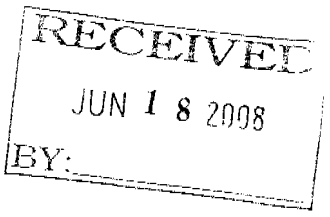
The Dow Chemical Company
Gulf Coast Pipeline Subsidiaries
1000 County Road 340
Angleton, Texas 77515

June 18, 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 4-2008-1002M

Dear Mr. Seeley,

Attached are the 13 items that were identified in the PHMSA audit of the Dow procedures for Gas and Liquid Integrity Management Plans conducted October 15-19 and 22-24, 2007 in Angleton, TX. These 13 items were enumerated in the Letter of Amendment referenced CPF 4-2008-1002M and dated March 12, 2008.
We subsequently asked for, and were granted, an extension until June 20, 2008 in order to properly address these items.
Dow has addressed these 13 items by making the described required changes as spelled out with each individual item on the attached document. Copies of any of the procedures/documents referenced in the described changes are available to you upon request.

Please contact the undersigned if you have any questions.

Sincerely,

Richard L. Scott

Richard L. Scott
Pipeline Regulatory Compliance Specialist
Dow Pipeline Subsidiaries

Copy: K. C. Weyer
Dow Pipeline Company
1000 CR 340
Angleton, TX 77515

Item 1:

Dow procedures must be revised to better address implementation and review aspects to ensure consistent application results. Three particular areas identified were the Triennial Evaluation, Dig Evaluations, and Hydrostatic Retesting Schedule changes associated with Management of Change.

To address consistent application of the Triennial Evaluation, Dow revised the wording in the Gas IMP Plan (para VIII.B.) and the Liquid IMP Plan (para XI.) to read as follows:

"Program evaluation shall be performed within the framework of Dow's GCPL ODMS Self Assessment Plan for Element 6.08, Process Safety, using the following two activities:

1. The Annual HCA and assessment plan review per PIM 3.13.

2. The Triennial Program Review per PIM 3.11.

Implementation of the assessments is triggered by the Event and Action Tool (EAT) action item for the annually recurring Element 6.08 Self Assessments. Action items generated by the self assessments are entered into EAT (if compliance related) or the Action Item Tracking Tool (AITT) (if non-compliance related).

Consistent application of the assessments is ensured by the use of the Dow ODMS Self Assessment program, and by including the PIM procedures which further describe the content and objectives of the assessments.

To address consistent application of dig evaluations, Dow added the following requirement to PIM 3.03 Post ILI Run, Step 10:

"Anomalies on the final dig plan will be excavated and defect assessment performed by trained and qualified personnel (training and qualifications are defined in the Liquid/Gas IMP Plans).
The digs and defect assessment will be documented on the Anomaly Field Investigation Form. All fields on the form are mandatory unless not applicable and marked as N/A on the form."

Additionally, the following statement was added to the Anomaly Field Investigation Form: "All items are mandatory unless not applicable and marked "N/A"."

Training requirements for employees assigned to locate and document anomaly investigations were addressed as part of Item 2 below.

To address consistent application of schedule changes, Dow added the following statement to the Liquid IMP Plan:

XI. Management of Change

A. Management of changes to equipment or procedures shall be controlled through the use of Dow's MOC global work process.

B. All changes to any part of the Plan or Assessment schedule must be documented as to the rationale and approved by the IMP core steering team prior to implementing the change [195.452(l)(1)(ii)].

C. PHMSA must be notified prior to any change that affects the 5-year assessment interval as follows [195.452(j)(4)]:

1. 270 days prior to a longer assessment period based on an engineering analysis.

2. 180 days prior to a longer assessment period based on unavailable technology.

Item 2:

The Dow's procedures must be revised to better address specific training requirements for employees assigned to locate and document anomaly investigations. Also, Dow's OM&E O-16 must be revised to better address the training and qualification for personnel involved with performing risk analysis.

