



**The Dow Chemical Company**  
Gulf Coast Pipeline Subsidiaries  
1000 County Road 340  
Angleton, Texas 77515

January 13, 2008

US Department of Transportation  
Pipeline and Hazardous Materials Safety Administration  
Southwest Region  
8701 S. Gessner – Suite 1110  
Houston, Texas 77074

Attn: Mr. R. M. Seeley

Reference: CPF 4-2007-5036M

Dear Mr. Seeley,

This letter and attachments are Dow Pipeline Company's follow-up response to the Notice of Amendments letter referenced above and dated September 27, 2007. We have completed these items by January 20, 2008, the date that I had asked for in my initial response letter dated October 22, 2007. All changes and actions have been addressed at this time.

Attached is a revised summary of the actions taken for the items listed in the letter of Amendment. Actions are complete at this time.

Please contact the undersigned if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Richard L. Scott".

Richard L. Scott  
Pipeline Regulatory Compliance Specialist  
Dow Pipeline Subsidiaries

Incl.

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DOT Audit of the Pipeline OM&E Manuals  
April 2-5, 2007  
Cause CPF4-2007-5036M

1.

Part 195.56(b) requires the Operator to provide specific information as listed when submitting a Safety Related Condition Report. Dow procedure OME E-07 for reporting of Safety Related Condition Reports only references Part 191.25 for reporting SRCR for gas pipelines. It does not reference 195.56 except on the back of the form. Specifically the procedure does not include item (b)(1) as a required item in the procedure or on the form. Dow must expand this procedure to include all required information and modify your form to include all required data.

In the Scope of OM&E E-07 it now states, "All Safety Related Conditions, as defined in 49 CFR 191.23/195.55 involving a jurisdictional pipeline must be reported as required by 49 CFR 191.25/195.56.

Now the procedure E-07 and form do require item (b) (1) as indicated by the first bullet of the procedure:

"Notify the Pipeline Regulatory Compliance Specialist when any of the listed conditions are suspected, to allow him to make the report in a timely manner. Provide the following information on the Form included with this procedure:

- Name and principle address of operator
- Date of report
- Name, job title and business phone of person submitting the report
- Name, job title and business phone of the person who determined that the condition exists
- Date of discovery and date condition was first determined to exist.
- Detailed description of the condition. Include sketch if appropriate.
- Detailed description of area where condition exists, including county and distance from nearest town and road.
- Note the proximity of any buildings, railroads, and outdoor assembly areas (parks, lakes, rivers, etc.). Include sketch if appropriate.
  - Any comments, recommendations or follow-up action taken."

2.

Dow's procedure PIM 5.01 incorrectly referenced Section 5 of API 1104. Dow must update their manual to reference, Section 6 of API 1104.

Project Inspection Manual. 5.01 now says in the Codes and Regulations section:

"All references to API 1104 are 19<sup>th</sup> Edition or the latest Edition accepted by DOT, Standard for Welding Pipelines and Related Facilities." And in the main body of the procedure step 1 now says:

Welders must be qualified in accordance with either ASME Boiler and Pressure Code Section IX or Section 6, API 1104, 19<sup>th</sup> Edition. A qualified Company representative shall specify which code to use. (192.227, 195.222)

3.

Dow's procedure PIM 1.06 incorrectly referenced Section 6 of API 1104. The Dow manual must reference Section 9 of API 1104. PIM 1.00 addresses the requirements for NDT of Gas Pipeline systems only. Dow must address the requirements for NDT of Hazardous Liquid Pipeline systems in their procedure.

