressure at Tap xx.yy.
 - (3) Conduct a leak test of the system to be uprated if one has not been done within 6 months of the proposed uprating.
 - (4) In accordance with § 192.555(c), after complying with § 192.555(b), the maximum allowable operating pressure (MAOP) of a segment of pipeline constructed before September 12, 1970 may increase to the highest pressure permitted under § 192.619 using as test pressure the highest pressure that the segment of pipeline was previously subjected (either in a strength test or in actual operation) or
 - (5) In accordance with § 192.555(d)(1), after complying with § 192.555(b), pipeline will be tested to establish the new MAOP for the pipeline segment if the segments do not meet the previous testing of the pipeline requirements. The test procedure is as follows:
 - a. The hydrostatic or gas (natural gas or nitrogen) test will be in accordance with Numbered Document A-34, "Piping Design and Test Requirements." and will meet the same requirements for a new line of the same material in the same location.

- Note:** If a segment cannot be taken out of service, use natural gas to increase the pressure in a segment up to 30% SMYS in a Class 3 location. If this is the case, increase the pressure in increments with leak check at each incremental increase. At the end of the natural gas test, establish an MAOP equal to the test pressure divided by 1.5.
- b. Pipeline segment is in a class location ____.
 - c. The minimum test pressure will be (1.25 times or 1.5 times depending on class location) the proposed MAOP of ____ psig.
 - d. The test duration will be for __ hours.

Note: The test duration will meet the minimum requirements of CFR Title 49, Subpart J, "Test Requirements" (8 hours for MAOP equal or greater than 30% SMYS or 1 hour for under 30% SMYS). If any variable necessary to determine the design pressure under the design formula (§ 192.105) is unknown, the test duration must be 8 hours.

- e. A successful hydrostatic or gas test establishes the new MAOP of ____ psig for the segment of pipeline or station.
- f. After the pipeline segment is tied-in, the pipeline pressure must increase to its operating pressure at a controlled rate to ensure there are no hazardous leaks.

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- g. Repair any leaks discovered.
- (6) After complying with paragraphs 1, 2, 3, 4 and 5 above, the pipeline and the associated taps, DFM, and regulator stations may increase to the maximum allowable operating pressure in increments and recorded on TD-4125P-04-F02 Attachment 6, "Typical Uprate Pressure Report."

Note: Where a segment of pipeline is uprated in accordance with Paragraph 4 above in this section, the increase in pressure must be made in increments that are equal to either: 1) 10% of the pressure before the uprating; or 2) 25% of the total pressure increase, whichever produces the fewer number of increments.

- a. The pressure in (the pipeline and all DFMs) increases in ___ increments. At the end of each incremental increase, the pressure must hold constant while the entire affected pipeline, DFMs, and stations are checked for leaks with operational checks made on all regulator equipment.
- b. Repair each leak detected before a further pressure increase is made, except for a leak determined not to be potentially hazardous. Leaks determined to not be potentially hazardous must be monitored during the pressure increase to verify they do not become a hazard.
- c. Within one week of operation, leak survey the pipeline again.
- d. Repair any leaks discovered.

E. Date of Uprating:

Schedule the construction and testing is scheduled to begin (date and year). Schedule the uprate to start (date and year).

F. General Order No. 112-E Requirements

Now that the line has been inspected and qualified, uprate the line in accordance with CFR Title 49, Subpart K, "Uprating." CFR Title 49, § 192.553c requires this written plan. Test the line in accordance with CFR Title 49, §§ 192.501 to 507 and with § 192.619.

State if the California Public Utility Commission (CPUC) notification report is required 30 days prior to uprating based on criteria presented in G.O. 112-E Subpart B - Reports, 126.1a) which reads, "A pipeline operating at or to be operated at a hoop stress of 20 percent or more of the specified minimum yield strength of the pipe being uprated."

The report must include:

- The new maximum allowable operating pressure
- The reasons for the change
- The steps taken to determine the capability of the pipeline to withstand such an increase

Include contact person for the uprate: (Engineer name and phone number).

