



U.S. Department
of Transportation

**Pipeline and
Hazardous Materials Safety
Administration**

8701 South Gessner, Suite 1110
Houston, TX 77074

NOTICE OF AMENDMENT

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

June 26, 2012

Mr. Kevin Weyer
President
Dow Pipeline Company - Cayuse
1000 County Road 340, BM64
Angleton, TX 77515

CPF 4-2012-5024M

Dear Mr. Weyer:

On December 12-15, 2011, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA) pursuant to Chapter 601 of 49 United States Code inspected the Dow Chemical Pipeline-Cayuse (Dow) procedures for Control Room Management in Houston, TX. The Dow pipeline system is monitored and controlled through the Houston Product Control Center located in the Houston Dow Center.

On the basis of the inspection, PHMSA has identified the apparent inadequacies found within Dow plans or procedures, as described below:

1. §195.446 Control room management.

(a) General.

This section applies to each operator of a pipeline facility with a controller working in a control room who monitors and controls all or part of a pipeline facility through a SCADA system. Each operator must have and follow written control room management procedures that implement the requirements of this section. The procedures required by this section must be integrated, as appropriate, with the operator's written procedures required by § 195.402. An operator must develop the procedures no later than August 1, 2011, and must implement the procedures according to the following schedule. The procedures required by paragraphs (b), (c)(5), (d)(2) and (d)(3), (f) and (g) of this section must be implemented no later than October 1, 2011. The procedures required by paragraphs (c)(1) through (4), (d)(1), (d)(4), and (e) must be implemented no later than August 1, 2012. The training procedures required by paragraph (h) must be implemented no later than August 1, 2012, except that any training required by another paragraph of this section must be implemented no later than the deadline for that paragraph.

§195.446 Control room management.

(b) Roles and responsibilities.

Each operator must define the roles and responsibilities of a controller during normal, abnormal, and

emergency operating conditions. To provide for a controller's prompt and appropriate response to operating conditions, an operator must define each of the following:

- (1) A controller's authority and responsibility to make decisions and take actions during normal operations;

The Gulf Coast Pipelines (GCPL) Procedure HPCOM 8.21 Product Control Roles and Responsibilities fails to address the importance of remaining at the console and staying attentive once critical commands have been executed. Some SCADA commands can be complex or take an extended period of time to execute in the field. Controllers should not leave the console prematurely or let shift change processes interfere with the fulfillment of command actions or critical communications with field personnel.

Dow must amend the GCPL Procedure HPCOM 8.21 Product Control Roles and Responsibilities to address these issues.

2. §195.446 Control room management.
(a) General. (See Item #1)

§195.446 Control room management.

(b) Roles and responsibilities.

Each operator must define the roles and responsibilities of a controller during normal, abnormal, and emergency operating conditions. To provide for a controller's prompt and appropriate response to operating conditions, an operator must define each of the following:

- (4) A method of recording controller shift-changes and any hand- over of responsibility between controllers.

The GCPL Procedure HPCOM 8.11 Shift Change and Relief Notes fails to require that the specific time and date of the shift change be documented. The procedure should include the date and time the shift change started, the date and time the shift change ended, the name of the incoming controller, and the name of the existing controller. Just annotating the topics covered during the shift change is not adequate.

Dow must amend the GCPL Procedure HPCOM 8.11 Shift Change and Relief Notes to address this issue.

3. §195.446 Control room management.
(a) General. (See Item #1)

§195.446 Control room management.

(c) Provide adequate information.

Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:

- (2) Conduct a point-to-point verification between SCADA displays and related field equipment when field equipment is added or moved and when other changes that affect pipeline safety are made to field equipment or SCADA displays;

The GCPL Procedure JP 1611 Verification of Transmitted Data between SCADA Device and Houston Dow Center fails to include the types of field changes that require point-to-point verification. Like-for-like replacement of field instrumentation requires a point-to-point verification, if only to verify the replacement and related calculation results in proper functionality and correct information. Point-to-point verification is required even if the change only affects the SCADA display. Change control documentation should explicitly document if the change requires point-to point verification.

Dow must amend the GCPL Procedure JP 1611 Verification of Transmitted Data between SCADA Device and Houston Dow Center to incorporate the types of field changes that require point-to-point verification.