The Scope section of PIM 1.06 now reads: "Inspect all welds to ensure compliance with this procedure, PIM 1.00 and PIM 5.01. Weld inspectors must be knowledgeable of welding procedure qualification requirements, welder qualification requirements, and section 6 and 9 of API 1104, 19<sup>th</sup> Edition or the latest edition accepted by DOT, which is the controlling standard. [195.228, 192.214]"

The Requirements section of PIM 1.00 says: "All piping and facilities in regulated Liquid service shall be designed and constructed per ASME B31.4. [195.202]" and the Scope section says:

"This document covers the general design restrictions and requirements required by 49 CFR Part 192 and 195, for the equipment and facilities owned by the following subsidiary companies:

- Cayuse Pipeline Company, Inc.
- Dow Hydrocarbons & Resources, Inc.
- Dow Intrastate Gas Company
- Dow Pipeline Company
- Seadrift Pipeline Corporation
- UCAR Louisiana Pipeline Company
- UCAR Pipeline Incorporated"

4.

Dow's manual combines both liquid and gas regulations into a single manual. During this process references are made to each part as appropriate. This section of Dow's manual addresses only Part 192 and does not address Part 195 for non-destructive testing (NDT). Dow must expand PIM 1.06 to include NDT for hazardous liquid lines.

PIM 1.00 and PIM 1.06 state that all welds will be NDT tested, but no procedure is addressed. Dow must establish a procedure to address NDT testing methods.

In PIM 1.06 , in the Mandatory Standards section, Steps 1 and 2 now clearly state:

1. Inspect all welds to ensure compliance with this procedure, PIM 1.00 and PIM 5.01. Weld inspectors must be knowledgeable of welding procedure qualification requirements, welder qualification requirements, and section 6 and 9 of API 1104, 19<sup>th</sup> Edition or the latest edition accepted by DOT, which is the controlling standard. [195.228, 192.214]
2. All welders welding on any piping owned by The Dow Chemical Company pipeline subsidiaries must be qualified and or requalified on the welding procedure to be used within the past 6-months. All welders must be qualified in accordance with section 3 of API 1104, 19<sup>th</sup> Edition or the latest edition accepted

by DOT, or section IX of the ASME Boiler and Pressure Vessel Code. [192.227, 229, 195.222] and later in step 17. it now states:

17. Welds are nondestructively tested by any process that will detect any defects that affects the integrity of the weld, as required by PIM 1.00 in accordance with written NDE procedures by appropriately qualified personnel. (195.234(b))

5.

Dow's OME M-09 does not address the term "otherwise changed" and how leaks will be dealt with if they occur. Dow must include and define the term "otherwise changed" in the existing procedure and expand on how leaks are dealt with during the process.

OM&E M-09 now has a statement in the Scope that reads:

"All pipeline repairs shall pass inspections and non-destructive tests. All pipe used for replacement must be hydrostatically tested to the pressure required for a new pipeline in the same location. No pipeline or segment that has been replaced, relocated or otherwise changed (i.e. repaired after a leak or damage) will be put back into service until it has been pressure tested without leaking."

6.

Currently as written, Dow's PIM 1.20 Hydrostatic Test Specifications only references Part 192 regulations. Dow must add reference to and expand this procedure to include requirements listed in Part 195 Testing of components.

PIM 1.20 has the following References which are included or have been added:

1. MSP EMETL G56T-7241-00 Hydrotesting of MSP Pipelines
2. DOT Gas Transmission Pipeline Safety Regulations, 49 CFR Part 192, subpart J.
3. DOT Hazardous Liquids Pipeline Safety Regulations, 49 CFR Part 195, subpart H.
4. American Petroleum Institute Recommended Practice RP-1102, "Pressure Testing of Liquid Petroleum Pipelines".
5. Related Procedures
  - a. 1117 GCPL NORM Handling Procedure
  - b. 1118 Waste Disposal Basic Process for NORM and Hydrotest Water
  - c. 1118a Waste Disposal Flow Charts
  - d. 1119 GCPL Hydrostatic Test Water Procedure

7.

Dow must specifically identify the test mediums used for testing of its pipelines. PIM 1.06 addresses filling with water in the procedure but leaves the option of other mediums. PIM 1.00 must identify those other mediums and procedures for their use. The testing requirements are fragmented between these two appendices, with limited referencing.

PIM 1.06 is a Welding and Welder Qualification procedure. Test mediums for hydrostatic testing are not mentioned or included nor should they be.