To better address training requirements, Dow enumerated the specific training requirements in the Gas IMP Plan (para XIII) and the Liquid IMP Plan (para XII.C.) as follows:

Personnel Qualifications & Training [192.915]

A. Supervisory personnel – personnel in IMP supervisory roles (the core IMP Steering Team membership designated in this Plan) must demonstrate training and experience in the disciplines which they manage. Minimum training and experience requirements are:

1. Within 18 months of assignment to a Supervisory Position over IMP, attend an Industry training course covering 49CFR192 and 49CFR195. (An example of a course that meets this requirement would be the RCP DOT Pipeline Compliance Workshop.)
2. General knowledge through self-study on the Internal Dow Integrity Management Plans and Procedures

Additional training and knowledge (optional, not required) can be obtained through attendance at Industry Seminars

B. Personnel who carry out assessments and evaluate results – this is usually done by Dow and contract engineering personnel and pig vendor technicians/analysts..

1. All contractors performing this work shall have a training program and shall provide documentation of the training and qualifications of all personnel working on Dow operated pipeline systems. This includes all persons who:

a. Run or manage the running of assessment tools and programs.

b. Review and analyze results from an integrity assessment.

c. Make recommendations as to actions taken as a result of these assessments.

2. Qualifications of Dow or Dow contract contingent staff personnel who carry out assessments and evaluate assessment results.

a. B.S. in an engineering discipline or equivalent
b. Be endorsed/approved by the ILI SME at the MSP tech center
c. 16 hours of Defect Assessment Training (2 day Kiefner, Clarion, or Equivalent)
d. 6 hours of regulatory training (DOT workshop, AGA workshop, RRC workshop on pipeline integrity)
e. 40 hours of supervised on-the-job training working with pigging data and generating dig sheets in the office
f. 40 hours of on-the-job training in the field working with field technicians (cleaning, launching, receiving, running smart tools, defect assessment)
g. In-depth knowledge through self-study on the Internal Dow Integrity Management Plans and Procedures
h. OQ 61 Performing Risk Analysis (PIM 3.15a)

3. In-Line Inspection personnel (Vendor Data Analysts) must be qualified per ASNT ILI-PQ-2003.

C. Persons responsible for supervising IMP field work (digs, defect assessment, and preventive and mitigative measures) – this is usually done by Dow Construction Managers. The following training and qualifications are required:

1. IMP Gas and Liquid Plans
2. Project Inspection Manual
3. OQ 5 Inspect Buried Pipe When Exposed
4. OQ 6 Electrically Inspect Bare Pipe
5. OQ 7 Prevention of Atmospheric Corrosion
6. OQ 8 Measure Wall Thickness of Pipe
7. OQ 12 Inspect Internal Pipe Surfaces
8. OQ 13 Application and Repair of External Coatings
9. OQ 17 Line Locating and Provide Temporary Marking of Buried Pipeline Prior to Excavation
10. OQ 32 Moving In-Service Pipe
11. OQ 34 Inspect Existing Pipe Following Movement
12. OQ 35 Inspection of Clearance of Existing Pipe to Underground Structures
13. OQ 36 Abandoning, Safe Disconnect, Purging, and Sealing of Pipeline Facilities
14. OQ 37 Installation or Repair of Support Structures on Existing Aboveground Components
15. OQ 38 Inspection Activities for Tie-Ins, Pipe Replacements, or Other Components Connecting to an Existing Pipeline
16. OQ 39 Backfilling a Trench Following Maintenance
17. OQ 40 Perform General Pipeline Repair Activities
18. OQ 41 Conduct Pressure Tests
19. OQ 43 Welding on Existing Pipeline Systems
20. OQ 44 Inspection and Testing of Welds
21. OQ 47 Operate Pressure Relieving Devices for Launching and Receiving Facilities
22. OQ 50 Prevention of Accidental Ignition
23. OQ 52 Abnormal Conditions Operation Response
24. OQ 55 Damage Prevention
25. OQ 57 Purge Gas or Air from a Gas Pipeline
26. OQ 58 Purge Gas or Air from a Liquid Pipeline
27. OQ 62 Defect Assessment (PIM 1.23, PIM 2.01 through 2.10, PIM 3.18)

Additionally, Dow added the new Operator Qualification tasks (#61 and #62) to OM&E O-16, and training curriculums are under development and will be provided upon request.

Item 3:

> *Dow's procedures must be revised to provide better documentation on how the Risk Model evaluates interactive threats. Dow must also revise its procedure to provide better documentation in the appropriate O&Ms related to the potential exclusion of threats related to internal corrosion, long seam problems, and both near neutral and high pH SCC.*

The following statement was added to the Liquid IMP Plan:

> VII.A. "Identification and evaluation of threats and risks is accomplished as described in PIM 3.15a, Evaluating Threats and Risk Analysis. The risk factors in para B below are included."

