

## NOTICE OF AMENDMENT

### **CERTIFIED MAIL - RETURN RECEIPT REQUESTED**

November 28, 2012

Mr. Stan Wingate, Vice President  
Montana – Dakota Utilities Co.  
400 North Fourth St  
Bismarck, ND 58501

**CPF 3-2012-1009M**

Dear Mr. Wingate:

On March 12 through March 16, 2012, representatives of the Pipeline and Hazardous Materials Safety Administration (PHMSA) Central Region, Montana Public Service Commission, North Dakota Public Service Commission, South Dakota Public Utilities Commission, Washington Utilities and Transportation Commission and Wyoming Public Service pursuant to Chapter 601 of 49 United States Code inspected the Pipeline Control Room Management (CRM) Plan, in Bismarck, ND. This CRM Plan inspection considered the operations of Williston Basin (WBI), Cascade Natural Gas (CNG) and Montana-Dakota Utilities (MDU).

On the basis of the inspection, PHMSA has identified apparent inadequacies found within the combined plans or procedures for CRM of the three above-mentioned companies, as described below:

**1. 192.631(a) General**

**(2) The procedures required by this section must be integrated, as appropriate, with operating and emergency procedures required by §§192.605 and 192.615. An operator must develop the procedures no later than August 1, 2011;**

- a) The operator has not performed and documented a detailed review of their facilities to assure there are no other locations that may be considered control rooms.
- b) The CRM Plan was not developed with a version control method for the plan, such as a header or footer, to show version, date and the individual making the approval.
- c) The CRM Plan needs to address that the official document will reside in SharePoint in the Control Room section, as was communicated to the inspection team.
- d) The CRM Plan needs to state that the review of the entire CRM Plan will be performed annually.
- e) A formal review the O&M, Emergency and Control Center procedures for three companies shall be completed for integration and compatibility between them.
- f) Specific tasks and how they are carried out for CNG need to be developed in the CRM Plan, since they have unique operations compared to WBI and MDU.
- g) The CRM Plan need to address each the specific requirements and system issues will be attended to by WBI.
- h) A method to document that the review of the CRM Plan has occurred and a requirement to sign off on the approval by the responsible party should be developed.

## 2. 192.631 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;**

Roles and responsibilities were not clearly defined in the CRM Plan as addressed below:

- a) There are 3 different levels of control for the 3 different physical assets (WBI, MDU, and CNG). The controller's responsibilities need to be defined for each asset.
- b) A process for documenting how controllers are managed through sign in and sign out needs to be established.
- c) A process to address operator qualifications of the back-up facility, during an event, until the primary controllers arrive at the Glendive control center needs to be

established. Since the three different facilities have different back-up methods, these methods also need to be defined in the plan.

- d) Policy and procedures need to be established that address the direction of a controller's actions by unqualified personnel.
- e) Procedures need to be established to address what privileges are granted with regards to the SCADA login process.
- f) The CRM Plan must state that the domain of control changes when control is transferred to the Glendive facility. Currently, when back-up control is at Glendive, only WBI assets will be controlled.
- g) The CRM Plan needs to contain a formalized back-up process. The process needs to address the issue of qualified controllers' availability until Bismarck personnel arrive to the back-up location in Glendive.
- h) The CRM Plan needs to address that shift change and breaks do not interfere with the primary expectations of completing necessary actions prior to the controller leaving the console.

### 3. 192.631 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:**

**(2) A controller's role when an abnormal operating condition is detected, even if the controller is not the first to detect the condition, including the controller's responsibility to take specific actions and to communicate with others;**

Roles and responsibilities were not clearly defined in the CRM Plan as addressed below:

- a) The controller is not given the authority to shut down the pipeline. The controller needs to have the authority to perform this task if circumstances warrant such an action.
- b) The CRM Plan needs to clearly state that MAOPs need to be readily available to controllers. In addition to design MAOPs, temporary or permanent reductions in MAOPs due to maintenance activities, safety related conditions (SRC), integrity management (IM) issues or other Management of Change (MOC) requirements must also be provided prior to implementing the new MAOP. Also, the CRM Plan needs to state that controls within SCADA will prevent the MAOP from being exceeded.