PIM 1.00 is a General Design procedure and now states in the Requirements Section, Step 3.

“The MAOP design of Gas Transmission pipelines shall be calculated using the following formula per Part 192.65:

$MAOP = (2St/D) \times F \times E \times T$ , where

MAOP = maximum allowing operating pressure (must be confirmed by hydrotesting using water as a medium)

S = SMYS, D = OD of pipe, t = nominal wall thickness

F = design factor (192.111) E = joint factor (192.113)

T = temperature derating factor (192.115)”

And Step 4.

“The MOP of Hazardous Liquids Transmission Pipe shall be calculated using the following formula per Part 195.106:

$MOP = (2St/D) \times E \times F$ , where

MOP = maximum operating pressure (must be confirmed by hydrotesting using water as a medium)

S = SMYS, D = nominal OD of pipe, t = nominal wall thickness

F = design factor (0.72 or less) E = seam factor (195.106(e))

8.

195.402(c)(4) deals with determining which facilities require immediate response by the operator. OME E-01 needs to reference “immediate” response where applicable.

OM&E E-01 now states in the Scope of the procedure:

The purpose of this procedure is to establish guidelines for GCPL personnel, which can be used to minimize the dangers to the General Public, Environment, Company Employees and Property in the event of a failure of a GCPL operated Liquid or Gas Pipeline or related facility. **Note! All reports of a pipeline emergency require an “immediate” response by personnel.**

195.402(c)(5) states operator must analyze accidents to determine cause. Dow’s procedures use the term “failures” only, which might omit some incidents which do not include failure. Dow must include terminology to include terminology to include all causes or provide a definition of failure that includes all incidents.

OM&E E-04 is now named Investigation of Accidents, Incidents and Unplanned Events and the verbiage in the procedure reflects this change as well. Scope now says, “The purpose of an incident, accident or unplanned event investigation is to determine the cause, such that the potential for reoccurrence can be eliminated or minimized. The scope of an investigation shall depend upon the nature of the incident.”

195.402(c)(13) – OME A-03 Manual Control, has nothing specific to insure all appropriate comments from operator personnel are taken and used to determine effectiveness of the procedures. Dow’s procedure must be expanded to include input from all sources of feedback associated with it’s procedures.

OM&E A-03 now states in Manual Review Section:

“All procedure reviews required for this manual and other GCPL procedures as well are for the added purpose of obtaining feedback from the reviewer. Procedures will then be revised accordingly. GCPL personnel will not use a procedure that is not safe and effective.”

195.402(f) requires the operator to ensure O&M personnel are trained to recognize and report potential safety related conditions. Dow must revise its manual to address training of employees to meet the requirement of this regulation.

The GCPL Training Coordinator has recently added training and examination of this procedure to the requirements of O&M personnel on an annual basis.

OM&E E-07 now states in the Responsibilities section:

<b>Pipeline Regulatory Compliance Specialist</b>	Shall report any safety related condition occurring on any Dow Pipeline company regulated pipeline or facility that contains natural gas or hazardous liquids.
<b>The Activity or Project Leader</b>	Shall determine if the safety related condition is reportable by consulting with the Pipeline Regulatory Compliance Specialist (See References).
<b>Pipeline Engineer(s)</b>	Shall determine if the current operating conditions are safe or if the MAOP/MOP must be reduced to operate safely.
<b>Pipeline O&amp;M Personnel</b>	Annually take training & examination on this procedure to ensure knowledge of recognizing and reporting of SRC's

9.

Dow's OME E-01 Emergency Procedures only state that training will be conducted annually. Dow must expand procedure to state annually, not to exceed 15 months.

OM&E E-01 now states in section 1.13, Emergency Procedure Training :

“All GCPL personnel who are subject to response to a pipeline emergency shall be trained on this procedure including proficiency testing at least annually, not to exceed 15 months. “

10.

Dow does not address record retention time for Abnormal Operations within the records retention section of manual. Abnormal operations must be included in the appropriate section of Dow's OME A-06 Record Keeping Schedule.