The following statements were added to the Gas IMP Plan:

> III.C. "Interactive threats are more fully described in PIM 3.15a. The Risk Model is designed to quantify the impact of interactive threats on the overall risk ranking system."
>
> IV.D.1. "See PIM 3.15a, Evaluating Threats and Risk Assessment, for guidelines in determining threat applicability for each pipeline."

Dow is in the process of creating a new procedure, PIM 3.15a Evaluating Threats and Risk Analysis, which will be available for review upon request after it is completed.

This procedure will document how the Risk Model evaluates interactive threats.

Item 4:

> *Dow must revise its procedures to better document the collection of all the data sources identified in Table 2 from B31.8S. Dow must also revise its procedures to provide better documentation on how and when they validate the data related to specific locations on their pipelines and how the risk model uses conservative numbers when data is not known or available.*

The data sources identified in Table 2 from B31.8S were added to the Gas IMP Plan (IV.A.) as follows:

> "Data gathering, review, and integration begins with the Front End Loading (FEL) process (following Dow GCPL procedure PIM 3.01, Front End Loading for

IMP Turnaround Projects), and ends with the Data Integration process (following Dow GCPL procedure PIM 3.17, Data Integration Procedure).

1. During the PIM 3.01, FEL process, all data sources necessary for risk assessment and for planning the IMP inspection are gathered, reviewed, and analyzed. Typical data sources include:

(a) P&ID's
(b) Pipeline Alignment Drawings
(c) Original construction inspector notes/records
(d) Pipeline aerial photography
(e) Facility drawings/maps
(f) As-built drawings
(g) Material certifications
(h) Survey reports/drawings
(i) Safety related condition reports
(j) Operator standards/specifications
(k) Industry standards/specifications
(l) O&M procedures
(m) Emergency response plans
(n) Inspection records
(o) Test reports/records
(p) Incident reports
(q) Compliance records
(r) Design/engineering reports
(s) Technical evaluations
(t) Manufacturer equipment data"

These data sources were also added to Dow GCPL procedure PIM 3.01, Front End Loading for IMP Turnaround Projects.

To address data validation, missing data, and conservative assumptions, Dow added the following statements to the Gas IMP Plan (IV.A.):

"All data gathered for risk analysis shall be checked for accuracy. Data from the GPIMS database is considered valid because of the two level approvals required to commit the data into the database. Other data shall be validated by the original source document, field verification, or confirmation from two different data sources.

"When data is not available, conservative assumptions shall be made. Each threat covered by the missing or suspect data shall be assumed to apply to the segment being evaluated.

"Default values used in the Risk Model are the most conservative values that can reasonably apply. Default values are documented in the GPIMS Risk

Frame Modeler Base Model documentation. Because default values can inflate relative risk scores, reasonable efforts shall be made to eliminate default values with the actual, validated data."

Item 5:

Dow must revise its procedures to provide better documentation on how it validates that risk assessment results are logical and consistent with the operator's and industry's experience. (PIM 3.08)

Dow has updated GCPL Procedure PIM 3.08 to address validation of risk assessment results. The updated procedure is available for review upon request.

Item 6:

Dow must revise its procedures to ensure that when Guided Wave tools and technologies are used at cased crossings, Dow submits for the appropriate "other technology" requirements. Dow indicated they did not plan to use "other technology" but their plans previously submitted for cased crossings did not include the use of Guided Wave, which currently is the only acceptable method to evaluate cased crossings.

Dow has updated the ECDA Protocol, version 05-2008 Rev D, to include the following language in 4.9 Selection of Indirect Inspection Tool (IIT), 4.9.1 Number of IIT's ...

"Guided Wave Ultrasonic (GWUT) shall be used as "other technology" in HCA areas and as a complementary tool in non-HCA areas. A notification must be submitted 90 days prior to using GWUT in HCA areas for Liquid pipelines and 180 days prior to using GWUT in HCA areas for Gas pipelines. A final inspection and validation report is in Form F (Guided Wave Checklist)."