#### 4. 192.631 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:**

**(3) A controller's role during an emergency, even if the controller is not the first to detect the emergency, including the controller's responsibility to take specific actions and to communicate with others; and**

Roles and responsibilities were not clearly defined in the CRM Plan as addressed below:

- a) The CRM Plan needs to include guidance on how to determine when a pipeline needs to be shut down or operated.
- b) The CRM Plan needs to address what action a controller will take in the event a leak is identified by an outside party.
- c) The CRM Plan needs to reference the disaster recovery plan and processes to maintain continuity of pipeline control in Glendive and field locations.
- d) The CRM Plan needs address how the Glendive facility will begin operations to maintain continuity of pipeline control in case of a disaster.

#### 5. 192.631 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.**

- a) The CRM Plan needs to include a daily shift change procedure and documentation method that helps the controllers and follows the typical work flow process. Also, the specific time that the shift change begins and ends should be recorded.
- b) The CRM Plan needs to take into account the different time zones and how to record times for different zones for operations through the SCADA system.
- c) The CRM Plan needs to have a process to address the occurrence hand overs.

- d) The CRM Plan needs to include procedures on what will be reviewed prior to calling in replacement controllers to minimize hours of service (HOS) conflicts. The procedure also needs to state who is the responsible party for reviewing and approving the replacement.
- e) The CRM Plan needs to address how alarms are handled during shift change.
- f) The CRM Plan needs to identify the time to perform shift changes.

**6. 192.631 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:**

**(1) Implement sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 (incorporated by reference, see §192.7) whenever a SCADA system is added, expanded or replaced, unless the operator demonstrates that certain provisions of sections 1, 4, 8, 9, 11.1, and 11.3 of API RP 1165 are not practical for the SCADA system used**

- a) The CRM Plan needs to define the types of changes such as additions, expansions, or replacements that require the implementation of API 1165.
- b) The CRM Plan needs documentation of the work that has been done in order to comply with API 1165.
- c) The CRM Plan needs to include what all the symbols represent on the controller's SCADA screens and how many colors will be used.
- d) The CRM Plan needs to explain how they will assure they are in compliance with API 1165 on all screens.
- e) The CRM Plan needs to be expanded to address how the human factors of section 4 of API 1165 are incorporated into the SCADA system.
- f) The CRM Plan needs to be expanded to address how screens are designed and reviewed. In addition to how documents are to be compliant with section 8 of API 1165.
- g) The CRM Plan needs to be expanded to address color data attributes and legends within the procedures.
- h) The CRM Plan needs to be expanded to address the SCADA display requirements to be consistent between screens.

7. **192.631 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;**

- a) The CRM Plan needs to define safety-related and other points. Also, it needs to state how quickly the controllers need to address the different notifications from SCADA.
- b) The CRM Plan needs to include when safety points are replaced and point-to-point verifications are required.
- c) The CRM Plan needs to include the requirement that validation of field equipment will be performed against SCADA in the control center.

8. **192.631 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:**

**(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;**

- a) The CRM Plan needs to include a time frame for when the internal communications plan is activated. Also, include that field personnel will need to call the control center promptly whenever operating parameters are outside of those required and on regular intervals for those facilities deemed as safety related. The Control Center should also be recording the safety-related data points that are in manual mode. In addition, the plan needs to state that the control room will manually record safety point data and require prompt calls from the field personnel if an abnormal condition exists.
- b) The CRM Plan needs to address how certain equipment will fail; i.e., fail open or fail closed.
- c) The CRM Plan needs to include how internal communication plan tests will be performed to assure that all segments will be covered over time.

- d) The CRM Plan needs to include a documentation method for any deficiencies identified in the internal communications plan and how the deficiencies were corrected.
- e) The CRM Plan should state how the communications plan will be tested such as testing different segments annually to assure that all segments will be covered over time.

**9. 192.631 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;**

- a) The CRM Plan needs to explain how the development of the SCADA software will occur and how the active SCADA server will be updated with changes.
- b) The CRM Plan needs to include how the backup server will be tested.
- c) The CRM Plan needs to include a process that verifies there are adequate procedures in place for decision-making and internal communications.
- d) The CRM Plan needs to include procedures to adequately address and test the logistics of returning operations to the primary control room.

**10. 192.631 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:**

**(5) Establish and implement procedures for when a different controller assumes responsibility, including the content of information to be exchanged.**

- a) The CRM Plan needs a shift change log that is appropriately designed for a distribution network rather than a cross country pipeline. The current changeover details are insufficient in supporting the work flow process and are minimally filled out to meet the rule requirement. In addition, the changeover notes need to be maintained as part of the shift change log.