The following record of retention was added to OM&E A-06:

<b>Record Type</b>	<b>Retention Time</b>	<b>Reason</b>
Abnormal Operations Reports	CR + 3	195.404(b)

11.

Dow's OME O-18 MAOP/MOP Calculation and Requirements procedure must be expanded to differentiate between MAOP (Part 192) and MOP (Part 195). Since Dow uses a combined manual, liquid and gas must be addressed separately. Also, Dow must develop a procedure to include the design criteria found in 195.406(a)(3) and (a)(4) for MOP within their manual.

OM&E O-18 has been completely revamped. The title is now:

## **OME O-18 MAOP/MOP Calculation and Requirements**

The Scope now says:

The maximum allowable operating pressure (MAOP for gas pipelines) and the maximum operating pressure (MOP for liquid lines) must be calculated and established for all GCPL pipelines containing regulated chemicals before operation of the pipeline can commence whether these lines are constructed, merged or bought by GCPL.

The Basic Requirements now say:

1. An MAOP/MOP must be calculated for each pipeline.
2. Official MAOP's/MOP's are in the Pipeline Master Database.
3. All changes to MAOP's/MOP's must be controlled by an MOC review.
4. All components within a pipeline system must be rated for the established MAOP/MOP.
5. The Operating Pressure of a pipeline may not exceed:
  - a. The MAOP/MOP calculated by this procedure.
  - b. The design pressure of any component on the pipeline.
  - c. The applicable hydrostatic test pressure factor (all GCPL lines shall have a hydrostatic test using water as the medium whether these lines are constructed, merged or bought).

For HVL lines the Operating Pressure cannot exceed 110% of the MOP during surges.

The Procedure now says:

1	Calculate the yield pressure using the following formula: $\text{Yield (100\%)} = 2 * \text{SMYS} * \text{wt} / \text{Diameter}$
2	Multiply Yield by the appropriate Factors for gas pipelines (MAOP) or liquid pipelines as applicable for the MOP.
3	Confirm that the line has been hydrotested in accordance with PIM 1.20.
4	Confirm or revise the Pipeline Master Database to reflect the MAOP/MOP calculated.

12.

Dow's OME O-13 must be amended to make a statement of what communication methods are used and address what may be done to back this system up.

OM&E, O-13 now states the following as to communication methods and back-up means:

"Upon discovery of communications or SCADA loss, the Product Controller will notify the appropriate field representative immediately, who will physically operate the facilities using telephone or other means of communication (Company radio).

All pump/ compressor stations will be manned during a Loss of Communications while pumps or compressors are running unless approved otherwise by the Production Leader. Communications with Product control will be accomplished by telephone, cell phone or other means( Company radio)."

13.

Dow's OME M-05 Pipeline Marker procedure adequately addresses the use of line markers but does not address minimum size requirements for lettering. Dow must revise this procedure to address minimum size requirements.

OM&E M-05 now states:

"All Pipeline Markers / Signs will have the following wording on a sharply contrasting background and be readily identifiable to the Pipeline operating company;

- "( Appropriate ) Pipeline Company "
- "Warning ", "Caution " or " Danger"—Gas or Petroleum Pipeline" (Name of specific Hydrocarbon Product may be used) all of which must be in letters at least 1 inch high with an approximate stroke of ¼ inch except for markers in heavily developed urban areas.

" The applicable 24 hour telephone contact phone number of the specific Pipeline operating company"

14.

Dow's OME M-13 Pipe Movement Procedure addresses MAOP instead of MOP while addressing the movement of a pipeline in operation. The procedure must be revised to address MOP as it relates to the movement of an in-service hazardous liquid pipeline. Also, the procedure must include procedural language adequately reflecting the requirements of lowering pressure in the line section during this operation.

OM&E M-13 now states for liquid lines:

"The pressure in a liquid line per 195.424 (b) (3) is reduced to the lower of the following:

- 50% or less of the MOP; or
- The lowest practical level that will maintain the highly volatile liquid in a liquid state with continuous flow, but not less than 50 psig above the vapor pressure of the fluid"



15.