4. §195.446 Control room management.

(a) General. (See Item #1)

§195.446

(c) Provide adequate information.

Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:

- (3) Test and verify an internal communication plan to provide adequate means for manual operation of the pipeline safely, at least once each calendar year, but at intervals not to exceed 15 months;

The GCPL Procedure HPCOM 6.01 Loss of Communications describes the actions required by pipeline personnel in the event of the loss of communications with the Houston Product Control Center. This procedure fails to require the testing and verification of the internal communication plan for manual operation as noted in 195.446(c)(3).

Dow must amend the GCPL Procedure HPCOM 6.01 Loss of Communications to require the testing and verification of the internal communication plan for manual operation of the pipeline safely at least once each calendar year at intervals, not to exceed 15 months.

5. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management.

(c) Provide adequate information.

Each operator must provide its controllers with the information, tools, processes and procedures necessary for the controllers to carry out the roles and responsibilities the operator has defined by performing each of the following:

- (4) Test any backup SCADA systems at least once each calendar year, but at intervals not to exceed 15 months;

The GCPL Procedure HPCOM 7.04 Control Center Relocation describes the actions to be taken to relocate the Houston Dow Control Center to the Seadrift Control Center. This procedure fails to require that the backup SCADA system will be tested at least once each year at intervals, not exceeding 15 months. If Dow experiences an actual SCADA failure that results in the back-up SCADA system being pressed into service, this event can serve as testing and verifying their back-up SCADA system, as long as an adequate representative sampling of functions are performed, verified and documented during back-up operations.

Dow must amend the GCPL Procedure HPCOM 7.04 Control Center Relocation to meet the requirements of 195.446(c)(4).

6. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management.

(d) Fatigue mitigation.

Each operator must implement the following methods to reduce the risk associated with controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined:

Dow does not have a written fatigue mitigation procedure or process. Dow is using a power-point document to represent the Fatigue Mitigation Plan. The operator must develop a plan that parallels the power-point presentation. The plan should document the scientific basis for provisions of the plan. The procedures should expand in the following areas: risks associated with controller fatigue and how to reduce those risks. Dow

should include within the procedure the enhancements that have been incorporated in the Houston Dow Control Center that help to prevent the onset of controller fatigue.

7. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management.

(d) Fatigue mitigation.

Each operator must implement the following methods to reduce the risk associated with controller fatigue that could inhibit a controller's ability to carry out the roles and responsibilities the operator has defined:

- (4) Establish a maximum limit on controller hours-of-service, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility.

The GCPL Control Room Management Program (white paper) dated 12/1/2011 does not have a formal procedure for approving deviations from the maximum hours of service (HOS) limits. Dow allows a maximum HOS of 14. The procedures should address the analysis of events leading to the deviation, the operator's actions following the deviation, and written approval from the fatigue program manager prior to deviation. Records should document justification for and approval of deviations in HOS.

Dow must prepare a procedure for deviating from the normal HOS to a maximum HOS limit.

8. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management

(e) Alarm management.

Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

- (3) Verify the correct safety-related alarm set-point values and alarm descriptions when associated field instruments are calibrated or changed and at least once each calendar year, but at intervals not to exceed 15 months;

The GCPL Alarm Philosophy dated December 9, 2011, addresses all aspects of the Dow Alarm Management Plan. The plan fails to include the requirement to verify the correct safety-related alarm setpoint values and alarm descriptions at least once each calendar year not to exceed an interval of 15 months.

Dow must amend the GCPL Alarm Philosophy to require that the safety-related alarm setpoint values and alarm descriptions be verified at least once each calendar year at intervals, not to exceed 15 months.

9. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management

(e) Alarm management.

Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

- (4) Review the alarm management plan required by this paragraph at least once each calendar year, but at intervals not exceeding 15 months, to determine the effectiveness of the plan;

The GCPL Alarm Philosophy dated December 9, 2011, addresses all aspects of the Dow Alarm Management Plan. The plan fails to include the requirement to review the Alarm Management Plan at least once each calendar year, not to exceed an interval of 15 months in order to determine the effectiveness of the plan.