- b) In Section 406 of the CRM Plan, the bulleted points need to be expanded to address specific physical assets and additional items defined in API RP 1168 that are not currently included.

**11. 192.631 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:**

- (3) Train controllers and supervisors to recognize the effects of fatigue; and**

In Section 502 of the CRM Plan, a statement should be included to address that annual effectiveness reviews will be done annually not to exceed 15 months.

**12. 192.631 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 HOS, which may provide for an emergency deviation from the maximum limit if necessary for the safe operation of a pipeline facility.**

- a) The CRM Plan needs to state that controllers shall be provided an opportunity for 8 hours of continuous sleep.
- b) The CRM Plan needs to justify the HOS limits.
- c) The CRM Plan needs to include the HOS for the lead Gas Control.
- d) The CRM Plan needs to include what countermeasures are available and what additional mitigation measures are recommended between the 9<sup>th</sup> and 12 hours of a shift.
- e) The CRM Plan needs to state that HOS deviations should only occur during emergencies and the approval and review process must be formalized and documented.

**13. 192.631 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:**

Section 603 of the CRM Plan and the Alarm Management plan need to clearly define the alarms in the SCADA system, provide adequate definitions, establish priorities for effective controller response, and what is visible to the controller.

#### **14. 192.631 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:**

**(1) Review SCADA safety-related alarm operations using a process that ensures alarms are accurate and support safe pipeline operations;**

- a) The Alarm Management plan needs to include provisions for identifying and correcting inaccurate or malfunctioning alarms.
- b) The Alarm Management plan needs to address the periodic verification of eyesight and color acuity for controllers.
- c) The Alarm Management plan needs to be modified to define “stale data” and provide a method to alert the controller that a stale or forced reading exists.

#### **15. 192.631 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:**

**(2) Identify at least once each calendar month, points affecting safety that have been taken off scan in the SCADA host, have had alarms inhibited, generated false alarms, or that have had forced or manual values for periods of time exceeding that required for associated maintenance or operating activities;**

The Alarm Management plan needs to be modified to include promptly correcting issues.

#### **16. 192.631 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 setpoint values and alarm descriptions at least once each calendar year, but at intervals not to exceed 15 months;**

- a) The Alarm Management plan needs to be modified to include a procedure for correcting alarm set point values and descriptors.
- b) The Alarm Management plan needs to be modified to incorporate MDU Cascade/Intermountain system into plan.

#### **17. 192.631 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 Alarm Management plan needs to be modified to define the review procedure that will be used to determine effectiveness, including the time interval, to reflect once each calendar year not to exceed 15 months.

#### **18. 192.631 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**

- a) The CRM Plan needs to include procedures to address what work load tasks exist, how this will be achieved and how the tasks will be distributed between controllers and others.
- b) The CRM Plan needs to include procedures to develop metrics to measure workload effectiveness.
- c) The CRM Plan needs to be amended to determine if the controller has sufficient time to analyze and react to incoming alarms.
- d) The CRM Plan needs to be amended to define the review process for determining if the controller's performance is currently adequate.

## **19. 192.631 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 CRM Plan needs to be amended to define how deficiencies found in implementing these sections will be resolved.

## **20. 192.631 Control room management**

**(f) Change management. Each operator must assure that changes that could affect control room operations are coordinated with the control room personnel by performing each of the following:**

**(1) Establish communications between control room representatives, operator's management, and associated field personnel when planning and implementing physical changes to pipeline equipment or configuration;**

The CRM Plan needs to be amended to incorporate current MOC procedures and define when a MOC document needs to be completed for CRM activities. The CRM Plan also needs to address adequate training for controllers prior to implementing the change.

## **21. 192.631 Control room management**

**(f) Change management. Each operator must assure that changes that could affect control room operations are coordinated with the control room personnel by performing each of the following:**

**(2) Require its field personnel to contact the control room when emergency conditions exist and when making field changes that affect control room operations;**

- a) The CRM Plan needs to be amended to include a process for providing information back from MDU or CNG when issues are sent to their attention by controllers.
- b) The CRM Plan needs a procedure to require its field personnel and SCADA support personnel to contact the control room when making field changes.