Dow's OME M-10 does not address the requirement for determining the capacity of overpressure protection devices. The procedure must be revised to address the requirements for determining the capacity of overpressure protection devices.

OM&E M10 now has wording in the section Inspection of Pressure Limiting Devices that reads:

**"Liquid Service: Sec. 195.428**

- Each operator shall, in the case of pipelines used to carry highly volatile liquids, at intervals not to exceed 7-1/2 months, but at least twice each calendar year, inspect and test each pressure limiting device, relief valve, pressure regulator, or other item of pressure control equipment to determine that it is functioning properly, is in good mechanical condition, and is adequate from the standpoint of capacity and reliability of operation for the service in which it is used.

**Gas Service: Sec. 192.743**

- If feasible, pressure relief devices (except rupture discs) must be tested in place, at intervals not exceeding 15 months, but at least once each calendar year, to determine that they have enough capacity to limit the pressure on the facilities to which they are connected to the desired maximum pressure.
- If a test is not feasible, review and calculation of the required capacity of the relieving device at each station must be made at intervals not exceeding 15 months, but at least once each calendar year, and these required capacities compared with the rated or experimentally determined relieving capacity of the device for the operating conditions under which it works. After the initial calculations, subsequent calculations are not required if the review documents that parameters have not changed in a manner which would cause the capacity to be less than required. This review will be conducted by the Run-Plant Engineer in their respective areas of responsibility and will be triggered by the pipeline Master Task List.
- If the relieving device is of insufficient capacity, a new or additional device must be installed to provide the additional capacity required.

**MLV: AGV type pressure limiting devices:**

- Bypass valves around pressure limiting devices (where installed) shall be inspected by partial operation and at least one valve sealed on the closed position.
- Testing of the set point is performed on a frequency as described above.
- Testing of the set point of Pressure Limiting Devices is to be performed using test equipment which has been certified, and rechecked annually

**Note:** Pressure limiting devices with isolation valves upstream or downstream shall be inspected monthly per OME M-14 Relief Device Blocking. Reference Safety System Impairment Standard.

**All Pressure Limiting Devices**

- Shall have a monthly inspection of isolation valves both upstream and down stream of the device or bypass valves. To ensure that they are sealed in the open position and that the seals are intact. This inspection shall be documented and records maintained for 1 year plus current.

Records of pressure limiting device inspections shall be maintained per A-06. Test and inspection results are recorded on the GCPL Overpressure Protection Data Worksheet ( Appendix-A)"

16.

Dow's OME O-07 Excavation Damage Prevention Procedure scope includes seismic blasting near their pipelines but fails to address the requirement of performing leakage surveys for possible damage in areas of blasting near pipelines. This procedure must be revised to address performing leakage surveys for possible damage in areas of blasting near pipelines.

OM&E O-07 now says for blasting near pipelines:

If seismic activity (blasting/vibroiseis) has occurred in close proximity to our pipeline and there is reason to believe it could have damaged our pipeline, a leakage survey will be conducted to verify integrity. If the blasting /vibroiseis has been performed with our Technician present and they adhered to our distance requirements as published in this procedure, this may not be necessary if there is no reason to believe damage has occurred.

17.

Dow's OME M-15 must specify that if active external corrosion is found requiring corrective action, the pipe must be investigated circumferentially and longitudinally beyond the exposed portion to determine whether additional corrosion requiring remedial action exist in the vicinity of the exposed portion.

OM&E M-15 has had the following wording added in section Examination of Exposed Pipe, Step 2:

"Whenever any buried pipe is exposed for any reason, the operator shall examine the pipe for evidence of external corrosion. If the operator finds that there is active corrosion, that the surface of the pipe is generally pitted, or that corrosion has caused a leak, he shall investigate further to determine the extent of the corrosion by investigating circumferentially and longitudinally beyond the exposed portion to determine whether additional corrosion requiring remedial action exists in the vicinity of the exposed portion."

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Sincerely,

Richard L. Scott  
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