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G. Leak History Review

Describe the leak survey history of the pipe in the uprate. Include the last survey date. Consider a table listing the following information:

Leak #	Found date	Repair date	Diameter	Wall map	plat	Block	Leak cause	Leak source

Describe causes of leaks and assess the nature of leaks and how it might affect the newly uprated pipeline.

H. Corrosion History Review

Describe the corrosion history of the pipeline, type of CP, rectifier locations, dates installed, length of time pipeline was under/not under CP. Using integrity management pre-assessment forms is acceptable. If the pipeline has been inspected by a smart pig, or external corrosion direct assessment (ECDA), list the locations and results. (The generic process governing smart pigging is RMP-11, "In-Line Inspections," and for ECDA it is RMP-09, "Procedure for External Corrosion Direct Assessment." These are Integrity Management Processes.)

I. Operating History Review

Describe the operating history of the pipeline, installation dates, MAOP/MOP/NOP history. This information is tabulated from TD-4125P-04, Attachment 3, "Pipeline Features List Template," and TD-4125P-04, Attachments 4, "Station Equipment List."

J. Main Inspection Reports Review

Describe issues or adverse conditions discovered during examination on Form 62-4060, "Leak Survey, Repair, Inspection, and Gas Quarterly Incident Report (Form "A")"

K. Scope of Work– Construction Prior to Uprate

Fill out Utility Standard S4110, Attachment 5, Form 62-4060, "Leak Survey, Repair, Inspection, and Gas Quarterly Incident Report (Form "A")," for any exposed locations indicating main type and condition, and indicating equipment found.

List construction work required prior to uprate.

L. Test Contingency Plan

This contingency plan addresses how to manage any test problems, such as leaks or ruptures which may occur during the test.

- Risks to system reliability if pipe fails during test?
- LNG/CNG availability?

Repair any corrosion leaks in accordance with Utility Standard S4134, "Selection of Steel Gas Pipeline Repair Methods." Reference Numbered Document B-53.2, "High Pressure Clamps" for mechanical leak clamps. Use other methods as appropriate (for



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example, patches, Sav-A-Valve, fill welding, type B sleeves, or pipe replacement). Document any repairs on Utility Standard S4110, Attachment 5, Form 62-4060, "Leak Survey, Repair, Inspection, and Gas Quarterly Incident Report (Form "A")."

M. Record Keeping Plan

CFR Title 49, § 192.553(b), "Records," requires that records for each segment of an uprated pipeline must remain on file for the life of the segment, including a record of each investigation required in Subpart K—Uprating, of all work performed, and of each pressure test conducted in connection with the uprating.

- Store copies of all records and original test report in the permanent job file in GT&D records department at: 375 Wiget Lane, Walnut Creek. Division files backup copy of the job package.
- Update service records if necessary and stored in block files.
- Update regulator datasheets to reflect new operating conditions (new MAOP, update any replaced equipment). File in T&R department regulator station maintenance records.
- Uprate record: file copy in _____ division office of Area ___ – facility MAOP documentation file, and in permanent job file.
- Update relief valve calculation calculations, if any. File the original records in _____ division office of Area ___, and copies in the Walnut Creek records job file.
- Mapping: GT&D mapping personnel map on GIS. Areas to map on plat sheets.
- Revise operating map # _____.

Attachments to this Written Plan:

TD-4125P-04, Attachment 2, "Records Research Procedure."

TD-4125P-04, Attachment 3, "Pipeline Features List Template."

TD-4125P-04, Attachment 4, "Station Equipment List Template."

TD-4125P-F01, Attachment 5, "Approval to Revise MAOP."

TD-4125P-F02, Attachment 6, "Typical Uprate Pressure Increase Report."

TD-4125P-F03, Attachment 7, "Engineering Review Check List."

TD-4125-F04, Attachment 8, "Post-MAOP Revision Documentation Check List."

System Map