And, footnote 5 to Table 2 ECDA Tool Selection Guidance has been added as follows:

"5. GWUT can either be used as a complementary tool (non-HCA) or as a stand-alone tool under the category of "Other Technology" (HCA area). See Appendix E Long Range Guided Wave Ultrasonic Testing (GWUT)."

Item 7:

Dow must revise its procedures to provide detailed steps for the use of ACVG, DCVG, and PCM.

Dow has develop new procedures for ACVG, DCVG and PCM surveys, including a check list before any of these surveys are performed in the field. These procedures are referenced in the ECDA Protocol, version 05-2008 Rev D.

These procedures are available for review upon request.

Item 8:

Dow must revise its procedures to ensure that the more restrictive requirements are sufficiently documented in order to determine exactly what are the additional requirements for both the NACE standard and the regulation.

Dow has updated the ECDA Protocol version 05-2008 Rev D and ICDA Protocol version 05-07-2008 Rev 6 protocols adding the requirements and restrictive criteria for each of the four phases when ECDA and/or ICDA are applied for the First Time as follows:

ECDA Protocol version 05-2008 Rev D
Pre-Assessment:
"4.10 Initial ECDA Applications
The first time ECDA is applied, it is required that more stringent requirements be used for each phase of the ECDA process (i.e., pre-assessment, indirect examination and direct examination). These more restrictive criteria shall be documented in the appropriate forms and in the Closure Report. At a minimum, one of the following additional tasks shall be performed:
• Defining high populated areas as additional ECDA regions,
• Pre-mark the pipeline to enhance data integration such as putting flags or paint dots at unique field and/or ROW features
• Perform test holes to obtain additional data on the pipeline and its environment and soil conditions"

Indirect Inspections:
"5.6. Initial ECDA Applications
The first time ECDA is applied, it is required that more stringent requirements be used for each phase of the ECDA process (i.e., pre-assessment, indirect examination and direct examination). These more restrictive criteria shall be documented in the appropriate forms and in the Closure Report. At a minimum, one of the following additional tasks shall be performed:
• For paved areas, direct contact with the subsurface soil (by boring through the pavement) to ensure readings obtained are viable.
• Use an additional tool, three instead of two for part or all of the survey area.
• Establishing a severity table and apply increased severity for each tool result:
• For CIS any reading more positive than -0.95 vDC is a severe indication (even though the CP potential shows that the area currently has adequate CP).
• For the PCM severe category, reduce the amount of signal reduction over a set length of pipe (i.e. reduce a 20% loss over 1000 feet to a 15% loss over 1000 feet).
• Require closer distance between test point readings for possible greater accuracy and less chance of missing an indication.

• Increase the excavation priorities by categorizing the highest two coating fault indications be treated as immediate and all subsequent indications be scheduled no matter how minor they appear.
• For indirect survey tool conflicts, even if resolved, redo indirect inspections for all tools"

Direct Examination:
"7.16 Initial ECDA Applications
The first time ECDA is applied, it is required that more stringent requirements be used for each phase of the ECDA process (i.e., pre-assessment, indirect examination and direct examination). These more restrictive criteria shall be documented in the appropriate forms and in the Closure Report. At a minimum, one of the following additional tasks shall be performed:
• Provide a larger excavation to assure all nearby indications are discovered to eliminate the potential of major indications masking minor or less severe indications.
• Requiring additional testing and or NDE results be obtained before closing excavations (such as Magnetic particle, X-ray and UT readings on all suspected indications, seams and welds).
• Resurvey ECDA region after immediate indications are repaired to determine if other indications were masked by large indication.
• Require addition of a "dual coupon" test station in each excavation to assist as monitoring point and diagnostic check going forward.

Post Assessment
"7.8 Initial ECDA Applications
The first time ECDA is applied, it is required that more stringent requirements be used for each phase of the ECDA process (i.e., pre-assessment, indirect examination and direct examination). These more restrictive criteria shall be documented in the appropriate forms and in the Closure Report. At a minimum, one of the following additional tasks shall be performed:
• The need for more stringent monitoring conditions (if corrosion is suspected).
• Shorter re-assessment intervals.
• Supplement the ECDA with a different assessment method either before or at the next scheduled assessment"

ICDA Protocol version 05-07-2008 Rev 6
Pre-Assessment
"3.4.3 First Time Application
When DG-ICDA is applied for the first time, consideration shall be given to the need for additional regions based on historic piping configuration"