## **22. 192.631 Control room management**

**(g) Operating experience. Each operator must assure that lessons learned from its operating experience are incorporated, as appropriate, into its control room management procedures by performing each of the following:**

**(1) Review incidents that must be reported pursuant to 49 CFR part 191 to determine if control room actions contributed to the event and, if so, correct, where necessary, deficiencies related to: (i) Controller fatigue; (ii) Field equipment; (iii) The operation of any relief device; (iv) Procedures; (v) SCADA system configuration; and (vi) SCADA system performance.**

- a) The CRM Plan needs to be amended so that their emergency procedures pertaining to whom the responsible parties are and their roles in the event of an emergency.
- b) The CRM Plan needs to include instructions on how to fill out the incident review form, and formalize training on how to fill out the form.
- c) The incident review form needs to include incorrect training as a possible contributing factor.
- d) The fatigue management plan needs to be amended to promote honest reporting of fatigue by the controller as a contributing factor in an incident. The plan should incorporate further review of the white paper documents to determine if any more questions need to be included on the incident review form to aid in the qualitative analysis.

## **23. 192.631 Control room management**

**(g) Operating experience. Each operator must assure that lessons learned from its operating experience are incorporated, as appropriate, into its control room management procedures by performing each of the following:**

**(2) Include lessons learned from the operator's experience in the training program required by this section.**

Section 802 of the CRM Plan needs to include how near misses will be factored into the plan.

## **24. 192.631 Control room management**

**(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:**

- a) The CRM Plan needs to include procedures to review the training program content and identify potential improvements.
- b) The CRM Plan needs to include a list of all the tasks performed by the controllers and to include how the training will demonstrate the proficiency on each task.

#### **25. 192.631 Control room management**

**(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:**

- (1) Responding to abnormal operating conditions likely to occur simultaneously or in sequence;**

The CRM Plan needs to include a list of some of the most common abnormal operating conditions (AOC's) that may occur simultaneously, and include training to recognize and react correctly to those situations when simultaneous AOC's occur.

#### **26. 192.631 Control room management**

**(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:**

- (3) Training controllers on their responsibilities for communication under the operator's emergency response procedures;**

The CRM Plan needs to include a procedure for having controllers perform their responsibilities during drills and a method to document the controllers' performance.

#### **27. 192.631 Control room management**

**(h) Training. Each operator must establish a controller training program and review the training program content to identify potential improvements at least once each calendar year, but at intervals not to exceed 15 months. An operator's program must provide for training each controller to carry out the roles and responsibilities defined by the operator. In addition, the training program must include the following elements:**

- (4) Training that will provide a controller a working knowledge of the pipeline system, especially during the development of abnormal operating conditions;**

The CRM Plan needs to include training that will provide controllers a working knowledge of the pipeline system.

## **28. 192.631 Control room management**

**(i) Compliance validation. Upon request, operators must submit their procedures to PHMSA or, in the case of an intrastate pipeline facility regulated by a State, to the appropriate State agency.**

- a) The CRM Plan needs to address how documentation of compliance with requests and 30-day references.
- b) The CRM Plan needs to address who the responsible individual is carrying out requests.

## **29. 192.631 Control room management**

**(j) Compliance and deviations. An operator must maintain for review during inspection:**

**(1) Records that demonstrate compliance with the requirements of this section;**

The CRM Plan needs to amend procedures to demonstrate how records will be managed and maintained to support compliance.

## **30. 192.631 Control room management**

**(j) Compliance and deviations. An operator must maintain for review during inspection:**

**(2) Documentation to demonstrate that any deviation from the procedures required by this section was necessary for the safe operation of the pipeline facility.**

The CRM Plan needs procedures to demonstrate and provide a documented record that every deviation from any CRM rule requirement is necessary for safe operation.

### 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 [number of days] 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 Montana Dakota Utilities maintains documentation of the safety improvement costs associated with fulfilling this Notice of Amendment (preparation/revision of plans, procedures) and submit the total to David Barrett, Director, Central Region, Pipeline and Hazardous Materials Safety Administration.

In correspondence concerning this matter, please refer to **CPF 3-2012-1009M** and, for each document you submit, please provide a copy in electronic format whenever possible.

Sincerely,

David Barrett  
Director, Central Region  
Pipeline and Hazardous Materials Safety Administration

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