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

U.S. Department of Transportation
Pipeline and
Hazardous Materials Safety Administration
8701 South Gessner, Suite 1110
Houston, Texas 77074

July 27, 2012

Attn: Rodrick M. Seeley, Director

Re: Response to Notice of Amendment for the Inspection of the Dow Chemical Pipeline-Cayuse (Dow) procedures for Control Room Management. CPF 4-2012-5024M.

Dear Mr. Seeley:

Concerning the Evaluation of the Control Room Management Procedure Inspection completed on December 12-15, 2011, Package Number CPF 4-2012-5024M, Dow Chemical Pipeline-Cayuse (Dow) is providing the actions taken to correct the eleven (11) apparent inadequacies:

1. The Gulf Coast Pipeline (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 process interfere with the fulfillment of command actions or critical communications with field personnel.
   Response:
   Modified HPCOM 8.21 to include; Specific Duties of Product Controller to monitor and control all pipeline systems, compressor stations, pumping stations, and storage facilities. Product Controller must know the geographic location of all remote telemetry systems by using the computer and must know how to make telemetry checks. Monitor telephone, radio, and microwave systems. Controller is responsible for making sure the communication lines are working at all telemetry stations. When having problems with communication lines, he/she is responsible for getting proper personnel out to repair as soon as possible. The Controller must be familiar with the general area in which field technicians normally work in order to monitor the system and coordinate the activities effectively. Some SCADA commands can be complex or take an extended period of time to execute in the field. Because control actions can be critical to maintain safety, controllers

should remain attentive while waiting for confirmation of the desired operation, and not leave the console prematurely.

2. 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.
   Response:
   Modified HPCOM 8.11 to include: Duties before going ON duty the controller coming on duty is responsible for reviewing all of these documents and asking any questions before the previous controller leaves for home. A list of these reports and documents is as follows: • Log Book Report • Shift Relief Notes (see below for more detail) • Review MTL • Review Alarm Summary & Critical Alarm Report and document in LogBook along with who you relieved and date and time.

3. 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.
   Response:
   Modified GCPL JP-1611 and CCD-1604 procedures to incorporate what changes need point-to-point verification.

4. 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 192.631(c)(3) and 195.446(c)(3).
   Response:
   The procedure HPCOM 6.01 has been modified to test the loss of communication during our relocation drill. The purpose of the procedure is to describe the actions required by pipeline personnel at stations in the event of loss of communications with the Houston Product Control (HPC) WW computer. This includes manual operation. This procedure will be tested once a year not to exceed 15 months. This will be coordinated with the yearly Hurricane Relocation Drill.

5. 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 in to 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.
Response:
Modified the procedure HPCOM 7.04 to include when the test should be done. A procedure was created for relocating the control of GCPL's from the Houston Dow Control Center to the back-up Seadrift Control Center. This procedure covers the relocation in planned or emergency situations. This procedure will be tested yearly not to exceed 15 months. Test will be done prior or at the beginning of Hurricane season.

6. 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 to help to prevent the onset of controller fatigue.
Response:
A procedure was created that documents what is done for fatigue mitigation. A new training course has been developed in MyLearning for the fatigue training. This training includes scientific information, risks, how to reduce those risks. The training will be reoccurring annual required training for all Product Controllers, the Production Coordinator and Production Leader. Course credit is received upon successful completion of a 10 question test that is pulled from a bank of 15 questions with a passing score of 80%.

7. 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 the 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.
Response:
Procedure was created to mitigate fatigue. The procedure includes the training, the shift lengths for safe operation of a pipeline, and if a deviation is to occur, written approval with justification is needed.

8. 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 set point values and alarm descriptions at least once each calendar year not to exceed an interval of 15 months.

Response:
GCPL Alarm Philosophy document has been revised to include the requirement to verify the correct safety-related alarm set point values and alarm descriptions at least once each calendar year not to exceed an interval of 15 months.

9. 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.
Response:
GCPL Alarm Philosophy has been modified to include an annual review of the effectiveness. This review will not exceed an interval of 15 months.

10. 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 difference in the level of activity during all periods of time, seasons, and shifts to account for variations in overall demands on controllers.
Response:
The procedure HPCOM 8.12 has been revised to include annual review for volume of alarms and the general activity that controllers have to respond to during a shift.

11. The GCPL Control Room Management Program dated December 1, 2011, fails to address how deficiencies discovered during the implementation of 192.631(e) (1-5) or 194.446(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 discover, 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.
Response:
The GCPL Alarm Philosophy document section labeled Management of Change and Alarm Documentation addresses this action item. A Master Task List task will be added to the Process Control Engineers tasks to see that alarm data is reviewed on a monthly basis. Revised procedure HPCOM 8.12 to include annual review for volume of alarms and the general activity that controllers have to respond to during a shift. The GCPL Alarm Philosophy has been modified to include an annual review of the effectiveness. This review will not exceed an

interval of 15 months. All deficiencies will be documented and actions needed will be placed in EAT tool.

Please contact me with questions, comments or requests for further information.

Regards,

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