Indirect Inspections:
"4.4.4 First Time Application
When DG-ICDA is applied for the first time, consideration shall be given to the need for more stringent flow modeling or critical angle calculation. [Examples

would include: 1) to use the seasonal specific flow conditions which result in the worst case flow model or critical angle, or 2) to use data from an ECDA analysis (i.e. historic and current operating conditions, flow rates, and general operational history) to help define worst case flow conditions"

Direct Examination:
"5.14 First Time Application
When DG-ICDA is applied for the first time, consideration shall be given to the need for extending the distance that direct examinations are conducted at each direct inspection location (i.e. additional one-foot C-scan segments). If ECDA is applied concurrent with ICDA, conduct at least three (3) ICDA validation examinations at ECDA locations"

Post Assessment:
"6.7 First Time Application
When DG-ICDA is applied for the first time, consideration shall be given to more restrictive criteria during Post Assessment evaluation. Examples include:
• The need for more stringent monitoring conditions (if corrosion is suspected), and/or
• Pipe cut-outs for examination at suspect NDT areas, and/or
• Shorter re-assessment intervals, and/or
• Supplement the ICDA with a different assessment method either before or at the next scheduled assessment"

Item 9:

Dow must revise its procedures changing all "shoulds" to "shalls" in order to ensure that all standards incorporated be reference are fully implemented. Where it is not possible to implement the standard completely. Dow must provide documentation to ensure that its alternative actions provide an equivalent level of safety and when actions cannot be implemented, it must have documented technical justifications for not taking those actions.

The following statement was added to the Liquid IMP Plan:

II.A.: "All industry standards incorporated by reference in 49 CFR 195.452 shall be fully implemented in this Plan, and in Dow Procedures that are referenced by and implement this Plan, as recommended in the industry standard."

The following statement was added to the Gas IMP Plan:

II.F.: "All industry standards incorporated by reference in 49 CFR 192 Subpart O shall be fully implemented in this Plan, and in Dow Procedures that are referenced by and implement this Plan, as recommended in the industry standard."

Item 10:

Dow must revise its excavation requirements to ensure that the proper number of digs are conducted in each HCA based on all of the applicable ICDA regions, including the minimum number required.

Dow has updated the ICDA Protocol, version 05-07-08 Rev 6, to include the following language in 5.3 Direct Examination Process, 5.3.1 Required Number of Direct Inspections per Region...

"When there is an HCA within a DG-ICDA region, two low point locations shall be direct inspected moving downstream from the beginning of the DG-ICDA region. These locations can be sags, drips, valves, manifolds, dead-legs, traps and/or areas where the inclination is larger than the critical angle. If internal corrosion is found in any of these locations, the following next low point within the HCA shall be excavated and a direct examination shall be performed."

Item 11:

Dow must revise its procedures to ensure retention times are consistent with the regulations. (Gas Plan XII)

The Gas IMP Plan has been updated in XII. Records, Responsibilities and Qualifications to reflect that all categories of records listed in 192.947 shall be retained for the useful life of the pipeline.

The revised Plan is available for review upon request.

Item 12:

Dow must revise its procedures to document the testing requirements associated with hydrostatic test failures.

Dow has updated GCPL Procedure PIM 1.20, Dow Generalized Hydrostatic Test Specification, by adding the following Analysis of Failures section:

"Hydrotest failures (leaks and ruptures) and pressure reversals shall be fully investigated, analyzed, and documented. Special attention shall be given to determining the cause of the failure or pressure reversal. If the cause of failure or pressure reversal is not obvious to the IMP Technical Specialist within his/her technical competency, the pipe shall be examined by a Dow metallurgist or a contract metallurgist.
Results/findings of the failure/pressure reversal analysis shall be integrated with all other findings during the IMP assessment. Appropriate Preventive & Mitigative Measures, if warranted, shall be determined during the data integration process."

Dow has updated the Liquid and Gas IMP Plans to reference PIM 1.20.

Item 13:

Dow must revise its buffer information from its plan to ensure proper correlation with Appendix C.

Dow has updated OME O-01 Appendix D to match the buffer zones in the Liquid IMP Plan Appendix G. Dow is in the process of adding more explanation in Appendix G regarding how volumes used in the PHAST model are selected and calculated, and the effect on the resulting buffer zones.

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