Dow must amend the GCPL Alarm Philosophy to require the review of the Alarm Management Plan at least once each calendar year at intervals not to exceed 15 months.

10. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management.

(e) Alarm management.

Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

- (5) Monitor the content and volume of general activity being directed to and required of each controller at least once each calendar year, but at intervals not exceeding 15 months, that will assure controllers have sufficient time to analyze and react to incoming alarms; and

The GCPL Control Room Management Program dated December 1, 2011, fails to address a means of identifying and measuring the work load (content and volume of general activity) being directed to an individual controller. The process should include, but is not limited to, pipeline operations, handling SCADA alarms, conducting shift change, greeting and responding to visitors, administrative tasks, impromptu requests, telephone calls, faxes, or other activities such as monitoring weather and news reports, checking security and video surveillance systems, using the internet, and interacting with colleagues, supervisors, and managers. Dow should be able to describe the differences in the level of activity during weekdays/weekends, and during day/night shifts. The measurement of workload should be performed during all periods of time, seasons, and shifts to account for variations in overall demands on controllers.

Dow must amend the GCPL Control Room Management Program dated December 1, 2011, to require a review of the general activity that controllers have to respond to during a shift at least once each calendar year, not to exceed an interval of 15 months.

11. §195.446 Control room management.

(a) General. (See Item #1)

§195.446 Control room management.

(e) Alarm management.

Each operator using a SCADA system must have a written alarm management plan to provide for effective controller response to alarms. An operator's plan must include provisions to:

- (6) Address deficiencies identified through the implementation of paragraphs (e)(1) through (e)(5) of this section.

The GCPL Control Room Management Program dated December 1, 2011, fails to address how deficiencies discovered during the implementation of 195.446(e)(1-5) will be resolved. Dow should promptly correct specific issues commensurate with their importance to safety. GCPL should maintain an itemized list of deficiencies and their date of discovery, the corrective action to be taken, and the completion date (or schedule) for corrective actions. The procedure should provide a criteria and/or guidelines for prioritizing the resolution and correction of deficiencies. GCPL's documentation should also record the basis for the selection and scheduling of corrective action.

Dow must amend the GCPL Control Room Management Program dated December 1, 2011, to address the remediation process of deficiencies discovered from the implementation of 195.446(e)(1-5).

Response to this Notice

This Notice is provided pursuant to 49 U.S.C. § 60108(a) and 49 C.F.R. § 190.237. Enclosed as part of this Notice is a document entitled *Response Options for Pipeline Operators in Compliance Proceedings*. Please refer to this document and note the response options. Be advised that all material you submit in response to this enforcement action is subject to being made publicly available. If you believe that any portion of your responsive material qualifies for confidential treatment under 5 U.S.C. 552(b), along with the complete original document you must provide a second copy of the document with the portions you believe qualify for confidential treatment redacted and an explanation of why you believe the redacted information qualifies for confidential treatment under 5 U.S.C. 552(b). If you do not respond within 30 days of receipt of this Notice, this constitutes a waiver of your right to contest the allegations in this Notice and authorizes the Associate Administrator for Pipeline Safety to find facts as alleged in this Notice without further notice to you and to issue a Final Order.

If, after opportunity for a hearing, your plans or procedures are found inadequate as alleged in this Notice, you may be ordered to amend your plans or procedures to correct the inadequacies (49 C.F.R. § 190.237). If you are not contesting this Notice, we propose that you submit your amended procedures to my office within 45 days of receipt of this Notice. This period may be extended by written request for good cause. Once the inadequacies identified herein have been addressed in your amended procedures, this enforcement action will be closed.

It is requested (not mandated) that Dow Pipeline Company - Cayuse maintain documentation of the safety improvement costs associated with fulfilling this Notice of Amendment (preparation/revision of plans, procedures) and submit the total to R. M. Seeley, Director, Southwest Region, Pipeline and Hazardous Materials Safety Administration. In correspondence concerning this matter, please refer to **CPF 4-2012-5024M** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,



R. M. Seeley
Director, Southwest Region
Pipeline and Hazardous Materials Safety Administration

Enclosure: *Response Options for Pipeline Operators in Compliance Proceedings*